



# Office of Undergraduate Research

UNIVERSITY OF SOUTH CAROLINA

## 2024 Summer Research Symposium

Thursday, July 25, 10:30am – noon and 1:00 – 2:30 pm

Hollings Program Room at the Thomas Cooper Library

*Sponsored by the Office of Undergraduate Research*

---

### MORNING SESSION 10:30 am – noon

#### CeRCaS START Program

1 - Effect of Plasma Post-Treatment on Catalytic Activity of Ruthenium Immobilized on AlCeO<sub>3</sub> toward Ammonia Decomposition

**John Koch**, USC Columbia; Chemical Engineering – Junior

**Alexus Corbin**, Midlands Technical College; Chemical Engineering - Junior

*Mentor: Dr. Majid Ghoreishian, USC Columbia - Chemical Engineering*

2 - Development of a Redox Synthesis Method for a Copper-Iron Bimetallic Catalyst

**Korey Martinez**, USC Columbia; Chemical Engineering – Sophomore

*Mentor: Dr. John Tengco, USC Columbia - Chemical Engineering*

3 - Influence of Vacuum Drying on Metal Dispersion of Platinum Alumina Catalysts

**Katherine McGoldrick**, USC Columbia; Chemical Engineering – Junior

**Daniel McClure**, Midlands Technical College; Chemical Engineering – Junior

*Mentor: Dr. Christopher Williams, USC Columbia - Chemical Engineering*

*Dr. John Regalbuto, USC Columbia - Chemical Engineering*

4 - Effects of Fluidized Drying on the Metal Nanoparticle Distribution of Platinum Alumina Catalysts

**Christine Thornton**, USC Columbia; Chemical Engineering – Junior

**Nakiyah Ellerbe**, Midlands Technical College; Chemical Engineering – Junior

*Mentor: Dr. Christopher Williams, USC Columbia - Chemical Engineering*

*Dr. John Regalbuto, USC Columbia - Chemical Engineering*

5 - Construction and Testing of a Gas Phase Flow Reactor for Catalytic Hydrogenation Studies

**Tyler Thoroughman**, USC Columbia; Chemical Engineering – Sophomore

**Elizabeth Foster**, Midlands Technical College Beltline; Chemical Engineering – Junior

*Mentor: Dr. Christopher Williams, USC Columbia - Chemical Engineering*

*Dr. John Regalbuto, USC Columbia - Chemical Engineering*

6 - Synthesis of Pt-Cu Catalysts to Maximize the Reactivity and Stability During Electrochemical Processes

**Alexander Flaum**, USC Columbia; Chemical Engineering – Junior

**Kamariya Burke**, Midlands Technical College; Chemical Engineering – Sophomore

*Mentor: Dr. Zhengmeng Peng, USC Columbia - Chemical Engineering*

*Ms. Yanlin Zhu, USC Columbia - Chemical Engineering*

## McNair Junior Fellows

7 - Assistive AI Chatbot for Children with ASD

**Wyatt Bellamy**, USC Columbia; Integrated Information Technology – Senior

*Mentor: Dr. Dezhi Wu, USC Columbia - Integrated Information Technology*

8 - Railroad study of Triaxial Testing

**Nana Boateng**, USC Columbia; Civil Engineering - Senior

*Mentor: Dr. Qian Yu, USC Columbia - Civil engineering*

9 - Development of Zirconium-binding microparticles for use in small animal PET imaging

**Ethan Renken**, USC Columbia; Biomedical Engineering – Junior

*Mentor: Dr. Michael Gower, USC Columbia - Chemical Engineering*

*Mr. Kido Atube, USC Columbia - Chemical Engineering*

10 - Recursive Lattice Generation

**Abdorrhman Abdelwahed**, USC Columbia; Computer Science – Sophomore

*Mentor: Dr. Andrew Gross, USC Columbia - Mechanical Engineering*

11 - Developing a Vaping Cessation Chatbot Using OpenAI's Assistant and Compliant ChatGPT

