2025 SUMMER *Research* SYMPOSIUM

Office of Undergraduate Research
UNIVERSITY OF SOUTH CAROLINA

Thursday, July 31, 2025 10:00 – 11:15 and 1:00 – 2:15
Hollings Program Room at the Thomas Cooper Library
Sponsored by the Office of Undergraduate Research
and the Office of the Vice President for Research

Morning Session 10:00 – 11:15

McNair Junior Fellows

1 *Controllable Impact Device for Tagged MRI 3D Acquisition*
Peace Aina, University of South Carolina, Columbia, SC Biomedical Engineering Senior
Dr. Ahmed Alshareef, University of South Carolina, Columbia, SC Biomedical Engineering

2 *Rank Reduction of LSTM Models for Online Vibration Signal Compensation on Edge Computing Devices*
Joshua McGuire, University of South Carolina, Columbia, SC Computer Engineering, Senior
Dr. Jason Bakos, University of South Carolina, Columbia, SC Computer Science and Engineering
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering

3 *Semi-Permanent Automated Water Quality Pump for Real-Time Monitoring*
Josh Hager, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering
Dr. Jasim Imran, University of South Carolina, Columbia, SC Civil and Environmental Engineering

4 *Assessment of UAV-deployed Epoxy-bonded Vibration Sensors on Concrete Structures*
Amanda Sark, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering
Mr. Jasim Imran, University of South Carolina, Columbia, SC Civil Engineering

5 *Real-Time Thermal Image Topological-Data Analysis for Quality Control and Defect Detection in Laser Powder Bed Fusion Additive Manufacturing*
Thienan Hoang, University of South Carolina, Columbia, SC Mechanical Engineering, Junior
Dr. Austin Downey, University Of South Carolina, Columbia, SC Mechanical Engineering

6 *Stereo Vision UAV Tracking for Autonomous Structural Health Monitoring Sensor Deployment*
Qi (Mark) Zheng, University of South Carolina, Columbia, SC Mechanical Engineering & Biological Sciences, Senior
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering

7 *Ground Camera Networks for UAV Distance Calculation and Point-Cloud Rendering*
Nolan Shute, University of South Carolina, Columbia, SC Mechanical Engineering, Sophomore
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering

8 *Encapsulating SEC Sensors in Flexible Silicone Wings*
Patrick Wynne, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Austin Downey, University of South Carolina, Columbia, SC Mechanical Engineering

9 *Effect of Fabrication Parameters on Morphology and Yield of Polymer Particles for Drug Delivery.*
Victoria Iacabucci, University of South Carolina, Columbia, SC Chemical Engineering, Senior
Dr. Michael Gower, University of South Carolina, Columbia, SC Biomedical Engineering

10 *The Impact of Solvent on Nanoparticle Morphology and Charge for Mucosal Drug Delivery Applications*
Margaret Davisson, University of South Carolina, Columbia, SC Biomedical Engineering & Theatre, Junior
Dr. Robert Gower, University of South Carolina, Columbia, SC Biomedical Engineering
Mr. Nicholas Colonna, University of South Carolina, Columbia, SC Biomedical Engineering

11 *Hierarchical Honeycomb*
Isaac Garman, University of South Carolina, Columbia, SC Mechanical Engineering, Junior
Dr. Andrew Gross, University of South Carolina, Columbia, SC Mechanical Engineering

12 *Machine Learning-Based Detection of Simulated Malware in FPGA Bitstreams*
Rye Stahle-Smith, University of South Carolina, Columbia, SC Computer Engineering, Senior
Dr. Rasha Elham Karakchi, University of South Carolina, Columbia, SC Computer Science and Engineering

13 *Compact Neurosymbolic AI for On-Chip Trojan Detection in Edge Controllers*
Darssan Eswaramoorthi, University of South Carolina, Columbia, SC Computer Engineering, Senior
Dr. Rasha Elham Karakchi, University of South Carolina, Columbia, SC Computer Science and Engineering

14 *Optimization of Symbolic Accelerators Through Intelligent Graph Simplification*
Tiffany Yu, University of South Carolina, Columbia, SC Computer Engineering, Junior
Dr. Rasha Karakchi, Univerity of South Carolina, Columbia SC Computer Science and Engineering

