

**Clemson University  
Clemson, South Carolina**

***OMB Circular A-133 Reports***

***For the year ended June 30, 2013***

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*Schedule of Expenditures of Federal Awards*

*For the year ending June 30, 2013*

Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>RESEARCH AND DEVELOPMENT CLUSTER</b>			
<b>Department of Agriculture</b>			
2010 Borlaug Fellowship for Bulgaria	10.RD	58-3148-1-084	\$ 11,597
Acquisition of Goods and Services	10.RD	58-6657-1-901	24,928
Acquisition of Goods and Services	10.RD	58-6657-2-400	79,670
Acquisition of Goods and Services	10.RD	58-6657-3-004	24,669
Acquisition of Goods and Services	10.RD	58-6659-1-111	3,490
Acquisition of Goods and Services	10.RD	58-6659-2-112	27,850
Acquisition of Goods and Services	10.RD	58-6659-2-113	11,495
Acquisition of Goods and Services	10.RD	58-6659-2-114	6,642
Acquisition of Goods and Services	10.RD	58-6659-3-115	26,776
Acquisition of Goods and Services	10.RD	58-6659-3-118	13,163
Acquisition of Goods and Services (Coastal Plain Soil, Water and Plant Conservation Research)	10.RD	58-6657-2-201	63,594
An International Collaboration to Understand Molecular Mechanisms of Vegetative/Reproductive Transition in Gymnosperms	10.RD	2009-51160-05478	10,022
Analysis of Beef Samples of the "Pasture Based Beef Systems for Appalachia"	10.RD	58-1932-8-838	189,778
Animal Health	10.RD	UNKNOWN	27,852
Application of Biotechnology to Control the Soybean Cyst Nematode	10.RD	58-1275-2-353	33,578
Children, Youth and Families at Risk (CYFAR) Liaison	10.RD	2009-41520-05376	34,467
Clemson University Sustainable Community Project (CYFAR Sustainability)	10.RD	2011-41520-30408	122,886
Clemson University Veterinary Institute, SC	10.RD	2010-38942-20745	108,495
Comparative Trapping Investigations of Small Hive Beetles Inside Honey Bee Colonies	10.RD	2010-34381-21291	13,722
Containment, Remediation, and Recycling of Irrigation Water for Sustainable Ornamental Crop Production	10.RD	2011-51181-30633	32,714
Culicoides Sonorensis Transcriptome Project	10.RD	58-5430-2-313	7,847
Data Collection to Support International Regulatory Approvals for "Honeysweet" Plums	10.RD	58-1931-9-950	110,346
Data Sources and Food Demand Estimation: A Comparison of Homescan and Consumer Expenditure Data	10.RD	2011-67023-30058	55,141
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	3,802
Detection and Mitigation of Phytophthora ramorum and other Species of Phytophthora in Forest Streams	10.RD	09-JV-11272138-014	(12,783)
Developing Canola Varieties with Durable and Robust Blackleg Resistance by Pyramiding Race-Specific Resistant Genes	10.RD	2010-38624-21823	30,310
Developing Dynamic Mist Control Strategies for the Propagation of Vegetable Cuttings	10.RD	58-3607-8-722	21,603
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	65,723
Developing Molecular Resources Using Next Generation Sequencing and Evaluation of Peach NCGR Germplasm for Drought Resistance	10.RD	58-1931-2-307	389
Development of Plant Materials Native to Longleaf Ecosystems Within the Atlantic Coastal Plain of North and South Carolina	10.RD	09-CS-11081209-002	4,805
Documenting and Predicting Impacts of Global Climate Change Using Historical Sea Eagle Monitoring Data	10.RD	10-JV-11221635-284	4,014

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Agriculture, continued</b>			
Drought Effects on Forest Regeneration in the Southeast- Regional Analysis Based on FHM/FIA Data	10.RD	10-DG-11083150-013	34,151
Enhancing Expertise in Identification of Plant-Parasitic Nematodes of Regulatory Significance	10.RD	11-8130-0040-CA	36,041
Enhancing the Sustainability of Livestock Production Systems on the Southeastern US	10.RD	2010-51160-21072	23,025
Environmental Risk Assessment of Perennial Grasses Genetically Engineered for Abiotic Stress Tolerance	10.RD	2010-33522-21656	58,354
Farmscape Ecology of Stink Bugs and the Development of Environmentally Friendly Control Strategies	10.RD	2009-34103-19813	3,442
Genetic Engineering for Septoria Disease Resistance in Hybrid Poplar	10.RD	2011-67010-30197	38,360
Genetics and Genomics of Chestnut Blight Resistance	10.RD	11-CA-11330126-106	75,417
Hand Hygiene Promotion: An Essential Strategy for Preventing Foodborne Illness in Elementary Schools	10.RD	2011-51110-31020	157,719
Hatch	10.RD	UNKNOWN	3,502,562
Implementation of an Evaluation Framework for the MarketMaker National Network	10.RD	12-25-G-1126	22,422
Improving Food Handling, Hygiene, and Sanitation in the Child Care Environment in North Carolina and South Carolina	10.RD	2008-51110-04335	126,417
Innovative Nematode Management Strategies to Reduce Pesticide Usage While Enhancing Farm Profit and Environmental Quality	10.RD	2010-51101-21785	340,152
Integrating Management of Soft Scales in the Southern Landscape	10.RD	2010-34103-21144	68,957
Land Use Planning and Forest Disturbance: Comparison of Models, Dissemination of Information in the American Planning Association	10.RD	12-CA-11330136-036	15,138
Land Use Planning for Future Forest Disturbances: An Analysis of the Usefulness of Conservation Planning Tools and Technology	10.RD	10-DG-11330136-141	4,542
Landscape-Scale Thresholds of Early Successional Habitat; Reconciling Biodiversity, Public Perception, and Timber Yield in Managed Forests	10.RD	12-CA-11330134-092	9,962
Long-Term Changes in Bird Community Composition with Forest Maturation in Southern Appalachian Hardwood Forests	10.RD	SRS 07-CA-11330134-089	9,521
Managing Declining Pine Stands for the Restoration of Red-cockaded Woodpecker Habitat (Resample Supplement)	10.RD	12-JV-11330123-046	46,032
M-cells in the Bovine Mammary Gland	10.RD	2011-67016-30140	1,065
McIntire Stennis	10.RD	UNKNOWN	743,467
Mechanisms, Ecological Impacts, and Restoration Strategies for Invasion of Agricultural Fields by the Clonal Plant <i>Polygonum cuspidatum</i>	10.RD	2009-35320-05042	75,144
Mitigation of <i>Phytophthora</i> Species in Water With Algaecides	10.RD	11-8130-0999-CA	25,380
Multi-Scale Biogeochemical Assessment of Soil Denitrification Process Impacted by Nanosilver	10.RD	2012-67022-30158	41,673
Myoepithelial Ontogeny in Prepubertal Heifers	10.RD	2009-35208-05778	14,312
National Visitor Use Monitoring	10.RD	AG-4670-C-12-0115	27,505
Nutrition and Food Safety Education Targeting Rural Older Adults: Using a Volunteer-based, Train-the-Team Approach	10.RD	2010-46100-21801	92,459
Pilot Study to Determine the Effect of a Nutritional Food Safety Curriculum Targeting Older Adults Who Participate in the South Carolina Congregate Nutrition Program	10.RD	2009-46100-05957	(836)
Prescribed Fire vs. Wildfire: Impacts of Repeated Fires on Vegetative Community Development in the Southern Appalachian Mountains	10.RD	11-DG-11330136-004	363

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Agriculture, continued</b>			
Presentation of Students and Young Scientists at the 2013 32nd Southern Forest Tree Improvement Conference	10.RD	2013-67013-20874	14,191
Producing Biological Control Agents for Use in Hemlock Woolly Adelgid Management in the Southern Appalachians	10.RD	10-DG-11083150-031	109,024
Producing Biological Control Agents for Use in Hemlock Woolly Adelgid Management	10.RD	08-DG-11083150-012	(1)
Rapid Detection and Mitigation of Phytophthora ramorum in Water	10.RD	12-8130-0161-CA	46,502
Rapid Detection of Phytophthora ramorum in Water: Year 2	10.RD	11-8130-1538-CA	13,668
Repeated and Prescribed Fires and Mechanical Fuel Treatments May Promote Multiple Management Objectives in the Southern Appalachian Mountains	10.RD	12-CA-11330136-041	15,484
Repeated Prescribed Fires and Mechanical Fuel Treatments for Restoration in the Southern Appalachian Mountains	10.RD	12-CA-11330136-122	46,497
Research Support Agreement Management Report	10.RD	58-6659-1-110	577
Research Synthesis: Impacts of Fire on Fauna in the Appalachian Region	10.RD	12-CA-11330136-008	10,592
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	78,040
Socioeconomic Predictors of Family Forest Owner Use of Federal Income Tax Provisions	10.RD	10-JV-11330143-090	19,816
Southeastern Budwood Program	10.RD	10-8100-1414-CA	230
Southeastern Budwood Program	10.RD	11-8100-1414-CA	75,649
Southeastern Budwood Program	10.RD	12-8100-1414-CA	27,352
Statistical Research Analysis	10.RD	58-3AEU-1-0002	6,680
Technology for Irrigated Vegetable Production, SC	10.RD	2010-38508-20653	46,943
Temporal and Spatial Patterns of Pine Mortality in the Southeastern United States	10.RD	SRS 09-JV-11330123-095	83,283
The Supplemental Nutrition Assistance Program and Household Spending: A Flexible Demand	10.RD	58-5000-1-0028	22,810
Tracking and Managing Diseases of Floriculture Crops Caused by Oomycetes and Fungi	10.RD	58-1907-0-103	42,091
Translational Genomics Approaches to Control of Peach Tree Short Life in the Southeastern US	10.RD	2010-34126-21199	30,233
Understanding How a Lipokine, Palmitoleic Acid (C16:1) and Stearyl-CoA Desaturase (SCD) Influence Fat Synthesis	10.RD	2012-67012-19907	48,161
Use of Wetland Systems to Treat Nursery Runoff	10.RD	58-6618-2-105	34,535
Use of Wetland Systems to Treat Nursery Runoff	10.RD	58-6618-7-216	17,182
Using Local Food Banks to Improve Sustainability of Small and Limited Resource Farms	10.RD	2011-67023-30124	108,477
Pass-through programs from:			
Cornell University			
Eastern Broccoli: Developing An Eastern Broccoli Industry	10.RD	61314-9362	16,192
Establishing "The Center for Behavioral Economics and Child Nutrition Research"	10.RD	62140-10084	759
Georgia Forestry Commission			
Laboratory Analysis of Leaf Bait Samples from Streams in Georgia: 2012	10.RD	None	6,000
Michigan State University			
RosBREED: Enabling Marker Assisted Breeding in Rosaceae	10.RD	61-4296E	43,042
North Carolina State University			
Building Capacity to Control Viral Foodborne Disease: A Translational, Multidisciplinary Approach	10.RD	2011-0494-01	308,193

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Agriculture, continued</b>			
Pass-through programs from North Carolina University, continued:			
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	19,598
Developing Tools for Integrated Pest Management of an Exotic White Grub in Sweet Potato	10.RD	2009-0987-02	477
Development of Grafting Technology to Improve Sustainability and Competitiveness of the U.S. Fruiting Vegetable Industry	10.RD	2011-1609-01	113,725
Development of Solid and Hollow-Core Cross-Laminated Timber Systems for Low- and Mid-Rise Construction	10.RD	2013-0043-01	13,355
Predicting In-season Infection Risk of Cucurbit Downy Mildew and Validation of A Downy Mildew Forecasting System.	10.RD	2012-1968-01	4,247
Pennsylvania State University			
Innovative Technologies of Thinning of Fruit	10.RD	3818-CU-USDA-9561	20,107
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	10,197
Development of Peach Varieties with Superior Qualities for Enhanced Production, Increased Consumption and Competitive Advantage of the South Carolina Peach	10.RD	12-25-B-1253	15,990
Enabling Marker Assisted Breeding for Brown Rot Resistance/Tolerance in Peach	10.RD	None	1,752
Enhancing Value Added Agribusiness Opportunities	10.RD	None	9,727
Feasibility Study for Specialty Food Crop Incubator	10.RD	12-25-B-1093	706
Sensitivity of the Gummy Stem Blight Fungus to Newly Registered Fungicides	10.RD	None	3,030
Advancing the Transition from Conventional to Organic Vegetable Production Utilizing Precision Fertigation Technologies and Cover Cropping	10.RD	Project 5	256
South Carolina Forestry Commission			
Impact of Laurel Wilt Disease on Redbay ( <i>Persea borbonia</i> ) Ecosystems	10.RD	None	17,635
Post-hurricane Fuel Dynamics and Its Implications to Fire Behavior	10.RD	None	33,814
Texas A&M University			
Improving Soil Quality to Increase Yield and Reduce Diseases in Organic Rice Production	10.RD	06-S130621	3,040
University of Arkansas			
The Evolutionary Dynamics and Management of Weedy Rice in the U.S.	10.RD	UA AES 900957-01	9,942
University of California Davis			
Developing and Validating Practical Strategies to Improve Microbial Safety in Composting Process Control and Handling Practices	10.RD	201016985-01	143,068
Validating Salmonella Inactivation During Thermal Processing of the Physically Heat-treated Chicken Litter As Soil Amendment and Organic Fertilizer	10.RD	201121654-01	52,696
University of Florida			
Climate Variability to Climate Change: Extension Challenges and Opportunities in the Southeast Area	10.RD	UF11109 00094451	161,798

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Agriculture, continued</b>			
Pass through programs from the University of Florida, continued			
Efficacy of Experimental Products Against the Cottony Cushion Scale	10.RD	PO# 1300213222	11,615
Integrated Grafting Technology to Improve Disease Resistance and Fruit Yield in Specialty Melon Production	10.RD	UF10235	13,822
Occurrence and Distribution of Resistance to Elevate and Switch in Populations of Botrytis cinerea from Strawberries in California	10.RD	PO# 1300213382	2,462
Occurrence and Distribution of Resistance to Elevate and Switch in Populations of Botrytis cinerea from Strawberries in the Carolinas	10.RD	1200184261	5,000
Precision Disease Management for Sustainable Strawberry Production in the Eastern United States	10.RD	00089088 UF10221	238,341
University of Georgia			
A Reduced Risk Management System for Managing Thrips and Tomato Spotted Wilt Virus in Tomato and Pepper in the Southeastern USA	10.RD	RF330-411/3843878	53,680
A Systems Approach to Minimize Escherichia Coli 0157:H7 Food Safety Hazards Associated with Fresh and Fresh-cut Leafy Greens	10.RD	RD319-243/3504758	12,705
Carbon Dynamics in Management Intensive Grazing Dairy Systems	10.RD	RC284-551/4895306	34,019
Ecologically Driven Stink Bug Management in Commercial Farmscape	10.RD	RF330-451/4893146	9,005
Evaluation of Somatic Seedlings of American Chestnut for Resistance to Phytophthora Root Rot-Forest Health Initiative	10.RD	RR272-333/4784886	10,072
Implement Plan of Work for the Southern Region Sustainable Agriculture Research & Education (SARE) Program	10.RD	RD309-109/4786416	1,241
Implement Plan of Work for the Southern Region Sustainable Agriculture Research and Education Professional Development (PDP) Program	10.RD	RE675-161/4786346	4,055
Improvement of the Safety of Food Handling Practices on Small Farms	10.RD	RD309-105/4690158	28,099
University of Kentucky			
CYFAR Capacity Building Program - Federal Collaborative Partner Opportunities	10.RD	3048106543-10-120	7,483
University of North Carolina Asheville			
Keeping the Value with the Farm: Expanding Market Opportunities Through Regional Branding	10.RD	12-SA-01 PO# P1202709	3,064
University of South Carolina			
Genomic and Breeding Foundations for Cellulosic Sorghum Bioenergy Hybrids	10.RD	PO#41650(13010-FB90)/12-2015	54,117
Washington State University			
Tree Fruit GDR: Translating Genomic Knowledge to Fruit Tree Agriculture	10.RD	111359 G002633	61,524
<b>Total Department of Agriculture</b>			<b>9,208,997</b>
<b>Department of Commerce</b>			
Botanical Product Analysis by HPLC-Particle Beam Mass Spectrometers	11.RD	60NANB12D110	56,936
Fatigue, Shiftwork and Human Performance	11.RD	60NANB11D035N-02	35,765
Understanding the Dynamics of Invasion: A Test Using the Titan Acorn Barnacle (Megabalanus Coccoporne) and the Striped Barnacle Amphibalanus Amphitrite	11.RD	FNA09NOS4200045	3,478

