Honors Research Symposium Program Spring 2019

University Honors Program, Georgia Southern University

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/honors-pubs

Part of the Educational Methods Commons, and the Higher Education Commons

This other is brought to you for free and open access by the University Honors Program at Digital Commons@Georgia Southern. It has been accepted for inclusion in University Honors Research Symposium Programs by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
THESIS PRESENTATIONS
Nessmith-Lane Classrooms
Session 1 11:15 am - 12:15 pm

RECEPTION & POSTER PRESENTATIONS 12:15 pm - 1:30 pm
Nessmith-Lane Ballroom

WELCOME 12:30 pm
Nessmith-Lane Ballroom

THESIS PRESENTATIONS
Nessmith-Lane Classrooms
Session 2 1:30 pm - 2:30 pm
Session 3 2:35 pm - 3:35 pm
Session 4 3:40 pm - 4:40 pm
Welcome to the Twelfth Annual Honors Research Symposium. This event is designed to showcase the research and creative activities of the honors students on the Statesboro campus of Georgia Southern University. This year, over 100 honors students will present their work, bringing the total number of participants to over 1000 since 2008. The symposium program falls into two main components: poster presentations and thesis presentations.

**POSTER PRESENTATIONS**

Poster presentations are designed for freshmen, sophomores, and juniors. These students are presenting works based on research carried out in the context of honors classes, research based on experiential learning activities, or the preliminary studies for their Honors Theses. In all cases, poster presenters are eager to engage attendees and receive comments on their work. This is particularly true for juniors, who are, in most cases, just launching their thesis research projects.

**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 or Capstone Project. 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.
Emily Krout  
Political Science and Arabic  
The Social Effect of Commercial Tourism in Gulf Countries  
Dr. Jacek Lubecki  

In this paper, I analyze the United Arab Emirates’ and Bahrain’s relationship with tourism, oil prices, and social change to predict what will happen within Saudi Arabia. I measure annual tourism rates from 1996-2017 within each country, as in each they are all rising.

Anna Kwiatkowski  
Political Science  
Immigration Policy Reform: International Students and Higher Education  
Dr. Steven Engel  

Many states in the Global North are implementing restrictive immigration policies, including restricting international students, to combat the high influx of immigrants. Using the UK as a case study, I find that restrictive immigration policies led to a decrease in international students enrolled in higher education institutions (HEI) throughout the UK.

Julia Fechter  
Journalism  
Hollywood, Hashtags, and Cultural Disharmony: A Comparative Framing Analysis of How American Newspapers Have Framed the Me Too Movement  
Dr. Jennifer Kowalewski  

This project explored how The New York Times, The Washington Post, and the New York Post covered the Me Too movement. I analyzed factors including article tone, main news angle, and political affiliation to determine whether those newspapers used supportive, critical, or neutral frames to explain the movement.
Victoria Liggett  Accounting/Fraud Examination
Directed Gifts, Love Offerings and the Uncertain Guidance of IRS Publication 526 for Donors and Donees to Non-Profit Organizations
Dr. Michael Wiggins

This study focuses on the IRS guidelines for charitable contributions and how fraud is committed under the ambiguity of IRS publication 526. There are numerous instances of fraud, especially in not-for-profit organizations. This study will review those cases and explore the guidelines’ possible impacts on the future.

Kelley Nemec  Information Systems
The Application of Paperless Processes to Improve Data Management in Small to Medium Organizations
Dr. Michael Cuellar

The most successful businesses today rely on data to discover insights and enrich decision making. Though, for small businesses lacking the same resources, this is nearly impossible. A business looking to remain competitive will benefit from having accurate and organized long-term records and everyday transactions created from digital processes.

Madison Wills  Information Technology
The Role of Gender in Workplace Exhaustion: Female Perceptions of Stress in the Technology Workplace
Dr. Cheryl Asheim

As the role of the information technology professional expands, an increasing amount of technology employees are experiencing workplace exhaustion. Adding to that stress, women face other obstacles as minorities in the field. This project seeks to identify characteristics of how gender influences perceived stress and exhaustion in the technology workplace.

Pierce Keen  History
From Nazis to Good Comrades: Changing American Views of Germany and the Germans
Dr. Brian Feltman

This thesis addresses the cultural bias against Germany that began in World War I with the stirrings of anti-German sentiment, ultimately arced during World War II, and began to wane as the post-World War II, Cold War-era Soviet Union supplanted Germany as the greatest threat to democracy.