15 *Developing Efficient Water-Soluble Sacrificial Layers for Transferable Oxide Films in Flexible Electronics*
Avari Suber, University of South Carolina, Columbia, SC Mechanical Engineering, Junior
Dr. Dongkyu Lee, University of South Carolina, Columbia, SC Mechanical Engineering

16 *Enhancing the Efficiency of Thermoelectric Devices Using Exsolved Metal Nanoparticles in Oxide Thin Films*
Caden Kincaid, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Dongkyu Lee, University of South Carolina, Columbia,SC Mechanical Engineering
Mr. Ebenezer Seesi, University of South Carolina, Columbia, SC Mechanical Engineering
Mr. Mohammad El Loubani, University of South Carolina, Columbia, SC Mechanical Engineering

17 *Condition Assessment of Structural Materials using Non-Destructive Examination and Machine Learning*
Alex Ervin, University of South Carolina, Columbia, SC Computer Information Systems, Junior
Sam Kolowith, University of South Carolina, Columbia, SC Mechanical Engineering, Junior
Dr. Ai Li, University of South Carolina, Columbia, SC Civil Engineering

18 *A Detailed Numerical Investigation of Flow Blurring Atomization*
Ethan Smith, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Yue Ling, University of South Carolina, Columbia, SC Mechanical Engineering

19 *Investigating the fitness of cell culture assays for signifying amyloid-β neurotoxicity*
Dorothy Miller, University of South Carolina, Columbia, SC Biomedical Engineering & Neuroscience, Senior
Dr. Melissa Moss, University of South Carolina, Columbia, SC Biomedical Engineering
Mr. Michael Kaven, University of South Carolina, Columbia, SC Biomedical Engineeirng

20 *Error Assessment of Inverse Methods for Determining Material Properties Using Simulated Images*
Evan Wey, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Subramani Sockalingam, University of South Carolina, Columbia, SC Mechanical Engineering

21 *Characterization of Composite Delamination under High Strain Rate Loading*
Madhan Vital, University of South Carolina, Columbia, SC Aerospace Engineering, Junior
Dr. Subramani Sockalingam, University of South Carolina, Columbia, SC Mechanical Engineering

22 *A Physics-Informed Machine Learning Approach for Predicting Aviation Fuel Properties*
Matthew Burnett, University of South Carolina, Columbia, SC Aerospace Engineering, Senior
Dr. Sang Hee Won, University of South Carolina, Columbia SC Mechanical Engineering

23 *Analyzing Flame Extinction in Counterflow Diffusion Flames Using Transport-Weighted Enthalpy to Support Combustion Model Validation*
Nick Wattenbarger, University of South Carolina, Columbia, SC Mechanical Engineering, Senior
Dr. Sang Hee Won, University of South Carolina, Columbia, SC Mechanical Engineering

24 *Designing a Resource-based Maternal Health Chatbot Utilizing Adaptive Nudging*
Ian Fonzo, University of South Carolina, Columbia, SC Integrated Information Technology, Senior
Dr. Dezhi Wu, University of South Carolina, Columbia, SC Integrated Information Technology

25 *Towards a Data Driven Mechanism for Automated Error Correction for Fused Filament Fabrication (FFF)*
Lewis Davies, University of South Carolina, Columbia, SC Mechanical Engineering, Senior
Dr. Thorsten Wuest, University of South Carolina, Columbia, SC Mechanical Engineering
Mr. Austin Harper, University of South Carolina, Columbia, SC Mechanical Engineering

26 *Full-Scale Testing of Geogrid-Stabilized Railway Ballast Under Progressive Rainfall Condition*
Nana Boateng, University of South Carolina, Columbia, SC Civil Engineering, Senior
Dr. Qian Yu, University of South Carolina, Columbia, SC Civil Engineering

27 *Addressing Secure Authentication Challenges in Embedded Systems*
Nishant Chinnasami, University of South Carolina, Columbia, SC Computer Information System, Junior
Dr. Rasha Karakchi, University of South Carolina, Columbia, SC Computer Science and Engineering

28 *Exploring the Correlation Between Porosity and Surface Roughness in AA6061 Via Laser Powder Bed Fusion*
Edison Lin, University of South Carolina, Columbia, SC Mechanical Engineering, Junior
Prof. Lang Yuan, University of South Carolina, Columbia, SC Mechanical Engineering
Mr. Can Sun, University of South Carolina, Columbia, SC Mechanical Engineering
Mr. Sivaji Karna, University of South Carolina, Columbia, SC Mechanical Engineering