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Commerce, continued</b>			
Pass-through programs from:			
Clemson University Research Foundation			
Evaluation of IC Interconnect Failure of through Silicon Vias (TVSs)	11.RD	60NANB12H016	34,481
South Carolina Sea Grant Consortium			
Drought and Decline of Blue Crabs in South Carolina	11.RD	M284-R/CF-15	2,989
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	17,630
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	4,103
Green Infrastructure Design for Stormwater Management in Coastal South Carolina: An Assessment of Ecohydrological Function	11.RD	M388	39,374
Green Infrastructure Design for Stormwater Management in Coastal South Carolina: An Assessment of Ecohydrological Function	11.RD	M488	3,075
Infiltration Versus Retention for Stormwater Quantity and Quality Management: A Continued Assessment of Rainfall Response in Coastal South Carolina Watersheds	11.RD	M277-R/ER-37	8,854
Perceptions of Marine Aquaculture in Tourist Destinations on the Southeastern United States Coast - Year 1	11.RD	M314 - Year 1	18,410
Sea Grant Aquaculture Extension 2010: The SC Sea Grant Aquaculture Extension Enhancement Program - Year 2	11.RD	A/E-AQ1a - Yr. 2	39,931
Sea Grant Aquaculture Extension 2010: The SC Sea Grant Aquaculture Extension Enhancement Program - Year 3	11.RD	A/E-AQ1a - Yr. 3	35,986
Understanding Demand for Value-Added Products and Services Associated with For-Hire Boat Trips on the South Carolina Coast	11.RD	M390	30,802
Understanding Demand for Value-Added Products and Services Associated with For-Hire Boat Trips on the South Carolina Coast	11.RD	M490	13,175
South Carolina Manufacturing Extension Partnership			
SCMEP FY12	11.RD	2012-002	(1)
SCMEP FY13	11.RD	2013-002	79,593
University of Central Florida			
Evaluation of IC Interconnect Failure of Through Silicon Vias	11.RD	UNKNOWN	6,023
University of Delaware			
Molecular Tracking of Fecal Contamination in Delaware Coastal Waters	11.RD	29916	21,319
<b>Total Department of Commerce</b>			<b>451,923</b>
<b>Department of Defense</b>			
2012 Clemson Mini-Conference on Discrete Mathematics	12.RD	H98230-12-1-0253	5,668
3-D Test Systems: New Tools for Unlocking the Mysteries of Breast Cancer	12.RD	W81XWH-05-1-0379	194,024
Accounting for Hydrologic State in Ground Penetrating Radar Classification Systems	12.RD	W911NF-10-1-0292	64,160
Adaptive Multicarrier Transmission for Dynamic Spectrum Access in Tactical Cognitive Radio Networks with Fading Channels	12.RD	N00014-12-1-0060	96,263
Adaptive Reliable Unicast and Multicast Transmission in Tactical Packet Radio Networks	12.RD	W911NF-11-1-0427	116,850
Anthropomorphic Interfaces on Automation Trust, Dependence, and Performance in Younger and Older Adults	12.RD	FA9550-12-1-0385	71,334

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Defense, continued</b>			
Atomistic Molecular Simulation Methods to Predict CBW A-Surface Interactions	12.RD	HDTRA1-10-1-0028	456,184
Carbon Fibers Derived from Sustainable Precursors	12.RD	W911NF-10-2-0024	228,733
Combined Biological and Chemical Mechanisms for Degradation of Insensitive Munitions in the Presence of Alternate Explosives	12.RD	W912HQ-12-C-0058	156,095
Concept Validation and Optimization for a Vent-based Mine-blast Mitigation System	12.RD	W911NF-11-1-0518	24,048
Cooperative Red-Cockaded Woodpecker Translocation Support	12.RD	W9126G-10-2-0030	98,795
Designing Better Virtual Environments for Training	12.RD	N00014-09-1-0989	107,118
Detecting Hidden Communication Protocol	12.RD	FA9550-09-1-0173	48,385
Develop Integrated Management Practices for the Control of Chinese Tallow ( <i>Triadica sebifera</i> ) in Coastal Forests	12.RD	W9126G-11-2-0057	14,778
Development of a Fort Jackson Watershed Management Plan Using GIS-Based Decision Support Tools	12.RD	W9126G-10-2-0013	2,021
Development of Marine Antifouling Coatings Utilizing a Fouling Deterrence Strategy	12.RD	N00014-11-1-0183	162,817
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	316,181
Engineering Chronic Spinal Cord Injury Lesion Cavity for Enhanced Regeneration	12.RD	W81XWH-10-1-0954	69,135
Facilitating Soldier Receipt of Needed Mental Health Treatment	12.RD	W81XWH-11-2-0010	357,901
Friction Stir Welding Behavior of Selected 2000-series and 5000-series Aluminum Alloys	12.RD	W911NF-11-1-0207	43,391
Garment Modification and Production Support - Task Orders	12.RD	2008*1221204*021	271,026
Gradient Films from Shape Memory Nanofoams for Waveguide Coating	12.RD	HDTRA1-10-1-0101	350,154
High-Temperature Interfacial Thermodynamics for Mechanism-Informed Materials Design: A Case Study of Sintered Mo-Si-B Based Alloys	12.RD	FA9550-10-1-0185	117,788
Hydrothermal Actinide Growth Project	12.RD	FA8601-12-P-0315	22,566
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	99,944
Iterative Decoding of q-ary Parity-check Codes and Related Problems	12.RD	H98230-13-1-0232	3,423
Jet Disposal of Dredge Spoil: Transport, Entrainment and Deposition of Fluid Mud	12.RD	W912HZ-09-C-0068	31,973
Laboratory of Excellence for Characterization of Electromagnetic Properties of Nanocomposite Materials	12.RD	FA9550-11-1-0316	71,732
Magnetic Field Assisted Assembly of Ordered Multifunctional Ceramic Nanocomposites for Extreme Environments	12.RD	FA9550-12-1-0459	147,441
Manufacturing Science of Improved Molded Optics	12.RD	W911NF-09-1-0536	59,903
Multicharged Ion Promoted Desorption (MIPD) of Reaction Co-Products	12.RD	W911NF-13-1-0042	66,434
Multidimensional 2-Photon Imaging System for the Investigation of Biofouling Mechanisms and Biomineralization Mechanisms	12.RD	N00014-11-1-0784	135,385
Multi-length Scale Material Model Development for Armor-grade Composites	12.RD	W911NF-09-1-0513	14,764
New Protein Modification under Nitrosative Stress	12.RD	W81XWH-10-1-0385	177,714
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	54,899
Palmetto Number Theory Series/SouthEast Regional Meeting on Numbers	12.RD	H98230-11-1-0230	2,104

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Defense, continued</b>			
Polarization-Maintaining Large-Core All-Solid Photonic Bandgap Fibers for Power Scaling of High Power Fiber Lasers	12.RD	HQ0147-11-C-6010	296,963
Production and Characterization of Cut Resistant, Dyeable Fibers via Acrylic/Copolyaramid Bi-Component Wet Spinning	12.RD	W911QY-10-C-0107	12,545
Research and Development on EM Responsive Coatings	12.RD	FA8650-09-D-5900/0002	88,718
Subsurface Thermal Energy Storage (STES) for Improved Heating and Air-Conditioning Efficiency	12.RD	W912HQ-10-C-0027	203,836
Technologies and Methodologies in Prevention of ASR in Concrete Pavements	12.RD	N62583-09-C-0024	39,593
The Arithmetic of Siegel Modular Forms	12.RD	H98230-11-1-0137	9,963
Tools for Enhanced F-22 Maintenance Visibility	12.RD	FA8601-13-P-0101	46,463
Topologically Protected Quantum Information Processing in Spin-orbit Coupled Semiconductors	12.RD	FA9550-10-1-0497	175,125
Ultra-Trace Level Quantification of Alpha- and Beta- Emitting Radionuclides with Extractive Scintillating Resin	12.RD	HDTRA1-12-1-0012	198,879
Pass-through programs from:			
Applied Research Associates, Incorporated			
PM Stryker: Fireproof Characterization Testing	12.RD	PO# 13-00636	115
Clemson University Research Foundation			
3D Meta-Optics for High Energy Lasers	12.RD	20100669-04-CRF	193,881
Advanced Optical Fibers for High Power Fiber Lasers	12.RD	W911NF-10-1-0423	245,925
Engineered Laser Filaments in Air for Defense Stand-Off Sensing and Interaction Applications	12.RD	238975	30,500
Eye-Safe Polycrystalline Lasers	12.RD	FA9550-07-1-0566	51,601
Innovative Design and Manufacturing of Gradient-Index-based Transformation Optics	12.RD	4622-CU-AFRL-7225	118,236
Investigation of the Accumulative Roll Bonding ARB of Thick Titanium Sheets	12.RD	W911NF-10-1-0413	2,300
Light Filamentation Science	12.RD	232897	23,272
Luminescence Materials as Nanoparticle Thermal Sensors	12.RD	AA-5-33690	30,809
Multi-KW 2 M Emission by Spectrally combining Many Tm Fiber Lasers Year 2	12.RD	233280	8,115
NanoEnergetics-Fundamental Exploration and Technological Development	12.RD	RSC10010	148,381
Novel FEL Cavity Optic Phase II	12.RD	N00014-12-1-0099	65,777
Novel Fiber Concepts for High Power Single Mode Fiber Lasers	12.RD	W911NF-12-1-0332	266,575
Novel High Energy Fiber Lasers	12.RD	HQ0147-08-C-0028	12,321
Novel Materials and Components for All-fiber Faraday Isolators	12.RD	FA8650-09-C-5405	75,828
FlexTech Alliance, Incorporated			
Translating Printed Electronics Process Technology from Laboratory to Commercial Scale	12.RD	RFP12-158_Clemson	252,927
Lehigh University			
Tailoring of Atomic-Scale Interphase Complexions for Mechanism-Informed Material Design	12.RD	542549-78002	61,569
Massachusetts Institute of Technology			
Evaluation of Radiation-induced Photonic Defects in Si, Ge, Chalcogenides and Polymers	12.RD	5710003309	66,396
MIT Lincoln Laboratory			
Lincoln Laboratory Graduate Student Research Support	12.RD	PO 7000014944/3077723	32
Mote Marine Laboratory			
Novel Compounds from Shark and Stingray Epidermal Mucus with Antimicrobial Activity Against Wound Infection Pathogens	12.RD	MML-107-547	13,548

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Defense, continued</b>			
Pass-through programs, continued:			
NanoScale Corporation			
Chemical-Biological Forensic Evidence Container with Agent and Tamper Resistant Tools	12.RD	NSF-388-001	5,785
North Carolina A&T State University			
DNI S&T Center of Academic Excellence: Center for Academic Studies in Identity Sciences	12.RD	210096B	23,358
NXT, Incorporated			
ARRA - Creating World Class Healthcare Facilities for the Military Health System	12.RD	32224-Task Order 002	22,281
Clemson University Subcontract to NXT for the National Institute of Building Sciences	12.RD	2012000752	42,239
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	322,639
Rutgers, The State University of New Jersey			
Single Crystal Fiber Lasers	12.RD	4816 PO# S1762674	41,684
Science Applications International Corporation			
Polymer Kelp	12.RD	P010129691	79,730
Polymer Kelp Fiber Development	12.RD	P010141436	16,580
Sentar, Incorporated			
Software Deception as a Countermeasure to Attacks on Software Protection Systems	12.RD	SEN-12CLEMSON-01	26,937
South Carolina Research Authority			
Troop Readiness Improvement Project (TRIM)	12.RD	2008-30	5,093
The Boeing Company			
High Performance Stretched Polymer Fibers	12.RD	652218 (W911 W6-10-2-05)	127,435
Tulane University			
Development and Use of Genetic Methods for Assessing Aquatic Environmental Condition and Recruitment Dynamics of Native Stream Fishes on Pacific Islands	12.RD	TUL-607-10/11	8,373
University of Illinois			
Novel Optical Fiber Materials with Engineered Brillouin Gain Coefficients SSL-1: Novel Fiber Lasers	12.RD	2012-03919-01	16,712
University of Massachusetts - Dartmouth			
Photovoltaic Fabrics	12.RD	13938	11,424
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 (formally F011680)	118,029
ARC Research at Clemson University	12.RD	3002307587 (formally F011680)	134,551
Computational Support to Develop a Verification and Validation Plan to Reduce Engineering Change Propagation in Vehicle Configuration Design	12.RD	3002307587 (formally F011680)	58,792
Enhanced Fluid Properties and Minimization of Radiator Fan Power Consumption in Military Ground Vehicle Cooling Systems	12.RD	3002307587 (formally F011680)	41,130
Modeling & Optimization of Electrified Propulsion Systems	12.RD	3002307587 (formally F011680)	93,190
Ultracapacitor Energy Storage for Improving Fuel Economy and Extending Battery Life in Heavy Vehicles	12.RD	3002307587 (formally F011680)	59,606
University of Missouri - Rolla			
The Intelligent All Electric Ship Power System	12.RD	00015569-1	(316)

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Defense, continued</b>			
Pass-through programs, continued:			
University of Texas at Dallas Synthesis and Raman Characterization of Boron Doped Carbon Nanotubes	12.RD	632274, Dr. Zakhidov, 090727, P1196	39,029
Washington & Jefferson College Research Analysis Agreement between CSIP at Washington & Jefferson College and SOP at Clemson University	12.RD	CSIP	11,874
Research Analysis Agreement between CSIP at Washington & Jefferson College and SOP at Clemson University	12.RD	None	<u>6,217</u>
<b>Total Department of Defense</b>			<u>8,313,696</u>
<b>Department of the Interior</b>			
CESU: Building the Capacity to Monitor Coastal Marine Ecosystem Health: Reagent Development and Technical Applications of Novel Antibody and Molecular Tools	15.RD	P12AC11053	3,405
Climate Change and Tidally Influenced Freshwater Forested Wetlands of the Southeast: Understanding Functional Ecological Attributes of Forest Transitions to Marsh	15.RD	G09AC00153	45,209
Conservation Corridors for Desert Tortoises	15.RD	G13AC00019	29,213
Determining the Movement Patterns and Habitat Use of Seabirds to Support Marine Spatial Planning Along the Atlantic Coast	15.RD	F11AC01380 (formerly F11AC00695)	35,961
Dissolved and Particulate Anthropogenic Organic Pollutants in the Coastal Environments of the Southeastern US	15.RD	P12AC11162	1,949
Eastern Brown Pelicans: Dispersal, Seasonal Movements and Monitoring of PAH's and Other Contaminants in the Northern Gulf of Mexico	15.RD	G12AC20367	183,662
Evaluating the Effects of FERC License Actions for Consumers Energy Projects on Bald Eagles Nesting Along the Au Sable, Manistee and Muskegon Rivers	15.RD	G10AC00604 (05HQRU1569) P11AC91086 (formerly P11AT50946 )	17,249
Habitat Restoration for Bobwhite Quail and Early-Successional Wildlife Species-Kings Mountain National Military Park	15.RD	P11AT50946 )	5,866
Implement Assessment Protocol for the Rare Carolina Bogmirt Population at Congaree National Park	15.RD	P12AC11253	11,473
Needs Assessment for Interpretation and Education	15.RD	None	3,022
Needs Assessment for Visitor and Resource Protection and Three Specialty Career Fields in Collaboration of the CESU Network	15.RD	P12AC11224 (H5000085050)	35,707
NPS Southeast Region Marine Science Support Center	15.RD	P12AC11053	2,938
Program Management for the SC Water Resources Center	15.RD	G11AP20105	96,297
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)	13,851
Southern Appalachian Cooperative Ecosystems Studies	15.RD	H5000085050 / J5460080183	1,539
Structural Prognosis for the Effective Management of Nation's Cultural Heritage	15.RD	P11AP60979 (formerly MT-2210-11- NC-02) P11AP60836 (formerly MT-2210- 12-NC-01)	6,653
Towards Simpler, Cheaper and Greener Iron Conservation	15.RD	P12AC11169 (H5000085050)	8,245
Treatment of Museum Collection Objects from Fort Sumter and Fort Moultrie National Monuments	15.RD	P12AC11169 (H5000085050)	99,581
Understanding Relationships Between Sediment and Carbon Deposition and Floodplain Forest Functions in the Congaree National Park, SC	15.RD	G10AC00157	34,773
Application of the Visitor Experience and Resource Protection (VERP) Program in Pinnacles National Monument	15.RD	P11AC91070 (formerly J8450110020)	7,917
Cannon Stabilization and Architectural Coatings Treatment at Fort Moultrie - CESU	15.RD	P08AC00212 (formerly J5430080027)	34,311

