Social Sciences

1 - Translation, Not Correction: The Value and Benefits of Teaching Young African-American Students to Maneuver Between African American Language and Standardized English
Chelsea Jimenez, USC Columbia, Early Childhood Education – Senior (McNair Scholars Program)
Mentors: Dr. Florencia Cornet, USC Columbia, Opportunity Scholars Program
Dr. Susi Long, USC Columbia, Early Childhood Education and Language and Literacy
Dr. Sharon White, USC Columbia, Ronald E. McNair Program

2 - Effects of Socioeconomic Status and Levels of Acculturation on the Participation Disparities of Hispanic Families in Outdoor Recreational Activities
Pinita Tovar, USC Columbia, Marketing & Finance - Senior (McNair Scholars Program)
Mentor: Dr. Florencia Cornet, USC Columbia, SC, TRIO Programs

Biological and Marine Sciences

3 - Analysis of microplastic accumulation in marine bivalves influenced by PVC coated lobster traps in Frenchman’s Bay, Maine
Laura Snyder, USC Columbia, Marine Science – Junior (Magellan Scholar Program)
Mentors: Mr. Campbell Scott, Winter Harbor, ME, Marine Science
Ms. Victoria Mangus, USC Columbia, Marine Science

4 - Analysis of Bacteriophage that infect Caulobacter crescentus from Rocky Branch Creek
Chris Thomas, USC Columbia, Biochemistry and Molecular Biology - Senior
Mentor: Dr. Bert Ely, USC Columbia, Biological Sciences

Health Sciences

5 - Regulation of food intake and neuronal activation following intranasal leptin administration
Donzelle Benton, USC Columbia, Experimental Psychology – Sophomore (Summer Internship for Undergraduates)
Mentor: Dr. Claudia Grillo, USC School of Medicine Columbia, Pharmacology, Physiology, and Neuroscience

6 - Effect of Intranasal Leptin Administration upon Food Intake and Serotonin Turnover in the Rat Brain
Dylan Vaughan, College of Charleston, Charleston, SC, Biology – Senior (Summer Internship for Undergraduates)
Mentor: Dr. Claudia Grillo, USC School of Medicine Columbia, Pharmacology, Physiology, and Neuroscience

7 - Early Language and Literacy Acquisition in Children with Hearing Loss
Brianna Harris, USC Columbia, Public Health – Senior (SMART Program)
Brianna Childs, USC Columbia, Public Health – Senior (SMART Program)
Mentor: Dr. Krystal Werfel, USC Columbia, Communication Sciences and Disorders

8 - Automatic Separation of Vowels in Aphasic and Apraxic Speakers
Angelica Hutchinson, USC Columbia, Biology/Psychology – Recent Graduate
Dr. Dirk den Ouden, USC Columbia, Communication Sciences and Disorders
9 - Developing a mobile website application to promote breastfeeding among pregnant African American women
McKenzie Isreal, USC Columbia, Public Health – Junior (SMART Program)
Mentor: Dr. Tisha Felder, USC Columbia, Nursing

10 - Preliminary Findings from a Pilot Study Assessing the Narrative Characteristics of an HIV Prevention Story
Morgan Leggette, College of Charleston, Charleston, SC, Public Health - Senior
Chelsea Perry, University of South Carolina, Columbia, Public Health – Senior (Magellan Scholar Program)
Mentor: Dr. Alyssa Robillard, USC Columbia, Public Health

11 - Differences in Trends of Discrimination Among Older Adults
Cedasia McQueen, USC Columbia, Public Health, Recent Graduate
Mentor: Dr. Kellee White, USC Columbia, Epidemiology & Biostatistics

12 - Examining the relationship between self-efficacy for healthy diets and fruit and vegetable intake from the NEW Soul study
Mikayla Nelson, USC Columbia, Public Health - Senior
Mentor: Dr. Gabrielle Turner-McGrievy, USC Columbia, Health Promotion, Education and Behavior

Engineering
13 - Monolithic Cu_2ZnSnS_4 (CZTS) thin-film heterojunction solar cell arrays fabricated by a low-cost spray pyrolysis route
Sterling Reese, USC Columbia, Electrical Engineering – Senior (SMART Program)
Mentors: Dr. Krishna C. Mandal, USC Columbia, SC, Electrical Engineering
Mr. Towhid A. Chowdhury, USC Columbia, SC, Electrical Engineering