29 *Topology-Driven Optimization of Internal Wing Structures via Additive Manufacturing*
Darius Dash, University of South Carolina, Columbia, SC Mechanical Engineering ,Sophomore
Prof. Lang Yuan, University of South Carolina, Columbia, SC Mechanical Engineering

30 *Conductive MXene-Polyelectrolyte Fibrous Scaffolds for Neural Regeneration*
Paul Ward Pratz, University of South Carolina, Columbia, SC Biomedical Engineering, Junior
Dr. Nader Taheri-Qazvini, University of South Carolina, Columbia, SC Biomedical Engineering

31 *Vascular Smooth Muscle O-GlcNAc transferase (OGT) is sensitive to biomechanical stress*
Delaney Johnson, University of South Carolina, Columbia, SC Biomedical Engineering, Senior
Dr. Cameron McCarthy, University of South Carolina, Columbia, SC Cell Biology and Anatomy

32 *Optimized Gelatin Methacrylate Synthesis via Advanced pH Control for Superior Crosslinking Efficiency*
Benjamin Beall, University of South Carolina, Columbia, SC Chemical Engineering, Senior
Dr. Nader Taheri-Qazvini, University of South Carolina, Columbia, SC Chemical Engineering/ Biomedical Engineering

Computer Engineering

33 *OralSLAM: Visual Inertial SLAM for 3D Mapping of the Oral Cavity Using a Smart Toothbrush*
Tsbih Salman, University of South Carolina, Columbia, SC Computer Engineering, Senior
Hammam Salman, University of South Carolina, Columbia, SC Computer Engineering, Junior
Dr. Sanjib Sur, University of South Carolina, Columbia, SC Computer Science and Engineering

Chemical Engineering

34 *Preparation and Application of Catalyst Inks for Catalyst-Coated Polybenzimidazole Membranes*
Saryu Rath, University of South Carolina, Columbia, SC Chemical Engineering, Senior
Dr. Benjamin Meekins, University of South Carolina, Columbia, SC Chemical Engineering
Dr. Sirivatch Shimpalee, University of South Carolina, Columbia, SC Chemical Engineering

35 *Effects of Dopant Acid Concentration and Doping Time on Polybenzimidazole Membranes*
Samantha Costantino, University of South Carolina, Columbia, SC Chemical Engineering, Junior
Dr. Ben Meekins, University of South Carolina, Columbia, SC Chemical Engineering
Dr. Ishwor Karki, University of South Carolina, Columbia, SC Chemical Engineering
Dr. Sirivatch Shimpalee, University of South Carolina, Columbia, SC Chemical Engineering

REU: Design of Nanomaterials for 21st Century Energy

36 *Designing Platinum Nanoparticles as Catalysts for the Recycling of Polyolefins*
John Hopkins, University of Georgia, Athen GA Chemistry, Senior
Dr. Andreas Heyden, The University of South Carolina, Columbia, SC Chemical Engineering
Mr. Olajide Bamidele, The University of South Carolina, Columbia, SC Chemical Engineering

37 *Electrochemical Characterization of Cellulose-Based Separators for Secondary Lithium Metal Batteries*
Anelisse M. Torres Santiago, University of Puerto Rico, Mayagüez, PR Chemical Engineering, Junior
Dr. Golareh Jalilvand, University of South Carolina, Columbia, SC Chemical Engineering
Mr. Hunter McRay, University of South Carolina, Columbia, SC Chemical Engineering

38 *Amine Functionalized Biochar Modification to Improve Carbon Capture*
William Slater, Wake Forest University, Winston-Salem, NC Engineering, Junior
Dr. Jochen Lauterbach, University of South Carolina, Columbia, SC Chemical Engineering
Mr. Patrick Holcombe, University of South Carolina, Columbia, SC Chemical Engineering

39 *Synthesis and Electrochemical Evaluation of One-Dimensional NiMo-based Catalysts for the Hydrogen Evolution Reaction*
Nathaniel Baird, NC State University, Raleigh, NC Chemical Engineering, Junior
Prof. William Mustain, University of South Carolina, Columbia, SC Chemical Engineering
Dr. Sriram Mosali, University of South Carolina, Columbia, SC Chemical Engineering