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of the Interior, continued</b>			
Characterization of the Moth (Lepidoptera) Diversity of Congaree National Park (CESU)	15.RD	P10AC00543 (formerly J5430090058)	5,760
Evaluate Dormant Season Herbicide Treatment Methods for Chinese Privet at Congaree National Park	15.RD	P10AC00532 (formerly J5240100017)	9,501
Front-End Development for the Biodiversity Database of Great Smoky Mountains National Park	15.RD	P11AC91091 (formerly P11AT51069)	28,672
Internship Program for Fire and Fuels Management	15.RD	P08AC00215 (formerly P11AC91099 (formerly P11AT50774)	25,490
Scion and Seed Collection and Processing at Carl Sandburg Home National Historic Site	15.RD	P11AT50774)	551
Structural Integrity Assessments at Fort Sumter National Monument (FSNM)- CESU	15.RD	P11AC91078 (formerly P11AT50423 )	80,028
Tourism as a Tool for Conservation of Mountain Gorillas in the Albertine Rift: The Case of Volcanos National Park, Rwanda	15.RD	F12AP01121	14,520
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
Pass-through programs from:			
North Carolina Wildlife Resources Commission			
Effects of Intensive Pine Management on Aquatic Herptiles with Special Emphasis on Spotted Turtles, North Carolina, USA	15.RD	WM-0230/PO NC10010345	4,707
Effects of Stand Age, Wetland Type, and Landscape Matrix on Patterns of Amphibian Occupancy in Managed Coastal Pine Forests	15.RD	WM-0257 // PO# NC10055455	10,000
South Carolina Department of Natural Resources			
Assessing Nest Success and Habitat Use of Wilson's Plovers #1	15.RD	SCDNR FY2012-004/P24019481612	8,943
Assessing Nest Success and Habitat Use of Wilson's Plovers #3	15.RD	SCDNR FY2013-002/P24019497209	9,985
Best Management Practices for Reducing Sea Turtle Predation	15.RD	None	207
Monitoring Impacts of Native Yellow Pine Restoration on Avifauna in the South Carolina Mountains	15.RD	T-54-R-1, P24014406011	14,388
Web Based GIS Decision Support System	15.RD	SCDNR FY2013-5403513	43,049
University of Minnesota			
Identifying and Evaluating Best Practices for the Adaptive Management of Water Resources	15.RD	H0020773301	31,233
Virginia Polytechnic Institute			
Assessing Quality Indicators for Interpretive Programs in the National Park Service	15.RD	457204-19244	10,739
National Education Council Interpretation and Education Program Assessment Tool	15.RD	432766-19244	3,447
Wildlands Network			
Assisting Wildlands Network to Identify and Prioritize Key Habitat Connectivity Areas for the South Atlantic Region	15.RD	F11AC00459	2,017
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	6,832
Data Needs Assessment to Support Conservation Planning for the Appalachian LCC	15.RD	ALCC 2013-01	35,359
<b>Total Department of the Interior</b>			<u>1,047,923</u>

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Justice</b>			
Pass-through programs from:			
West Virginia Research Corporation			
Use of Periocular Features for Biometric Recognition	16.RD	09-0970-CU	265,012
<b>Total Department of Justice</b>			<b>265,012</b>
<b>Department of Labor</b>			
Pass-through programs from:			
Florence-Darlington Technical College			
Accessible Support Services and Instruction for Sustainable Transition (ASSIST) to Work	17.RD	B0005504	323,201
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	118,237
<b>Total Department of Labor</b>			<b>441,438</b>
<b>Department of State</b>			
Capacity Building for Study Abroad: Cooperative Bachelor's Degree Programs			
	19.RD	S-ECAAS-09-GR-158 (EB)	25,189
Internet Democracy Support for West Africa	19.RD	S-LMAQM-12-GR-1033	200,403
<b>Total Department of State</b>			<b>225,592</b>
<b>Department of Transportation</b>			
2012 Dwight David Eisenhower Transportation Fellowship	20.RD	DTFH64-12-G-00017	11,500
2012 Dwight David Eisenhower Transportation Fellowship	20.RD	DTFH64-12-G-00046	4,631
2012 Dwight David Eisenhower Transportation Fellowship	20.RD	DTFH64-12-G-00029	3,888
Pass-through programs from:			
Innovative Pavement Research Foundation			
Performance of Concrete in the Presence of Airfield Pavement Deicers and Identification of Induced Distress Mechanisms	20.RD	FAA-01-G-002-05-7	(663)
Intelligent Automation Incorporated			
A Novel Detection and Warning System to Mitigate Dilemma Zone (DZ) Issues	20.RD	826-2	3
Professional Service Industries, Incorporated			
Fundamental Investigations into ASR - Mechanisms, Mitigation and Testing	20.RD	None	104,979
South Carolina Department of Transportation (SCDOT)			
Impact of Coarse Aggregate Gradation on PCC Performance Properties	20.RD	1361; Proj No. 689	37,023
Improvements to Acceleration Design Response Spectra for Seismic Design of Transportation Structures in South Carolina	20.RD	1318, Proj No. 686	81,512
Integration of the Incident Command System (ICS) Protocol for Effective Coordination of Multi-Agency Response to Traffic Incidents	20.RD	1543; Proj No. 699	182,484
Operational and Safety Characteristics of Lane Widths	20.RD	1440; Proj No. 693	135,381
Professional Services Contract Manager Development and Certification Strategy	20.RD	1507; Project No. 696	105,684
Ranking of Pavement Preservation Methods and Practices	20.RD	1456; Proj No. 695	87,025
Real Time Measurement of Scour Depths Around Bridge Piers and Abutments	20.RD	1417; Proj No. 692	96,921
Study of the Rate of Deterioration of Bridges and Pavements as Affected by Trucks	20.RD	1463; Project No. 694	76,885
Accelerated Bridge Construction - Precast Alternate for Flat Slab Spans	20.RD	1297/1449, Proj No. 682	81,774

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Transportation, continued</b>			
Pass-through programs from SCDOT, continued:			
Accelerated Bridge Construction - Precast Alternate for Flat Slab Spans	20.RD	1582, Proj No. 682	35,627
Compliance with the United State Environmental Protection Agency (USEPA) Effluent Limitation Guidelines-Turbidity Control and Surface Outlets	20.RD	SPR No. 702	94,083
Ranking of Pavement Preservation Methods and Practices	20.RD	1574; Proj No. 695	283
Support for the Development and Implementation of an Access Management Program through Research and Analysis of Collision Data	20.RD	1591; Project No. 706	30,440
Validation of Contractor HMA Testing Data in the Materials Acceptance Process - Phase II	20.RD	1508; Project No. 697	119,333
TransAnalytics, LLC			
The Effects of Medical Conditions on Driving Performance	20.RD	DTNH22-09-D-00135, Task Order	18,974
University of North Carolina - Chapel Hill			
Older Drivers' Pedal Behavior	20.RD	5-55002	51,304
Pedal Application Errors	20.RD	5-36366	52,831
University of Tennessee			
Production of Biohydrogen and Succinic Acid	20.RD	8500022313	59,339
Westat			
HFCV Mobile Device Vehicle Integration Assessment	20.RD	8928-S-001 // Task Order No. 8	<u>21,811</u>
<b>Total Department of Transportation</b>			<u>1,493,052</u>
<b>Appalachian Regional Commission</b>			
STEM Leadership Inclusion (I STEM)	23.RD	SC17376	<u>12,233</u>
<b>Total Appalachian Regional Commission</b>			<u>12,233</u>
<b>National Aeronautics and Space Administration</b>			
NRI-Small: Long, Thin Continuum Robots for Space Applications	43.RD	NNX12AM01G	33,915
A Multi-Instrument Study of Electron-Positron Annihilation in the Milky Way	43.RD	NNX09AC80G	6,334
Broad Band Observations using INTEGRAL and Fermi	43.RD	NNX09AT25G	7,499
Chemical Evolution of the Neutron-Rich Iron-Group Isotopes and Implications for the Formation of FUN CAIs	43.RD	NNX10AN96H	29,896
Equatorial Vortex Experiment (EVEX): A Study of the Ionospheric Plasma Circulation and the Sunset Layer from Kwajalein (Clemson CO-I Proposal)	43.RD	NNX10AL26G	88,720
Geospace Response to Lower Atmospheric Wave Variability Due to the El Nino - Southern Oscillation	43.RD	NNX11AJ13G	110,737
Investigation of Anomalous Transport in the Lower Thermosphere	43.RD	NNX11AE17G	173,380
Mesosphere-Lower Thermosphere Turbulence Experiment (MTEX) (Co-I Proposal Clemson University)	43.RD	NNX13AE26G	869
Neutral-Ion Coupling and Wind Shear Effects in the Daytime Lower Ionosphere	43.RD	NNX09AI20G	51,222
Nucleosynthesis and Galactic Chemical Evolution of Cosmochemically Significant Isotopes	43.RD	NNX10AH78G	53,505
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	3,721
Pass-through programs from:			
College of Charleston			
Developing Optical Strain Gauges for Passive Remote Strain Sensing	43.RD	20-SG-Clemson_Anker-PA	9,860

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<b>National Aeronautics and Space Administration, continued</b>			
Pass-through programs from College of Charleston, continued:			
Enabling Public Participation in Astronomy: Installation of the 29th Dixon Lomax Telescope at the Taylor Creek Observatory	43.RD	20-SG-Clemson_Mount-RFI	8,000
Graduate Research Assistantship for Brittany McGowan - Effects of Hydrostatic Pressure on the Differentiation of Bone Marrow Cells into Osteoblasts in 3D Culture	43.RD	520589 Brittany McGowan	377
Graduate Research Assistantship for James Mathieson - Dynamic Tracking of Design Project Complexity for Project Performance Prediction	43.RD	520589 James Mathieson	726
Graduate Research Assistantship for Timothy Reeves - Discrete Element Methods: Realistic Modeling of Interactions Between Wheels and Sandy Soils	43.RD	520589 Timothy Reeves	682
Graduate Research Assistantship: Toward a Career on Advanced Materials Research for Space Applications	43.RD	520589 Ankoma Anderson	8,449
Initiating Ionic Radiation Effects Testing at CUEBIT	43.RD	19-SG-Clemson_Sosolik-RFI	6,000
Light-Weight Nanocomposites of Superior Thermal and Electrical Properties for Space Applications	43.RD	19-SG-Clemson_Sun-RGP	2,250
NASA EPSCoR RID Augmentation Travel Award Program - 2012	43.RD	20-NE-Clemson_Alexis-T	3,749
NASA EPSCoR RID Augmentation Travel Award Program - 2012	43.RD	20-NE-Clemson_Sun-T	3,049
NASA EPSCoR RID Augmentation Travel Award Program - 2012	43.RD	20-NE-Clemson_Zhu-T	3,750
Palmetto Academy 2012: Advanced Space Materials	43.RD	19-SG-Clemson_Sun-PA	15,750
Palmetto Academy 2012: Effects of Irradiation on Polymer Material Properties for Bearing and Structural Applications in Space	43.RD	19-SG-Clemson_DesJardins-PA	10,279
Palmetto Academy 2012: Nanostructured Surfaces and Surface Coatings for Photovoltaic Cells	43.RD	19-SG-Clemson_Mefford-PA	4,962
Palmetto Academy 2012: Surface Enhanced Raman Spectroscopy	43.RD	19-SG-Clemson_Anker-PA	7,577
Palmetto Academy 2012: Understanding the Effect of Ionizing Radiation on Articular Cartilage Biomechanics	43.RD	19-SG-Clemson_Dean-PA	10,433
Portable Hardware for Sensorimotor Adaptation	43.RD	UNKNOWN	2,533
Refining NASA's Space-Based GPS Technology for Applications in Site-Specific Irrigation and Watershed Management	43.RD	20-NE-Clemson_Khalilian-RGP/520829	21,011
South Carolina Space Grant Consortium Campus Director Funds	43.RD	18-SG-Clemson_Nagatomi-Director	647
GATS, Incorporated			
Analysis of Short-Term Tidal Perturbations	43.RD	GATS_SC-12005	1,834
Georgia Institute of Technology			
Design of Resilient Silicon Anodes	43.RD	R9872-S1	44,940
Jet Propulsion Laboratory			
Gas in Protoplanetary Systems - HERSCHEL Cycle-0	43.RD	1369554	7,145
Identification of Forming Gas Giant Planets in the Transition Object HD141569	43.RD	1474968	2,538
NASA Keck 2010A Proposal #56 Observation of Re-Vibrational OH and H2O Emission in Disks Around Young Stars	43.RD	1398507/TO# NM0711085	11,411
Observation of OH Emission from the Transition Disk HD141569	43.RD	1460429	9,385
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	10,699
<b>Total National Aeronautics and Space Administration</b>			<b>767,834</b>
<b>Institute of Museum &amp; Library Services</b>			
The Open Parks Grid: the Gateway to Parks Information	45.RD	LG-05-10-0117-10	215,269
<b>Total Institute of Museum &amp; Library Services</b>			<b>215,269</b>

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation</b>			
5th Annual Graduate Student Mini-Conference in Computational Mathematics	47.RD	DMS-1245607	5,901
A National EPSCoR Cyberinfrastructure Student Engagement Program	47.RD	EPS-1132168	191,403
A Novel Concept for Micro-Power Generation Using Flow-Induced Self-Excited Oscillations	47.RD	CMMI-1000667	62,342
A Priori Analysis of Subgrid Molecular Transport Effects on High Pressure Turbulent Combustion Modeling	47.RD	CBET-0965624	47,795
Algebraic Analysis of Parity Check Codes and Iterative Decoding	47.RD	DMS-0901693	59,397
Analysis and Stability of Dynamical System Models Over Networks	47.RD	DMS-1211691	19,874
Arabidopsis 2010: Collaborative Research: Evolution of Gene Position and Function in Arabidopsis Using Outgroup Genomes	47.RD	MCB-0820345	9,014
Autonomous Distributed Local Computing Models Using Self-Stabilization	47.RD	CCF-0832582	12,400
Biochemistry and Physiology of Novel Acetate Kinases from Eukaryotic Microbes	47.RD	MCB-0920274	225,940
Biosystems Technology ATE Project	47.RD	DUE-0703117	37,046
BPC-AE: Collaborative Research: The Alliance for the Advancement of African-American Researcher in Computing (A4RC)	47.RD	CNS-0940533	3,354
Broadband Dielectric Spectrometers with 1-10 nm Planar Nanofluidic Channels	47.RD	ECCS-0925424	62,994
Capillary-Channeled Polymer (C-CP) Fiber Stationary Phases for High Speed and Preparative Protein Separation	47.RD	CHE-1011820	97,559
CAREER: A Novel Space-creation concept to Enhance the Survival and Functionality of Transplanted Human Stem Cells	47.RD	CBET-0748129	5,365
CAREER: Advancing the Mechanistic Understanding of Field-Scale Preferential Flow and Transport Processes in Soils Using Geophysics	47.RD	EAR-1151294	71,852
CAREER: Algorithmic Aspects of Ordinal Matching Problems	47.RD	CCF-0845593	79,111
CAREER: Brain Tissue Regeneration After Stroke	47.RD	CBET-1055922	11,835
CAREER: Changing the Landscape: Towards the Development of a Physics Identity in High School	47.RD	DRL-0952460	91,914
CAREER: Computational Modeling of Protein Evolvability	47.RD	MCB-0953783	80,727
CAREER: Creating Effective, Sustainable Inquiry-Based Instruction in Middle School Science Classrooms	47.RD	DRL-0952160	81,335
CAREER: Determining the Role of Metal Coordination in Selenium Antioxidant Activity. An Interdisciplinary Approach to Chemical Biology Education and Research	47.RD	CHE-0545138	1,365
CAREER: Electromechanical Transduction of Vibratory Energy Harvesters in Random and Non-Stationary Environments	47.RD	CMMI-1055419	67,779
CAREER: Energy and Charge Transfer Dynamics in Hypothermal Energy Ion-Surface Impacts	47.RD	CHE-0548111	19,656
CAREER: Harnessing Hybrid Computing Resources in PetaScale Computing and Beyond	47.RD	OCI-1149644	21,394
CAREER: High Resolution Spectrochemical Imaging Through Tissue	47.RD	CHE-1255535	25,767
CAREER: Incorporating Patient Heterogeneity and Choice into Predictive Models of Health and Economic Outcomes	47.RD	CMMI-1150732	71,257
CAREER: Integrated Materials-Mechanics-Manufacturing Approach to Hot Blank - Cold Die (HB-CD) Forming of Lightweight Alloy Sheets	47.RD	CMMI-1254670	16,111
CAREER: Modeling Irrationalities of Designers to Support their Decisions for Net-Zero Energy Buildings	47.RD	CMMI-1054122	51,998
CAREER: Multiscale Thermomechanical Analysis of Nanomaterials and Nanostructures	47.RD	CBET-0955096	107,398

