

Recipients of funding through the Advanced Support for Innovative Research Excellence, or ASPIRE program, are some of the best and brightest researchers at the University of South Carolina. In addition to honoring [current recipients](#) on our website, we continue to recognize past recipients and projects through this archive document.

2012 ASIRE Recipients

2012: ASPIRE I – Innovation, Track I

Principal Investigator	Title	Department	College
Adlof, Suzanne	Dynamic Assessment of Word Learning as a Predictor of Reading Comprehension Outcomes	Communication Sciences & Disorders	Public Health, Arnold School of
Billings, Deborah	Group Outcomes, Pregnancy and Stress (the GROUPS Study)	Health Promotion, Education & Behavior	Public Health, Arnold School of
Browne, Teri	Disparities in Phosphate Binder Adherence Among Hemodialysis Patients: A Mixed Methods Study	Social Work	Social Work, College of
Chen, Hexin	Proteomic analysis reveals an iron regulatory gene as a novel target for treatment of HER2-overexpressing breast cancer	Biological Sciences	Arts and Sciences, College of
Frizzell, Norma	Protein Succination is associated with Neuropathology in Mitochondrial Disease	Pharmacology, Physiology & Neuroscience	Medicine, School of
Huang, Xinyu	Development of Novel Thermo-Mechanical Testing Methodology for SiC Composite Claddings	Mechanical Engineering	Engineering & Computing, College of
Jabbarzadeh, Ehsan	Nanoengineering stem cell cardiac lineage commitment	Chemical Engineering	Engineering & Computing, College of
Kaczynski, Andrew	Building Youth Capacity for Healthy Community Design: University of South Carolina ASPIRE-I 2012 Research Grant Proposal (Track I)	Health Promotion, Education & Behavior	Public Health, Arnold School of
Kuenzli, Elisabeth	Indians, Identity, and Nation Building in Eastern Bolivia, through the Perspective of Provincial Archival Documentation	History	Arts and Sciences, College of
Montie, Eric	Using Passive Acoustics to Correlate Sound Production and Egg Release in Captive Populations of Soniferous Fishes: A Model to Study Spawning Behavior in the Wild	Science and Mathematics	USC Beaufort
Murphy, Elizabeth	Macrophages in High Fat Diet Enhanced Colorectal Cancer: Regulation by miRNA-155	Pathology & Microbiology	Medicine, School of
Pershin, Yuriy	Novel Approaches to Spin Noise Spectroscopy	Physics & Astronomy	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Rajca, Andrew	Space, Memory, and Human Rights in the Postdictatorial Southern Cone	Languages, Literatures, and Cultures	Arts and Sciences, College of
Saleh, Navid	Heteroaggregation and deposition of chirally separated single-walled carbon nanotubes in heterogeneous aquatic systems	Civil & Environmental Engineering	Engineering & Computing, College of
Shervette, Virginia	Conservation Biogeography of Freshwater Fishes in Southeastern USA: Freshwater Fish Diversity and Evolution Using River-Oxbow Lake Systems in SC and GA as a Case Study	Biology & Geology	USC Aiken
Wang, Hui	Single-Molecule Spectroscopic Study of Dynamic Nanoscale DNA Bending Induced by Retroviral Nucleocapsid Proteins	Chemistry & Biochemistry	Arts and Sciences, College of
Xu, Peisheng	Dual Secured Nano-Sting for Targeted Colon Cancer Therapy	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Yang, Jinkyu	Development of Novel Structural Materials Using Granular Phononic Crystals	Mechanical Engineering	Engineering & Computing, College of

2012: ASPIRE I – Innovation, Track II

Principal Investigator	Title	Department	College
Alexeev, Oleg	Synthesis and Reactivity of Zeolite-Supported Rh Complexes	Chemical Engineering	Engineering & Computing, College of
DePratter, Chester	The Colonial Era Archaeology of the Savannah River Valley	Archaeology & Anthropology, SC Institute of	Arts and Sciences, College of
Lo, Pang-Kuo	Exploring the role of DNMT1 in HER2-mediated breast tumorigenesis and its therapeutic application	Biological Sciences	Arts and Sciences, College of
Malysz, John	EFFECT OF ACUTE ETHANOL EXPOSURE ON URINARY BLADDER SMOOTH MUSCLE FUNCTION: ROLE OF K ⁺ ION CHANNELS	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Schools, Gary	Intranucleolar bodies in stress response	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Shapiro, Cheri	Dynamic Risk Factors for Youth Recidivism	Families in Society, Institute for	Social Work, College of
Singh, Narendra	Investigation of Resveratrol-regulated microRNAs and epigenetic modification in amelioration of lupus	Pathology & Microbiology	Medicine, School of

ASPIRE Recipients 2012-2016

Williams, Edith	Systemic Lupus Erythematosus Travel Burden Survey (SLETBS): Baseline Data Among a South Carolina SLE Cohort	Epidemiology & Biostatistics	Public Health, Arnold School of
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2012: ASPIRE I – Innovation, Track III

Principal Investigator	Title	Department	College
Lavigne, John	Hybrid and Polymer-Modified Boronate-Linked Covalent Organic Frameworks (COFs)	Chemistry & Biochemistry	Arts and Sciences, College of
Reagan, Lawrence	Decreased CNS leptin activity in comorbid depression and obesity	Pharmacology, Physiology & Neuroscience	Medicine, School of
Ziehl, Paul	Distributed Sensing for the Nuclear Infrastructure	Civil & Environmental Engineering	Engineering & Computing, College of

2012: ASPIRE I – Innovation, Track IV

Principal Investigator	Title	Department	College
Cobb, Charles	The Archaeology of Chickasaw Migrations and Colonial Alliances	Archaeology & Anthropology, SC Institute of	Arts and Sciences, College of
Felder, Michael	Identification of a Recessive Gene Causing Juvenile, Remitting Ataxia	Biological Sciences	Arts and Sciences, College of
Kelly, Kenneth	Landlords, Traders, and the 19th Century Illegal Slave Trade: Archaeologies of Entanglement along the Rio Pongo, Guinea, West Africa.	Anthropology	Arts and Sciences, College of
Knapp, Camelia	Full Waveform Elastic Inversion Code Development for Gas Hydrate Research	Earth and Ocean Sciences	Arts and Sciences, College of
Krizek, Beth	Long noncoding RNAs in Arabidopsis flower development	Biological Sciences	Arts and Sciences, College of
Mandal, Krishna	Novel Semiconductors for High Resolution Nuclear Detector	Electrical Engineering	Engineering & Computing, College of
Marton, Laszlo	Development of Virginia mallow to be a new multipurpose biomass crop	Biological Sciences	Arts and Sciences, College of
Omolo, Bernard	A Bayesian Hierarchical Model for Correlated Microarray Datasets	USC Upstate	USC Upstate

ASPIRE Recipients 2012-2016

Petkov, Georgi	TRANSIENT RECEPTOR POTENTIAL MELASTATIN 4 CHANNEL: NOVEL PHARMACOLOGICAL TARGET FOR URINARY BLADDER DYSFUNCTION	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Shaw, Timothy	Measurement of Oxygen Consumption in Beach Face Pore Waters	Chemistry & Biochemistry	Arts and Sciences, College of
Walsh, Kenneth	Application of ISFETs for Ion Channel Drug Discovery	Pharmacology, Physiology & Neuroscience	Medicine, School of
Wang, Qian	TOBACCO MOSAIC VIRUS AS SCAFFOLDING MATERIALS TO ENHANCE BONE REGENERATION	Chemistry & Biochemistry	Arts and Sciences, College of
Weik, Terrance	Chickasaw African Transitions: Archaeo-Geophysical Survey at the Levi Colbert Prairie Homestead in Mississippi	Anthropology	Arts and Sciences, College of

2012: ASPIRE II – Integration

Principal Investigator	Title	Department	College
Berger, Franklin	Program in Thymidylate Synthase Research	COBRE: Center for Colon Cancer Research	Arts and Sciences, College of
Booze, Rosemarie	Brain Inflammation: Diet-Induced Obesity and Novel Anti-Inflammatory Therapeutics	Psychology	Arts and Sciences, College of
Buell, Duncan	Ghosts of South Carolina College--A Critical Interactive for Engaging Students and Visitors in the History of USC's Horseshoe	Computer Science & Engineering	Engineering & Computing, College of
Chen, Donna	New Catalysts for Direct Ethanol Fuel Cells	Chemistry & Biochemistry	Arts and Sciences, College of
Decho, Alan	Revolutionizing Treatment of resistant-infections using engineered nanoparticles to inhibit bacterial cell-cell communication.	Environmental Health Sciences	Public Health, Arnold School of
Hebert, James	ASPIRE-II: Preparing for a Program Project Grant in Diet, Physical Activity, and Energy Balance to Address Large Racial Disparities in Colorectal Cancer Prevention and Control	Epidemiology & Biostatistics	Public Health, Arnold School of
Heyden, Andreas	Catalytic Conversion of Biomass-Derived Platform Molecules into High Octane Biofuels	Chemical Engineering	Engineering & Computing, College of
Hughes, Austin	Evolution of transcription factor regulatory networks	Biological Sciences	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Ploehn, Harry	A Materials Toolbox Approach for Synthesis and Characterization of Polymer Nanocomposites	Chemical Engineering	Engineering & Computing, College of
Weist, Mark	Interdisciplinary Collaboration, Training and Intervention for Youth with Mood Disorders in Schools	Psychology	Arts and Sciences, College of
Wilson, Dawn	Gene and Environmental Influences on Obesity: Implications for Prevention	Psychology	Arts and Sciences, College of
Wilson, Marlene	Validating rodent models of PTSD for developing biomarkers of resilience, risk, & treatment	Pharmacology, Physiology & Neuroscience	Medicine, School of