40 *Catalytic Upcycling of High-Density Polyethylene Using Nonthermal Hydrogen Plasma*
Sofia Romero, Cornell University, Ithaca, NY Chemical Engineering, Sophomore
Prof. Zhenmeng Peng, University of South Carolina, Columbia, SC Chemical Engineering
Mr. Parsa Pishva, University of South Carolina, Columbia, SC Chemical Engineering

41 *Yttria/Alumina Mixed Metal Oxide Support for a Ruthenium-Based Ammonia Decomposition Catalyst*
Elias Wendt, University of South Carolina, Columbia, SC Chemical Engineering, Senior
Dr. Rahat Qazi, University of South Carolina, Columbia, SC SAGE
Dr. Jochen Lauterbach, University of South Carolina, Columbia, SC Chemical Engineering

42 *Simulation of Heat Pumps (still a work in progress)*
Charlie Gamble, University of South Carolina, Columbia, SC Chemical Engineering, Junior
Dr. Jim Ritter, University of South Carolina, Columbia, SC Chemical Engineering

43 Liquid Crystal-Templated Strategies for Controlled Catalytic Material Synthesis
Judith Shaver, University of North Carolina, Chapel Hill, NC Biomedical Engineering, Junior
Dr. Monirosadat (Sanaz) Sadati, University of South Carolina, Columbia, SC Chemical Engineering

44 *Optimization of Pyrolytic Bio-oil Upgrading Using Zeolite Catalysts*
Colby Braden, University of Alabama, Tuscaloosa, AL Chemical Engineering, Sophomore
Dr. Jochen Lauterbach, University of South Carolina, Columbia, SC Chemical Engineering
Mr. Samuel Drummond, University of South Carolina, Columbia, SC Chemical Engineering

45 *Linguistic Analysis of Credibility Assessment Interviews Through Generative Artificial Intelligence Models and Natural Language Toolkit*
Michelle Ihetu, University of South Carolina, Columbia, SC Biomedical Engineering, Senior, McNair Junior Fellow
Dr. Nicholas Boltin, University of South Carolina, Columbia, SC Biomedical Engineering & Integrated Information Technology

46 *Chiral Nematic Self-Assembly of Cellulose Nanocrystals for Optically Responsive Materials*
Maeve Lembke, University of South Carolina, Columbia, SC Chemistry- Junior
Dr Monirosadat (Sanaz) Sadati, University of South Carolina, Columbia, SC Chemical Engineering

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Afternoon Session 1:00 – 2:15

TRIO McNair Scholars

1 The Importance of Understanding the Etiopathophysiology and Timely Diagnosis of Hypovolemic and Distributive Shock
Ansley Woodson, University of South Carolina Upstate, Spartanburg, SC Biology- Sophomore
Dr. Meeta Banerjee, University of South Carolina, Columbia, SC Psychology

2 *Feeding Equity: The Intersection of Race, Food Security, and Mental Health in Higher Education*
Isha Patel, University of South Carolina, Columbia, SC Biological Sciences- Senior
Dr. Meeta Banerjee, University of South Carolina, Columbia, SC Psychology

3 *Maintaining Wellbeing: The Relationship Between Stress, Coping, and Health Behavior*
Sonali Tucker, University of South Carolina, Columbia, SC Psychology- Senior
Dr. Meeta Banerjee, University of South Carolina, Columbia, SC Department of Psychology

4 *Dopamine vs. Deadlines: The Influence of Social Media on Attention-Deficit Hyperactivity Disorder among College Students*
Aryana Hughey, University of South Carolina, Columbia, SC Psychology- Junior
Dr. Daniel Cooper, University of South Carolina, Columbia,SC Psychology

5 *Mental and Physical Health: How both can impact performance and the healing process within football*
Raquel Carranza Garcia, University of South Carolina, Columbia, SC Exercise Science- Junior
Dr. Daniel Cooper, University of South Carolina, Columbia, SC Psychology

6 *Polycystic Ovarian Syndrome: Class, Culture, and Care of Latinas*
Daniela Lopez, University of South Carolina Beaufort, Bluffton, SC Biology- Junior
Dr. Florencia Cornet, University of South Carolina, Columbia, SC TRIO McNair Program