**Lucas Aust**, USC Columbia; Computer Information Systems – Senior

*Mentor: Dr. Dezhi Wu, USC Columbia - Integrated Information Technology*

12 - Design of Acoustic Metamaterial Inspired by Chiral Liquid Crystal Skyrmions

**Zane Basrawala**, USC Columbia; Biomedical Engineering – Junior

*Mentor: Dr. Monirosadat (Sanaz) Sadati, USC Columbia - Chemical Engineering*

*Mr. Jeremy Money, USC Columbia - Chemical Engineering*

13 - An In-Situ Sensor Node for Spatial and Temporal Monitoring of Water Quality

**Matthew Burnett**, USC Columbia; Aerospace Engineering – Senior

*Mentor: Dr. Austin Downey, USC Columbia - Mechanical Engineering*

14 - Generating Contrastive Explanations for Puzzles Solved With Automated Planning Using Planning Ontology and NLP

**Nitin Gupta**, USC Columbia; Computer Science – Senior

*Mentor: Dr. Biplav Srivastava, USC Columbia - Computer Science and Engineering*

*Mr. Bharath Muppasani, USC Columbia - Computer Science and Engineering*

15 - Pathfinding Using Weight Finite Automata

**Ryan Karbowniczak**, USC Columbia; Computer Engineering – Senior

*Mentor: Dr. Rasha Karakchi, USC Columbia - College of Engineering and Computing*

16 - The Impact of Localized Retinoic Acid Drug Delivery on Markers of Protein Synthesis in Muscle Recovering From Atrophy

**Kelsey Krusen**, USC Columbia; Biomedical Engineering - Senior

*Mentor: Dr. Michael Gower, USC Columbia - Chemical Engineering*

*Ms. Candice Cheung, USC Columbia - Biomedical Engineering*

17 - Unmanned Aircraft Systems for Water Sampling

**Quinn Labrozzi**, USC Columbia; Mechanical Engineering – Sophomore

*Mentor: Dr. Nikos Vitzilaios, USC Columbia - Mechanical Engineering*

18 - GelMA Synthesis Using Novel AMPD Buffer for Improved Reaction Control

**Sidh Lad**, USC Columbia; Biomedical Engineering – Sophomore

**Benjamin Beall**, USC Columbia; Chemical Engineering – Junior

*Mentor: Dr. Nader Taheri Qazvini, USC Columbia - Chemical Engineering*

19 - Machine Learning for physics-literate generation of fluid flow over a particle droplet using Convolutional Neural Networks (CNN)

**Christopher Lee**, USC Columbia; Mechanical Engineering- Senior

*Mentor: Dr. Stanley Ling, USC Columbia - Mechanical Engineering*

20 - Using Optical Fibers to Measure Strain in Thermoplastic Composite Parts

**Reese Massett**, USC Columbia; Aerospace Engineering – Senior

*Mentor: Dr. Darun Barazanchy, USC Columbia - McNAIR Center*

21 - SPECIES: Smart Penetrometer with Edge Computing and Embedded Systems

**Sydney Morris**, USC Columbia; Mechanical Engineering – Senior

*Mentor: Dr. Austin Downey, USC Columbia – Mechanical Engineering*

22 - Efficient Quantum Circuit Synthesis with DeepXube

**Brice Odom**, USC Columbia; Computer Science, Mathematics – Sophomore

*Mentor: Dr. Forest Agostinelli, USC Columbia - Artificial Intelligence Institute of USC*

23 - The Effect of a Buffer Layer on the Thermoelectric Properties of Perovskite Thin Films

**Ben Richardson**, USC Columbia; Mechanical Engineering – Senior

*Mentor: Dr. Dongkyu Lee, USC Columbia - Mechanical Engineering*

*Mr. Mohammed El Loubani, USC Columbia - Mechanical Engineering*

24 - Finite Element Analysis of USC Walking Bridges

**Samuel Roberts**, USC Columbia; Aerospace Engineering - Junior

*Mentor: Dr. Austin Downey, USC Columbia - Mechanical Engineering*

25 - Engineering Solid Polymer Electrolytes for Structural Batteries with Enhanced Mechanical and Electrochemical Performances