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
CAREER: Particle Magnetophoresis in Ferrofluid Microflows for Lab-on-a-Chip Applications.	47.RD	CBET-1150670	34,790
CAREER: Scalable Learning and Adaptation with Intelligent Techniques and Neural Networks for Reconfiguration and Survivability of Complex Systems	47.RD	ECCS-1231820	23,851
CAREER: Student Motivation and Learning in Engineering	47.RD	EEC-1055950	1,198
CAREER: Supporting Patterns for Embedded Network Systems	47.RD	CNS-0745846	62,134
CAREER: The Evolution of Gas in Disks - Setting the Stage for Planet Formation	47.RD	AST-0954811	87,324
CAREER: Understanding Carbon Nanoassembly in Biological and Environmental Systems	47.RD	CBET-0744040	13,979
CAREER: Understanding Process-Induced Damage in Laser-Assisted Cell Direct Writing-Bridging Manufacturing Science and Biomedical Research	47.RD	CMMI-0747959	28,769
CC-NIE Integration: Clemson-NextNet	47.RD	OCI-1245936	135,884
CEDAR - Experimental and Modeling Study of Mesoscale Ion-Neutral Coupling in the Auroral Thermosphere	47.RD	AGS-0640641	8,205
CELDI: F-22 Dynamic Scheduling Assessment and Tool Development Center for Aviation and Automotive Technology Education Using Virtual E-School [CA2VES]	47.RD	IIP-0641414	47,916
CGV: Large: Collaborative Research: Modeling, Display, and Understanding Uncertainty in Simulations for Policy Decision Making	47.RD	DUE-1104181	330,889
Chemistry and the Logic of Life: A Research-Based, Integrated General Chemistry Curriculum	47.RD	IIS-1212501	71,162
CI SEEDS: Seeding the Next Generation Cyberinfrastructure Ecosystem - REU Supplement	47.RD	DUE-0816692	76,812
CI-SEEDS: Seeding the Next Generation Cyberinfrastructure Ecosystem Collaborative Proposal: BPC-DP: Incorporating Cultural Tools for Math and Computing Concepts into the Boys and Girls Clubs of America	47.RD	ACI-1212680	7,500
Collaborative Research: "Hands-On" Collaborative Reasoning Across the Curriculum	47.RD	ACI-1212680	61,680
Collaborative Research: CEDAR--A Focused Study of Sustained Upward Vertical Winds in the Auroral Zone	47.RD	CNS-0969240	13,994
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	DUE-1022941	129,178
Collaborative Research: CEDAR--Development and Application of a Multi-site Observing Network to Study Mid-latitude Thermospheric Dynamics	47.RD	AGS-1243077	308
Collaborative Research: CEDAR--Observational and Numerical Studies of Tide-planetary Wave Coupling	47.RD	AGS-0940217	55,280
Collaborative Research: Characterizing Climate-Induced Qualitative Changes in Plant Biopolymer Composition and Their Influence on Soil Processes	47.RD	AGS-1138931	44,758
Collaborative Research: Communicating Hurricane Information to Local Officials for Protective Action Decision Making	47.RD	AGS-1139048	23,585
Collaborative Research: Comprehensive Investigation of Midlatitude Ionospheric Irregularities	47.RD	DEB-1145993	13,685
Collaborative Research: Developing Engineer of 2020 Traits: How do Non-curricular Activities Impact African American Students?	47.RD	SES-0838639	(343)
	47.RD	AGS-1007539	87,173
	47.RD	EEC-1159813	6,457

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
Collaborative Research: Do Diverse Members of the Epsilonproteobacteria Employ a Novel Nitrate Reduction Pathway?	47.RD	MCB-1265410	143,750
Collaborative Research: Effects of Hydrologic Processes on In Situ Stress Transients	47.RD	EAR-0944315	55,346
Collaborative Research: Engineering Education Research Leader NetWorkshops: Mentoring, Communicating, and Power Brokering for the Next Generation	47.RD	EEC-1314725	4,541
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	4,782
Collaborative Research: Fluid Dynamics Foundations of Cell Printing	47.RD	CBET-0936235	115,625
Collaborative Research: G-SESAME Cloud: A Dynamically Scalable Collaboration Community for Biological Knowledge Discovery	47.RD	DBI-0960586	130,182
Collaborative Research: Hybrid Integration of Plasmonic Interferometer Sensors and Active Optoelectronic Devices on a Single Microfluidic Chip	47.RD	ECCS-1127957	18,759
Collaborative Research: Measurements and Modeling of Subgrid-Scale Turbulence in the Atmospheric Surface Layer	47.RD	AGS-0638392	97,743
Collaborative Research: Planning Grant: I/UCRC for Social Technologies and Analytics	47.RD	IIP-1266155	1,075
Collaborative Research: Plasticity, Selection and Divergence in Stream Fishes of the Hawaiian Islands	47.RD	IOS-0817794	13,627
Collaborative Research: Processing and Properties of Cellulose Films for MEMS Applications	47.RD	CMI-1130825	4,000
Collaborative Research: Processing and Properties of Cellulose Films for MEMS Applications	47.RD	CMMI-1130825	65,788
Collaborative Research: Reformulation-Linearization Technique for Discrete and Continuous Nonconvex Optimization with Applications	47.RD	CMMI-0968909	71,380
Collaborative Research: Research Initiation Grant: Influence of Motivation on Learning Outcomes in an Engineering Service Course	47.RD	EEC-1240327	19,090
Collaborative Research: REU Site: Computational Algebraic Geometry, Combinatorics, and Number Theory	47.RD	DMS-1156761	123,626
Collaborative Research: Topological States and Quantum Information in Semiconductors and Cold Atom Superfluids	47.RD	PHY-1104527	46,519
Collaborative Research: G-SESAME Cloud: A Dynamically Scalable Collaboration Community for Biological Knowledge Discovery	47.RD	DBI-0960586	3,064
Collaborative Research: REU Site: Computational Algebraic Geometry, Combinatorics, and Number Theory	47.RD	DMS-1156761	2,288
Complete Reductive Dechlorination of Trichloroethylene (TCE) by non-Dehalococcoides Microorganisms	47.RD	CBET-1102889	3,865
Complexity and Algorithms of Decoding Algebraic Codes	47.RD	CCF-0830581	37,461
Conference Support for Student Participation at the 2012 International Symposium on Flexible Automation; St. Louis, Missouri; June 18-20, 2012	47.RD	CMMI-1141536	14,068
Conjugated Polymer Nanoparticles for Nanoscale Chemical Microscopy	47.RD	CHE-1058885	51,184
Controlling and Enhancing Optical Gradient Forces in Integrated Optomechanical Devices	47.RD	ECCS-1101845	121,449
Coupling Small-Particle Adsorbents with Membranes for Trace-Containment Removal in Water Treatment	47.RD	CBET-1236070	6,640

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<b>National Science Foundation, continued</b>			
CPA-SEL: Collaborative Research-Continuing Progress Toward Verified Software	47.RD	CCF-0811748	14,080
Critical Raindrop Characteristics: Fall Speed, Shape, and Size Distributions	47.RD	AGS-1144846	93,153
CSR: Small: Collaborative Research: An Architecture for the Emergency Retasking of Wireless Sensors Networks (ALERT)	47.RD	CNS-1116976	19,931
CSR: Small: Efficient and Reciprocal File Replication and Consistency Maintenance in Pervasive Distributed Computing	47.RD	CNS-0917056	122,336
CU Thinking: Research to Practice	47.RD	EEC-1048325	52,853
CU-STEP: Enhancing the Undergraduate Experience Through Research and Curriculum Development	47.RD	DUE-0525474	118,083
Development of Performance-Based Design Guidelines for Integrating Phase Change Materials in Buildings	47.RD	CMMI-0927962	55,497
EAGER: A Study of the National Software Cyberinfrastructure Environment	47.RD	OCI-1129017	98,348
EAGER: Developing a Framework for a Cyber-Infrastructure General Practitioner Program	47.RD	OCI-1251544	67,704
EAGER: GENI Experiments on Pervasive Data Sharing Over Heterogeneous Networks	47.RD	CNS-1049947	58,789
EAGER: Prototype Tool for Visualizing Online Polarization	47.RD	IIS-1247198	36,111
EAGER: PXFS - A Persistent Storage Model for Extreme Scale	47.RD	CCF-1142905	112,525
EAGER: Report on International Data Exchange Requirements (RIDER)	47.RD	OCI-1223688	46,057
EAGER: TIGER-Tight Integration of Grid Enabled Researchers	47.RD	OCI-1063679	73,141
EAGER: Transcriptome Analysis of CHO Cells to Improve Productivity and Control Protein Aggregation	47.RD	CBET-1218345	47,865
EAGER-GENI Experiments on Network Security and Traffic Analysis	47.RD	CNS-1049765	41,271
EFRI-BSBA: Multifunctional Materials and Devices for Distributed Actuation and Sensing	47.RD	EFRI-0937985	488,719
EFRI-CBE: Emerging Frontiers in 3-D Breast Cancer Tissue Test System	47.RD	EFRI-0736007	357,935
EFRI-COPN: Neuroscience and Neural Networks for Engineering the Future Intelligent Electric Power	47.RD	EFRI-1238097	232,875
Electromagnetic Scattering From 3-D Objects Buried in Layered Lossy Earth with Multiple Rough Interfaces	47.RD	ECCS-0821918	9,041
Emphasizing Core Calculus Concepts Using Biomedical Applications to Engage, Mentor and Retain STEM Students	47.RD	DUE-1044265	71,938
ERC-Small Business: Micropatterning of Film Extrusion Die Surfaces	47.RD	EEC-1128481	99,519
Establishing Clemson University as a Research Site for CELDi	47.RD	IIP-0641414	78,640
Evaluation of Nanoparticle Behavior During Transitions from Engineered to Natural Systems	47.RD	CMMI-1057633	148,458
Expanding the Clemson Calculus Challenge into Southeastern Regional Calculus Contest	47.RD	DMS-1118656	13,677
Experimental and Modeling Study of Risk from Ember Storms	47.RD	CMMI-1200560	45,271
Exploratory Synthesis of New Classes of Inorganic Salt-inclusion Solids	47.RD	DMR-0706426	(479)
Extrapolating the Concept of Protein Corona for Understanding Nanoparticles at Large	47.RD	CBET-1232724	94,937
Fabrication of Double Layer Cellular Spheroid Using Acoustic Excitation-Assisted Compound Jetting	47.RD	CMMI-1100402	9,021
Fabry-Perot Studies of Equatorial Thermospheric Dynamics and Composition: Part II	47.RD	AGS-0634671	29,297

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
Formation of Halonitromethanes and Nitrosamines During Ozonation in Drinking Water Treatment	47.RD	CBET-1066567	72,575
Fundamental Study of Carbon Dots for Fluorescence Bio- imaging/sensing	47.RD	CBET-0967423	113,385
Gene Flow and Divergence Across the Equatorial Tropical Marine Barrier: Past, Present and Future	47.RD	OCE-0961996	132,127
GOALI: Low-Ash Lignin Biofuel from Black-Liquor Streams	47.RD	CBET-1236759	88,537
GOALI: Understanding Plasticization and Compaction Mechanisms in Perfluorocyclobutyl Polymer Thin Films and Membranes	47.RD	CBET-0966581	82,294
Graduate Research Fellowship Program	47.RD	DGE-1246875	36,662
Graduate Research Fellowship Program	47.RD	DGE-1246875	503,062
Graduate Research Fellowship Program	47.RD	UNKNOWN	13,011
Graduate Research Fellowship Program	47.RD	DGE-0751278	(2,147)
Graduate Research Fellowship Program	47.RD	DGE-1246875	36,552
Growth Rates of Bacterial Taxa in Coastal Marine Ecosystems	47.RD	OCE-1261359	36,218
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	130,381
GSE/RES: Sustainability Topics as a Route to Female Recruitment in Engineering	47.RD	HRD-1036617	162,863
HCC: Small Eye Movement in Stereoscopic Displays, Implications for Visualization	47.RD	IIS-0915085	204,177
HCC: Small: Conversational Agens in Web Based Consumer Environments Designed for Older Users	47.RD	IIS-0955763	115,639
High Temperature Hydro Thermal Synthesis and Crystal Growth of Inorganic Oxides	47.RD	DMR-0907395	33,592
Hilbert Spaces of Analytic Functions and Their Applications	47.RD	DMS-1304208	24,843
How Does the Plant Say-No More?: A Molecular Genetic Approach to Nodule Number Regulation	47.RD	IOS-1146014	224,774
Human-Centered Computing Scholars: Fostering a New Generation of Underrepresented and Financially Disadvantaged Researchers	47.RD	DUE-1060545	92,371
I/UCRC CGI: I/UCRC for the Ceramic, Composite and Optical Materials Center	47.RD	IIP-1034979	60,008
I/UCRC: Collaborative Research: Center for Excellence in Logistics and Distribution, Phase II	47.RD	IIP-1266013	418
I-Corps: A Novel Functional Shoulder Brace to Limit Dislocation	47.RD	IIP-1265279	16,381
I-Corps: A Novel Surgical Simulator for Eventuating and Training Force-based Laparoscopic Skills	47.RD	IIP-1247508	49,588
I-Corps: Drug-eluting Sutures	47.RD	IIP-1242516	44,986
Image Reconstruction In Diffuse Optical Tomography With Sparsity Constraints	47.RD	DMS-0915214	24,656
Impact of Nonmigrating Tides on the Thermospheric Energy Budget and Constituents	47.RD	AGS-1112704	2,641
Improved Methods for Incompressible Viscous Flow Simulation	47.RD	DMS-1112593	54,119
Individual Nomination (PAESMEM)	47.RD	DUE-1101770	15,450
INSPIRE: Evaluating the Effect of Cyberinfrastructure on Universities Production Process	47.RD	SMA-1243436	148,986
Integrative Situated Design: Linking Functions and Affordances Through Form	47.RD	CMMI-0826441	31,319