2012: ASPIRE III – Infrastructure

Principal Investigator	Title	Department	College
Broude, Eugenia	Confocal Microscope Upgrade for the Translational Cancer Therapeutics Shared Instrumentation Facility	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Dawson, John	Purchase of Velos Pro Linear Ion Trap (LTQ) Mass Spectrometer - Department of chemistry and Biochemistry	Chemistry & Biochemistry	Arts and Sciences, College of
Dyer, Andrew	The Promotion of Transgenic and Controlled-Environment Greenhouse Research at USC Aiken	USC Aiken	USC Aiken
Ghoshroy, Soumitra	Acquisition of a Remotely Operable Variable Pressure Scanning Electron Microscope for the University of South Carolina Electron Microscopy Center	Electron Microscopy Center	Arts and Sciences, College of
Kidane, Addis	HIGH TEMPERATURE HOT PRESSING FOR ADVANCED, AEROSPACE, NUCLEAR, BIOMEDICAL AND FUEL CELL MATERIAL PROCESSING	Mechanical Engineering	Engineering & Computing, College of
Lu, Kevin	Databases to Strengthen Interdisciplinary Research and Teaching Efforts for Faculty in Clinical Pharmacy and Outcomes Sciences Department	Clinical Pharmacy and Outcomes Sciences	Pharmacy, SC College of
Mousseau, Timothy	Proposed purchase of a SAM 940 Radiation Isotope Identifier (RIID)	Biological Sciences	Arts and Sciences, College of
Potts, Jay	Upgrade of Live Cell Imaging Capabilities in the USC Instrumentation Resource Facility	Cell Biology & Anatomy	Medicine, School of
Rorden, Christopher	MRI Simulator Shared Laboratory	Psychology	Arts and Sciences, College of

2013 ASIRE Recipients

2013: ASPIRE I – Innovation, Track I

Principal Investigator	Title	Department	College
Anderson, Jill	Adaptive evolution in the context of rapid climate change	Biological Sciences	Arts and Sciences, College of
Davis, Shannon	Generating novel zebrafish lines to study pituitary organogenesis	Biological Sciences	Arts and Sciences, College of
Greytak, Andrew	Aspire: Demonstration of ligand binding and release from single semiconductor nanowires	Chemistry & Biochemistry	Arts and Sciences, College of
Liu, Xinfeng	Mathematical modeling and computational studies for proliferation kinetics of tumor growth	Mathematics	Arts and Sciences, College of
Schwebel, Sara	Scott O'Dell's Island of the Blue Dolphins: An Annotated, Critical Edition	English	Arts and Sciences, College of
Irvin, Matthew	Understanding the Link between Substance Use and School Dropout among Rural Youth	Educational Studies, Department of	Education, College of
Niehaus, Sarah	How Social-Emotional Well-Being Contributes to the Academic Achievement of English Language Learners	Educational Studies, Department of	Education, College of
Alekseyev, Max	Varying-resolution synteny blocks construction for large-scale phylogenomics	Computer Science & Engineering	Engineering & Computing, College of
Berge, Nicole	Evaluating Nanomaterial Mobility in Realistic Municipal Solid Waste (MSW) Landfill Environments: Part 1 - Development of Geotechnical Centrifuge Testing Protocols	Civil & Environmental Engineering	Engineering & Computing, College of
Blanchette, James	Use of Ischemic Preconditioning to Enhance Islet Engraftment	Chemical Engineering	Engineering & Computing, College of
LIU, CHUNYANG	Comprehensive Study on the Coupling Effects between Mechanical and Hydraulic Behavior of Multiphase Porous Media by Using SPH and DEM	Civil & Environmental Engineering	Engineering & Computing, College of
Shazly, Tarek	Decoupling the active and passive mechanics of vascular tissue	Mechanical Engineering	Engineering & Computing, College of
Tarbutton, Joshua	Additive Manufacturing for Precision Engineering Applications	Mechanical Engineering	Engineering & Computing, College of

ASPIRE Recipients 2012-2016

Uline, Mark	Molecular Modeling of Divalent Cation Interactions with Monolayers of Surface-Bound Single-Stranded DNA	Chemical Engineering	Engineering & Computing, College of
Wang, Xiaofeng	Condition-Based Control of Resilient Networked Systems	Electrical Engineering	Engineering & Computing, College of
Yu, Miao	Nano-Channel Enhanced Composite Membranes to Achieve a 20,000 GPU CO2 Permeance for Carbon Capture	Chemical Engineering	Engineering & Computing, College of
Gavigan, Karen	ASPIRE-ing to Prevent HIV/AIDS: A Graphic Novel Intervention for South Carolina Teens	Library & Information Sciences, School of	Mass Communications & Information Studies, College of
Ai, Walden	Adapting the pre-metastatic niche model to study asthma	Pathology, Microbiology and Immunology	Medicine, School of
Kelly, Michele	Intramolecular Signals Controlling Phosphodiesterase 11A (PDE11A) Function in Brain	Pharmacology, Physiology & Neuroscience	Medicine, School of
Robinson, Cory	AN INFANT MOUSE MODEL OF ELEVATED INTERLEUKIN-27 PRODUCTION	Pathology, Microbiology and Immunology	Medicine, School of
Lu, Kevin	Diabetes and Risk of Pancreatic Cancer:	Clinical Pharmacy and Outcomes Sciences	Pharmacy, SC College of
	A Retrospective Cohort Study among the Veteran Affairs Population		
Zhu, Jun	Environmental enrichment and vulnerability to nicotine dependence	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Blake, Christine	Using a novel experimental approach with eye tracking to examine how different front-of-package labels influence parents selection of foods and beverages for their children	Health Promotion, Education & Behavior	Public Health, Arnold School of
CHATTERJE E, SAURABH	Epigenetic Modulations in Resveratrol-mediated Therapeutic Effects in Environmental Linked-Nonalcoholic Steatohepatitis of Obesity	Environmental Health Sciences	Public Health, Arnold School of
Den Ouden, Dirk-Bart	Cortical stimulation of verb-argument-structure processing	Communication Sciences & Disorders	Public Health, Arnold School of
Kaczynski, Andrew	Neighborhood Physical and Social Environment and Residents' Physical Activity Patterns	Health Promotion, Education & Behavior	Public Health, Arnold School of
Newman-Norlund, Roger	Creation of a Web-Based Research Tool for Studying Social-Motor Impairments in Children with Autism Spectrum Disorder	Exercise Science	Public Health, Arnold School of

ASPIRE Recipients 2012-2016

Sui, Xuemei	A feasibility study of using automated feedback to enhance physical activity and dietary self-management behaviors to promote weight loss in a healthcare setting	Exercise Science	Public Health, Arnold School of
Andrews, Christina	Assessing the Impact of the Affordable Care Act on Access to Substance Abuse Treatment for Medicaid-Insured Americans	Social Work, College of	Social Work, College of
Boyd, Kate	Bringing the South Carolina Encyclopedia Online	University Libraries	University Libraries
Vieyra, Michelle	Getting Everyone Involved: Identifying the Obstacles to Participation of Minorities in Undergraduate Research Experiences	USC Aiken	USC Aiken
Cai, Li	Immuno-Targeting of Breast Cancer Cells with Human Natural Antibodies	USC Salkehatchie	USC Salkehatchie

2013: ASPIRE I – Innovation, Track II

Principal Investigator	Title	Department	College
Chen, Mengqian	Regulation of Androgen Receptor Function by Transcription Regulating Kinases CDK8 and CDK19	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Hegde, Venkatesh	Cannabidiol and immunosuppression: Studies on mechanism of induction and role of myeloid derived suppressor cells (MDSCs)	Pathology, Microbiology and Immunology	Medicine, School of
King, Adam	Refining the Middle Savannah River Valley Hollywood Phase Chronology Using Sequence Analysis	Archaeology & Anthropology, SC Institute of	Arts and Sciences, College of
Norris, Carol LeAnn	A Comparative Study of Rixutimab-associated	Clinical Pharmacy and Outcomes Sciences	Pharmacy, SC College of
	Progressive Multifocal Leucoencephalopathy (PML)		