**Gabriela Roman-Martinez**, USC Columbia; Chemical Engineering – Junior

**Kyra Glassey**, University of Arizona; Chemical Engineering – Senior

*Mentor: Dr. Monirosadat Sadati, USC Columbia - Chemical Engineering*

26 - UAVision: Real-Time Drone Detector and Tracker Using a Camera Vision System

**Tyler Russo**, USC Columbia; Mechanical Engineering – Senior

*Mentor: Dr. Nikos Vitzilaios, USC Columbia - Mechanical Engineering*

27 - An Immersed Boundary Method to Simulate Fluid Structure Interaction and Particle Laden Flow

**Spencer Schwartz**, USC Columbia; Mechanical Engineering – Senior

*Mentor: Dr. Stanley Ling, USC Columbia - Mechanical Engineering*

28 - Signal Processing Instrument for NMR Characterization of Hydrocarbons

**David Wamai**, USC Columbia; Computer Science - Senior

*Mentor: Dr. Austin Downey, USC Columbia; Mechanical Engineering*

29 - Hardware Development for Laser-based in Situ Monitoring of Metal Additive Manufacturing

**Matthew Whetham**, USC Columbia; Mechanical Engineering - Senior

*Mentor: Dr. Austin Downey, USC Columbia, Mechanical Engineering*

30 - Camera-Assisted UAV Sensor Package Deployment System

**Qi (Mark) Zheng**, USC Columbia; Mechanical Engineering and Biological Sciences - Junior

*Mentor: Dr. Austin Downey, USC Columbia; Mechanical Engineering*

31 - Quantifying Collective Cell Migration Dynamics in Normal and Cancer Cell Monolayers Using Time-Lapse Image Analysis

**Jarred Funderburk**, USC Columbia; Chemical Engineering - Senior

*Mentor: Dr. Nader Taheri Qazvini, USC Columbia; Chemical Engineering / Biomedical Engineering*

## NSF REU: CO<sub>2</sub> Chemical Engineering Opportunities and Challenges

32 - Modeling Anhydrous Polybenzimidazole-Based CO<sub>2</sub>/CO Electrolysis Using Computational Fluid Dynamics

**Mia Alvarez**, Columbia University, New York City, NY; Chemical Engineering - Junior

*Mentors: Dr. Sirivatch Shimpalee, USC Columbia, Chemical Engineering*

*Dr. Benjamin Meekins, USC Columbia, Chemical Engineering*

*Dr. Kris Likit-anurak, USC Columbia, Chemical Engineering*

33 - Optimization of the synthesis process and exploration of CO<sub>2</sub> desorption methods for waste wood derived biochar

**Patton Courie**, Purdue University, West Lafayette, IN; Aerospace Engineering - Sophomore

*Mentors: Dr. Jochen Lauterbach, USC Columbia, Chemical Engineering*

*Ms. Sarah Stofik, USC Columbia, Chemical Engineering*

34 - Synthesizing Platinum Nanoparticles on Microporous Materials

**Elizabeth Crawshaw**, University of South Florida, Tampa, FL; Chemical Engineering - Junior

*Mentors: Dr. John Regalbuto, USC Columbia, Chemical Engineering*

*Mr. Roozbeh Seifollahy, USC Columbia, Chemical Engineering*

*Mr. Nathan Thornburg, USC Columbia, Chemical Engineering*

*Ms. Alaba Ojo, USC Columbia, Chemical Engineering*

35 - Engineering Solid Polymer Electrolytes for Structural Batteries with Enhanced Mechanical and Electrochemical Performances

**Kyra Glassey**, University of Arizona, Tucson, AZ; Chemical Engineering - Senior

**Gabriela Roman-Martinez**, USC Columbia; Chemical Engineering – Junior (McNair Junior Fellows)

*Mentors: Dr. Monirosadat Sadati, USC Columbia, Chemical Engineering*

36 - The Design of Bimetallic Alloys for Hydrodeoxygenation of Propanoic Acid Under Reaction Conditions