14 - Comparison of Synthesis Methods for Pt-Ru Catalysts in Direct Methanol Fuel Cells (DMFC)
John Weiss, USC Columbia, Chemical Engineering - Sophomore (Science Undergraduate Research Fellowships)
Mentor: Dr. John Weidner, USC Columbia, Chemical Engineering

Research Experiences for Undergraduates: Applied Computational Robotics
15 - Path Planning for Autonomous Survey Boats in Rivers
Adam Braude, University of Puget Sound, Tacoma, WA, Computer Science - Junior
Mentor: Dr. Ioannis Rekleitis, USC Columbia, Computer Science and Engineering

16 - Assessing the Viability of Mobile Routers
Lacie Covington, Northeastern Technical College, Cheraw, SC, Computer Programming – Sophomore
Mentors: Dr. Srihari Nelakuditi, USC Columbia, Computer Science and Engineering
Dr. Jason O’Kane, USC Columbia, Computer Science and Engineering

17 - Three-Dimensional Underwater Navigation for the AQUA Robot
Chris DeGuira, Georgia College and State University, Milledgeville, GA, Computer Science – Senior
Mentor: Dr. Jason O’Kane, USC Columbia, Computer Science and Engineering

18 - Guaranteed Coverage with a Blind Unreliable Robot
Daniel Feshbach, Haverford College, Haverford, PA, Computer Science - Junior
Mentors: Dr. Jason O’Kane, USC Columbia, Computer Science and Engineering
Mr. Jeremy Lewis, USC Columbia, Computer Science and Engineering
19 - Parallelized RRTs for Dubins Vehicles
**Austin Gray**, New College of Florida, Sarasota, FL, Computer Science - Senior
Mentor: Dr. Jason O’Kane, USC Columbia, SC, Computer Science and Engineering

20 - Comparison of Open Sourced Visual-Inertial State Estimation Algorithms
**Alan Hernandez**, MiraCosta College, Oceanside, CA, Computer Science – Sophomore
Mentor: Dr. Ioannis Rekleitis, USC Columbia, SC, Computer Science and Engineering

21 - Mapping of River Using Velodyne LiDAR Sensor
**Keleigh Romine**, Winthrop University, Rock Hill, SC, Computer Science - Senior
Mentors: Dr. Ioannis Rekleitis, USC Columbia, Computer Science and Engineering
Dr. Alberto Quattrini Li, USC Columbia, Computer Science and Engineering
Ms. Sharmin Rahman, USC Columbia, Computer Science and Engineering

22 - Order-flipping for efficient repair of multi-robot coordination plans
**Amanda Seasholtz**, Valdosta State University, Valdosta, GA, Computer Science – Junior
Mentor: Dr. Jason O’Kane, USC Columbia, Computer Science

23 - Testing of the Software Functionality of Robots
**Anna Swanier**, Claflin University, Orangeburg, SC, Computer Science - Junior
Mentors: Dr. Jason O’Kane, USC Columbia, Computer Science
Dr. Gregory Gay, USC Columbia, Computer Science

24 - Deep Learning for Pose Estimation for Cooperative Underwater Robotics
**Oscar Youngquist**, Rose-Hulman Institute of Technology, Terre Haute, IN, Computer Science and Computational Science - Junior
Mentors: Dr. Ioannis Rekleitis, USC Columbia, Computer Science and Engineering
Mr. Md Modasshir, USC Columbia, Computer Science and Engineering

**Research Experiences for Undergraduates: Chemical Engineering**
25 - Investigation of CuMn$_2$O$_4$ Performance in Chemical Looping with Oxygen Uncoupling (CLOU)
**Dave Chun**, The Cooper Union for the Advancement of Science and Art, New York, NY, Chemical Engineering - Senior
Mentors: Dr. Bihter Padak, USC Columbia, Chemical Engineering
Ms. Turna Barua, USC Columbia, Chemical Engineering

26 - Effect of SO$_2$ poisoning on NiCe@SiO$_2$ yolk-shell nanotube catalyst during Tri- reforming of methane with simulated flue gas
**Orlando Mendible**, Universidad de Puerto Rico Mayagüez, Chemical engineering - Junior
Mentors: Dr. Erdem Sasmaz, USC Columbia, Chemical engineering
Dr. Bihter Padak, USC Columbia, Chemical Engineering

27 - Investigating the Evolution of Modeling Parameters As NMC/Graphite Li-Ion Batteries Age
**Seth Reed**, Syracuse University, Syracuse, NY, Chemical Engineering - Sophomore
Mentors: Dr. Bill Mustain, USC Columbia, Chemical Engineering
Mr. Benjamin Ng, USC Columbia, Chemical Engineering