2013: ASPIRE I – Innovation, Track III

Principal Investigator	Title	Department	College
Carson, James	Cachexia in ApcMIN/+ mice: The role of IL-6 (ASPIRE I)	Exercise Science	Public Health, Arnold School of
Connolly, Erin	ASPIRE I (Track III) Proposal: Integrating Cellular Iron Homeostasis Mechanisms	Biological Sciences	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Outten, Franklin	ASPIRE I: Characterization of an essential iron cofactor biosynthesis pathway from Mycobacterium tuberculosis	Chemistry & Biochemistry	Arts and Sciences, College of
Stratmann, Johannes	Negative regulation of MAP kinases in plant responses to herbivory	Biological Sciences	Arts and Sciences, College of
Zhang, Jiajia	Innovative Spatio-temporal Survival Models Allowing Crossing Survival	Epidemiology and Biostatistics	Public Health, Arnold School of

2013: ASPIRE I – Innovation, Track IV

Principal Investigator	Title	Department	College
Hebert, Thomas	High-Achieving University Students from Low-Income Backgrounds	Educational Studies, Department of	Education, College of
Matthews, Michael	Interactions of Collagen Matrix Materials with Near- and Super-Critical Solvents	Chemical Engineering	Engineering & Computing, College of
Mueller, Agnes	Aspire I -- Track IV: Legacies of Despair and Hope (Book)	Languages, Literatures, and Cultures	Arts and Sciences, College of
Osokina, Elena	The Hammer and the Icon: Soviet Sales of Religious Art to the United States under Stalin	History	Arts and Sciences, College of
Patel, Rekha	Investigation of molecular mechanisms involved in dystonia 16	Biological Sciences	Arts and Sciences, College of
Petkov, Georgi	Physiological role of Kv channels in human urinary bladder smooth muscle	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Pittman, Douglas	Development of a novel high throughput in vivo assay to discover inhibitors that block protein-protein interactions	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of
Reisman, David	p53-HIV Tat interactions that inhibit p53 function	Biological Sciences	Arts and Sciences, College of
Waldman, Alan	The Influence of Progerin on DNA Transactions	Biological Sciences	Arts and Sciences, College of
Yankovsky, Alexander	Preliminary sampling and scaling of the buoyant plume originating from melting iceberg in the Labrador Sea	Earth and Ocean Sciences	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Yoon, Yeomin	Preliminary Evaluation of Sonocatalytic Degradation Coupled with Carbon Nanotubes for Removal of Endocrine Disrupting Compounds, Pharmaceuticals, and Personal Care Products	Civil & Environmental Engineering	Engineering & Computing, College of
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2013: ASPIRE II – Integration

Principal Investigator	Title	Department	College
Dr. Angela Dorothea Liese	Positioning USC for National Prominence in Food Security and Food Access Research	Epidemiology & Biostatistics	Public Health, Arnold School of
Dr. Colin F Wilder	Dirty History Metacrawler	University Libraries	University Libraries
Dr. Fanglin Chen	ASPIRE-II: Design and Discovery of Novel Electrode Materials for Reversible Solid Oxide Cells	Mechanical Engineering	Engineering & Computing, College of
Dr. John R. Monnier	Design, preparation, and evaluation of improved catalysts for direct hydrochlorination of acetylene to vinyl chloride monomer	Chemical Engineering	Engineering & Computing, College of
Dr. Ronit Elk	A Community-Generated Palliative Care Telemedicine Consult Program for Rural Black Elders: A Feasibility Study	Clinical Pharmacy and Outcomes Sciences	Pharmacy, SC College of
Troy M Herter	Coupling Robotic Assessment with Gaze Tracking to Assess Action Selection Following Stroke - ASPIRE II	Exercise Science	Public Health, Arnold School of

2013: ASPIRE III – Infrastructure

Principal Investigator	Title	Department	College
Charles Bennett	Databases to Strengthen Pharmacovigilance Research and Teaching Efforts for Faculty in Pharmacy, Medicine, and Public Health	Pharmacy - (Dean)	Pharmacy, SC College of
Dr. Beth Allyn Krizek	Acquisition of Instrumentation for Quantitative Biomolecular Imaging	Biological Sciences	Arts and Sciences, College of
Dr. Campbell McInnes, PhD	Mass Directed Automated Preparative Scale HPLC Purification System Resubmission of ASPIRE III proposal from 2/12/2012	Pharmaceutical and Biomedical Sciences	Pharmacy, SC College of

ASPIRE Recipients 2012-2016

Dr. Harry J Ploehn	Ferroelectric Characterization of Materials for Energy Storage, Radiation Detection, and Power Electronics	Chemical Engineering	Engineering & Computing, College of
Dr. John Gerdes, Jr.	3-D Modeling Service Bureau	Integrated Information Technology	Hospitality, Retail & Sport Management, College of
Dr. Mark Garrett Cooper	A Small-Gauge High-Resolution Film Scanner for Moving Image Research Collections	English	Arts and Sciences, College of
Dr. Prasun Kanti Majumdar	In-Situ Thermal Imaging of Manufacturing of Heterogeneous Materials and Their Multi-Physical Response	Mechanical Engineering	Engineering & Computing, College of
Professor Thomas Michael Makris	Acquisition of Applied Photophysics Stopped Flow Spectrometer	Chemistry & Biochemistry	Arts and Sciences, College of
Robert L Price and Jay Potts	Acquisition of a LI-COR Odyssey CLx Infrared Imaging System for the USC Instrumentation Resource Facility	Cell Biology & Anatomy	Medicine, School of

2014 ASIRE Recipients

2014: ASPIRE I – Innovation, Track I

Principal Investigator	Title	Department	College
Nathaniel Bell	Geographic Disparities in Access to Post-acute Health Care Services After Injury	Nursing	College of Nursing
Ryan Carlson	Assessing Relationship Violence Across a Continuum: A Scale Development Project	Department of Educational Studies	College of Education
Saurabh Chatterjee	Epigenetic Signaling of the Transient Receptor Potential Channel (TRPV4) in Environment-linked Nonalcoholic Steatohepatitis	Environmental Health Sciences	Arnold School of Public Health
Hexin Chen	HER2 Increases the Cancer Stem Cell Population Through Regulation of microRNAs	Biological Sciences	College of Arts and Sciences
Scott Decker	A Novel Approach to Improving Identification of Children with Math Learning Disabilities	Psychology	College of Arts and Sciences
April DeLaurier	Understanding the Role of Histone deacetylase-4 (Hdac4) in Zebrafish Craniofacial Development	USC Aiken	USC Aiken
Jan Eberth	Deficiencies and Determinants of Patient Knowledge about Adjuvant Breast Radiation Therapy	Epidemiology & Biostatistics	Arnold School of Public Health
Raja Fayad	Exercise and Adiponectin: Role in Chronic Inflammation-induced Colon Cancer	Exercise Science	Arnold School of Public Health
Kirk Foster	Using Social Media to Assess Social Capital, Neighborhood Attachment and Collective Action: Citizens in Their Own Voices	College of Social Work	College of Social Work
Gregorio Gomez	Allergic Desensitization by Alterations in Adenosine Receptor Expression Following Suboptimal Stimulation of Immunoglobulin E Receptor	Pathology, Microbiology and Immunology	School of Medicine
Jessica J. Green	Individual Differences in Reading and Attention Skills	Psychology	College of Arts and Sciences
Charles Hancock	Developing a Phaseolus acutifolius Mutagenesis Resource for Discovery of Drought-related Genes	USC Aiken	USC Aiken
Aidyn Iachini	Repeating Ninth Grade: Understanding Students' Academic Risk Trajectories & Exploring Early Intervention Program Effectiveness	College of Social Work	College of Social Work