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
International Collaboration in Chemistry: Preparation and Utilization of SF5-Containing Building Blocks	47.RD	CHE-1124859	134,973
Inverted Colloidal Crystal Membranes	47.RD	CBET-0651231	(1,202)
Investigations of the Size Effects on the Relaxation Rates of Polymer Coated Magnetic Nanoparticles for Hyperthermia	47.RD	DMR-0907167	2,284
Materials World Network: Switchable Polymer Interfaces for Bottom-Up Stimulation of Mammalian Cells	47.RD	DMR-1107786	166,555
Materials World Network: US-China Collaborative Partnership on Eco-Friendly High Performance (Si, Sn)-Based Thermoelectric Nanocomposite Materials	47.RD	DMR-1008073	24,101
Mathematics Partnering With Computer Science to Improve Calculus Instruction and Learning	47.RD	DUE-0817442	31,594
Molecular Physics of the Electrical Double Layer in Ionic Liquids	47.RD	CBET-0967175	10,724
MRI: Acquisition of a Nano-to-Micro-Scale 3D Live-Cell Imaging System for Biomedical Research and Education	47.RD	CBET-0923379	(3,746)
MRI: Acquisition of High Performance Computing Instrument for Collaborative Data-Enabled Science	47.RD	CNS-1228312	938,240
MRI: Acquisition of Nikon A1R-MP Confocal/Multiphoton Microscope With Widefield HyperSpectral Imaging System for the Jordan Hall Imaging Facility	47.RD	DBI-1126407	521,471
MRI: Development of a Laser Microbioparticle Separator	47.RD	CBET-0923311	69,289
MRI: Development of the Intelligent River (R), A Basin-Scale Monitoring Instrument	47.RD	CNS-1126344	646,390
Multimodal Membranes for High-Throughput Bioseparations	47.RD	CBET-1159622	10,651
Nanoscale Surface Adsorption and Disorder in Battery Materials	47.RD	DMR-1006515	27,750
NEDG: Mechanisms for Efficient and Reliable Routing in Hybrid Wireless Networks	47.RD	CNS-1025652	59,735
Network Target Coordination for Complex System Optimization	47.RD	CMMI-1129969	136,350
NSF BPC-A: Institute for African-American Mentoring in Computing Sciences (iAAMCS)	47.RD	CNS-1303156	12,857
NSF IPA	47.RD	DGE-1252729	37,307
Numerical Approximations of Non-Newtonian Fluid Flows With Applications	47.RD	DMS-1016182	61,134
OrganicPad: A Tablet PC-Based Interactivity Tool for Organic Chemistry	47.RD	DRL-0735655	78,734
Palmetto Number Theory Series/SouthEast Regional Meeting on Numbers	47.RD	DMS-1101301	2,454
Particle Electrophoresis in Curved Microchannels: Fundamentals and Applications	47.RD	CBET-0853873	60,316
Quantitative Structure-Adsorbability Relationships for the Adsorption of Organic Chemicals by Carbon Nanotubes	47.RD	CBET-0967425	79,337
RAPID: Impact of Earthquakes on the Electricity Infrastructure Technology	47.RD	ECCS-1216298	6,050
REU Site: Advanced Functional Membranes	47.RD	EEC-1061524	107,887
REU Site: Interfaces and Surfaces: Exploring and Experiencing Science (I SEE Science)	47.RD	DMR-1062873	52,348
REU Site: Solid-State Devices for Electronics, Photonics, and Magnetics Technology	47.RD	EEC-1262991	43,623
REU Site: Data-Intensive Computing	47.RD	OCI-1263180	36,987
REU Site: Summer Program in Applied Psychology	47.RD	SMA-1004413	51,089
RI: Medium: Collaborative Research: Real-Time Continuum Manipulation	47.RD	IIS-0904116	46,462
RI: Small: Interactive Perception for Manipulating Non-Rigid Objects	47.RD	IIS-1017007	137,364

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<b>National Science Foundation, continued</b>			
Selenium Antioxidant Mechanisms: Metal Binding vs. Reactive Oxygen Species Scavenging	47.RD	CHE-1213912	90,727
Semi Fluorinated Polymers: Forming Energy Controlled Responsive Interfaces	47.RD	DMR-0907390	91,476
SHB: Small: An Assistive, Robotic Table [ART] Promoting Independent Living	47.RD	IIS-1116075	123,233
SHB: Type II (INT): Collaborative Research: Creating Learning Systems with Mobile Technology to Improve Perioperative Services	47.RD	IIS-1237077	79,306
SHF: Medium: Collaborative Research: Specification and Mathematics Engineering for the Verified Software End-Game	47.RD	CCF-1161916	47,133
SHF: Small: RUI: Collaborative Research: Accelerators to Applications - Supercharging the Undergraduate Computer Science Curriculum	47.RD	CCF-0916387	102,116
SNM: Defect-Engineered Nanocarbons for Electrochemical Energy Storage	47.RD	CMMI-1246800	223,670
The Changing Face of Andean Urbanism: Sociopolitical Change at El Purgataorio, Camsa Valley, Peru	47.RD	BCS-0814338	825
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	54,958
The Geography of Proliferating Conservation Easements	47.RD	BCS-1068906	297
Tigers Teach Noyce Scholarship	47.RD	DUE-1136293	143,283
Topics on Computational Algebra	47.RD	DMS-1005369	47,837
Transforming Robust Design Concept into a Novel Geotechnical Design Tool	47.RD	CMMI-1200117	76,552
Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES)	47.RD	DUE-1043707	86,720
Understanding the Macroscopic Dynamics of Ultrasonic Consolidation	47.RD	CMMI-1068977	120,437
Use of Chiral Tracers to Determine Cycling of POPs in Stream Ecosystems	47.RD	CBET-0828699	8,158
Vehicle-Infrastructure Integration Enabled Plug-In Hybrid Electric Vehicles for Energy Management	47.RD	CMMI-0928744	68,714
ARRA - CAREER: Influence of Social Capital on Under-Represented Engineering Students' Academic and Career Decisions	47.RD	EEC-0950710	47,095
ARRA - Collaborative Research: Fiber-Optic Strain Monitoring of Rock Masses in Large Underground Facilities	47.RD	CMMI-0900163	24,665
ARRA - CU Thinking	47.RD	EEC-0935163	84,712
ARRA - Discovery and Predication of Hidden Biodiversity in Black Flies (Diptera: Simuliidae)	47.RD	DEB-0841636	117,677
ARRA - Enabling Long-Time Accuracy in Turbulent Flow Simulations	47.RD	DMS-0914478	6,208
ARRA - MRI-R2: Acquisition of a Highly Charged Ion Beamline for Interdisciplinary Materials Research and Education at Clemson University	47.RD	DMR-0960100	1,409,404
ARRA - Organized Materials for Plastic Electronics: Divided Pi-Ways and Platinum Energy Canopies	47.RD	CHE-0847132	132,240
ARRA - Predictive Energy Management in Smart Vehicles: Exploiting Traffic and Terrain Preview for Fuel Savings	47.RD	CMMI-0928533	73,342
ARRA - REU Site: Undergraduate Research in Human-Centered Computing	47.RD	CNS-0850695	6,383
ARRA - Science Master's Program: Sustainable and Resilient Infrastructure	47.RD	DGE-1011478	148,022

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<b>National Science Foundation, continued</b>			
ARRA - Spectroscopy of Solar-Type Stars: Fundamental Problems in Stellar Astrophysics	47.RD	AST-0908342	76,776
Pass-through programs from:			
3F, LLC			
Biocomponent Fiber Spinning and Characterization of Spun Fibers/Heat Treatment of Multi Component Nanofibers	47.RD	IIP-0956907	100,635
Advanced Photonic Crystals, LLC			
Hydrothermal Growth of Potassium Beryllium Fluoroborate (KBBF) for Deep UV Nonlinear Optical Applications	47.RD	IIP-1058055 Prime # NSF	88,051
Advanced Thermal Technologies, LLC			
Rheological Characterization and Melt-Spinning of Industrial Mesophase Pitch Precursors	47.RD	IIP-1038760	2,292
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	69,471
Campus Trials of Enterprise GENI	47.RD	9500010314 1833A-REU	7,727
GENI WiMAX at Clemson	47.RD	1843A/PO# 9500011083	52,972
GENI WiMAX at Clemson - REU Supplement	47.RD	1843/PO#9500011083	5,289
Clemson University Research Foundation			
ARRA - South Carolina Inter- and Intra- Campus Cyber Connectivity (C2)	47.RD	2011-703	113,822
CAREER: Control of Processes Actuated with Mobile Radiant Sources	47.RD	CMMI-1055254	62,195
CAREER: Model-Based Control of Machining Processes and Scalability for Manufacturing System Control	47.RD	CMMI-0954318	29,568
Center for Electromagnetic Compatibility	47.RD	IIP-0934299	46,823
Collaborative Research: I/UCRC in Painting/Coating application and Surface Inspection Systems	47.RD	IIP-1067995	223
Collaborative Research: Pattern Transfer Nanomanufacturing with Magnetically-Recorded Nanotemplates	47.RD	CMMI-1130819	77,722
GOALI: Model-Based System Fault Diagnosis and Prognosis: Passive Robustness and Aging Prediction	47.RD	PO#RF01145992 - 60016267	3,454
Student Participation Grant for National Manufacturing Conferences: 2012 ASME MSEC and SME NAMRC 40; University of Notre Dame, South Bend, Indiana; June 4-8, 2012.	47.RD	CMMI-1156247	296
Synthesis-Microstructure-Performance Relations in Oxide Ceramic Scintillators	47.RD	DMR-1207080	34,227
Travel Scholarships for Frontiers in BioMagnetic Particles 2013	47.RD	DMR-1248199	4,000
Colorado State University			
NEESR-CR: NEESoft: Seismic Risk Reduction for Soft-Story Woodframe Buildings	47.RD	G-4948-2	46,692
Fayetteville State University			
Examining the Impact of Online Distance Education on Student Learning and Student Engagement in STEM Disciplines at Historically Black Colleges and Universities	47.RD	NSF HBCU-UP 211210-01	2,532
Georgia Institute of Technology			
Goal: Neural Networks and Adaptive Critic Designs for Energy Security & Sustainability	47.RD	R9360-G2	35,210

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
Pass-through programs, continued:			
Medical University of South Carolina Structure and Dynamics of the Spider Dragline Silk Assembly Process	47.RD	MUSC11-106	56,865
Pennsylvania State University REU: Participant Support TRPGR: Comparative Genomics of Environmental Stress Responses in North American Hardwoods	47.RD	4730-CU-NSF-5974	884
TRPGR: Comparative Genomics of Environmental Stress Responses in North American Hardwoods	47.RD	4375-CU-NSF-5974	227,340
Purdue University Characterizing and Modeling the Experience of Transfer Students in Engineering	47.RD	4101-38563	126,135
South Carolina Research Authority 2009 Research Infrastructure Improvement Grant (RII)	47.RD	2002-593 TO#0061	378
ARRA - EPSCOR Desktop to TeraGrid Ecosystem: Integrating Campus-Based with National Cyberinfrastructure	47.RD	2002-593 TO#0062 (EPS-0919440)	247,195
South Carolina State University A Partnership in Observational and Computational Astronomy (POCA)	47.RD	08-586009-BAPS-CU-SC 11-581004-SCAMP-CU- SC/PO#1202173	57,411
Louis Stokes Alliance for Minority Participation (SCAMP) - Year 5	47.RD	SC/PO#1202173	60,987
University of Alabama NEESR-CR: NEESsoft-Seismic Risk Reduction for Soft-Story, Wood Frame Buildings	47.RD	10-075	994
University of Central Florida REU Site: International Program on Optics, Lasers, Photonics and Optical Materials	47.RD	176726	6,289
University of Florida EXTENCI: Extending Science Through Enhanced National Cyberinfrastructure	47.RD	UF10121	31,439
The South East Alliance for Graduate Education and Professoriate	47.RD	UF05036	495
University of Massachusetts Amherst Collaborative Research: Ecohydrology of Deep Crystalline Rocks at Dusel Homestake	47.RD	10-005772B00	11,192
University of North Carolina Wilmington iPhone/iPod Touch/iPad as Interactive Personal Response System	47.RD	571480-11-01	162
University of Oklahoma NEESR-SG: Understanding and Improving the Seismic Behavior of Pile Foundations in Soft Clays	47.RD	2009-46	3,054
University of South Carolina The South Carolina Project for Organ Biofabrication - Research Infrastructure Improvement (RII) Track Grant	47.RD	13-2357 22410-Z117	138,490
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	34,507
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	1,020

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>National Science Foundation, continued</b>			
Pass-through programs from University of South Carolina, continued:			
The South Carolina Project for Organ Biofabrication (Scaffold-Free Fabrication of Fascular Constructs Using Inkjetting)	47.RD	13-2299 PO#51893L/22410-Z105	32,987
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	34,453
University of Texas Austin Campus Bridging for Stampede	47.RD	UTA13-000068	15,999
University of Washington CREATIV: Tools, Models and Innovation Platforms for Research on Social Media	47.RD	7425278	16,649
Washington University Gordon Research Conference on Visualization in Science and Education	47.RD	WU-12-243 PO# 2917766T	3,202
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	<u>24,778</u>
<b>Total National Science Foundation</b>			<u>18,445,144</u>
<b>Small Business Administration</b>			
An Innovation Center at the Clemson University Advanced Materials Center	59.RD	SBAHQ-10-I-0278	<u>7,343</u>
<b>Total Small Business Administration</b>			<u>7,343</u>
<b>Department of Veterans Affairs</b>			
Nanoparticle Coupled Antioxidants for Respiratory Illness in Veterans	64.RD	VA 247-P-1705 PO#534-D37103	<u>37,585</u>
<b>Total Department of Veterans Affairs</b>			<u>37,585</u>
<b>Environmental Protection Agency</b>			
Behavior of Carbon Nanomaterials in Aqueous Suspensions of Natural Organic Matter	66.RD	RD-83388601-0	51,619
Ben Sharp - Modeling Switchgrass Production in South Carolina Based on Farmer's Decisions: A Stochastic and Spatial Analysis	66.RD	FP-91717201	11,594
Defining Significant Nexus with Navigable Waters for Small, Relatively Isolated Wetlands in the Piedmont Ecoregion	66.RD	CD95488711	154,791
Dentritic Polymers as Biocompatible Dispersants for Oil Spill Remediation	66.RD	RD-83518201	114,964
Influence of Water Quality on the Bioavailability and Food Chain Transport of Carbon Nanoparticles	66.RD	RD-83409201-0	33,304
STAR Fellowship	66.RD	FP-91713301	13,557
Understanding and Managing Risks Posed by Brines Containing Dissolved Carbon Dioxide	66.RD	RD-83438301	249,444
Pass-through programs from:			
North Carolina State University Less Rain Down the Drain: Disconnecting Stormwater Systems to Restore Black Creek	66.RD	2010-0838-01	8,288
Upstate Forever Market-Based Mechanisms for Promoting Low-Impact Development, Mitigating Legacy Stormwater Discharges and Restoring Urban Floodplains in Saluda-Reedy Watershed	66.RD	None	965

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<b>Environmental Protection Agency, continued</b>			
Pass-through programs, continued:			
William Marsh Rice University EPA/STAR - Environmental Impact of Nanox	66.RD	R16992	28,286
<b>Total Environmental Protection Agency</b>			<b>666,812</b>
<b>Nuclear Regulatory Commission</b>			
Junior Nuclear Environmental Engineering and Science Faculty Support	77.RD	NRC-38-10-921	95,870
US NRC Nuclear Education Program Scholarship and Fellowship	77.RD	NRC-38-08-956	108,769
<b>Total Nuclear Regulatory Commission</b>			<b>204,639</b>
<b>Department of Energy</b>			
ARRA - Fundamentals & Advanced Power Systems Certificate Programs for Training the Power Industry Sector	81.RD	DE-OE0000466	164,275
Asymmetric Hybrid Nanoparticles (AHNs)	81.RD	DE-FG02-06ER46342	78,949
Alternative Sample Loading Preparation for Thermal Ionization Mass Spectrometry	81.RD	DE-NA0001735	74,838
BioEthanol Collaborative	81.RD	DE- FG36-08GO88071	26,232
Clemson University CyberInstitute	81.RD	DE-SC0001984	648,714
First-Principles Calculation of Vibrational Mode in Complex Materials	81.RD	DE-SC0008487	115,988
From Interfaces to Bulk: Experimental-Computational Studies Across Time and Length Scales of Multi Functional Ionic Polymer	81.RD	DE-SC0007908	118,546
Grain Boundary Complexions and Transitions in Doped Silicon	81.RD	DE-FG02-08ER46511	122
Innovative Water Management Technology to Reduce Environmental Impacts of Produced Water	81.RD	DE-NT0005682	57,109
Multiscale Modeling of Grain Boundary Segregation and Embrittlement in Tungsten for Mechanistic Design of Alloy for Coal Fired Plants	81.RD	DE-FE0003892	118,570
Proof of Feasibility of Using Well Bore Deformation As A Diagnostic Tool To Improve Co2 Sequestration	81.RD	DE-FE0004542	68,946
Quantifying Microbe-mineral Interactions Leading to Remotely Detectable Induced Polarization Signals: Implications for Monitoring Bioremediation	81.RD	DE-SC0002280	22,382
Pass-through programs from:			
Battelle Energy Alliance, LLC Predictive Maturity of Multi-Scale Simulation Models for Fuel Performance	81.RD	00101999	115,749
Center for Transportation and the Environment Southeast Regional Electric Vehicles Planning Program	81.RD	Prime award # DE-EE0005579	18,835
Clemson University Research Foundation ARRA - Electroalcohologenesis: Bioelectrochemical Reduction of CO2 to Butanol	81.RD	MUSC10-063	174,018
Beyond the Lambertian Limit--Novel Low-Symmetry Gratings for Ultimate Light Trapping Enhancement in Next-Generation Photovoltaics	81.RD	27773 (Prime#DE-EE0005327)	54,045
Compact, Highly Sensitive and Specific Mid-Infrared (MIR) Chemical Sensors	81.RD	DE-NA0000421	210,980
Decommission of Transportation of glove box mockup at CETL	81.RD	BOA-10888-04914 CU06	6,688
Development of a Self-Consistent Model of Plutonium Sorption: Quantification of Sorption Enthalpy and Ligand-Promoted Dissolution	81.RD	DE-SC0004883	228,187
Fluoropolymers, Electrolytes, Composites and Electrodes	81.RD	DE-FG02-05ER15718	78,733
GATE Center of Excellence in Sustainable Vehicle Systems	81.RD	DE-EE0005571	169,021
Integrating Light-Weight Automotive Materials	81.RD	200929-130171	1,740