7 *The Role of Artificial Intelligence in Teaching Financial Literacy*
Terryn Patterson-Bryant, South Carolina State University, Orangeburg, SC Accounting- Senior
Dr. Florencia Cornet, University of South Carolina, Columbia, SC TRIO McNair Program

8 *The Impact of a First-Generation College Student's Understanding of Financial Literacy*
Marquisha Johnson, University of South Carolina, Columbia, SC Finance- Senior
Dr. Jamil Johnson, University of South Carolina, Columbia, SC Leadership, Learning Design, and Inquiry College of Education

9 *A Home Away From Home: The Latino Predominantly White Institution (PWI) Experience*
Lisette Argueta, University of South Carolina, Columbia, SC Public Health- Senior
Dr. Jamil Johnson, University of South Carolina, Columbia, SC Educational Leadership and Policies

10 *"More Than a Game" How Sports Shape and Shake the Dreams of Black Youth*
Darren Jean-Francois, Voorhees University, Denmark, SC Business Major- Senior
Dr. Jamil Johnson, University of South Carolina, Columbia, SC Leadership, Learning Design, and Inquiry College of Education

11 *Songs That Heal: The Effectiveness of a Music Therapy Approach for Treating Depressive Symptoms in Low-SES Adolescent Populations*.
Collin Taylor, University of South Carolina, Columbia, SC Psychology & Philosophy- Senior
Dr. Jamil Johnson, University of South Carolina, Columbia, SC Leadership, Learning Design, and Inquiry

12 *Autonomous Navigation Efficiency of a Low-Cost Embedded Rover*
Jo'Marion Ford-Campbell, University of South Carolina, Columbia, SC Computer Engineering- Senior
Dr. Jamil Khan, University of South Carolina, Columbia, SC College of Engineering and Computing

13 *Introducing the Rabies Vaccine at a Young Age to Increase Survival Rate*
Jennifer Gonzalez, University of South Carolina Aiken, Aiken, SC Clinical Lab Science- Senior
Dr. Jamil Khan, University of South Carolina, Columbia, SC TRIO Ronald E. McNair Scholar Program

14 *Gender and Racial Socialization of Black-White Biracial Americans*
Aaron McLeod, University of South Carolina, Columbia, SC Sociology- Sophomore
Dr. Florencia Cornet, University of South Carolina, Columbia, SC English/African-American Studies/ Latin-American Studies/ TRIO

REU: Biological and Chemical Contaminants in Aquatic Ecosystems

15 *Elemental Stoichiometry of Sinking Particles in the Santa Barbara Basin over the Past 16 Years*
Nina Coli, University of South Carolina, Columbia, SC Environmental Science- Senior
Dr. Claudia Benitez-Nelson, University of South Carolina, Columbia, SC School of Earth, Ocean and Environment

16 *The Synergistic Effects of Emerging Contaminants on Freshwater Phytoplankton Biomass*
Grace Margulies, University of South Carolina, Columbia, SC Biological Sciences- Junior
Dr. Jay Pinckney, University of South Carolina, Columbia, SC Biological Sciences and Marine Sciences
Ms. Cat Schlenker, University of South Carolina, Columbia, SC Biological sciences
Dr. Tammi Richardson, University of South Carolina, Columbia, SC Biological Sciences and Marine Sciences

17 *Cyanobacterial Dynamics and Phytoplankton Community Structures at Lake Murray (2021-2025)*
Gavin Madgett, University of South Carolina, Columbia, SC Marine Science- Senior
Dr. Jay Pinckney, University of South Carolina, Columbia, SC School of the Earth, Ocean, and Environment

18 *Quantifying and Characterizing Microplastics in Winyah Bay and North Inlet Estuaries, SC*
Emily Contract, University of South Carolina, Columbia, SC Marine Science- Senior
Dr. Tammi Richardson, University of South Carolina, Columbia, SC SEOE

19 *How well does Adsorbable Organic Fluorine Reflect Total PFAS: Method Recovery of Fluorinated Pharmaceuticals*
Jack Schillat, Wofford College, Spartanburg, SC Chemistry and Math- Junior
Dr. Susan Richardson, University of South Carolina, Columbia, SC Department of Biochemistry and Chemistry
Mr. Haritha Lawan, University of South Carolina, Columbia, SC Department of Biochemistry and Chemistry