ASPIRE Recipients 2012-2016

Rhonda Johnson	Frequency and Attributions of Discrimination Experiences among Lower- and Middle-income African Americans	Psychology	College of Arts and Sciences
Andrew Kaczynski	Evaluation of an Inter-agency Collaboration to Promote Park Visitation and Physical Activity Among Youth in Greenville County, SC	Health Promotion, Education & Behavior	Arnold School of Public Health
Michele Kelly	Dissecting the Molecular and Anatomical Pathways of Recent Versus Remote Long-term Memory	Pharmacology, Physiology & Neuroscience	School of Medicine
Nicole Kivita	Social and Organizational Mechanisms for Promoting Youth Physical Activity Among Youth with Developmental Disabilities	Psychology	College of Arts and Sciences
Chen Li	Ultrafast and Sensitive Gas Nanosensors Based on Graphene Nanoribbons	Mechanical Engineering	College of Engineering & Computing
Jingjing Liu	STARS: Supporting Task Accomplishment Retrieval Systems	School of Library & Information Sciences	College of Mass Communications & Information Studies
Fabio Matta	Feasibility of Engineering Earth Masonry for Sustainable Seismic-Resistant Dwelling Structures	Civil & Environmental Engineering	College of Engineering & Computing
Elizabeth Murphy	Sex-specific Differences in Obesity-enhanced Colon Cancer	Pathology, Microbiology and Immunology	School of Medicine
Kasia Pawelek	Connecting Within- and Between-hosts Dynamics in the Influenza Infection-staged Epidemiological Models with Behavior Change and Antiviral Therapy	USC Beaufort	USC Beaufort
Samuel Pierce	From the Church to the Street: The CEDA and Catholic Mobilization in the Spanish Republic, 1931-1936	USC Aiken	USC Aiken
Zaina Qureshi	Determining Patterns of Opioid Misuse and Misprescribing in South Carolina	Health Services Policy and Management	Arnold School of Public Health
Cory Robinson	The Involvement of Myeloid-derived Suppressor Cells and Epigenetic Regulation of Interleukin-27 Production in Infant Immunity	Pathology, Microbiology and Immunology	School of Medicine
Ramzi Salloum	Waterpipe Tobacco Smoking Among College Students: Understanding Attitudes and Intentions Using a Discrete Choice Experiment	Health Services Policy and Management	Arnold School of Public Health
Natalia Shustova	Control of Active Layer Morphology in Organic Photovoltaics	Chemistry & Biochemistry	College of Arts and Sciences

ASPIRE Recipients 2012-2016

Gabrielle Turner-McGrievy	Refining and Pilot Testing Social Networks for Encouraging Healthy Behaviors: The Social Pounds Off Digitally (Social POD) Study	Health Promotion, Education & Behavior	Arnold School of Public Health
Paula Vasquez	Mathematical Modeling of Plant Responses to Multiple Stress Signals	Mathematics	College of Arts and Sciences
Hui Wang	Optically Tunable and Catalytically Active Porous Gold Nanoparticles	Chemistry & Biochemistry	College of Arts and Sciences
Ginny Webb	Characterizing the Effect Antiphagocytic Protein 1 has on <i>Cryptococcus neoformans</i> Infection	USC Upstate	USC Upstate
Yanwen Wu	Surface Plasmon-Mediated Coherent Coupling of Spatially Separated Semiconductor Quantum Systems	Physics & Astronomy	College of Arts and Sciences
Peisheng Xu	Self-boosting Nanoparticle for Targeted Breast Cancer Therapy	Pharmaceutical and Biomedical Sciences	SC College of Pharmacy
Bin Zhang	Hierarchical Real-time Fault Contingency Management with Applications to Aircraft Systems	Electrical Engineering	College of Engineering & Computing

2014: ASPIRE I – Innovation, Track II

Principal Investigator	Title	Department	College
Guoqing Qian	Novel PBI Nanocomposite Membranes for Hydrogen Separation and Purification	Chemistry & Biochemistry	College of Arts and Sciences
Edith Williams	Development of a South Carolina Lupus Registry	Epidemiology & Biostatistics	Arnold School of Public Health
Xiaoming Yang	Epigenetic Regulation of Gene Expression by THC in Immune Cells	Pathology, Microbiology and Immunology	School of Medicine

2014: ASPIRE I – Innovation, Track III

Principal Investigator	Title	Department	College
Sue Heiney	Patient Centered Treatment Adherence to Hormonal Therapy	Nursing	College of Nursing

ASPIRE Recipients 2012-2016

Joe Johnson	A Self-Correcting Algorithm and Metrics for Grading Both Short and Complex Responses Using an Internet-based Student Response System for Standard and Distributed Learning	Physics & Astronomy	College of Arts and Sciences
Xiao-Dong Zhou	Solid State Hybrid Electrolyte for Next Generation Lithium Battery Technology	Chemical Engineering	College of Engineering & Computing

2014: ASPIRE I – Innovation, Track IV

Principal Investigator	Title	Department	College
Amit Almor	The Role of Spatial Representations in Establishing, Maintaining and Tracking Linguistic Reference	Psychology	College of Arts and Sciences
Kenn Apel	The Acquisition of Affix Awareness in First through Third Grade Students	Communication Sciences & Disorders	Arnold School of Public Health
Bo Cai	Efficient Model Selection in High-Dimensional Data Analysis	Epidemiology & Biostatistics	Arnold School of Public Health
Catherine Castner	Edition of Latin text of Biondo Flavio's On the Origin and Deeds of the Venetians	Languages, Literatures, and Cultures	College of Arts and Sciences
Daniela Di Cecco	The Personal is Political: Women's Experience in the Writings of Madeleine Bourdouxhe (1906-1996)	Languages, Literatures, and Cultures	College of Arts and Sciences
Don Doyle	Vive Lincoln! The World Responds to the Death of Abraham Lincoln	History	College of Arts and Sciences
Lara Ducate	A Longitudinal Study of Teacher Candidates' Affect, Competencies and Appropriations of Teaching Languages with Technology	Languages, Literatures, and Cultures	College of Arts and Sciences
Jeffry Dudycha	Mutation-Selection Balance in the Evolution of Opsin Expression	Biological Sciences	College of Arts and Sciences
Janet Fisher	Regulation of Ionotropic Glutamate Receptors by Auxiliary Subunits	Pharmacology, Physiology & Neuroscience	School of Medicine
Chin-Tser Huang	Secure Smart Caching for Mobile Cloud Computing	Computer Science & Engineering	College of Engineering & Computing
Kevin Huang	Proof-of-concept Demonstration of a Novel Capture and Conversion All-in-one CO ₂ Reactor	Mechanical Engineering	College of Engineering & Computing

ASPIRE Recipients 2012-2016

Goutam Koley	Synthesis and Characterization of MoS ₂ and MoS ₂ /Graphene Heterojunction	Electrical Engineering	College of Engineering & Computing
Clifford Leaman	Compact Disc Recording of Saxophone and Percussion Music	School of Music	School of Music
Angela Liese	Provider Access, Glycemic Control and Metabolic Health in Youth with Diabetes: Does it Matter Where You Live?	Epidemiology & Biostatistics	Arnold School of Public Health
Krishna Mandal	Silicon Carbide-based X-ray Detectors for High Resolution Digital Mammography	Electrical Engineering	College of Engineering & Computing
Lydia Matesic	Establishing a Novel Mouse Model to Dissect the Autoimmune to Lymphoproliferation to Lymphoma Sequence	Biological Sciences	College of Arts and Sciences
Andrew Myers	Norris Crossman: A Yankee Soldier in the South Carolina Upcountry	USC Upstate	USC Upstate
Georgi Petkov	Human TRPM4 Channel and Overactive Bladder	Pharmaceutical and Biomedical Sciences	SC College of Pharmacy
Alyssa Robillard	Developing a Story-telling HIV Prevention Intervention for African American Women Using A Community-Based Approach	Health Promotion, Education & Behavior	Arnold School of Public Health
David Rocheleau	3D Printing of Tracheobronchial Stents	Mechanical Engineering	College of Engineering & Computing
Patrick Scott	The Collected Writings of Gavin Turnbull (1765-1816): An Open-Access Edition	English	College of Arts and Sciences
Vicki Vance	Validation of Mammalian Tumor Suppressor MicroRNAs Produced in Bioengineered Plants	Biological Sciences	College of Arts and Sciences
Michael Wyatt	Mitochondrial Gene Editing to Study Mitochondrial Diseases	Pharmaceutical and Biomedical Sciences	SC College of Pharmacy

2014: ASPIRE II – Integration

Title	Investigative Team
<p>Structural Genomics of Agricultural Pest <i>Tetranychus urticae</i></p>	<p>Principal Investigator: Maksymilian Chruszcz, Dept. of Chemistry & Biochemistry, College of Arts and Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • John Dawson, Dept. of Chemistry & Biochemistry, College of Arts and Sciences • Gregorio Gomez, Dept. of Pathology, Microbiology and Immunology, School of Medicine • Lukasz Lebioda, Dept. of Chemistry & Biochemistry, College of Arts and Sciences • Michael Anthony Matthews, Dept. of Chemical Engineering, College of Engineering & Computing
<p>Prenatal Nicotine Exposure and the Orexin System: Long-term Vulnerability to Stimulant Drugs</p>	<p>Principal Investigator: Steven Harrod, Dept. of Psychology, College of Arts & Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Jim Fadel, Dept. of Pharmacology, Physiology & Neuroscience, School of Medicine • Jun Zhu, Dept. of Pharmaceutical & Biomedical Sciences, SC College of Pharmacy
<p>Cancer Initiating Cell Mechanotransduction in a Model Hydrogel Culture System</p>	<p>Principal Investigator: Esmail Jabbari, Dept. of Chemical Engineering, College of Engineering & Computing</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Mythreye Karthikeyan, Dept. of Chemistry & Biochemistry, College of Arts & Sciences • Michael Shtutman, Dept. of Pharmaceutical & Biomedical Sciences, SC College of Pharmacy