Rebecca McClellan  History
A Question of God: Jewish Theology and Memoirs of the Holocaust
Dr. Brian Feltman

The Holocaust, the systematic murder of the European Jews by the Germans, had massive impacts on the religious beliefs of those Jews who survived it. This thesis will investigate the stories of five Jewish survivors in order to see the impact made on them and their faith.

Alyssa Windsor  History
A Once and Future Queen: Jackie Kennedy and Her Kingdom
Dr. Michelle Haberland

The Kennedy Camelot was important to America and how we now come to view families in the White House. Jacqueline Kennedy was perhaps one of the most important characters in this story that was tragically interrupted—a character that, I believe, is not fully developed.
Lauren Love  Biochemistry
Investigations of Protein Conformational Changes as a Signal for Apoptosis
Dr. Michele McGibony

The relationship between the 3D structure of a protein and its function is well established. Caspase-3 will be amplified, isolated, and monitored for protein conformational changes in the presence of calcium ions via CD spectroscopy to shed light on its function in normal cell death.

John Stagg  Chemistry
Assessment of Oxidative Stress in the Livers of Rats Exposed to 2-Aminoanthracene for Twelve Weeks
Dr. Eric Gato

2-aminoanthracene (2AA) is a poly aromatic hydrocarbon (PAH) that is a product of incomplete combustion among other things. This study looks to examine the dietary effects of 2AA on the livers of rats, and analyze how this exposure relates to oxidative stress which has been shown to contribute to type 1 diabetes.

Tyler Wagner  Chemistry
Synthesis of Gold Nanorods with CPd4 Peptide-Capped Palladium Nanoparticles Functionalization for Carbon-Carbon Cross Coupling Reactions
Dr. Beverly Briggs Penland

Palladium nanoparticles were formed on the surface of CPd4 peptide-functionalized gold nanorods as a biomimetic approach to creating nanomaterials under environmentally-friendly conditions for potential use as a catalyst in Suzuki coupling reactions between boronic acids and aryl halides. The size, shape, and location of palladium nanoparticle formation were solvent-dependent.

Sarah Rogers  Biology
The Effects of Warming Sea Temperatures and Ocean Acidification on the Temperate Coral Oculina arbuscula
Dr. Daniel F. Gleason

For 75 days in aquaria, Oculina arbuscula were exposed to pH levels expected to occur by the year 2100 and summer sea temperatures. The combination of these stresses reduced calcification rates significantly, suggesting that these two variables may act synergistically to limit the success of O. arbuscula on Georgia’s reefs.

Benjamin Siclare  Biology
Role of Integrin alpha 6 (ITGA6) in Neurovascular Development and Stroke
Dr. Vinoth Sittaramane

ITGA6 is an important cellular adhesion molecule that has been shown to influence vascular development and other processes such as tumor metastasis. This project aims to further explore the molecule’s role in neurovascular development and the impact it could have on one of the world’s most prominent killers, stroke.

Shannon Wagner  Biology
Developing Sensory Behavioral Assays for Zebrafish Autism Model
Dr. Vinoth Sittaramane

Individuals diagnosed with Autism Spectrum Disorder (ASD) share many similar symptoms such as hyperactivity to social, visual, and auditory stimuli, as well as hyposensitivity to olfactory stimuli. Behavioral assays have been created using zebrafish larvae to study the responses when exposed to social stimuli, tactile stimuli, and olfactory stimuli.
Emily Pressler
Spanish and French
Hispanic Stereotypes in Contemporary Film
Dra. Leticia McGrath

This research serves as an analysis of selected contemporary U.S. films that feature a Hispanic character in order to shed light on the excessive appearance of stereotypes often portrayed by Hispanics on-screen, as well as to promote open-mindedness by educating others on the cultural diversity of Spanish speakers.

Brady Gwynn
English and French
Los Angeles, Pittsburgh, and Nowhere: The Influence of Place on Bildungsroman
Dr. Joe Pellegrino

This thesis focuses on two metropolitan cities, Los Angeles and Pittsburgh, and their connection to the novel form. Bildungsroman texts are necessary for this analysis of place because adolescence allows for the awakening of oneself and one's surroundings. On the brink of adulthood, these protagonists reminisce on home while exploring a new landscape: the city.