**Alexandra Hauk**, Ramapo College, Mahwah, NJ; Chemistry - Senior

*Mentors: Dr. Andreas Heyden, USC Columbia, Chemical Engineering*

*Dr. Wenqiang Yang, USC Columbia, Chemical Engineering*

37 - Investigation of Cathode Processing and Electrolyte Chemistry for LiFePO<sub>4</sub> Batteries

**Lillian Johnson**, Ithaca College, Ithaca, NY; Chemistry - Senior

*Mentors: Dr. Golareh Jalivand, USC Columbia, Chemical Engineering*

38 - Development of a Novel Experimental Technique for Measuring Equilibrium Adsorption Isotherms Under Dynamic Conditions

**Joseph Kuklewski**, Hope College, Holland, MI; Chemical Engineering; Chemistry - Senior

*Mentors: Dr. Armin Ebner, USC Columbia, Chemical Engineering*

*Dr. Jim Ritter, USC Columbia, Chemical Engineering*

39 - Anhydrous Polybenzimidazole-based Electrolysis of CO<sub>2</sub>/CO to Hydrocarbons

**Tierney McCarroll**, Mount St. Mary's University, Emmitsburg, MD; Chemical Engineering - Junior

*Mentors: Dr. Sirivatch Shimpalee, University of South Carolina, Chemical Engineering*

*Dr. Kris Likit-anurak, University of South Carolina, Chemical Engineering*

40 - Comparative Isotherm and Kinetics study of Kr, Xe, N<sub>2</sub> and Ar on a Zeolitic based Proprietary Material

**Prumon Nagasara**, Mahidol University, Nakhon Pathom, Thailand; Chemical Engineering – Senior

*Mentor: Dr. Armin Ebner, USC Columbia - Chemical Engineering*

*Dr. James Ritter, USC Columbia - Chemical Engineering*

41 - Using Physics Based Models to Predict the Conductivity of Solid Polymer Electrolytes

**David Pinegar**, University of Arizona; Chemical Engineering and Applied Mathematics - Senior

*Mentor: Dr. Ralph E. White, USC Columbia - Chemical Engineering*

*Dr. Paul Coman, USC Columbia - Chemical Engineering*

42 - Design of new catalysts for the generation of clean H<sub>2</sub> from liquid organic hydrogen carriers: dehydrogenation of methylcyclohexane on bimetallic catalysts

**Ahava Salomon**, University of Arizona; Chemical Engineering - Junior

*Mentor: Dr. John Tengco, USC Columbia - Chemical Engineering*

*Dr. Saqib Patwary, USC Columbia - Chemical Engineering*

43 - Synthesis and Behavior of Single-Atom Catalysts for Electrochemical CO<sub>2</sub> Reduction

**Noah Sandberg**, Colorado School of Mines; Chemical Engineering - Junior

*Mentor: Dr. William Mustain, USC Columbia - Chemical Engineering*

### **Biological Sciences**

44 - Do great white sharks hold a key to novel antibiotics? An investigational study into the potential for white shark bacteria to serve as novel sources for new antibiotics

**Matthew Holt**, USC Beaufort; Biological Sciences - Senior

*Mentor: Dr. Kim Ritchie, USC Beaufort, Natural Sciences*

### **Engineering**

45 - Preparation of Catalysts Involving Single Atom and Low Nuclearity Clusters of Platinum and Palladium Supported on Nickel Nanoparticles Using Galvanic Displacement

**Jordan Ynga**, USC Columbia; Chemical Engineering – Senior

*Mentor: Dr. Yanjiao Yi, USC Columbia – Chemical Engineering*

46 - Effect of the Acid Dopant Concentration on the Physical and Chemical Properties of Polybenzimidazole (PBI) Membranes

**Ainsley Reed**, USC Columbia; Chemical Engineering – Sophomore

*Mentor: Dr. Sirivatch Shimpalee, USC Columbia - Chemical Engineering*

*Dr. Benjamin Meekins, USC Columbia - Chemical Engineering*

47 - Bioelectrochemical Effects of Iodine on Bacteria Isolated from the Environment