ASPIRE Recipients 2012-2016

<p>Identifying Patient-specific Risk Factors for Large Vessel Ischemic Stroke Using a Multidisciplinary Approach</p>	<p>Principal Investigator: Susan Lessner, Dept. of Cell Biology & Anatomy, School of Medicine</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Daping Fan, Dept. of Cell Biology & Anatomy, School of Medicine • Tarek Shazly, Dept. of Mechanical Engineering, College of Engineering & Computing • Michael Sutton, Dept. of Mechanical Engineering, College of Engineering & Computing • William Fry, Surgery, School of Medicine • Christopher Carsten, Greenville Hospital System and School of Medicine-Greenville
<p>A Multi-Disciplinary Data Sharing Center Prototype Using A New Numeric-Metadata (NM) Standard for Big Data</p>	<p>Principal Investigator: Joseph Johnson, Dept. of Physics and Astronomy, College of Arts & Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Bill Hogue, Vice President of Information Technology, University Technology Services • Robert Mullen, Dept. of Civil & Environmental Engineering, College of Engineering & Computing • Paul Huray, Electrical Engineering, College of Engineering & Computing • Don Jordan, Mathematics & Center for Science Education, College of Arts & Sciences • Camelia Knapp, Dept. of Earth and Ocean Sciences, College of Arts & Sciences • Tammi Richardson, Dept. of Biological Sciences, College of Arts & Sciences • Dwayne Porter, Dept. of Environmental Health Sciences, Arnold School of Public Health • Phil Moore, Office of Information Technology

ASPIRE Recipients 2012-2016

<p>Risk of Food Allergy Following Antibiotic Exposure in Young Children</p>	<p>Principal Investigator: Bryan Love, Clinical Pharmacy and Outcomes Sciences, SC College of Pharmacy</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Joshua Mann, Family and Preventive Medicine, School of Medicine • James Hardin, Epidemiology and Biostatistics, Arnold School of Public Health • David Amrol, Clinical Medicine, School of Medicine • Christina Cox, Clinical Pharmacy and Outcomes Sciences, School of Medicine • Kevin Lu, Clinical Pharmacy and Outcomes Sciences, School of Medicine
<p>Genomic Analysis of Smooth Cordgrass, <i>Spartina alterniflora</i>, for Enhancing Carbon Sequestration, Biomass Production, and Agronomic Applications</p>	<p>Principal Investigator:James Morris, Baruch Institute, College of Arts & Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Erin Connolly, Dept. of Biological Sciences, College of Arts & Sciences • Camelia Knapp, Dept. of Earth and Ocean Sciences, College of Arts & Sciences • Dr. Jochen Lauterbach, Dept. of Chemical Engineering, College of Engineering & Computing
<p>From Genome to Novel Materials: Developing the Beta Keratin Monomer as a Nanofiber for Fabrication of New Products with New Properties</p>	<p>Principal Investigator: Roger Sawyer, Dept. of Biological Sciences, College of Arts & Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Matthew Greenwold, Dept. of Biological Sciences, College of Arts & Sciences • Bert Ely, Dept. of Biological Sciences, College of Arts & Sciences • Mihaly Czako, Dept. of Biological Sciences, College of Arts & Sciences • Lazslo Martón, Dept. of Biological Sciences, College of Arts & Sciences • Esmail Jabbari, Dept. of Chemical Engineering, College of Engineering & Computing • Qi Wang, Dept. of Mathematics, College of Arts & Sciences

ASPIRE Recipients 2012-2016

<p>Uncertainty Quantification Driven Multi-scale Model Development for Aflatoxin Prediction</p>	<p>Principal Investigator: Gabriel Terejanu, Dept. of Computer Science & Engineering, College of Engineering & Computing</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Sourav Banerjee, Dept. of Mechanical Engineering, College of Engineering & Computing • Anindya Chanda, Dept. of Environmental Health Sciences, Arnold School of Public Health
<p>Single Cell Analysis Technology Based on Nano/Microfluidics and Far Field Nanoscopy for Cancer Research</p>	<p>Principal Investigator: Guiren Wang, Dept. of Mechanical Engineering, College of Engineering & Computing</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Kim Creek, Dept. of Pharmaceutical and Biomedical Sciences, SC College of Pharmacy • Lucia Pirisi-Creek, Dept. of Pathology, Microbiology, and Immunology, School of Medicine • Daping Fan, Dept. of Cell Biology & Anatomy, School of Medicine
<p>Women's Well-Being Initiative's Arts-Based Community Interventions for At-risk Youth</p>	<p>Principal Investigator: Lynn Weber, Dept. of Women's Studies, College of Arts & Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Dana DeHart, College of Social Work • DeAnne Messias, College of Nursing • Olga Ivashkevich, Dept. of Art, College of Arts & Sciences
<p>Promoting Engaged Parents in Special Education (Project PEPSE)</p>	<p>Principal Investigator: Mitchell Yell, Dept. of Educational Studies, College of Education</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Mark Weist, Dept. of Psychology, College of Arts & Sciences • Robert Hock, College of Social Work • Scott Decker, Dept. of Psychology, College of Arts & Sciences • Ryan Carlson, Dept. of Educational Studies, College of Education • Christine Christle, Dept. of Educational Studies, College of Education

2014: ASPIRE III – Infrastructure

Principal Investigator	Title	Department	College
Maksymilian Chruszcz	Access to the 3rd Generation Synchrotron X-ray Source Through SER-CAT at the Advanced Photon Source	Chemistry & Biochemistry	College of Arts and Sciences
Heather Heckman	Hi-Resolution, 35mm Film Scanner to Support Research	University Libraries	University Libraries
Jason O'Kane	A Platform for Basic and Applied Research in Personal Robotics	Computer Science & Engineering	College of Engineering & Computing
Natalia Shustova	Acquisition of Steady State Fluorimeter Equipped with an Integrating Sphere	Chemistry & Biochemistry	College of Arts and Sciences
Laura Swain	The Advancement of Neuroscience Research Involving Interdisciplinary Collaborations to Investigate Cognition and Brain Function Using Electroencephalogram (EEG) at University of South Carolina Aiken	USC Aiken	USC Aiken
Hans-Conrad zur Loye	Purchase of a Bruker D8 Quest Single Crystal Diffractometer for the Multi-User Single Crystal X-ray Diffraction Facility	Chemistry & Biochemistry	College of Arts and Sciences

2015 ASIRE Recipients

2015: ASPIRE I – Innovation, Track I

Principal Investigator	Title	Department	College
Christina Andrews	Assessing the Impact of State Medicaid Policy on Access to Buprenorphine among Adolescents with Opioid Use Disorders in the United States	Social Work	College of Social Work
Sourav Banerjee	Is it Possible to Quantify the Growth of Entropy due to Material Damage?	Mechanical Engineering	College of Engineering and Computing
Jenay Beer	A Robot Teaching Assistant for Rural Minority South Carolina Students	Computer Science and Engineering	College of Engineering and Computing
Nansi Boghossian	Impact of a lifestyle intervention among overweight/obese pregnant women on cardiometabolic biomarkers	Epidemiology & Biostatistics	Arnold School of Public Health
Jeanne Britton	Mapping Scotland: Cartography, Literature, and Environment in the Industrial Age	University Libraries	University Libraries
Anindya Chanda	Purification and Characterization of aflatoxin synthesis inhibitors from <i>Penicillium virginium</i>	Environmental Health Sciences	Arnold School of Public Health
Robin Estrada	Experiences of rural southeastern Latino parents of children with asthma	Nursing	College of Nursing
Daniel Fogerty	Maximizing speech understanding in noise: Temporal processing of partial auditory information	Communication Science and Disorders	Arnold School of Public Health
Norma Frizzell	Understanding the Mechanism of Action of Dimethylfumarate: Identification of Succinated Target Proteins	Pharmacology, Physiology and Neuroscience	School of Medicine
Michael Gavin	R Package for Humanities Text Analysis	English	College of Arts and Sciences
Marco Geraci	MIBO – Multiple Imputation for Bounded Variables Using Flexible Transformation Models	Epidemiology and Biostatistics	Arnold School of Public Health