Olivia Thompson
English
Female Protagonists in Dystopian Literature
Dr. Joe Pellegrino

This study addresses the female protagonists in four contemporary dystopian novels. Each protagonist rebels against some social reality, but the results of these rebellions vary. Some women are instrumental in overthrowing the current social and governmental structures while others see their efforts thwarted and remain oppressed.
1. Megan Tanner  
**Art**  
Representation of Arab People and Islam in Italian Renaissance Art between 1490 and 1520  
Dr. Tiffanie Townsend

This poster will examine the influence of the Islamic religion and culture on Renaissance Italy, as well as the portrayal of Arab people in art between 1490 and 1520. It will also compare attitudes towards the Arab minority to that of contemporary society.

2. Chris Pintro  
**Biochemistry**  
Structure of 5-amino-1-(4-methoxyphenyl)-1H-pyrazole  
Dr. Allison Amonette and Dr. Jim Lobue

The goal of our research is to determine the crystalline structure of 5-Amino-1-(4-methoxyphenyl)-1H-pyrazole. This compound is used for crop protection. The compound was crystallized in ethyl acetate. X-ray diffraction was done in a Rigaku XtaLAB mini single crystal X-ray diffractometer. The crystal structure was solved using Olex 2 structure solving software.

3. Abigail McNamee  
**Biochemistry**  
Analyzing Anti-Cancer Effects of a Novel Tris-Indolyl Compound  
Dr. Christine Whitlock and Dr. Timothy Tolentino

A novel tris-indolyl iron-chelating drug was prepared and tested for anticancer properties. Apoptosis assays via flow cytometry were used to measure the compound’s effect on the viability of a cancer cell line. Preliminary data showed that cancer cells exposed to the compound had a decrease in viability.

4. Conner Clark  
**Biochemistry**  
Toxicological Analysis of CNT-Ab Treated Mice as a Form of Cancer Therapy  
Dr. Eric Gato

Cancer treatments such as chemotherapy have serious side effects and the potential for biological resistance. Carbon nanotubes bound to tumor specific antibodies (Ab) offers specific treatment for cancer cells without affecting surrounding tissue. We seek to affirm the initial promising results of CNT in cancer therapy by investigating the toxicology in mice injected with CNT-Ab followed by microwave hypothermia.

5. Christina Sartain  
**Biology**  
Effects of Auditory Predator Cues on Foraging Behavior in *Peromyscus polionotus*  
Dr. Michelle Cawthorn

It is established that animals react to predator cues. The purpose of this study is to test whether or not direct predator cues in the form of predator calls affects foraging effort in oldfield mice as measured by giving up density (GUD). We predict that hearing a known predator call near a burrow will significantly increase the GUD.

6. Ashlyn Smith  
**Biology**  
Anthropogenic Factors May Affect Cardiac Activity in the Atlantic Ribbed Mussel  
Dr. Sophie George

The effects of interruptions of the immersion/emersion cycle on the physiology of marsh organisms may depend on their ability to deal with higher temperatures. This study investigated whether the heart rate of the Atlantic Ribbed Mussel, *Geukensia demissa*, differed between two sites with uninterrupted tidal flow and a site with interrupted tidal flow.
7. Angelica Tumminello  
Presence of *Dirofilaria immitis* in Dogs and Mosquitoes in Southeastern Georgia  
Dr. William Irby

Canine heartworm disease is caused by the filarial nematode, *Dirofilaria immitis*. 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 dog breeds are more prone to the disease than others.

8. Ryann Heninger  
Red vs. Blue Decoy Coloration in *Plestiodon egregius*  
Dr. Christian Cox

The purpose of this poster is to describe my ongoing research studying decoy coloration using clay models. The experiment is a study of decoy coloration in mole skinks, *Plestiodon egregius*, as an example of antipredator traits. This study aims to understand regional differences in decoy coloration in the same species.

9. Katherine Barrs  
Mathematical Modeling and Argentine Ants  
Dr. Joshua Gibson and Dr. Hua Wang

Ants recognize colonies through a chemical odor comprised of a unique blend of cuticular hydrocarbons (CHCs). We propose to mathematically model differences in chemical odor through analysis of CHC structures. This model will be applied to CHCs in previously untested Southeastern colonies and verified with colony interaction assays.

10. Justin Hall  
An Efficient Visual-Based Method for Classifying Instrumental Audio Using Deep Learning  
Dr. Rami Haddad

In this paper, an efficient method for classifying and identifying instrumental audio is proposed via utilizing a deep learning image classification algorithm. The method of classification involves analyzing the visual equivalent of an audio sample with a neural network to identify the generating musical instrument.

