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Fall 2019

Honors Research Symposium Program Fall 2019

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HONORS RESEARCH SYMPOSIUM

**University Honors Program
Georgia Southern University
December 4, 2019**



Fall 2019 Honors Research Symposium

SCHEDULE

Nessmith-Lane Conference Center

RECEPTION

5:30 pm - 6:00 pm

Room 2911

WELCOME

5:45 pm

Room 2911

THESIS PRESENTATIONS

Rooms 2901, 2903, 2904, 2905, 2908

Session 1

6:00 pm - 7:00 pm

Session 2

7:05 pm - 8:05 pm

WELCOME

THESIS PRESENTATIONS

Thesis presentations feature graduating seniors who are delivering oral presentations of the results of their Honors Thesis work. Every honors student, in order to graduate as an honors scholar, must complete an Honors Thesis. As the titles and abstracts in this program indicate, these projects span the realms of inquiry and creativity available here at Georgia Southern University. Also listed in this program are the faculty mentors who have worked with each of these students, providing advice, support, and mentorship as the students have completed these projects.

ENJOY THE SYMPOSIUM

Please silence cell phones and do not text during sessions in order to give full attention to all the presenters. Please refrain from leaving sessions early or arriving late if at all possible. If you do plan to leave early to see a different session, please wait until the speaker has finished his or her presentation. Presenters using electronic presentations should load their presentations on the computer prior to the beginning of the session. Moderators will be in each session to make sure presentations run the appropriate length and to moderate Q&A sessions.

THE UNIVERSITY HONORS PROGRAM

The University Honors Program provides a small college atmosphere in the context of a large comprehensive university. The program is designed to foster the development of a critical sense of inquiry, a spirit of creativity, a global perspective, and an ethic of civic responsibility. A hallmark of the program is the emphasis on bringing ideas to life through undergraduate research, experiential learning, and service-learning opportunities.

6:00 PM - 7:00 PM

SESSION 1

THESIS PRESENTATIONS

ROOM 2903

6:00 PM - 7:00 PM

Konner Smith **English and Religious Studies**
From Camp Meetings to Crusades: African American Religious Songs in Context
Dr. Joe Pellegrino

The images found throughout African American religious songs are timeless, yet they reflect the realities of their historical and cultural contexts. Despite the differences in sound, there is a strong sense of continuity between each era, as compositions from slave songs to rap emphasize the themes of freedom, hope, and perseverance.

Dashawna Anderson **Sociology and Psychology**
Perceptions of African American College Women: STD/STI Health Risk Behaviors among African American Women
Dr. April Schueths

Sexually transmitted disease/infection (STD/STI) rates are on the rise for African American women. A health equity lens was used and in-depth interviews were conducted with college-aged, African American women to gain their perceptions about the risk behaviors that cause STDs/STIs among African American women, in general.

Erin Maurer **Sociology**
Adolescent Male Behaviors as Portrayed in the Disney Sitcom *Hannah Montana*
Dr. Nancy Malcom

This project uses content analysis to examine misogynistic behavior of the child character Rico Suave in *Hannah Montana*. He is an example of the unobserved trope of the toxic adolescent. Because the aggressor is a child, his behavior is presented as comedy, reinforcing negative stereotypes of Latin ethnicity and masculinity.

ROOM 2904

6:00 PM - 7:00 PM

Sade' Culliver **Fashion Merchandising and Apparel Design**
Aesthetics of Anxiety
Professor Hope Simpara

My research explains anxiety and what it is like to deal with the condition. This research includes an illustrated clothing line of fifteen looks that visually summarize anxiety. The purpose of this is to give people a better understanding of anxiety and help people with the condition feel more confident.

Alexandra Thompson **Music Education**
Music and the Mind: The Body's Affective Response to Music
Dr. David Langley

This research delves into the multisensory experience of listening to music and its effect on listeners. The aim of this research is to understand how music affects students mentally and emotionally, so that educators can figure out what music selections are relevant to students' personal lives and diverse backgrounds.

Hannah Sincavage **Writing & Linguistics**
Redefining "Normal:" Textual and Visual Rhetoric of Women with Disabilities
Dr. Lisa Costello and Dr. Christopher Garland

This thesis rhetorically analyzes the textual and visual rhetoric attached to bodies with disabilities in the forms of policy, headlines, advertisements, and social media. This analysis takes the form of YouTube videos in order to be accessible to the wide range of audiences affected by this research.