20 *Nutrient Legacies in South Carolina Lakes: Precipitation and Land Use as Shaping Forces Over 20 Years (1999-2023)*
Kaitlyn Lease, University of South Carolina, Columbia, SC Marine Science- Senior
Dr. Claudia Benitez-Nelson, University of South Carolina, Columbia, SC School of Earth, Ocean and Environment

REU: Undergraduate Research in Physics

21 *Spin-Flip Processes Induced by Magnetic Texture*
Reagan Stanton, University of South Carolina, Columbia, SC Physics- Junior
Dr. Yaroslaw Bazaliy, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Mr. Wiz Maung, University of South Carolina, Columbia, SC Department of Physics and Astronomy

22 *Optimizing Detection of Nonlinear Response Curves of Magnetic Nanoparticles using Magnetic Particle Spectroscopy*
Dustin Docusen, Eastern Michigan University, Ypsilanti, MI Physics Research & Mathematics- Junior
Dr. Thomas Crawford, University of South Carolina, Columbia, SC Physics and Astronomy

23 *Detection of Magnetic Nanoparticle Dynamics in Ferrofluid Using Multi-Coil Magnetic Field Modulation*
Jamari Blanks, University of South Carolina, Columbia, SC Physics- Junior
Dr. Thomas Crawford, University of South Carolina, Columbia, SC Physics and Astronomy

24 *Experimental Study of Proton-Deuteron Elastic Scattering at Intermediate Energies at Jefferson Lab*
Evrim Gulser, Arizona State University, Tempe, AZ Physics & Mathematics- Senior
Dr. Yordanka Ilieva, University of South Carolina, Columbia, SC Physics
Dr. Pawel Nadel-Turonski, University of South Carolina, Columbia, SC Physics

25 *Unusual Ground States in $Li_{0.9}Mo_6O_{17}$*
Sarah Montanti, Rowan University, Glassboro, NJ Chemistry & Physics- Senior
Prof. Rongying Jin, University of South Carolina, Columbia, SC Physics and Astronomy
Mr. Daniel Duong, University of South Carolina, Columbia, SC Physics

26 *Transition Metal Quantum Defects in Wide-Bandgap Semiconductors*
Bee Ball, University of South Carolina, Columbia, SC Physics & Electrical Engineering- Senior
Dr. Sai Mu, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Dr. Zhi-Hao Wang, University of South Carolina, Columbia, SC Department of Physics and Astronomy

27 *Invisible Decays of Muonium*
Nicholas Bagby, The Ohio State University, Columbus, OH Physics- Senior
Dr. Alexey Petrov, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Dr. Girish Kumar, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Mr. Ehsan Fasihi Moghaddam, University of South Carolina, Columbia, SC Department of Physics and Astronomy

28 *Probing Lepton Flavor Violation in Electron-Positron Collisions*
Keith Scarbor, Berry College, Rome, GA Physics- Senior
Dr. Alexey Petrov, University of South Carolina, Columbia, SC Physics

29 *Determining Particle Momenta through Time-of-Flight Measurements for the MUSE Experiment*
Evan Zimmerman, Colgate University, Hamilton, NY Physics- Junior
Prof. Steffen Strauch, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Mr. Cameron Walker, University of South Carolina, Columbia, SC Department of Physics and Astronomy

30 *Investigating Structural and Magnetic Contributions to SHG in BaMnSb2*
Jonathan Stowers, The College of Wooster, Wooster, OH Physics- Junior
Dr. Yanwen Wu, University of South Carolina, Columbia, SC Department of Physics and Astronomy

REU: Linguistics

Partner-Specific Alignment at the Lexical and Syntactic Levels in Interactive Dialogue

31 *Analyzing Leader-Follower Dynamics in Task-Oriented Dialogue through Linguistic Alignment*
Marguerite Wilson, University of South Carolina, Columbia, SC Neuroscience- Senior
Dr. Amit Almor, University of South Carolina, Columbia, SC Psychology
Ms. Sarah Wilson, University of South Carolina, Columbia, SC Linguistics

32 *Relating Lexical Alignment and Task Completion Efficiency for Dyads in a Collaborative Task-Oriented Dialogue*
Gwendolyn Simons, University of South Carolina, Columbia, SC Statistics & Psychology Senior
Dr. Amit Almor, University of South Carolina, Columbia, SC Psychology
Ms. Sarah Wilson, University of South Carolina, Columbia, SC Psychology