**Dominique Smith**, USC Columbia; Chemical Engineering – Junior

*Mentor: Dr. Sirivatch Shimpalee, USC Columbia - Engineering and Computing*

48 - High-Frequency Electrochemical Impedance Spectroscopy of Cylindrical Lithium-ion Cells: Experimental Heuristics and a Coupled Magneto-Electrochemical Model

**Matthew King**, USC Columbia; Chemical Engineering & Mathematics – Senior

*Mentor: Dr. Ralph White, USC Columbia - Chemical Engineering*

*Dr. Paul Coman, USC Columbia - Chemical Engineering*

---

## AFTERNOON SESSION 1:00 – 2:30 pm

### SC Advancing Diversity in Aging Research

1 - Is the PY of PSMF1 necessary for its interaction with WW Domain Containing Protein 1 (WWP1)?

**Jasmaine Donovan**, South Carolina State University, Orangeburg, SC; Biology - Senior

*Mentor: Dr. Lydia Matesic, USC Columbia, Biological Sciences*

2 - Antibiotic Resistance of Commensal Bacteria

**Michael Austin**, Claflin University, Orangeburg, SC; Biology - Senior

*Mentor: Dr. Melissa Ellerman, USC Columbia, Biological Sciences*

3 - How Sucrose Diet affects Oogenesis in Aging Drosophila

**Inderah Hendricks**, Claflin University, Orangeburg, SC; Biochemistry - Junior

*Mentor: Dr. Alissa Armstrong, USC Columbia, Biological Sciences*

4 – Investigating Pituitary Stem Cells in the Aging Process of Peromyscus Maniculatus and Mus Musculus

**Ziya Middleton**, Claflin University, Orangeburg, SC; Biology - Senior

*Mentor: Dr. Shannon Davis, USC Columbia, Biological Sciences*

5 - Who Can Access Your Data? Patient Data Protection

**Caleb Ryland**, Claflin University, Orangeburg, SC; Computer Science - Senior

*Mentor: Dr. Csilla Farkas, USC Columbia, Computer Science and Engineering*

6 - Deployment of Machine Learning and Edge AI Systems

**Danali Simmons**, Claflin University, Orangeburg, SC; Computer Engineering - Senior

*Mentors: Dr. Ramtin Mohammadizand, USC Columbia, Computer Science and Engineering*

*Ms. Mahsa Majdzadeh Ardakani, USC Columbia*

7 - Hand Gesture Data Collection from Smartwatch and Event-based Cameras

**Karrington Stanley**, Claflin University, Orangeburg, SC; Computer Engineering - Junior

*Mentor: Dr. Ramtin Mohammadizand, USC Columbia, Computer Science and Engineering*

8 – Discovering Whether SC Voters get Reliable Answers to their Election-Related Questions

**Zora Stephens**, Claflin University, Orangeburg, SC; Computer Engineering - Sophomore

*Mentors: Dr. Biplav Srivastava, USC Columbia, Computer Science and Engineering*

*Mr. Kausik Lakkaraju, USC Columbia, Computer Science and Engineering*

9 - Evaluating AI-Based Meal Recommendations for Health Conditions in Demographic Groups

**Shamaria Stroman**, Claflin University, Orangeburg SC; Computer Science – Senior

*Mentors: Dr. Biplav Srivastava, USC Columbia, Computer Science and Engineering*

*Siva Likitha Valluru, USC Columbia, Computer Science and Engineering*

10 - Assessment of Cytotoxic Activity of a Peptide Drug Conjugate

**Maya Taylor**, MUSC College of Pharmacy; Pharmacy - Sophomore

*Mentors: Dr. Hippokratis Kiaris, USC-Columbia; Drug Discovery and Biomedical Sciences*

*Mr. Bernardo Chavis, USC-Columbia; Drug Discovery and Biomedical Sciences*

11 – Acute Soluble A $\beta$  Oligomer Exposure Leads to Mitochondrial Respiratory Changes in Mesenteric Resistance Arteries from C57bl/6J Mice