ROOM 2905

6:00 PM - 7:00 PM

Temitope Obielodan **Mechanical Engineering**
Fluid Shift and Fluid Resuscitation in Burn Patients with the Use of Bio-Electrical Impedance Spectroscopy to Monitor Fluid Levels
Dr. JungHun Choi

The purpose of this research is to explore possible methods of monitoring the body fluid levels of burn patients in order to fully understand the fluid increase patterns in the torso area. This was done by carrying out tests with the use of multi-electrode placements on the human torso.

James Walker **Mechanical Engineering**
The Development of a Platform for Remote Navigation through Woodlands
Dr. Minchul Shin

The goal of this thesis project is to begin developing an autonomous robot capable of reliably navigating a wooded environment. This project will combat invasive plants by introducing an artificial predator in conjunction with existing forest preservation efforts. This thesis specifically focuses on the mechanical design of the robot.

Margaret Kilpatrick **Mechanical Engineering**
The Investigation of Noise, Vibrations, and Emissions of Aero-Gas Turbine Combustion with Synthetic Kerosene Fuels
Dr. Valentin Soloiu

Climatic changes from aviation emissions include the effects of greenhouse gases such as: CO₂, NO_x, and aerosols. For that reason, the objectives of this study were to investigate the noise, vibrations, and emissions characteristics of synthetic kerosene combustion in an aerospace gas turbine to reduce the engine's environmental impact.

ROOM 2908

6:00 PM - 7:00 PM

Angelica Tumminello **Biology**
Presence of *Dirofilaria Immitis* in Mosquitoes in Southeastern Georgia
Dr. William Irby

This project has two main components: 1) to understand which species of mosquitoes are transmitting canine heartworm disease in Bulloch County, Georgia, and 2) to investigate whether certain demographics of dogs in Southeastern Georgia are more prone to the disease than others.

Ashlyn Smith **Biology**
Steady Heartbeat: Field and Laboratory Studies Indicate Unexpected Resilience to High Temperatures for the Ribbed Mussel *Geukensia demissa*
Dr. Sophie George

Salt marshes are delicate environments subjected to higher temperatures from climate change and anthropogenic factors. This investigation explored the cardiac response of the ribbed mussel *Geukensia demissa* to elevated and reduced temperatures. This was accomplished by recording the heartbeat of *G. demissa* in the laboratory and field.

Hayley Robinson **Biology**
A Multi-Scale Investigation of Habitat Selectivity in Coastal Plain Stream Fishes
Dr. James H. Roberts

Fishes within the Coastal Plain sort into different assemblages dependent on variables at reach- and microhabitat-scales. We looked at 8 species spanning this gradient and asked which variables influenced occurrence and habitat use. Our findings suggest that habitat selection of Coastal Plain fishes is scale-dependent, and potentially interacts with morphology, feeding strategy, and water-quality tolerance.

ROOM 2901

7:05 PM - 8:05 PM

Caitlin Shelby

Psychology

**Illusory Boundaries and Perceived Access to Rural Mental Health Care
Dr. Karen Z. Naufel**

This study examined the effects of illusory boundaries (as county lines on a map) on distance and accessibility judgments. When an illusory boundary was present between locations, participants perceived accessibility to be lower than when there was no illusory boundary. This research has implications for rural mental health care accessibility.

Delaney Grimm

Recreation

**Using Photovoice to Measure Learning Objectives at Camp with Adults with Developmental Disabilities
Dr. Brent D. Wolfe**

This thesis explores what adults with developmental disabilities learn at a weeklong camp. Photovoice analysis was used which allows individuals who have difficulty expressing themselves/are nonverbal to still participate in research. For data analysis, my categories relate to six domains of recreational therapy: physical, emotional, spiritual, social, cognitive, and leisure.

7:05 PM - 8:05 PM

SESSION 2

THESIS PRESENTATIONS

ROOM 2903

7:05 PM - 8:05 PM

Madelyn Harvin

Spanish

Used by Many, Taught by Few: A Study on *el voseo* in L2 Spanish Classrooms in the United States
Dr. Ángela Pinilla-Herrera

Vos is a second-person singular pronoun used by about 130 million speakers, but is noticeably absent in Spanish textbooks. This project investigates the extent to which instructors incorporate this pronoun into their classes, reasons for the pronoun's exclusion, as well as relationships between the teaching of vos and certain factors.