ASPIRE Recipients 2012-2016

April Hiscox	Characterization of forest fire smoke plume dynamics with an eye-safe scanning lidar	Geography	College of Arts and Sciences
Cassandra Jones	Searching for the Lost Novel: The Parable of the Trickster	USC Upstate	USC Upstate
Andrew Kaczynski	ParkIndex: Development of a Prototype Tool for Advancing Parks and Public Health Research and Practice	Prevention Research Center	Arnold School of Public Health
Courtney Lewis	The Business of Being Cherokee	Anthropology	College of Arts and Sciences
Eric Montie	Using Long Term Acoustic Recorders to Understand Daily and Seasonal Patterns of Spawning in Sciaenids: Baseline Information Necessary to Understand the Impacts of Climate Change	USC Beaufort - Academic Affairs	USC Beaufort
Kelly Lynn Mulvey	Challenging Exclusion: An Experimental Assessment of Children's Resistance to Social Exclusion Based on Language	Education Studies	College of Education
Otis Owens	Evaluation of an Avatar-Led Decision Aid to Promote Informed Decision Making for Prostate Cancer Screening Among African-American Males in Faith-Based Communities	Social Work	College of Social Work
Dmitry Peryshkov	The Role of Boron-Metal Bonds in Cooperative Activation of Small Molecules	Chemistry and Biochemistry	College of Arts and Sciences
Sarah Rothenberg	The Contribution of Gut Microbiota to Prenatal Methylmercury Exposure	Center for Research in Nutrition and Health Disparities	Arnold School of Public Health
Minsub Shim	Development of a novel, versatile mouse model of sporadic colorectal cancer	Biological Sciences	College of Arts and Sciences
Jill Stewart	Deficits in planning reach distance after stroke: motor capacity or learned non-use	Exercise Science	Arnold School of Public Health
Joshua Tarbutton	3D Printing-assisted Piezoelectric Device Manufacturing Technology for Lead-free Sensors, Actuators and Energy Harvesters	Mechanical Engineering	College of Engineering and Computing
Jill Turner (Ortinski)	Behavioral and Genomic Effects of Selective Hippocampal CREB Deletion During Nicotine Withdrawal	Pharmaceutical and Biomedical Sciences	SC College of Pharmacy

ASPIRE Recipients 2012-2016

Zhu Wang	Reduced Order Modeling of Complex Fluid Flows	Interdisciplinary Mathematics Institute	College of Arts and Sciences
Colin Wilder	Libri Legales (Books of Law): A Meta-Archive Connecting Law across Time and Space	University Libraries	University Libraries
Sheryl Wiskur	Exploring the Reactivity of Novel Silicon Lewis Acids	Chemistry and Biochemistry	College of Arts and Sciences

2015: ASPIRE I – Innovation, Track IIA

Principal Investigator	Title	Department	College
Salai Ammal	Multiscale modeling of non-noble metal catalysts for the conversion of lignocellulosic biomass model molecules	Chemical Engineering	College of Engineering and Computing
Xiao Androulakis	A Prospective fMRI Study on Resting-State Brain Activity in Healthy subjects and in Chronic Migraine patients Undergoing Long Term Sphenopalatine Ganglion Blockade	Neurology	School of Medicine
Andrew Binks	Development of an Animal Model of Dyspnea	School of Medicine Greenville	School of Medicine Greenville
Melanie Gall	Feasibility of Automated Hurricane Damage Detection using Object-Based Image Analysis	Geography	College of Arts and Sciences

2015: ASPIRE I – Innovation, Track IIA

Principal Investigator	Title	Department	College
Alexander Chumanevich	Quinacrine: Repurposing for anti-colitis properties	Pharmaceutical and Biomedical Sciences	SC College of Pharmacy

ASPIRE Recipients 2012-2016

Jennifer Flynn	The development of a home-based intervention to promote outdoor time and physical activity among elementary school-age children	Exercise Science	Arnold School of Public Health
Kelly Gibson	Ba/Ca in Planktonic Foraminifera as a Recorder of Freshwater Input to the Ocean: Proxy Refinement in the Gulf of Papua, Papua New Guinea	Earth and Ocean Sciences	College of Arts and Sciences
Laura Hahn	Specification of the Infant Phenotype in Down Syndrome	Psychology	College of Arts and Sciences
Alison Hendricks	Influence of variable input on typical and disordered language acquisition	Communication Sciences and Disorders	Arnold School of Public Health
Seung Joon Lee	Shaping Subcellular Transcriptome through Alternative Splicing	Biological Sciences	College of Arts and Sciences
Hongyu Li	Tracing the Fate of Permafrost Soil Carbon from River to the Coastal Arctic Ocean	Earth and Ocean Sciences	College of Arts and Sciences
Courtney Monroe	Using Technology to Enhance Social Support for Weight Loss	Exercise Science	Arnold School of Public Health
Kathleen O'Connell	The Development of a Novel Diagnostic for Breast Cancer Based on a Synthetic Lectin Array	Chemistry and Biochemistry	College of Arts and Sciences
Allison Randel	Increasing Physical Activity for Youth with Autism Spectrum Disorders (ASD)	Exercise Science	Arnold School of Public Health
Nirav Shah	Identification of miRNA-489 novel targets in HER2 positive breast cancer	Biological Sciences	College of Arts and Sciences
Amanda Sharko	Orexin-A as a modulator of individual differences in PTSD-like behavior	Pharmacology, Physiology and Neuroscience	School of Medicine
Tarkeshwar Singh	The Interaction of Visual Attention and Handedness in Action Selection and Action Specification	Exercise Science	Arnold School of Public Health
Cun Wen	Fundamental Studies into the Role of Surface Crystallographic Faceting on CO ₂ Methanation on Cobalt Catalysts	Chemical Engineering	College of Engineering and Computing

2015: ASPIRE I – Innovation, Track III

Principal Investigator	Title	Department	College
Richard Adams	Ethane to Ethanol: New Bimetallic Catalysts Containing Gold for the Selective Oxidation of Hydrocarbons	Chemistry and Biochemistry	College of Arts and Sciences

2015: ASPIRE I – Innovation, Track IV

Principal Investigator	Title	Department	College
Wayne Carver	Role of myocyte-derived exosomes in regulation of myocardial fibrosis	Cell Biology and Anatomy	School of Medicine
Joanna Casey	Specialized Traders in Tigray, Ethiopia	Anthropology	College of Arts and Sciences
Stephen Criswell	South Carolina Native American Folklife and Oral History Project: Expansion and Implementation	USC Lancaster	USC Lancaster
Andrew Dyer	Adaptive trans-generational plasticity in <i>Cyperus esculentus</i>	USC Aiken	USC Aiken
Hunter Gardner	Transmitting Roman plague in the West	Languages, Literatures and Cultures	College of Arts and Sciences
Andrew Graciano	Art and Electricity: Identifying an Artist and Sitter in an Eighteenth-Century (Dutch) Portrait	Art	College of Arts and Sciences
Xianzheng Huang	Consistent Model Diagnostics and Improved Wrong-Model Inference in GLM(M) Using Error-Prone Data	Statistics	College of Arts and Sciences

ASPIRE Recipients 2012-2016

David Reisman	The mechanism of action of a novel p53-related long non-coding RNA (lncRNA) in myeloid cell differentiation	Biological Sciences	College of Arts and Sciences
Linda Shimizu	Development of Templates for Enantioselective Photooxidations	Chemistry and Biochemistry	College of Arts and Sciences
David Tedeschi	Search for Neutrinoless Double Beta Decay	Physics and Astronomy	College of Arts and Sciences
Shane Thye	Status and the Development of Relational Cohesion	Sociology	College of Arts and Sciences
Katrina Walsemann	Making visible that which is hidden: Examining the health status of undocumented immigrants	Health Promotion, Education and Behavior	Arnold School of Public Health
Cuizhen Wang	Remote Sensing of agricultural water budget with bioenergy land use in the Mississippi River Basin	Geography	College of Arts and Sciences
Xingjian Xue	Novel Concept towards Fabricating Nanostructured Cathodes for Low Temperature Solid Oxide Fuel Cells	Mechanical Engineering	College of Engineering and Computing

2015: ASPIRE II – Integration

Title	Investigative Team
Handheld Art: Arader Collection, McKissick Museum, Florence County Museum of Art, The Halsey Institute for Contemporary Art, & South Carolina State Museum	<p>Principal Investigator: Karen Heid, Department of Art, College of Arts and Sciences</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Lana Burgess, McKissick Museum • Christine Lotter, Instruction and Teacher Education • Elizabeth Suddeth, University Libraries
Establishing Screening Strategies for Prostate Cancer Patients	<p>Principal Investigator: Zaina Qureshi, Health Services Policy and Management, Arnold School of Public Health</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • Lianming Wang, Statistics • James Hebert, Epidemiology and Biostatistics • Sandra Glover, Health Services Policy and Management • Mahmud Khan, Health Services Policy and Management • Bo Cai, Epidemiology and Biostatistics • Charles Bennett, Pharmacy • Robert Palmer, Internal Medicine
The Center for Biomaterials and Cardiovascular Repair	<p>Principal Investigator: Francis Spinale, Cell Biology and Anatomy, School of Medicine</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • John Eberth, Cell Biology and Anatomy • Andrew Greytak, Chemistry and Biochemistry • Tarek Shazly, Mechanical Engineering • Mark Uline, Chemical Engineering
QuitConnect: Developing and Evaluating Inter-disciplinary Smoking Cessation and Smoking Relapse Interventions using an Online Community of Smokers	<p>Principal Investigator: Scott Strayer, Family and Preventive Medicine, School of Medicine</p> <p>Collaborators:</p> <ul style="list-style-type: none"> • James Thrasher, Health Promotion, Education and Behavior • Homayoun Valafar, Computer Science and Engineering