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Energy, continued</b>			
Pass-through programs from Clemson University Research Foundation, continued:			
Lignin Recovery and Purification	81.RD	None	10,642
Nuclear Forensics Junior Faculty Award Program-DHS	81.RD	12.2147	75,097
Nuclear Forensics Junior Faculty Award Program-DHS	81.RD	12-2011	46,586
Quantification of Cation Sorption to Engineered Barrier Materials Under Extreme Conditions	81.RD	120716	373,975
Research Support to Build and Test Components of the Pit Disassembly Conversion Facility Design, Collect Data, Write Reports, Make Design Observations	81.RD	DE-EM0000901	363,328
Stabilization of Pu Surface Complexes on Mineral Colloids by Natural Organic Matter	81.RD	B597372	64,213
Technetium Sorption to Cementitious Materials	81.RD	WEST197 SC0277	53,527
Louisiana State University			
Computational Catalysis and Atomic-level Synthesis of Materials: Building Effective Catalysts from First Principles	81.RD	41924	217,565
Medical University of South Carolina			
Nuclear Forensics Education Award Program	81.RD	MUSC10-114/IDNE012A	(2,829)
Nuclear Forensics Education Award Program	81.RD	MUSC12-012	36,874
MWH Americas, Incorporated			
Laboratory Evaluation of Biostimulation to Treat Chlorinated Ethenes in the Chatsworth Formation, Santa Susana Field Laboratory, Ventura Co., CA	81.RD	S1010919-96944-OF	57,399
NanoSonic, Incorporated			
Nanoscale Approach to High Performance Thermoelectric Composites	81.RD	E-4317	103,081
South Carolina Universities Research and Education Foundation			
Access to Clemson Imaging instrumentation	81.RD	WEST201	2,510
Alternative Sintering of Ceramic Waste Forms	81.RD	SRNS009	1,232
ARML Imaging Instrument Access	81.RD	SRNS006	3,188
Electron Microscope Center Imaging Instrument Access	81.RD	WEST199	3,102
Examination of the Electrical Properties of Micro- and Nano-Scale Properties in Weak Electrostatic Fields	81.RD	SRNS004	34,364
Fabrication of Nanostructured Rhenium Films	81.RD	SRNS010	8,859
Harmonic Detection of Resonance for the Study of Fluoride Attack of Surfaces	81.RD	WEST172	7,616
Phase II- Examination of the Electrical Properties of Conductive Polymers and OLEDs In Weak Electrostatic Fields	81.RD	WEST166	23,067
SCM Inventory/Warehouse Analysis Study Project	81.RD	SRNS003	69,772
SRR Technical Support Provided by Clemson University	81.RD	SRRA001	74,044
Uranium Particle Characterization	81.RD	SRNS007	26,606
South Dakota State University			
Regional Biomass Feedstock Partnership - Biomass Residue Removal	81.RD	3TG146	37,574
Southern States Energy Board			
ARRA - Southeast CO2 Sequestration Technology Training Program (SECARB-ED)	81.RD	SSEB-SECARB_ED-920-CLEM-2009- 001	17,648
TECHFISH			
ARRA - Lignin Recovery and Purification	81.RD	Prime # DE-SC0003312	69,235
The Consortium for Plant Biotechnology Research, Incorporated			
Development of Environmentally Friendly Transgenic Turfgrass with Enhanced Drought and Salt Tolerance	81.RD	GO12026-316	44,926

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Energy, continued</b>			
Pass-through programs, continued:			
United States Automotive Materials Partnership LLC Development of Advanced Steel for Lightweight Vehicles	81.RD	13-2825-AMP	21,354
University of Georgia Environmental Protection of DOE Lands: Studies in Long-Term Stewardship	81.RD	RR267-420/4893886	4,700
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	57,138
UT-Battelle, LLC Novel Software Storage Architecture-Southeast Region Research Initiative (SERRI)	81.RD	4000111689	197,010
R&D Building Reliable Data Transfer Tool	81.RD	4000108178	27,479
Wireless Power Transfer (WPT) and Charging of Plug-In Electric Vehicles	81.RD	4000119528	251,181
Resilient Home Program Support - Southeast Region Research Initiative (SERRI)	81.RD	4000087337	<u>172,899</u>
<b>Total Department of Energy</b>			<u>5,107,629</u>
<b>Department of Education</b>			
Graduate Fellowships in Electrical and Computer Engineering	84.RD	P200A120224-13	42,034
Graduate Training in Engineering and Managing Resilient and Sustainable Civil Infrastructure	84.RD	P200A120222-13	22,469
Pass-through programs from:			
Greg Mathis Charter High School Greg Mathis Charter High School - Turnaround Project	84.RD	H63010010411	33,667
Iowa State University Professional Development for Algebra Progress Monitoring	84.RD	432-28-07	90,602
South Carolina Commission on Higher Education Improving Middle Grades Teacher Quality through the Clemson Mathematics Institute and Video Club	84.RD	ITQ FY2012-13	59,806
University of Central Florida MILMI - International Masters in Laser Materials and Interactions	84.RD	166253	21,328
University of Louisville A Longitudinal Study of the SC Personal Pathways to Success Initiative	84.RD	ULRF 08-0181-04	38,276
University of Michigan Lifelong Learning Curriculum Transformation Project	84.RD	3002053929	1,168
University of South Carolina Center for Adolescent Research in Schools (CARS)	84.RD	PO#41793(13580 FA84)/12-2043	<u>120,885</u>
<b>Total Department of Education</b>			<u>430,235</u>
<b>Vietnam Education Foundation</b>			
Vietnam Education Foundation Fellowship	85.RD	F09034F	1,000
Vietnam Education Foundation Fellowship	85.RD	None	<u>1,520</u>
<b>Total Vietnam Education Foundation</b>			<u>2,520</u>
<b>Election Assistance Commission</b>			
2010 Voting Technology and Accessibility Research - Accessible Voting Technology Initiative	90.RD	EAC110149A	<u>1,525,302</u>
<b>Total Election Assistance Commission</b>			<u>1,525,302</u>

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Health and Human Services</b>			
A Multi-Level, Cohort-Sequential Study of Rural Adolescent Dating Violence Victimization and Perpetration	93.RD	5R01HD067505-02	433,273
A Novel Colon-Specific Bi-Functional Amebicidal Therapeutics: Gal-Dextran-MM	93.RD	5R03AI076869-02	926
ARRA - Epidemiology of Sexual Violence: A Trajectory-Based Approach	93.RD	1R15HD065568-01S1	272,829
ARRA - Mechanisms of Immunological Adaptation to a Harsh Chemical Environment	93.RD	1R15ES016905-01A1	3,017
Avian Middle Ear Development	93.RD	5R01DC009236-05	307,778
Biomaterials for Guided Neural Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	145,893
Biomechanical Characterization of Human Cartilaginous End-Plate	93.RD	5R03AR055775-02	86,745
Biphasic Intervertebra Disc Regeneration using Biomimetic Scaffolds - Benjamin Whatley	93.RD	1F31AG040929-01A1	33,982
Cardiac-Cell Mechanics at the Single-Cell Level: Properties & Interactions	93.RD	5K25HL092228-04	164,072
Cardiovascular Tissue Engineering in Diabetes	93.RD	5R21EB009835-02	26,385
Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	947,972
Controlling Fatty Acid Synthesis in African Trypanosomes	93.RD	3R15AI081207-01A1S1	28,456
DelPhi: Software for Electrostatic Modeling of Biomolecules	93.RD	5R01GM093937-03	417,196
Development of Scar-Inhibiting Compliant Tissue Adhesive	93.RD	5R21EB008785-02	90,974
Elastin-derived Scaffolds for Tissue Engineered Small Diameter Vascular Grafts	93.RD	5R03TW008941-02	7,130
Electromechanical Imaging of Live Vascular Smooth Muscle Cells	93.RD	5R21RR024449-02	62
Enabling Technology for Brain Tissue Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	79,881
Enhancing Patient Safety for Nurses Through Virtual Pediatric Patient Interaction	93.RD	1R03HS020233-01	49,876
Epidemiology of Sexual Violence: A Trajectory-Based Approach (supplement grant)	93.RD	3R15HD065568-01S1	106,023
GAGs: Function and Fixation in Bioprosthetic Heart Valves	93.RD	5R01HL070969-08	382,406
Health Coaches for Hypertension Control	93.RD	D04RH12726-03-00	49,962
High-Performance Membrane Chromatography for Protein Purification	93.RD	1R15GM094676-01	108,253
Histology and Imaging Core-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	131,779
Hyaluronan Based Vascular Grafts-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	51,936
Improved Spray Scavenging of Particulates Via Acoustical Excitation of Drop Oscil	93.RD	5R01OH009546-03	66,859
Integrating Biomechanics & Cell Biology to Understand TMJ Pathology	93.RD	5R01DE021134-02 revised	242,609
Investigating Mechanism of Intracellular Rotational Transport with Optical T	93.RD	1R15EB014560-01A1	41,177
Investigation of Effective Training of "promotoras" in Oral Rehydration Therapy	93.RD	1R03NR013228-01A1	42,434
Label Free RF Imaging of Cell Membrane Heterogeneity in Liquid Materials Synthesis and Characterization-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	1K25GM100480-01A1	79,847
Mechanically Guided Urological Tissue Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	162,803
Mechanically Guided Urological Tissue Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	105,256
Naturally Occurring Dog Model for Juvenile Dermatomyositis	93.RD	1R15AR062868-01A1	14,576
Nutrient Sensing and Hexokinases in T. brucei	93.RD	2R15AI075326-02 revised	106,317

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<b>Department of Health and Human Services, continued</b>			
Polymer Dot Nanoparticles for Detection of Single Molecules in Live Cells	93.RD	5 R01 GM081040-04	112
Role of Mei5-Sae3 in Meiotic Homologous Recombination	93.RD	5R01GM098510-03	180,408
Skin Cancer Detection Using Polarized Light Spectroscopic Methods	93.RD	1R15CA131808-01 Revised	8,111
Stem Cell-myocyte Electrical Coupling-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	312,936
Telluride Science Research Meeting on "Frontiers in Biomagnetic Particles III", in Telluride, CO, June 2 - 5, 2013	93.RD	1R13EB017626-01	8,000
The Presence of A Bacterial Metabolic Pathway in Eukaryotic Fungi	93.RD	1R15GM084417-01A1	30,705
The Role of CAR and PXR in Gender Predominant P450 Expression and Induction	93.RD	2R15ES017321-02	70,476
Tissue Engineered Aortic Heart Valves: Scaffolds & Stem Cells	93.RD	5R01HL093399-04	234,588
Tissue Engineered Repair of Cranial Facial Muscle (Emily Lynn Ongstad)	93.RD	5F31DE022224-02	30,034
Tissue Engineering in Spinal Cord Regeneration	93.RD	5R01NS050243-05	105,409
Trans-generational Impact of Maternal Obesity and Diabetes on Health Disparities	93.RD	5R01MD004251-02	146,330
Vibratory Mechanotransduction	93.RD	5R21EB009489-02	25,839
Xanthine DNA Glycosylase in Mammalian Systems	93.RD	1R15GM090141-01	82,328
Pass-through programs from:			
Bite Technologies, LLC			
Assessing the Bite Counter as a Tool for Food Intake Monitoring	93.RD	CU-01	43,748
BotaniPharm, LLC			
Development of Research Grade Goldenseal Phase II	93.RD	CU09-01-11	5,635
Cedars-Sinai Medical Center			
Nanoconjugate based on polymeric acid for brain tumor treatment	93.RD	923755	11,398
Cell & Tissue Systems, Incorporated			
SBIR Phase II: Design and Assessment of a Compliant Nanofibrous Vascular Graft	93.RD	SBIR Phase II	4,558
Chesterfield County Coordinating Council			
Drug Free Chesterfield	93.RD	SP13611	26,166
Children's Hospital Boston			
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Inhibitors	93.RD	PO# 0000461506 / 70855	49,275
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Inhibitors	93.RD	PO#0000461505 / 76953	69,989
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Receptors	93.RD	76953/PO # 0000356080	(7,424)
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Receptors	93.RD	PO # 0000253732	(7,692)
East Carolina University			
Understanding the Formation of Nanoparticle-Protein Corona Impact on Cellular Uptake and Activation	93.RD	A11-0020-S001	38,361
Emory University			
Group Interventions for Abused, Suicidal Black Women	93.RD	S513420	(143)
Indiana University			
IN Challenge Grant Supplemental (Challenge Category #4)	93.RD	PO # 1290467	1,574
Medical University of South Carolina			
Assessing the Frequency and Costs Associated with Emergency Department Transfers Among South Carolina Nursing Home Residents	93.RD	SCTR 1201	10,882
Methods for Retrospective Multi-Site Research	93.RD	MUSC12-046	57,336

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<b>Department of Health and Human Services, continued</b>			
Pass-through programs, continued:			
NUBAD, LLC			
A Rapid Assay for RNA Targeted Drugs	93.RD	N08-29-2011	40,282
Targeting RNA Conformation for Drug Development	93.RD	NUBAD1R41GM100607-01	32,885
Rutgers, The State University of New Jersey			
Coarse Grained Modeling of Biomolecule-Copolymer Conjugate Systems	93.RD	4705/S1694198	94,220
Development of Molecular Modeling Methods to Simulate Protein Adsorption to Polymer Surfaces	93.RD	S1543487 4433 433677 10578	(1,825)
South Carolina Department of Social Services			
Strengthening SC Systems in Support of Quality Child Care Programs	93.RD	None	12,411
South Carolina Department of Agriculture			
South Carolina Farm to School Evaluation	93.RD	P16010CPPW11	9,250
The University of Kansas			
Tuning of Cellular Efficacy and Profiling of Cross-Species Antiparasitic Potential by Additional SAR Rounds By Synthesis of Trypanosoma Brucei Hexokinase 1 Inhibitors	93.RD	None	(10,749)
University of Michigan			
Effects of the Built Environment, Crime and Food Prices on BMI, Activity and Eating	93.RD	3002239275	16,204
University of South Carolina			
ARRA - Creation of an Integrated Consent Process for Biospecimen Collection and Community Research Participation in South Carolina	93.RD	PO#31854L/11-1874	6,608
Palmetto State Geriatric Education Center	93.RD	PO#51836 (18190-FJ20)/13-2240	19,999
SC Cancer Disparities Community Network II (Community Core-Year 2)	93.RD	PO#41751(11500-FA1B)/12-2036	8,947
South Carolina Cancer Disparities Community Network II (Community Core-Year 3)	93.RD	PO#51773(11500-FA33)/13-2246	18,600
South Carolina IDeA Networks of Biomedical Research Excellence (INBRE)	93.RD	PO#41591L/22050-Z161	625
South Carolina IDeA Networks of Biomedical Research Excellence (SC INBRE)	93.RD	22050-Z163	195,076
South Carolina IDeA Networks of Biomedical Research Excellence (SC INBRE) - Year 3 Bioinformatics Core	93.RD	13-2191 PO#51610/15590-FA93	10,000
University of Texas Austin			
A Novel Approach for the Design and Development of Valvular Replacement Biomaterials	93.RD	UTA12-000570	55,596
Widmeyer Communications			
Bullying Prevention Campaign Phase V	93.RD	None	37,181
Phase V Option Year 1 HRSA's Bullying Prevention Campaign	93.RD	None	52,249
<b>Total Department of Health and Human Services</b>			<b>6,925,182</b>
<b>Department of Homeland Security</b>			
Pass-through programs from:			
Federal Alliance for Safe Homes			
College Education for Building Codes: Current Status and Best Practices	97.RD	None	9,510
FLASH - ReScU	97.RD	2013000770 ReScU	24,262
FLASH-Building Code Framework	97.RD	2013000770 Bldg Code	31,426