Elizabeth Leone

International Studies

A Shift in Global Thought and Practice: Assessing the Impacts of the Human Security Paradigm on Global Public Health
Dr. William Biebuyck

I examine the idea of human security becoming a paradigm and how it is adopted in public health programs. I argue that increasing human security puts emphasis on the role of global actors, preventative care and health education when adopted by states, specifically Ghana and the Ivory Coast.

Katherina Albers

Accounting

Caveat Emptor: A Study of Fraud, Red Flags, and Investor Due Diligence
Dr. Dwight Sneathen

For decades fraud has been an ever growing problem in our society, costing Americans \$650 billion each year. Investors need to proactively search for red flags. Through an examination of two recent frauds, Theranos and Fyre Media, I will discuss the frauds perpetrated and the red flags that investors missed.

ROOM 2904

7:05 PM - 8:05 PM

Claire Doroff

Exercise Science

Effects of Active Sitting on Reading and Typing Task Productivity
Dr. Ronald Snarr

Active sitting, consisting of modified chairs or stability balls, allows the body to stay dynamic while seated. The purpose was to evaluate the effects of active and non-active chairs on typing and reading task productivity. Results suggest active sitting may have a negative effect on workplace performance and perceived productivity.

Anna Hassett

Exercise Science

The Relationship between Sleep Duration and Optimism Levels in Generation Z Students
Dr. Daniel Czech

Generation Z's sleep duration and quality is decreasing. This increases the risk of depression, cardiovascular disease, and obesity. Optimism, a measure of worldview, is believed to improve overall health. The purpose of the present study is to examine the relationship between sleep duration and reported optimism in Generation Z students.

Vevian Grace Lee

Exercise Science

Physical Therapists' Perspectives of School Functioning for Children with Cerebral Palsy (CP)
Dr. Gavin Colquitt

This study used Photovoice to identify barriers and facilitators to school functioning among physical therapists of children with cerebral palsy (CP). Perceived barriers included lack of inclusiveness and limited accessibility of equipment. Facilitators included support and relationships. Photovoice serves as a tool to improve school function of children with CP.

ROOM 2905

7:05 PM - 8:05 PM

Noelle Anderson

Mathematics

Stabilize Chaotic Flows in a Coupled Triple-Loop Thermosyphon System
Dr. Yan Wu

This study addresses controlling a chaotic dynamic system. The goal is to derive a system of equations to study various flow patterns. Once the parameter values are identified, proportional controllers are designed so that the system trajectories are stabilized. The stability of the control system is then investigated through simulations.

Daylan Post

Physics and Computer Science

Silicon Quantum Dots Conjunctive with Stable Radicals: Potential Application in Non-invasive Cancer Diagnostics
Dr. Li Ma

Silicon Quantum Dots (SiQD's) have unique physical properties that show promise in possible use for cancer detection. In particular, my research revolves around studying the emission, excitation, absorption, and electron spin resonance spectra of SiQD's in conjunction with free radicals.

ROOM 2908

7:05 PM - 8:05 PM

Trina Biswas

Biochemistry

Determination of Optimal Mild Organic Solvents for Synthesis of PdNPs for Carbon-Carbon Coupling Reactions
Dr. Beverly Briggs Penland

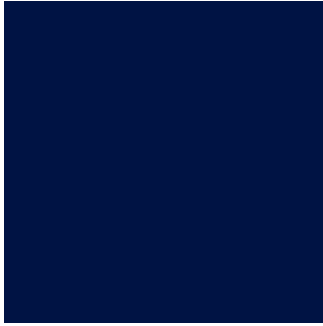
The application of nanoparticles is especially popular in the field of nanocatalysts. This research sought to translate the benefits of peptide-based synthesis to organic solvents and use less toxic organic solvents for carbon-carbon coupling reactions, like Heck coupling with new peptide-based nanocatalysts.

Molly Rowe

Biology

Analysis of the Temporal Patterning of Notch Downstream Targets during *Drosophila melanogaster* Egg Chamber Development
Dr. Dongyu Jia

Dysregulation of the Notch signaling pathway often results in developmental defects and initiation and progression of cancer. As timing of regulation in this pathway may be linked to many biological processes, we investigated and established a model of temporal patterning of major Notch downstream targets during *Drosophila* egg chamber development.



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Designed by Ashley Callahan ('20) & Caroline Usry ('21)