28 - Hydrogenation of 2-methyl-3-buten-2-ol over Pd/CaCO$_3$ catalyst to investigate the mass transfer within a homebuilt batch reactor
**Gerardo Rivera-Castro**, University of Puerto Rico, Mayagüez, PR, Chemical Engineering - Senior
Mentor: Dr. Jochen Lauterbach, USC Columbia, Chemical Engineering
29 - Size-controlled Synthesis of Pt on Different Oxides and Carbon
**Nicole Shannon**, North Greenville University, Tigerville, SC, Mathematics- Senior
Mentors: Dr. John Monnier, USC Columbia, Chemical Engineering
Dr. John Weidner, USC Columbia, Chemical Engineering
Dr. Aili Wang, USC Columbia, Chemical Engineering

30 - Surface phase diagram of bimetallic catalyst Pt/Sn using constrained ab initio Thermodynamics
**Celine Tesvara**, Penn State University, University Park, PA, Chemical Engineering - Senior
Mentor: Dr. Andreas Heyden, USC Columbia, Chemical Engineering

**South Carolina Advancing Diversity in Aging Research Program**
31 - Communicative Function in Aphasia
**Chandler Bright**, Claflin University, Orangeburg, SC, Biology - Senior
Mentors: Dr. Julius Fridriksson, USC Columbia, Communication Sciences and Disorders
Dr. Alexandra Basilakos, USC Columbia, Communication Sciences and Disorders

32 - Exploring the Role of Nuclear Lamin A in the Regulation of Stress Response Using a Cell Culture Model of Aging
**Jasmine Carter**, Claflin University Orangeburg, SC, Biology - Junior
Mentors: Dr. Rekha Patel, USC Columbia, Department of Biological Sciences
Ms. Benedich Ukhueduan, USC Columbia, Department of Biological Sciences

33 - The Effect of Resveratrol on the Expression of Genes in Epithelial Cells of Mice of EAE
**Zhane Chandler**, Claflin University Orangeburg, SC, Biology - Junior
Dr. Narendra Singh, USC School of Medicine Columbia, Pathology, Microbiology and Immunology

34 - Barriers to Lung Cancer Screening: Insights from Primary Care Physicians and Nurse Practitioners
**Shantavia Edmonds**, Claflin University, Orangeburg, SC, Biochemistry – Junior
Mentors: Dr. Karen McDonnell, USC Columbia, Nursing
Mr. David Gallerani, USC Columbia, Nursing

35 - Effect of Resveratrol on microRNAs regulation in gut epithelial cells of mice with Experimental Autoimmune encephalomyelitis (EAE)
**Nneora Ezeanya**, Allen University, Columbia, SC, Biology - Senior
Mentor: Dr. Narendra Singh, USC School of Medicine Columbia, Pathology, Microbiology, and Immunology

36 - The Influence of Amyloid-β Protein on Cellular P-glycoprotein Expression
**Ishawn Francis**, Claflin University, Orangeburg, SC, Biology - Senior
Mentors: Dr. Melissa Moss, USC Columbia, Biomedical Engineering
Mrs. Hope Holt, USC Columbia, Biomedical Engineering

37 - Developing a Visual Model of User Interface Components for Assistive Technology for Older Adults
**Hana Hailu**, Benedict College, Columbia, SC, Computer Engineering - Senior
Dr. Neset Hikmet, USC Columbia, Integrated Information Technology

38 - Procedures of hospitalized dementia patients in South Carolina
**Thaddeus Holiday**, Claflin University, Orangeburg, SC, Biochemistry - Junior
Dr. Neset Hikmet, USC Columbia, Integrated Information Technology
39 - Effects of Aging on DNMT1 Expression in Daphnia pulex and Daphnia pulicaria
Syeda Madiha, Claflin University, Orangeburg, SC, Biology - Senior
Dr. Jeff Dudycha, USC Columbia, Biological Sciences
Mr. Trenton Agrelius, USC Columbia, Biological Sciences

40 - Health Status of Older Hispanic Populations in the United States
Monai Mitchell, Claflin University, Orangeburg, SC, Biology and Psychology - Junior
Mentor: Dr. Myriam Torres, USC Columbia, Epidemiology and Biostatistics

41 - Chronic Traumatic Encephalopathy: A Perspective from the South Carolina Alzheimer's Disease and Related Dementias Registry
Kiariah Muller, Claflin University, Orangeburg, SC, Biology - Junior
Mentor: Dr. Maggi C. Miller, USC Columbia, Epidemiology and Biostatistics