**Shelton Watkins**, North Carolina A&T State University; Biology- Junior

*Mentor: Dr. Camilla Wenceslau, USC School of Medicine Columbia- Cardiovascular Translational Research Center*

12 - The Analysis of Bone Marrow in Ing4- Mice  
**Spencer Yates**, USC-Columbia; Biological Sciences - Junior  
*Mentor: Dr. Katie Kathrein, USC-Columbia, SC, Biological Sciences*

### **TRIO McNair Scholars Program**

13 - Exploring the Innovation of AI Technology within the Music Industry  
**Derry Auguste**, Morris College; Mass Communication - Junior  
*Mentor: Dr. Vareva Evans-Harris, Benedict College, English*

14 - Securing Remote Employment for College Students  
**Princess Barrett**, Morris College; Business Administration - Senior  
*Mentor: Dr. Vareva Evans-Harris, Benedict College, English*

15 - Household routines influences on academic success in higher education  
**Zhaae' Chandler**, USC-Columbia; Human resources - Junior  
*Mentor: Dr. Vareva Evans-Harris, Benedict College, English*

16 - K-12 Teachers in the United States and their Experiences Dealing with Burnout  
**Marie Chantal**, USC-Upstate; Child Development and Family Studies (major) Child Advocacy Studies (minor) - Senior  
*Mentor: Dr. Jamil Johnson, USC Columbia- Leadership, Learning Design, and Inquiry*

17 - Birthing Black: The Impact of Perceived Discrimination on the Birthing Experiences of Black Women  
**Ebony Christie**, USC-Columbia; Public Health- Senior  
*Mentor: Dr. Daniel Cooper, USC Columbia- Psychology*

18 - Social Media's Influence on Older Adolescent and Young Adult Nutritional and Dietary Health Behavior  
**Anajae Curry**, USC- Columbia; Public Health- Junior  
*Mentor: Dr. Florencia Cornet, USC Columbia- English*

19 - The Role of Community-Based Health Education Programs in Health Literacy Outcomes and Enhancing Preventive Care in Rural Areas  
**Parth Dave**, USC-Columbia; Biological Sciences- Sophomore  
*Mentor: Dr. Jamil Khan, USC Columbia- Mechanical Engineering*  
*Dr. Tegia Coleman-Rochester, USC Columbia- TRIO Programs/ TRIO Ronald E. McNair Program*

20 - A Qualitative Study Exploring the Student Experiences of Latino Male Students at a Flagship Predominantly White Institution  
**Julio Domingo**, USC-Columbia; Political Science & African American Studies- Senior  
*Mentor: Dr. Jamil Johnson, USC Columbia- Leadership, Learning Design, and Inquiry*

21 - Human Trafficking: An Analysis of the Policies to prevent (being sold) in the United States  
**Arianna Floyd**, Morris College; Criminal Justice- Junior  
*Mentor: Dr. Jamil Khan, USC Columbia- Mechanical Engineering*

22 - Obstetric Racism & the High Rates of Negative Maternal Health Outcomes in Black Women  
**Savanna Fumbi**, USC-Beaufort, Psychology- Junior  
*Mentor: Dr. Daniel Cooper, USC Columbia- Psychology*

23 - Biracial Individuals and the Development of Identity

**Sean Gary**, USC-Columbia; Psychology- Senior

*Mentor: Dr. Vareva Evans-Harris, Benedict College- English*

24 - Sickle Cell Anemia in African Americans: The Psychological Perspective on the Individual and Their Family

**Allanah June**, Claflin University; Biology- Junior

*Mentor: Dr. Jamil Khan, USC Columbia- Mechanical Engineering*

25 - Parents' Perspective on Autism and Its Effect on Their Child's Social Life

**Elijah Lane**, USC- Columbia; Psychology- Junior

*Mentor: Dr. Daniel Cooper, USC Columbia- Psychology*

26 - Dual Realities: Former Teenage Mothers Experiences

**Soriya Littlejohn**, South Carolina State University; Child Development- Senior

*Mentor: Dr. Jamil Johnson, USC Columbia- Leadership, Learning Design, and Inquiry*

27 - Ideologies that Influence Terrorism in the Middle East

**Jada Madden-Jefferson**, USC- Upstate; Political Science- Senior

*Mentor: Dr. Florencia Cornet, USC Columbia- English*

28 - Interventions and resources: addressing depression among African Americans in higher education

**Jada Mobley**, USC- Upstate; Psychology- Junior

*Mentor: Dr. Jamil Johnson, USC Columbia- Leadership, Learning Design, and Inquiry*

29 - Miracle Leaf: Can It Replace Prescription Medication?