ASPIRE Recipients 2012-2016

Advanced Membranes for Solar-Hydrogen Production in a Hybrid Sulfur Electrolyzer	Principal Investigator: John Weidner, Chemical Engineering, College of Engineering and Computing Collaborators: <ul style="list-style-type: none"> • Harry Ploehn, Chemical Engineering • Brian Benicewicz, Chemistry and Biochemistry
Development of New Hexaferrite Related Multiferroics	Principal Investigator: Hans-Conrad zur Loye, Chemistry and Biochemistry, College of Arts and Sciences Collaborators: <ul style="list-style-type: none"> • Harry Ploehn, Chemical Engineering • MVS Chandrashekhar, Electrical Engineering

2015: ASPIRE III – Infrastructure

Principal Investigator	Title	Department	College
Suzanne Adlof	m_Eye Lab: Mobile Eyetracking Lab for Research with Special Populations	Communication Sciences and Disorders	Arnold School of Public Health
April DeLaurier	Request for funds for a fluorescent confocal laser scanning microscope to advance research activities at USC Aiken	USC Aiken	USC Aiken
Michael Gower	Proposal for an In Vivo Animal Imager	Chemical Engineering	College of Engineering and Computing
Sarah Harmon	Purchase of a CFX96 Touch Real-Time PCR Detection System	USC Aiken	USC Aiken
Boris Kantor	Integrating RNAi-technology in the Viral Vector Core	Pharmacology, Physiology and Neuroscience	School of Medicine

ASPIRE Recipients 2012-2016

Daniel Reger	Acquisition of Two Solid-State NMR Probes	Chemistry and Biochemistry	College of Arts and Sciences
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2016 ASIRE Recipients

2016: ASPIRE I – Innovation, Track I

Principal Investigator	Title	Department	College
Brandt, Lydia	Mid-Century Architecture in America: Outside the Canon	Art	Arts and Sciences, College of
Brian, Ali	Project HOP: Health-enhancing Outcomes and Physical activity for individuals with visual impairments	Physical Education	Education, College of
Cozad, Melanie	Exploring the Use of Implicit and Explicit Methods to Elicit Individual Patient Preferences At Diagnosis to Inform Patient-Centered Care	Health Services Policy and Management	Public Health, Arnold School of
Cummings, Jason	The Black Middle Class Health Paradox and Racial Discrimination	Sociology	Arts and Sciences, College of
D'Antonio, Edward	Development of Biologically-Active Enzyme Inhibitors of the Pentose Phosphate Pathway Against Trypanosomatid Parasites	USC Beaufort - General	USC Beaufort
Davis, Rachel	Using tailored narratives to increase cross-racial empathy and reduce implicit racial bias: A preliminary study toward eliminating racial health disparities	Health Promotion, Education & Behavior	Public Health, Arnold School of
Drenowatz, Clemens	The Effects of Various Exercise Protocols on Energy Expenditure During and Following Exercise	Exercise Science	Public Health, Arnold School of
Eberth, John	Development and Evaluation of an In Vitro Calcium Chloride Mouse Model of Aortic Aneurysm	Cell Biology & Anatomy	Medicine, School of

ASPIRE Recipients 2012-2016

Farouk, Tanvir	IN-SITU MODIFICATION OF LIQUID FUEL PROPERTIES FOR CONTROLLING COMBUSTION PROPERTIES IN PISTON ENGINE CONFIGURATIONS	Mechanical Engineering	Engineering & Computing, College of
Gore, DeAnna	The Motivations and Experiences of Childfree Black Women and Men	USC Aiken	USC Aiken
Harrison, Conor	Power Play: Examining low carbon energy transitions in the Caribbean	Geography	Arts and Sciences, College of
Hattrick-Simpers, Jason	Using In situ Measurements of Atomistic Fluxes and Energetics to Control Texturing in Sputtered Co ₃ O ₄ Thin Films	Chemical Engineering	Engineering & Computing, College of
Henderson-Platt, Andrea	An Exploratory Study of Historical Trauma among African Americans in South Carolina.	Sociology	Arts and Sciences, College of
Hoque, Shamia	Integrated multi physics and statistical model of particle resuspension with application to environmental systems	Civil & Environmental Engineering	Engineering & Computing, College of
Kaczynski, Andrew	eCPAT: Advancement and feasibility testing of public park information and technology resources to support healthy communities	Prevention Research Center	Public Health, Arnold School of
Karami, Amir	Medical Case Reports Analytics (MCRA) in Neurology	Library & Information Sciences, School of	Mass Communications & Information Studies, College of
Li, Zhenlong	Developing a High Performance Query Analytical Platform to Support Large Scale Climate Data Analysis	Geography	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Lizarraga, Sofia	chromatin regulatory mechanisms underlying neuronal circuitry defects in autism spectrum disorders	Biological Sciences	Arts and Sciences, College of
Murphy, Elizabeth	Maternal-Obesity-Induced Transgenerational Colorectal Cancer Risk	Pathology, Microbiology and Immunology	Medicine, School of
Qiao, Shan	Functional wellness among women living with HIV in South Carolina	Health Promotion, Education & Behavior	Public Health, Arnold School of
Ramstad, Kristina	Panmixia, promiscuity, and nest parasitism among wood storks (<i>Mycteria americana</i>)	USC Aiken	USC Aiken
Roth, Benjamin	An alternative to the "iron fist"? Interrupting Central American emigration through violence prevention and community development	Social Work, College of	Social Work, College of
Speiser, Daniel	Neurobiology of a dispersed visual system: How do chitons (Mollusca; Polyplacophora) process the images gathered by their hundreds of eyes?	Biological Sciences	Arts and Sciences, College of
Stolz, Nolan	ASPIRE - Recording of an Original Composition for Orchestra	USC Upstate	USC Upstate
Vannucci, Aaron	Development of a Photocatalytic System for the Renewable Production of Hydrogen Fuel	Chemistry & Biochemistry	Arts and Sciences, College of
Wang, Hui	ASPIRE-I Track I: Plasmonic Hot Electron-Driven Photocatalysis: a Case Study of para-Nitrothiophenol Dimerization	Chemistry & Biochemistry	Arts and Sciences, College of
White, Kellee	Multimorbidity, Depressive Symptoms Trajectories, and Mortality among Middle-Aged and Older US Adults	Epidemiology & Biostatistics	Public Health, Arnold School of

ASPIRE Recipients 2012-2016

Wood, Susan	The anti-inflammatory properties of neuropeptide Y	Pharmacology, Physiology & Neuroscience	Medicine, School of
Ziolkowski, Lori	Are Alaskan supraglacial microbes consuming fossil fuel derived carbon?	Earth and Ocean Sciences	Arts and Sciences, College of

2016: ASPIRE I – Innovation, Track IIA

Principal Investigator	Title	Department	College
Alexeev, Oleg	Fine tuning catalytic properties of supported metal sites on a single atom scale	Chemical Engineering	Engineering & Computing, College of
Banister, Carolyn	Germline Variants Associated with HPV Persistence and Cervical Cancer	Pharmacy - (Dean)	Pharmacy, SC College of
Chatzistamou, Ioulia	Assessment of the anticancer activity of a novel multi-chemokine antibody for breast cancer management.	Pathology, Microbiology and Immunology	Medicine, School of
Elk, Ronit	Culturally Tailored Conversations at EOL: What African American Patients Want Physicians to Know	Nursing	Nursing, College of
Greenfield, Dianne	Using a novel molecular tool to rapidly detect, quantify, and predict harmful algal blooms associated with fish kills and public health concerns	Baruch Institute	Arts and Sciences, College of
Sasmaz, Erdem	Instrumental Design of a High-throughput Gas Chromatography	Chemical Engineering	Engineering & Computing, College of