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<b>RESEARCH AND DEVELOPMENT CLUSTER, Continued</b>			
<b>Department of Homeland Security, continued</b>			
Pass-through programs from, continued:			
Indiana University			
Developing Frameworks to Address Issues in Privacy	97.RD	BL-404718-CU (PO# 1311540)	23,761
Medical University of South Carolina			
Nuclear Forensics Education Award Program (NFEAP)	97.RD	MUSC12-104	<u>111,750</u>
<b>Total Department of Homeland Security</b>			<u>200,709</u>
<b>Agency for International Development</b>			
Pass-through programs from:			
Virginia Polytechnic Institute			
Building Local Capacity in IPM Solutions	98.RD	451071-19244	113,197
Ecologically-Based Partic IPM-SE Asia	98.RD	425976-19244	<u>214,898</u>
<b>Total Agency for International Development</b>			<u>328,095</u>
<b>Central Intelligence Agency</b>			
Ear Feature Analysis, Extraction Tools, and Classification for Improved Recognition	99.RD	2011-11071400004	<u>34,680</u>
<b>Total Central Intelligence Agency</b>			<u>34,680</u>
<b>Total Research and Development Cluster</b>			<u>56,358,844</u>
<b>STUDENT FINANCIAL ASSISTANCE CLUSTER</b>			
<b>Department of Education</b>			
Federal Supplemental Educational Opportunity Grants	84.007	UNKNOWN	309,250
Federal Work Study Program	84.003	UNKNOWN	576,385
Federal Work Study Program - Federal Job Location and Development	84.003	UNKNOWN	50,000
Federal Perkins Loan Program Federal Capital Contributions	84.038	UNKNOWN	122,119
Federal Pell Grant Program	84.063	UNKNOWN	12,807,913
Federal Direct Loans	84.268	UNKNOWN	<u>83,431,480</u>
<b>Total Department of Education</b>			<u>97,297,147</u>
<b>Total Student Financial Assistance Cluster</b>			<u>97,297,147</u>
<b>SNAP CLUSTER</b>			
<b>Department of Agriculture</b>			
Pass-through programs from:			
South Carolina Department of Social Services			
SNAP Outreach Community Partnership Program	10.561	5000012588	150,317
SNAP Outreach Community Partnership Program	10.561	5000013157	73,670
Supplemental Nutrition Assistance Program (SNAP-ED) for Clemson University	10.561	5000012249/6200000101/6200000	20,850
Supplemental Nutrition Assistance Program (SNAP-ED) for Clemson University	10.561	145	15,086
Supplemental Nutrition Assistance Program Employment and Training (SNAP E&T)	10.561	None	110,573
<b>Total Department of Agriculture</b>			<u>370,496</u>
<b>Total SNAP Cluster</b>			<u>370,496</u>

**Clemson University, South Carolina**  
**Schedule of Expenditures of Federal Awards**  
**For the year ending June 30, 2013**

Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>HIGHWAY PLANNING AND CONSTRUCTION CLUSTER</b>			
<b>Department of Transportation</b>			
Pass-through programs from:			
South Carolina Department of Transportation			
Transportation Technology Transfer Service (T3S)	20.205	1570; Proj No. 88L56E2013013	158,813
State Work Zone Safety Training Program	20.205	PO #369014/377336	239,392
Transportation Technology Transfer Service (T3S)	20.205	1522; Proj No. 88L56E2012012	153,348
South Carolina Department of Parks, Recreation, and Tourism			
Sustainable Trails Short Course	20.219	2007017	1,526
<b>Total Department of Transportation</b>			553,079
<b>Total Highway Planning and Construction Cluster</b>			553,079
<b>SPECIAL EDUCATION CLUSTER</b>			
<b>Department of Education</b>			
Pass-through programs from:			
South Carolina Department of Education			
Project CREATE: Center for ReEducation and Advancement of Teachers in Special Education	84.027	12CO302-01	13,079
Project CREATE: Center for ReEducation and Advancement of Teachers in Special Education	84.027	13CO302-01	14,006
<b>Total Department of Education</b>			27,085
<b>Total Special Education Cluster</b>			27,085
<b>OTHER PROGRAMS</b>			
<b>Department of Agriculture</b>			
NAHLN-LIMS Integration Consulting	10.UNK	13-9419-0095	892
USDA Forest Service Recreation, Heritage and Volunteer Resources	10.UNK	08-CR-11132424-147	3,978
Animal Disease Traceability	10.025	12-9645-1175CA	80,000
Animal Disease Traceability	10.025	13-9645-1175CA	1,897
CAPS - Tier 1 and Pests of National Concern	10.025	12-8245-0380-CA	68,925
CAPS - Tier 1 and Pests of National Concern	10.025	13-8245-0380-CA	44,477
Cooperative Pesticide Recordkeeping Program	10.025	12-25-A-5700	1,291
Emerald Ash Borer National Survey	10.025	12-8245-0648-CA	35,177
Emerald Ash Borer National Survey	10.025	13-8245-0648-CA	36,136
Equine, Cervids and Small Ruminants	10.025	12-9645-1144-CA	9,282
Farm Bill Honey Bee Survey	10.025	11-8245-0829-CA	15,359
Farm Bill Honey Bee Survey	10.025	12-8245-0829-CA	9,361
Farm Bill Junior Invasive Inspectors	10.025	12-8245-0907-CA	23,304
Farm Bill P ramorum National Nursery Survey	10.025	11-8245-0830-CA	22,727
Farm Bill Stone Fruit Commodity Survey	10.025	12-8245-0891-CA	13,192
Farm Bill Tomato Commodity Survey	10.025	11-8245-0831-CA	14,635
Farm Bill-Thousand Cankers Survey	10.025	13-8245-0964-CA	3,165
Imported Fire Ant	10.025	12-8245-0178-CA	27,994
Imported Fire Ant	10.025	13-8245-0178-CA	26,962
Maintenance of Membership Laboratory Requirements (NAHLN Member Lab Assistance)	10.025	12-9419-0164-CA	55,000
NAHLN- LIMS Integration Consulting	10.025	12-9419-0095-CA	60,036
National Surveillance and Response for Animal Health Activities	10.025	13-9645-1276-CA	6,158
Notifiable Avian Influenza Program for NPIP and LBMS (2012)	10.025	12-9645-1147-CA	180,702
Phytophthora ramorum Farm Bill National Nursery Survey	10.025	12-8245-0830-CA	15,766
Slow Sand Filtration System for P. ramorum Phase 2	10.025	12-8245-0794-CA	31,955
Swine Health Program	10.025	12-9645-1145-CA	54,302
Witchweed	10.025	12-8245-0028-CA	14,060
Witchweed	10.025	13-8245-0028-CA	3

**Clemson University, South Carolina**

*Schedule of Expenditures of Federal Awards*

*For the year ending June 30, 2013*

Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>OTHER PROGRAMS, Continued</b>			
<b>Department of Agriculture, continued</b>			
Zoonotic & Foreign/Emerging Diseases Management	10.025	12-9645-1146-CA	14,487
Bundling of Culinology, Nutrition and Packaging in Undergraduate Applied Niche Research	10.217	2012-70003-19969	30,108
Building Entrepreneurial, Business Management and Land Stewardship Capacity for South Carolina New and Beginning Farmers	10.311	2010-49400-21735	285,728
South Carolina Meat-Poultry Inspection Department (All Other)	10.475	BASE12	50,279
South Carolina Meat-Poultry Inspection Department (All Other)	10.475	UNKNOWN	152,592
South Carolina Meat-Poultry Inspection Department (Compliance)	10.475	BASE12	30,421
South Carolina Meat-Poultry Inspection Department (Compliance)	10.475	UNKNOWN	83,129
South Carolina Meat-Poultry Inspection Department (Cross Utilization)	10.475	Cross Utilization	60,602
South Carolina Meat-Poultry Inspection Department (In-Plant)	10.475	BASE12	264,399
South Carolina Meat-Poultry Inspection Department (In-Plant)	10.475	UNKNOWN	794,844
South Carolina Meat-Poultry Inspection Department (Laboratory)	10.475	BASE12	5,273
South Carolina Meat-Poultry Inspection Department (Laboratory)	10.475	UNKNOWN	18,094
South Carolina Meat-Poultry Inspection Department (PHDCIS)	10.475	UNKNOWN	3,329
South Carolina Meat-Poultry Inspection Department (PHDCIS) '12	10.475	FY 2012 PHDCIS	1,472
A Coordinated Extension IPM Training Program for South Carolina to Address Stakeholder Needs in Key Commodities	10.500	2010-41534-21538	221,564
Clemson University (South Carolina) Pesticide Safety Education Program	10.500	2011-48679-31062	5,310
Cooperative Extension Service - Smith Lever	10.500	UNKNOWN	6,674,113
Development of a New Web Based Database System	10.500	2010-38834-20823	17,775
Development of Extension IPM Training in South Carolina to Address Stakeholder Needs in Key Commodities	10.500	2009-41534-05445	6,973
Expanded Health Coaches for Hypertension Control	10.500	2012-46100-20122	51,811
South Carolina Pesticide Safety Education Program	10.500	2012-48679-20234	7,637
Sustainable Agriculture Research and Education Professional Development Program	10.500	2012-47001-19735	16,992
Web Based Nutrition Education and Evaluation Reporting System (webNEERS)	10.500	2012-41510-20085	144,235
Reducing Ground Water Hazards in Low Income Rural South Carolina Counties Through Increased Recycling and Landfill Gas Use	10.762	Loan # 11 46-039-576000254	15,131
Expansion of Innovation Center	10.769	Loan # 09 46-039-576000254	30,446
Expansion of Innovation Center	10.769	Loan 7 46-039-576000254	20,028
Rural Business Enterprise Grant (RBEG) - Technical Assistance	10.769	Loan 6 46-039-576000254	121
Development of Training Workshops for Weed Control and a SC NRCS Pamphlet: Weed Suppression Using Rolled Cover Crops (Organic)	10.902	68-4639-11-0027	14,889
Development of Training Workshops for Weed Control and a SC NRCS Pamphlet: Weed Suppression Using Rolled Cover Crops (Weed)	10.902	68-4639-11-0026	2,842
Creation of South Carolina MarketMaker Website	10.912	68-4639-12-0016	14,424
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	10,710
Demonstration of Innovative Water Conservation Technologies to Enhance Resilience to Drought While Optimizing Farm Profits	10.912	69-3A75-13-88	7,362
5 Borlaug Fellows to Clemson University	10.962	58-3148-8-148	25,028
South Carolina Meat-Poultry Inspection Department (Cross Utilization)	10.UNK	UNKNOWN	154,791
Pass-through programs from:			
South Carolina Forestry Commission			
Cogongrass Detection, Eradication & Education and Forest Pests Detection & Education Project	10.UNK	None	34,262
Cogongrass Detection, Eradication and Education Project	10.UNK	None	18,303
South Carolina Department of Agriculture			
Canning Coaches for Safe Home Preservation of Locally Grown Specialty Crops	10.170	12-25-B-1253	3,674
University of Florida			

**Clemson University, South Carolina**

*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
<b>OTHER PROGRAMS, Continued</b>			
<b>Department of Agriculture, continued</b>			
Educating and Training Future Farmers, Researchers and Extension Personnel in Sustainable Agriculture (Clemson subcontract with the University of Florida)	10.215	UF10245	18,142
University of Georgia			
Implement Plan of Work for the Southern Region Sustainable Agriculture Research & Education (SARE) Program	10.215	RD309-117/4893516	12,735
Implement Plan of Work for the Southern Region Sustainable Agriculture Research and Education Professional Development (PDP) Program	10.215	RE675-116/4892336	16,229
Pass-through programs from University of Georgia, continued:			
Sustainable Agriculture Research & Education (SARE) Program	10.215	RD309-122/4940046	19,441
Enhancing the Safety of Locally Grown Produce Through Research and Extension	10.303	RE256-119/4690768	37,831
National Center for Home Food Processing and Preservation	10.303	RE256-131/4893626	9,340
Michigan State University			
Food Borne Norovirus in Elder Care Facilities: An Integrated Approach to Prevention and Control	10.303	61-4299CU	33,860
Texas A&M University			
The Southern Region Water Resource Project	10.303	451009	14,762
University of Florida			
Southern Plant Diagnostic Network	10.304	UF12230	22,000
FamilyFarmed.org			
Valdosta RO Wholesale Success: Managing Wholesale Production, Marketing, Financial, and Human Risks for Alabama and South Carolina Specialty Crop Farmers, project#010	10.460	None	4,999
Auburn University			
Healthy Homes Project	10.500	10-ACES-374584-CU	649
Kansas State University			
4-H Air Force Military Partnership Project	10.500	S13181	2,452
4-H Military Partnerships: 4-H Army Youth Development Project	10.500	S12046.02	56,830
Military 4-H Club Grant - "Children, Youth and Families at Risk 4-H Military Partnership Program"	10.500	S13066	4,296
South Carolina 2012 Military 4-H Club Support	10.500	S12128.02	23,040
South Carolina 2012 Office of Secretary of Defense/Operation Military Kids Camp (SC 2012 OSD/OMK Camp)	10.500	S12238.01	17,781
South Carolina OMK Local/Regional Support Network (L/RSN) - Darlington Area	10.500	S12158.02	12,996
South Carolina OMK Local/Regional Support Network (L/RSN) - GLNS Region	10.500	S12109.02	17,925
Purdue University			
Military Community Family and Youth Extension Program	10.500	8000047940 / 2010-48869-20781	71,122
Military Community Family and Youth Extension Program	10.500	8000054851	4,073
University of Arkansas			
Building Organic Agriculture Extension Training Capacity in the Southeast	10.500	UACES 23481-04	(733)
University of Georgia			
Developing Mobile Applications Using Social Media for the Southeast Cattle Advisor	10.500	RE684-168/4943546	523
Implement Plan of Work for the Southern Region Sustainable Agriculture Research & Education Professional Development (PDP) Program	10.500	RE675-167/4941476	5,198
Saluda County			
Saluda County: Agribusiness Strategic Plan with an Emphasis on Developing Local Assets	10.762	2012000687	<u>30,013</u>
<b>Total Department of Agriculture</b>			<u>10,585,418</u>

**Clemson University, South Carolina**  
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Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>OTHER PROGRAMS, Continued</b>			
<b>Department of Commerce</b>			
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	36,556
Coastal and Marine Recreation and Tourism Outreach Partnership: SCSGC/Clemson PRTM - Year 3	11.417	M337-A/E-1b	<u>52,521</u>
<b>Total Department of Commerce</b>			<u>89,077</u>
<b>Department of Defense</b>			
SC OMK (Operation: Military Kids)	12.UNK	NAFBA1-13-M-0190	21,152
Pass-through programs from:			
South Carolina Army National Guard			
Rich Media Coordinator	12.UNK	4100013833/4100019464	318
SC Army National Guard Agribusiness Development Team (AADT) Training	12.UNK	W912QG-11-C-0002	<u>85,126</u>
<b>Total Department of Defense</b>			<u>106,596</u>
<b>Department of the Interior</b>			
Development of Healthy Parks - Healthy People Strategic Action Plan for Hot Springs National Park	15.UNK	P12AC11294 P11AC91068 (formerly J5041100026)	35,545
The Open Parks Grid Project (CESU)	15.UNK		<u>8,419</u>
<b>Total Department of the Interior</b>			<u>43,964</u>
<b>Department of Justice</b>			
Pass-through programs from:			
South Carolina Department of Public Safety			
Disproportionate Minority Contact Research Project	16.540	1J09006	(694)
Disproportionate Minority Contact Research Project	16.540	1J11001	(3,124)
National 4-H Council			
SC Tech Wizards 2012	16.726	2011-OJJDP-MNTR-137	183,200
SC Youth Mentoring Program	16.726	2012-OJJDP-NMPLIII-340	19,641
South Carolina Department of Alcohol and Drug Abuse Services			
Palmetto Initiative for Campus-Community Collaboration	16.727	CLE-PICC-2	22,634
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>20,235</u>
<b>Total Department of Justice</b>			<u>241,892</u>
<b>Department of State</b>			
Pass-through programs from:			
International Research & Exchanges Board			
Teaching Excellence and Achievement and International Leaders in Education Program (ILEP)	19.408	FY12-ILEP-Clemson-01	<u>172,583</u>
<b>Total Department of State</b>			<u>172,583</u>
<b>Appalachian Regional Commission</b>			
STEM Labs for Appalachian Youth	23.022	SC-17375	<u>29,370</u>
<b>Total Appalachian Regional Commission</b>			<u>29,370</u>