**Saima Nicolas**, South Carolina State University; Nutrition- Senior

*Mentor: Dr. Jamil Khan, USC Columbia- Mechanical Engineering*

30 - Examining Disparities in food access

**Ahmad Parker**, Voorhees University; Business Administration- Junior

*Mentor: Dr. Florencia Cornet, USC Columbia- English*

31 - Skin Deep: Examining Colorism & Racism and its Role in the Development of Self-Esteem and Identity of Black Women Attending Predominantly White Institutions

**Monique Rice**, USC Columbia; Criminology & Criminal Justice- Senior

*Mentor: Dr. Daniel Cooper, USC Columbia- Psychology*

32 - How does experiencing "urban adversities" impact the mental health of Black college students?

**Destiny Smith**, USC Aiken; Psychology- Senior

*Mentor: Dr. Florencia Cornet, USC Columbia- English*

## Health Sciences

33 - Hospital and Physician Characteristics Related to Rural and Racial Disparities in Maternal Outcomes

**Carter Collins**, USC Columbia; Biological Sciences – Senior

*Mentor: Dr. Cassie Odahowski, USC Columbia - Rural and Minority Health Research Center*

34 - Physiological Responses to Endless Rope High Intensity Interval Training

**Hannah Eberhardt**, USC Upstate; Exercise Science – Senior

*Mentor: Dr. Patrick Saracino, USC Upstate - Human Performance and Health*

35 - Physiological Responses to EndlessRope High Intensity Interval Training in Males and Females

**Cecilia Salas**, USC Upstate; Exercise and Sport Science – Senior

*Mentor: Dr. Patrick Saracino, USC Upstate - Exercise Science*

36 - Exploring the Fractal Dimension of the Brain: Correlations with Cognition

**Pranesh Rajesh Kannan**, USC Columbia; Neuroscience – Freshman

*Mentor: Dr. Roger Newman-Norlund, USC Columbia – Communication Sciences and Disorders*

37 - Nutritional Influences on Brain Health: Analyzing Dietary Fiber and Calorie Density in Relation to Prefrontal Cortex Decay

**Raghav Pallapothu**, River Bluff High School; Senior

*Mentor: Dr. Roger Newman-Norlund, USC Columbia – Communication Sciences and Disorders*

## **Morris College Research Internship Program**

38 - The Interaction of Bacteria and Phages in the Rhizosphere

**Jirbre Brown**, Morris College; Biology – Senior

*Mentor: Dr. Bert Ely, USC Columbia – Microbiology*

39 - STI Infrastructure and Emerging Concerns in South Carolina

**Emily Washington**, Morris College; Biology – Senior

*Mentor: Dr. Melissa Nolan, USC Columbia - Arnold School of Public Health*

## **Biological Sciences**

40 – DNA damage induced modifications of P53 and their effect on P53 binding to DNA

**Lelah Blizzard**, USC Columbia; Biological Sciences – Senior

*Mentors: Dr. David Reisman, USC Columbia, Biological Sciences*

*Ms. Savannah Keating, USC COLUMBIA, Biological Sciences*

41 - Modeling the Role of Ing4 in Hematopoietic Stem Cell Dynamics: A Computational and Experimental Approach

**Katerina Krstanovic**, USC Columbia; Biomedical Engineering – Senior

*Mentor: Dr. Katie Kathrein, USC Columbia - Biological Sciences*

*Dr. Paula Vasquez, USC Columbia - Mathematics*