

SPRING 2022

UNDERGRADUATE RESEARCH SYMPOSIUM TOP-RATED PROJECTS

The top-rated projects are listed by category in alphabetical order; Faculty mentors and departments are in parentheses.

Arts and Humanities Top Rated Projects

Jacob Pritchard - Novus Miles Christi: Spiritual Authority and Suffering in the Presbyterian Missionary Movement (Dr. Joseph Witt - Philosophy and Religion)

Alysia Williams - Affordable Multifamily Housing in Relation to Community Revitalization and Social Development: A Cross Analysis of Regional Housing in Urban Contexts (Jacob Gines - Architecture)

Biological Sciences and Engineering Top Rated Projects

Amber Cook - The Conservation of Brain Folding Mechanics (Dr. Andrew Lawton - Biological Sciences)

Reese Dunne - A Diffusion Tensor Imaging approach to investigate the effects of exercise on quadricep muscle fiber lengths (Garry Gold - Radiology, Stanford University)

Sophie Jones - Advancement of Methods for Quantifying Osteogenesis in Static and Dynamic Culture (Dr. Lauren Priddy - Agricultural and Biological Engineering)

Catherine Paul - Are Barn Owls potential biological control agents for rodents in the Black Belt? (Dr. Scott Rush - Wildlife, Fisheries and Aquaculture)

Ashutosh Shah - Invasive Aquatic Plant Species Identification on Nvidia Jetson Nano Using Computer Vision and Deep Learning (Dr. Sathish Samiappan and Dr. Gray Turnage - Geosystems Research Institute)

Nicholas Stinson - A method for quantifying neurodegeneration using a Drosophila model of Spinocerebellar Ataxia Type 1 (Dr. Natraj Krishnan - Biochemistry, Molecular Biology, Entomology & Plant Pathology)

Gracie Teel - Effects of dietary supplementation of DL-methionine and the calcium salt of DL-methionine hydroxy analog against the diquat-induced oxidative stress in growing pigs (Dr. Shengfa Liao, Dr. Shamimul Hasan, and Dr. Jean M. Feugang - Animal and Dairy Sciences)

Physical Sciences and Engineering Top Rated Projects

Satsha Burden - Aerodynamics of Winglets (Dr. Shreyas Narsipur - Aerospace Engineering)

Minjae Cho - Development of Generative Adversarial Network (GAN) Model for Multi-Phase Flow Prediction (Dr. Joonsik Hwang - Mechanical Engineering)

Devin Foeller - NMEA Communicator Integration for Flight Simulator Training (Rob Wolz - Aerospace Engineering)

Katelyn Woodard - A Radical Library: Cataloging Radiation Yield of Acrylates Undergoing Electron-beam Polymerization (Dr. Julie Jessop - Dave C. Swalm School of Chemical Engineering)

Timothy Wunrow - The Effect of Data Availability and Domain Adaptation for Part Certification in Metal-Based Additive Manufacturing (Dr. Wenmeng Tian - Industrial and Systems Engineering)

Social Sciences Top Rated Projects

Eleanor Holt - Parenting and Emerging Adult Sexual Health: The Impact of Parental Religiosity and Relationship Quality on Risky Sexual Behavior (Dr. Cliff McKinney - Psychology)

Anna McLain - Evaluation of a Levels System to Address Food Refusal in Adolescents (Dr. Hallie Smith and Dr. Hailey Ripple - Counseling, Educational Psychology, and Foundations)

Josie Nasekos - Examining Water Expenditures Burden in the Southeastern U.S. (Dr. Matthew Interis - Agricultural Economics)

Camden Patterson - You Are What You Keep: Community-based Evaluation of the Relationship Between Hoarding Symptoms and Interconnectedness with Items (Dr. Mary E. Dozier - Psychology)

Amy Pham - The Relationship between Gender and Race and Body Image Dissatisfaction in Mississippi (Dr. Jennifer Lemacks - Education and Human Sciences, the University of Southern Mississippi)

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SUB-COMPETITIONS

Community Engagement Research Track Winners

Joshua Warnsley (Physical Sciences and Engineering) - The nexus between community socioeconomic factors and expected behavioral response to upcoming climate disaster (Dr. Nazanin Tajik Morshedlou - Industrial and Systems Engineering)

Anna McLain (Social Sciences) - Evaluation of a Levels System to Address Food Refusal in Adolescents (Dr. Hallie Smith and Dr. Hailey Ripple - Counseling, Educational Psychology, and Foundations)

Sophie Jones (Biological Sciences and Engineering) - Advancement of Methods for Quantifying Osteogenesis in Static and Dynamic Culture (Dr. Lauren Priddy - Agricultural and Biological Engineering)

Public Health Research Competition Winners

First Place: Erin Dickinson - Alcohol Consumption and Sleep Quality Among College Students at Mississippi State University (Dr. Terezia Tolar-Peterson - Food Science, Nutrition and Health Promotion)

Second Place: Emily Tucker - Survival and persistence of *Listeria monocytogenes* Bug600 and ScottA after exposure to high and low concentrations of first generation quaternary ammonium compound (benzalkonium chloride). (Dr. Ramakrishna Nannapaneni - Food Science, Nutrition and Health Promotion)

Third Place: Rachel Kalchbrenner - Backgrounds Come Back Around: Fragile Families and Early Adolescent Substance Abuse (Dr. Danielle Nadorff - Psychology)

Three Minute Thesis Competition (3MT) Winners

Grand Champion: Sarah Dulaney - Investigating Differing COVID-19 Vaccine Attitudes within Families (Dr. Holli Seitz - Communication and Social Science Research Center)

Runner Up: Satsha Burden - Aerodynamics of Winglets (Dr. Shreyas Narsipur - Aerospace Engineering)

People's Choice: Riley Cutler - Effects of Glyphosate on Recombination Plasticity in *C. Elegans* (Dr. Amy Dapper - Biological Sciences)

Theta Tau Tomorrow Builder Award

Ashutosh Shah - Invasive Aquatic Plant Species Identification on Nvidia Jetson Nano Using Computer Vision and Deep Learning (Dr. Sathish Samiappan and Dr. Gray Turnage - Geosystems Research Institute)