2016: ASPIRE I – Innovation, Track IIB

Principal Investigator	Title	Department	College
Bringue, Manuel	Calcareous dinoflagellates in the Cariaco Basin (Venezuela) and calibration of the oxygen isotope composition of Thoracosphaera heimii calcite for paleotemperature reconstructions	Earth and Ocean Sciences	Arts and Sciences, College of
Enos, Reilly	The role of PKC-Theta in obesity-induced hepatic insulin resistance	Pathology, Microbiology and Immunology	Medicine, School of
Ghate, Pankaj	Regulation of neuronal morphology and development by RAB11FIP5 through mTOR signalling pathway	Biological Sciences	Arts and Sciences, College of
Harrison, Sayward	First Line of Defense: An Evaluation of the Role of Primary Care in the Prevention of Childhood Obesity in South Carolina	Health Promotion, Education & Behavior	Public Health, Arnold School of
Hogan-Brown, Abigail	Social anxiety in younger siblings of children with autism spectrum disorder	Psychology	Arts and Sciences, College of
hong, jie	Evaluating the efficiency, safety and environmental effects of polymer-coated nano-Fe ₃ O ₄ bioaccumulation in South Carolinian clams	Environmental Health Sciences	Public Health, Arnold School of
Klusek, Jessica	Biomarkers Markers for Cognitive-Linguistic Impairments in Women with the FMR1 Premutation	Psychology	Arts and Sciences, College of
Liu, Shou	IL6 enhances immunogenicity of breast cancer cells via inducing NKG2D Ligand	Biological Sciences	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Londono, Berlin	Human - mosquito complement - like proteins cross talk in Flavivirus responses	Pathology, Microbiology and Immunology	Medicine, School of
Markoutsas, Eleni	Dual targeted nanoparticles for delivering temozolomide across the blood-brain barrier for the treatment of glioma	Drug Discovery and Biomedical Sciences	Pharmacy, SC College of
Ponton, Dominic	Uptake of isotopically-labelled three-layered Ag107@Au@Ag109 nanoparticles by the unicellular green alga Chlamydomonas reinhardtii and subsequent trophic transfer to the freshwater snail Lymnaea stagnalis	Environmental Health Sciences	Public Health, Arnold School of
Shi, Liang	Identifying factors that modulate Cdk5-dependent axonal transport	Biological Sciences	Arts and Sciences, College of
Singh, Priyanka	Defining Inhibin dependent paracrine mechanisms of tumor angiogenesis.	Chemistry & Biochemistry	Arts and Sciences, College of
Vaish, Vivek	Role of Notch ligand, Jagged-2, in colorectal cancer chemoresistance	Biological Sciences	Arts and Sciences, College of
Velazquez, Kandy	The Effects Of Ojeok-San On Neuro-Immune Interactions In Colon Cancer	Pathology, Microbiology and Immunology	Medicine, School of
Zhao, Jia	Modeling and Simulation of Multicellular Systems using Multiphase Complex Fluids Models	Mathematics	Arts and Sciences, College of

2016: ASPIRE I – Innovation, Track III

Principal Investigator	Title	Department	College
Miller, David	Paragon	English	Arts and Sciences, College of
Baxter, Suzanne	Methodological research concerning accuracy of children's dietary recalls	Families in Society, Institute for	Social Work, College of

2016: ASPIRE I – Innovation, Track IV

Principal Investigator	Title	Department	College
Angel, Mike	Blue Light Emitting Diode Optically Encoded Source for Remote Raman Spectroscopy	Chemistry & Biochemistry	Arts and Sciences, College of
Coenen Snyder, Saskia	Aspire I Grant: "Diasporic Gems: Diamonds, Jews, and 19th Century Global Commerce"	History	Arts and Sciences, College of
DeWitte, Sharon	Plague, Famine, and Bedlam: Health and Survival in the Context of Historic Mortality Crises	Anthropology	Arts and Sciences, College of
Garashchuk, Sophya	First-principles simulations of the proton transport through atomically thin hexagonal boron nitrides	Chemistry & Biochemistry	Arts and Sciences, College of
Kelly, Kenneth	Archaeological Perspectives on Plantation Slavery Before and During the Haitian Revolution	Anthropology	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Kiaris, Hippokratis	Analysis of the unfolded protein response in <i>Peromyscus maniculatus</i> populations adapted in high and low altitudes.	Drug Discovery and Biomedical Sciences	Pharmacy, SC College of
Krizek, Beth	Genetic Engineering of <i>Camelina sativa</i>	Biological Sciences	Arts and Sciences, College of
Lavoie, Holly	Validation of cumulus cell biomarkers reflecting oocyte quality and leading to live birth using IVF	Cell Biology & Anatomy	Medicine, School of
Mandal, Krishna	A New PbEuTe Semiconductor Detector for Nuclear Materials Accounting	Electrical Engineering	Engineering & Computing, College of
Matesic, Lydia	Establishing an Intestinal Organoid Culture Model to Examine the Role of the Ubiquitin Ligase ITCH in the Homeostasis of the Intestinal Epithelium	Biological Sciences	Arts and Sciences, College of
Myhrer, Fred	Neutrino interactions with matter	Physics & Astronomy	Arts and Sciences, College of
Outten, Franklin	Characterization of the SufR transcription factor regulating iron cofactor biogenesis in pathogenic <i>Mycobacteria</i>	Chemistry & Biochemistry	Arts and Sciences, College of
Simpson, Brent	How Inequality Shapes Perceptions of Merit and Mobility	Sociology	Arts and Sciences, College of
Snow, Rachel	Kodak Culture: Education, Marketing, and Brand Building for Photography's Global Market (Writing Chapter Two and Researching Chapter Five)	USC Upstate	USC Upstate

ASPIRE Recipients 2012-2016

Spruill, Marjorie	Phase 2: Remembering International Women's Year 1977: An Oral History Preservation Project	History	Arts and Sciences, College of
Wade-Woolley, Lesly	How Children Spell Vowels in Long Words	Communication Sciences & Disorders	Public Health, Arnold School of

2016: ASPIRE II – Integration

Principal Investigator	Title	Department	College
Boyd, Kate Herrick Brown, Biological Sciences Lana Burgess, McKissick Museum Nathan Saunders, University Libraries John Knox, History	Historic Southern Naturalists: Bringing USC's History and Natural History Together Online	University Libraries	University Libraries
Burgin, Watson Ashley Knox, University Libraries Christopher Judge, USC Lancaster	Native American SC Digital Archive	USC Lancaster	USC Lancaster
Hashemi, Parastoo Alyssa Robillard, Health Promotion, Education, and Behavior Rose Booze, Psychology	Unraveling the Fundamental Neurological Mechanisms Underlying Neurodegeneration Induced Depression During HIV	Chemistry & Biochemistry	Arts and Sciences, College of

ASPIRE Recipients 2012-2016

Huang, Chin-Tser Seung Jang, School of Mass Communications and Journalism Jijun Tang, Computer Science and Engineering	Web Archaeology: Uncovering Hidden History on the Internet	Computer Science & Engineering	Engineering & Computing, College of
Huang, Xinyu Susan Richardson, Chemistry and Biochemistry Yeomin Yoon, Civil Engineering	Decentralized Desalination and Water Treatment with Direct Solar Membrane Distillation	Mechanical Engineering	Engineering & Computing, College of
Lavigne, John Susan Steck, Epidemiology and Biostatistics John Rose, Computer Science and Engineering	Synthetic lectin sensor arrays to assess prostate cancer associated glycosylation patterns: towards screening, staging and prognosis	Chemistry & Biochemistry	Arts and Sciences, College of
Patel, Rekha Norma Frizzell, Pharmacology, Physiology, and Neuroscience Jeff Dudycha, Biological Sciences	Influence of mitochondrial ND5 sequence on average lifespan of Daphnia pulex.	Biological Sciences	Arts and Sciences, College of

2016: ASPIRE III – Infrastructure

Principal Investigator	Title	Department	College
Chruszcz, Maksymilian	Access to the 3rd generation synchrotron X-ray source through SER-CAT at the Advanced Photon Source - Renewal	Chemistry & Biochemistry	Arts and Sciences, College of
Potts, Jay	Enhancement of Imaging Capabilities in the USC Instrumentation Resource Facility	Cell Biology & Anatomy	Medicine, School of
Price, Robert	Acquisition of a JEOL Neoscope Scanning Electron Microscope for the USC Instrumentation Resource Facility	Cell Biology & Anatomy	Medicine, School of
Richardson, Susan	Acquisition of Purge-and-Trap-Gas Chromatograph-Triple Quadrupole Mass Spectrometer System	Chemistry & Biochemistry	Arts and Sciences, College of
Viparelli, Enrica	A rotating annular flume to perform interdisciplinary research on transport, erosion and resuspension of fine sediment, natural tracers and contaminants	Civil & Environmental Engineering	Engineering & Computing, College of
Ziolkowski, Lori	Acquisition of Equipment Required for Preparing Compound Specific Radiocarbon Samples	Earth and Ocean Sciences	Arts and Sciences, College of