STEM and Health Sciences

33 *A Longitudinal Study of the Auditory Startle Reflex in Autistic Children*
Karina Sheth, University of South Carolina, Columbia, SC Neuroscience & Spanish- Senior
Dr. Abigail Hogan, University of South Carolina, Columbia, SC ASPH

34 *Mathematical Modeling of Neuroendocrine-Driven Inflammation*
Josh Prioleau, University of South Carolina, Columbia, SC Physics- Junior
Dr. Mitchel Colebank, University of South Carolina, Columbia, SC Department of Mathematics

35 *The Right Whale: Tracking Media Coverage of a Critically Endangered Species for Lasting Policy Change*
Hunter Ohmann, University of South Carolina, Columbia, SC Environmental Science- Senior
Dr. Erin Meyer-Gutbrod, University of South Carolina, Columbia, SC School of Earth, Ocean & Environment
Mrs. Amadi Afua Sefa-Twerefour, University of South Carolina, Columbia, SC School of Earth, Ocean & Environment

36 *Evaluating and Designing Metasurfaces for Exciting Skyrmions in Two-dimensional Materials*
Sophia Ellis, University of Richmond, Richmond, VA Physics- Junior
Dr. Mariama Rebello de Sousa Dias, University of Richmond, Richmond, VA Department of Physics
Dr. Yanwen Wu, University of South Carolina, Columbia, SC Department of Physics and Astronomy
Mr. Yuxuan Hu, University of Richmond, Richmond, VA Department of Physics

37 *Listening In: Undergraduate Reflections on Clinical Supervision Practices Through Transcript Review*
Ashanti Adams, University of South Carolina, Columbia, SC Psychology- Senior
Dr. Kimberly Becker, University of South Carolina, Columbia, SC Psychology

38 *Revealing the Magnetic Fields Towards the Central Supermassive Black Hole of the Circinus Galaxy*
Bennett Bass, University of South Carolina, Columbia, SC Physics- Junior
Dr. Enrique Lopez Rodriguez, University of South Carolina, Columbia, SC Physics and Astronomy

39 *Early Predictors of Infant-Parent Coordinated Attention and Word Learning in Preterm and Full-term Infants*
Hunarmeet Gill, University of South Carolina, Columbia, SC Neuroscience- Sophomore
Aarav Patel, University of South Carolina, Columbia, SC Neuroscience Sophomore
Dr. Xiaoxue Fu, University of South Carolina, Columbia, SC Department of Psychology

40 *Evaluating Zuranolone as a Pharmacological Advancement in the Treatment of Postpartum Depression A Review of Long-Term Therapeutic Impact*
Boomika Mahesh, University of South Carolina, Columbia, SC Biology- Junior
Dr. Richard Osbaldiston, University of South Carolina Beaufort, Beaufort Psychology

41 *Reflections on Menstrual Symptom Severity Interviews After a Plant-Based Nutrition Intervention*
Mallory Gedeon, University of South Carolina, Columbia, SC Biochemistry & Molecular Biology -Senior
Dr. John Bernhart, University of South Carolina, Columbia, SC Health Promotion, Education, and Behavior

REU Site: Analytic Combinatorics, Modular Forms, and Number Theory.

42 *Exceptional Congruences for Eta-Quotient Newforms*
Sean Jin, University of illinois, Urbana Champaign, Il Math- Sophomore
Eddie O'Sullivan, Colby College, Waterville, MA Math- Senior
Henry Stone, University of Michigan, Ann Arbor, MI Honors Math- Junior
Dr. Matthew Boylan, University of South Carolina, Columbia, SC Mathmatics
Ms. Swati , University of South Carolina, Columbia, SC Mathmatics

43 *Limiting Distributions of Various Types of Integer Partitions*
Alex Cao, University of California, Santa Barbara, CA Mathmatics- Freshman
Jack Frew, The Ohio State University, Columbus, OH Math and Physics- Senior
John Lehman, Durham University, Durham, UK Mathematics- Senior
Dr. Wei-Lun Tsai, University of South Carolina, Columbia, SC Mathmatics
Mr. Tapas Bhowmik, University of South Carolina, Columbia, SC Mathmatics