42 - Analysis of Patient Reported Outcomes and Prediction of Effectiveness of Surgery by Use of Machine Learning
Rajendra Neupane, Benedict College, Columbia, SC, Biological Sciences - Senior
Mentors: Dr. Benjamin Schooley, USC Columbia, Integrated Information Technology
Dr. Neset Hikmet, USC Columbia, Integrated Information Technology

43 - An assessment of Elderly People with Dementia: South Carolina's Case
Terika Williams, Claflin University, Orangeburg, SC, Biology - Junior
Mentors: Dr. Neset Hikmet, USC Columbia, Integrated Information Technology
Dr. Benjamin Schooley, USC Columbia, Health Information Technology

South Carolina Alliance for Minority Participation

44 - External Compression Test of Composite Nuclear Fuel Rods
Omari Adams, USC Columbia, Mechanical Engineering - Sophomore

45 - DNA Repair and Cancer Chemotherapy
Victory Agho, USC Columbia, Biological Sciences - Senior
Mentor: Dr. Michael Wyatt, USC Columbia, Drug Discovery and Biomedical Sciences

46 - Analyses of the ASB bacteria strain and Phage PSAA and bioinformatics of the CB2 gene
Angel Brown, USC Columbia, Biochemistry and Molecular Biology - Sophomore
Mentor: Dr. Bert Ely, USC Columbia, Biological Sciences

47 - Investigating Interactions Between Human Tumor Cells and Associated Bacteria
Jared (JD) Dawson, USC Columbia, Exercise Science - Sophomore
Mentors: Dr. Traci Testerman, USC School of Medicine Columbia, Pathology, Microbiology and Immunology
Ms. Yvonne Hui, USC School of Medicine Columbia, Pathology, Microbiology and Immunology

48 - Application of Computational Geometry to Automatic Assistance for Art and Architecture
Nathaniel Egot, Midlands Technical College, Columbia, SC, Computer Engineering - Junior
Mentor: Dr. Francisco Blanco-Silva, USC Columbia, Mathematics

49 - Impact of Doxorubicin on fertility in mouse ovaries
Gbemisola Feko, USC Columbia, Biological Sciences - Senior
Mentor: Dr. Shuo Xiao, USC Columbia, Environmental Health Sciences
50 - Refining the chronostratigraphy of a deep-sea sediment core in the Antarctic Southern Ocean using Sr isotope stratigraphy
**Jose Guzman-Cruz**, USC Columbia, Geological Sciences - Sophomore
Mentor: Dr. Howie Scher, USC Columbia, School of the Earth, Ocean, and Environment

51 - Corannulene-Integrated Covalent-Organic Frameworks (COFs)
**Rebecca Heugh**, USC Columbia, Chemistry - Senior
Mentor: Dr. Natalia Shustova, USC Columbia, Chemistry and Biochemistry

52 - Assistive Technologies for College Students with Disabilities: A Survey of Availability, Awareness, and Barriers
**Kristin Jackson**, USC Columbia, Integrated Information Technology - Senior
Mentor: Dr. Ismahan Arslan-Ari, USC Columbia, Educational Studies

53 - Asymmetric Trifluoromethylation
**Mia Jeanty**, USC Columbia, Chemistry - Senior
Mentor: Dr. Sheryl Wiskur, USC Columbia, Chemistry and Biochemistry

54 - Experimental Investigation of Defects in Automated Fiber Placement
**Kenneth Legette**, USC Columbia, Mechanical Engineering - Senior
Mentors: Dr. Ramy Harik, USC Columbia, Mechanical Engineering
Mr. Roudy Wehbe, USC Columbia, Mechanical Engineering

55 - Effects of Pramlintide on Breast Cancer Cell Proliferation and Signaling
**Briana Lewis**, USC Columbia, Exercise Science – Junior
Mentors: Dr. Hexin Chen, USC Columbia, Biological Sciences
Mr. Mithil Soni, USC Columbia, Biological Sciences

56 - Dynamic structure calculation of proteins using RDC data and machine learning
**Caleb Parks**, USC Columbia, Computer Science - Senior
Mentor: Dr. Homayoun Valafar, USC Columbia, Computer Science and Engineering, Biomedical Engineering

57 - ALGE3D: Input files for a three- dimensional transport model
**Sydney Sanders**, USC Columbia, Civil Engineering - Senior
Mentor: Dr. Enrica Viparelli, USC Columbia, Civil and Environmental Engineering