**Clemson University, South Carolina**  
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Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>OTHER PROGRAMS, Continued</b>			
<b>National Aeronautics and Space Administration</b>			
A Multi-Instrument Study of Electron-Positron Annihilation in the Milky Way	43.UNK	NNX09AC80 G	10,862
Pass-through programs from:			
College of Charleston			
NASA EPSCoR RID Augmentation Travel Award Program - 2012	43.001	20-NE-Clemson_Khalilian-T	<u>2,568</u>
<b>Total National Aeronautics and Space Administration</b>			<u>13,430</u>
<b>National Endowment for the Arts</b>			
Pass-through programs from:			
South Arts			
2012-2013 Southern Circuit	45.025	None	<u>2,400</u>
<b>Total National Endowment for the Arts</b>			<u>2,400</u>
<b>National Science Foundation</b>			
Collaborative Research: Computational Intelligence Methods for Dynamic Stochastic Optimization of Smart Grid Operation with High Penetration of Renewable Energy	47.041	ECCS-1232070	9,920
Collaborative Research: Communicating Hurricane Information to Local Officials for Protective Action Decision Making	47.075	SES-0838639	7,820
Biosystems Technology ATE Project	47.076	DUE-0703117	48,449
Clemson University MAT Noyce Scholarship Program for Middle Grades Education	47.076	DUE-0733711	8,770
Southeastern Regional Noyce Conference	47.076	DUE-1062155	159,197
A Planning Workshop to Scale Condominium Cluster Model to Condo of Condos	47.080	OCI-1249541	54,445
Pass-through programs from:			
University of Nebraska - Lincoln			
GEAR-Tech-21 Camp 2012	47.076	None	<u>943</u>
<b>Total National Science Foundation</b>			<u>289,544</u>
<b>Small Business Administration</b>			
Pass-through programs from:			
University of South Carolina			
Small Business Administration Jobs Act	59.UNK	PO#32207L/1-603001-Z-0149	36,086
Small Business Development Center - Operating Grant (Federal)	59.037	Federal	<u>367,228</u>
<b>Total Small Business Administration</b>			<u>403,314</u>
<b>Environmental Protection Agency</b>			
2011-2013 Certification and Training Pesticide Programs			
Cooperative Agreement	66.700	E98463811	62,279
2011-2013 Enforcement Pesticide Programs Cooperative Agreement	66.700	E98463611	167,307
2011-2013 Special Pesticide Programs Cooperative Agreement	66.700	E98463711	171,231
Pass-through programs from:			
Commonwealth of Virginia			
Animal Waste Analysis for Commonwealth of VA	66.460	319-2011-15-V	<u>38,446</u>
<b>Total Environmental Protection Agency</b>			<u>439,263</u>

**Clemson University, South Carolina**

*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
<b>OTHER PROGRAMS, Continued</b>			
<b>Department of Energy</b>			
Clemson University 15 Megawatt Hardware-In-the-Loop (HIL) Grid Simulator	81.087	DE-EE0005723	1,500,000
ARRA: Clemson University Wind Turbine Drivetrain Testing Facility	81.087	DE-EE0003023	5,363,898
<b>Total Department of Energy</b>			<u>6,863,898</u>
<b>Department of Education</b>			
Applied International Monetary Economics	84.116	P116J090063	27,678
The Consortium for Small and Medium-size Enterprises and Entrepreneurship Education (SMEEE)	84.116	P116J080038-11	26,206
Transatlantic Double Degree in International Business	84.116	P116J090006	55,568
Special Education-Personnel Preparation to Improve Services and Results for Children with Disabilities	84.325	H325D080056-11	221,575
National Dropout Prevention Center for Students with Disabilities	84.326	H326W080003-12	633,584
Pass-through programs from:			
South Carolina Department of Education			
Agricultural Education Professional Development	84.UNK	None	72,640
Agriculture Teacher Education and Professional Development	84.UNK	4000015033	301
Cherry Grove FFA Camp Caretaker	84.048	12VA302-42	(174)
Cherry Grove FFA Camp Caretaker	84.048	13VA302-42	21,892
Communities In Schools of Chester County			
21st Century Community Learning Centers Grant	84.287	None	9,439
South Carolina Department of Education			
21st Century Community Learning Center (Youth Development Center and Youth Challenge Academy)	84.287	12CL302-03	90,649
21st Century Community Learning Center (Youth Development Center and Youth Challenge Academy)	84.287	13CL302-03	48,018
21st Century Community Learning Centers - GoalPOST II	84.287	13CL302-02	275,535
21st Century Community Learning Centers - GoalPOST III	84.287	13CL302-20	142,711
21st Century Community Learning Centers for Charleston County Schools (A.I.M. Achieve, Inspire, Motivate)	84.287	13CL302-21	128,277
GoalPOST I (Goal-Oriented Performance in Out of School Time)	84.287	12CL302-01	154
GoalPOST II (Goal-Oriented Performance in Out of School Time)	84.287	12CL302-02	9,357
South Carolina Department of Education			
Inquiry Based Learning: A Companion Course for the Biology End-of-Course Exam	84.366	12MS302-01	79,283
Inquiry Based Learning: A Companion Course for the Biology End-of-Course Exam	84.366	13MS302	18,436
Inquiry Based Learning: A Companion Course for the Biology End-of-Course Test	84.366	11MS302-01	24,532
National Writing Project			
Upstate Writing Project Teacher Leadership Development SEED Grant	84.367	01-SC11-SEED2012	96,514
South Carolina Commission on Higher Education			
iPad Technology in Middle Grades Mathematics: Meeting the Need for Highly Technologically Qualified Teachers FY 2011-12	84.367	None	8,515
Meeting the Need for Highly Qualified Mathematics Teachers - FY 2011-12	84.367	None	12,321
Project RES: Reform-Based Environmental Science - FY 2011-12	84.367	ITQ 2011-2012	1,799
Project RES: Reform-Based Environmental Science - FY 2012-13	84.367	ITQ 2012-13	74,168
Project RES: Reform-Based Environmental Science FY 2011-12 Supplemental Grants	84.367	FY 2011-12 Supplemental	17,964
The Ohio State University			
ARRA: Reading Recovery: Scaling Up What Works	84.396	60029187 (PO# RF01229125)	398,218

**Clemson University, South Carolina**  
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Federal Grantor/Pass-Through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-Through Grantor's Number	Expenditures
<b>OTHER PROGRAMS, Continued</b>			
<b>Department of Education, continued</b>			
Pass-through programs from National Writing Project:			
2013 i3 NWP College-Ready Writers Program (CRWP) Study and Planning Grant	84.411	01-SC11-i32013	24,185
2013 i3 NWP College-Ready Writers Program (CRWP) Study and Planning Grant proposal	84.411	01-SC11-i32013	14,567
Upstate Writing Project SC-2012-2013 i3 College-Ready Writers Program: Study and Planning Grant	84.411	01-SC11-i32013	<u>19,613</u>
<b>Total Department of Education</b>			<u>2,553,525</u>
<b>Department of Health and Human Services</b>			
Pass-through programs from:			
University of South Carolina Health Information Technology Extension Program: Practice and Workflow Design to Support Meaningful Use of EHR	93.718	PO#31611L/11-1835 (22000-FL05)	7,394
Live Well Greenville-YMCA of Greenville Building Dreams-Community Transportation Grant	93.737	Prime # 1H75DP004224-01	14,275
University of South Carolina A Partnership to Promote Physical Activity and Healthy Eating in AME Churches	93.837	07-1313/11530 FA29 PO#71659,71660	<u>24,836</u>
<b>Total Department of Health and Human Services</b>			<u>46,505</u>
<b>Department of Homeland Security</b>			
Assistance to Firefighter Grant	97.044	EMW-2011-FO-8505	19,713
Pass-through programs from:			
South Carolina Law Enforcement Division Regional Food and Agriculture Sector Criticality Assessment Project (Multi-State)	97.UNK	9SHSP45	71,722
South Carolina Emergency Management Division Clemson University Continuity of Operations Plan	97.UNK	None	7,500
South Carolina Law Enforcement Division 2010 Buffer Zone Protection Program - Clemson University Sports Complex	97.078	10BZPP01	<u>93,528</u>
<b>Total Department of Homeland Security</b>			<u>192,463</u>
<b>Total Other Programs</b>			<u>22,073,242</u>
<b>Total Federal Expenditures</b>			<u>\$ 176,679,893</u>

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**Clemson University****Clemson, South Carolina*****Notes to the Schedule of Expenditures of Federal Awards******June 30, 2013***

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**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, 2013, 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 \$8,499,167 as of June 30, 2013.

**Note 4. Matching**

Under the FWS program, the University matched \$205,273 in total compensation for the year ended June 30, 2013 in addition to the federal share of expenditures in the accompanying schedule of expenditures of federal awards.

Under the FSEOG program, the University matched \$640,672 in funds awarded to students for the year ended June 30, 2013, in addition to the federal share of expenditures in the accompanying schedule of expenditures of federal awards.

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**Clemson University****Clemson, South Carolina***Notes to the Schedule of Expenditures of Federal Awards**June 30, 2013*

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**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>
<b>Department of Agriculture</b>		
	10.UNK	\$ 8,398
	10.170	29,475
	10.200	23,499
	10.206	8,979
	10.253	1,961
	10.303	428,732
	10.309	2,321
	10.311	95,264
	10.561	<u>185,823</u>
Total Department of Agriculture		<u>\$ 784,452</u>
<b>Department of Commerce</b>		
	11.417	<u>\$ 10,857</u>
Total Department of Commerce		<u>\$ 10,857</u>
<b>Department of Defense</b>		
	12.UNK	\$ 144,158
	12.300	833
	12.351	124,463
	12.420	74,910
	12.431	4,441
	12.800	<u>91,892</u>
Total Department of Defense		<u>\$ 440,697</u>
<b>Department of Interior</b>		
	15.805	<u>\$ 7,256</u>
Total Department of Interior		<u>\$ 7,256</u>
<b>Department of State</b>		
	19.345	<u>\$ 48,987</u>
Total Department of State		<u>\$ 48,987</u>

**Clemson University****Clemson, South Carolina***Notes to the Schedule of Expenditures of Federal Awards**June 30, 2013***Note 6. Subrecipients, Continued**

	Federal CFDA Number	Amount Provided to Subrecipients
<b>Department of Transportation</b>		
	20.UNK	\$ 71,135
	20.761	<u>4,475</u>
Total Department of Transportation		<u>\$ 75,610</u>
<b>National Aeronautics and Space Administration</b>		
	43.001	\$ <u>15,770</u>
Total National Aeronautics and Space Administration		<u>\$ 15,770</u>
<b>Institute of Museum and Library Services</b>		
	45.312	\$ <u>42,752</u>
Total Institute of Museum and Library Services		<u>\$ 42,752</u>
<b>National Science Foundation</b>		
	47.041	\$ 391,603
	47.049	117,353
	47.050	28,090
	47.070	104,753
	47.074	142,087
	47.076	319,717
	47.081	26,475
	47.082	<u>21,856</u>
Total National Science Foundation		<u>\$ 1,151,934</u>
<b>Environmental Protection Agency</b>		
	66.509	\$ <u>147,877</u>
Total Environmental Protection Agency		<u>\$ 147,877</u>
<b>Department of Energy</b>		
	81.UNK	\$ 461,314
	81.049	243,667
	81.057	104,923
	81.089	26,670
	81.113	<u>136,664</u>
Total Department of Energy		<u>\$ 973,238</u>
<b>Department of Education</b>		
	84.051	\$ 1,600
	84.116	14,338
	84.287	<u>181,120</u>
Total Department of Education		<u>\$ 197,058</u>

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**Clemson University****Clemson, South Carolina***Notes to the Schedule of Expenditures of Federal Awards**June 30, 2013*

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**Note 6. Subrecipients, Continued**

	Federal CFDA Number	Amount Provided to Subrecipients
<b>Election Assistance Commission</b>		
	90.403	\$ <u>1,087,489</u>
Total Election Assistance Commission		\$ <u>1,087,489</u>
<b>Department of Health and Human Services</b>		
	93.121	\$ 35,573
	93.286	2,072
	93.837	375,864
	93.853	78,552
	93.859	231,474
	93.865	<u>148,420</u>
Total Department of Health and Human Services		\$ <u>871,955</u>
<b>Agency for International Development</b>		
	98.001	\$ <u>186,000</u>
Total Agency for International Development		<u>186,000</u>
		\$ <u>6,041,932</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, 2013, 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 2, 2013. 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.

**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.



Greenville, South Carolina  
October 2, 2013



**INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE FOR  
EACH MAJOR FEDERAL PROGRAM; REPORT ON INTERNAL CONTROL OVER  
COMPLIANCE; AND THE 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, 2013. 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 \$4,941,534 in federal awards, which is not included in the schedule during the year ended June 30, 2013. 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 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, 2013.

### **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. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of 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, 2013 and the related notes to the financial statements, which collectively comprise the University's basic financial statements. We issued our report thereon dated October 2, 2013, 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.

*Elliott Davis, LLC*

Greenville, South Carolina  
October 2, 2013

**Clemson University**  
**Clemson, South Carolina**  
*Schedule of Findings and Questioned Costs*  
*For the year ended June 30, 2013*

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**Section I. Summary of Auditor's Results**

Financial Statements

Type of auditors' 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 \_\_\_\_\_ yes   X   none reported

Type of auditors' 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>
10.RD; 11.RD; 12.RD; 15.RD; 16.RD; 17.RD; 19.RD; 20.RD; 23.RD; 43.RD; 45.RD; 47.RD; 59.RD; 64.RD; 66.RD; 77.RD; 81.RD; 84.RD; 85.RD; 90.RD; 93.RD; 97.RD; 98.RD; 99.RD	Research and Development 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

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, 2013*

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**Section II. Financial Statement Findings**

None

**Section III. Federal Award Questioned Costs & Findings**

**Finding 2013-1**

Program:	CFDA No. 84.396 – ARRA: Reading Recovery: Scaling Up What Works
Criteria or Specific Requirement:	For calculations related to indirect cost recoveries, the University should exclude Tuition and Fees and Stipends from the indirect cost recovery base used to determine the indirect costs charged to the award.
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.
Questioned Costs:	\$12,508
Context:	A test of the facilities and administrative cost allocation adjustment recorded during the fiscal year indicated the adjustment was not properly supported by an appropriate indirect cost recovery base. The cost base used included direct expenditures for Teacher Stipends charged to the award during fiscal year 2012 incorrectly coded as Site Support. Charges for Site Support are eligible for inclusion in the indirect cost recovery base, while charges for Teacher Stipends are not eligible. The cost allocation adjustment was the only such adjustment made during the fiscal year.
Effect:	Costs of \$12,508 are questioned as a result of including the ineligible charges in the Indirect Cost Recovery base.
Cause:	A lack of detailed review of the proper coding of direct charges in the accounting system caused inappropriate items to be included in the indirect cost recovery base.
Recommendation:	Classification of direct charges should be reviewed for compliance with the grant award document by a responsible individual with oversight authority before the indirect cost base is determined and used to calculate the indirect cost recovery amounts.
View of Responsible Official and Corrective Actions:	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.

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**Clemson University****Clemson, South Carolina***Schedule of Findings and Questioned Costs**For the year ended June 30, 2013*

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**Section III. Federal Award Questioned Costs & Findings, Continued**

The Director of Grants and Contracts Administration is reviewing and approving indirect cost adjustments prepared by Grants and Contracts Administration fiscal managers on all sponsored projects before journal entries are posted to the General Ledger.

Communication is ongoing via the Grants and Contracts Administration newsletter and quarterly post-award University meetings with emphasis on identifying and allocating costs correctly. The reconciling adjustment is being prepared and excess funds will be returned to the sponsor.