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

Optimism is defined as explaining the future in a positive manner (Seligman, 2017). Lemola (2012) found that those with insomnia symptoms scored significantly lower on optimism. The purpose of this study is to examine the relationship between optimism and the amount of weekday and weekend sleep in Generation Z.

12. Allison Tucker  
The Relationship between Optimism and BMI in Generation Z – An Exploratory Investigation  
Dr. Daniel Czech

Optimism is defined as explaining and expecting the future in a positive manner (Seligman, 2017). Biber and Czech (2015) have shown a significant negative correlation between optimism and overall BMI. The purpose of this study is to examine differences between optimism and healthy, overweight, and obese Generation Z university students.
13. Alexandria Lee  Exercise Science
Physical Therapists’ Perspectives of School Functioning for Children with Cerebral Palsy (CP)
Dr. Gavin Colquitt, Dr. Ashley Walker, and Dr. Heather Lorden

This poster will present background on CP, Photovoice, and the International Classification of Functioning, Disability, and Health (ICF), which will be used to identify the barriers and facilitators to participation. It will also explain the purpose, methods, and data analysis of the study, and how they will indicate how the results will be presented to the public.

14. Mary-Gloria Iwunwa  Health Education and Promotion
Patient Perspectives? Use of Hydroxyurea in Sickle Cell Patients Transitioning from Pediatric Care into Adult Care
Dr. Raymona Lawrence

The transition from pediatric-centered to adult-centered care has been described as one of the most difficult phases for individuals living with Sickle Cell Disease (SCD). How they have been able to have an easier transition process with the treatment option, Hydroxyurea, is of interest to the health community. This is pertinent for patients to have higher survival rates and live uninhibited by physical, psychological and emotional concerns due to the Sickle Cell Disease. The purpose of this research is to acquire insight from patient perspectives into the possible barriers that may contribute to the under use of Hydroxyurea in patients transitioning from pediatric care into adult centered care.

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

Using a health equity lens, the purpose of this qualitative study is to examine perceptions held by African American college women, living in the southeastern United States, about the risk behaviors causing STDs/STIs among the Black/African American female population in the United States in general.

16. Caitlin Shelby  Psychology
Illusory Map Boundaries and Perceived Access to Mental Health Services
Dr. Karen Naufel

The purpose of this study is to determine if and to what extent illusory map boundaries affect perceived access to mental health services. Preliminary literature review suggests implications of this research for rural healthcare access.

17. Mackenzie Miller  Fashion Merchandising & Apparel Design and Management
#AdvancedStyle: How Sharing Fashion on Social Media Creates an Opportunity for Positive Social Engagement for Aging Adults
Dr. Addie Martindale

The purpose of this qualitative study was to understand how aging fashionistas use their Instagram accounts to socially engage. This research of 15 older women's Instagram accounts will provide insight of how to utilize social media to help older groups reduce social isolation and forge connections with like-minded individuals.

18. Haley Osborne  History and Philosophy
Municipally Owned Slaves in Savannah, Georgia
Dr. Lisa Denmark

Prior to the Civil War, Savannah, Georgia was an active participant in the institution of slavery. The city's government used its funds to purchase several enslaved people between the years of 1830 and 1864. These men were put to work building city infrastructure as well as working for the Scavenger's Department.
19. Narayan Saviskas  
**History**  
The “Good Wehrmacht” - Myths about German War Crimes  
Then and Now  
Dr. Brian Feltman  

Since the end of the Second World War the myth that the German army had no part in the Holocaust has been propagated by the German people and scholars years later. This project hopes to examine the myths since the war and to shed light on the true history that occurred.

20. Cassandra Hankin  
**History**  
Project VENONA: The Men and Women Who Broke the Unbreakable Code  
Dr. William Allison  

The Venona Project was the United States’ counterintelligence program initiated by the United States Army’s Signal Intelligence Service during World War II. While today’s society knows about the men’s work in the operation, it is relatively unaware of the difficult analytical work that women performed during the project’s duration.

21. Elizabeth Leone  
**International Studies**  
The Security of Health: Connections between Human Security and Health in Ghana and the Ivory Coast  
Dr. William Biebuyck  

I examine how the idea of human security has impacted policies in public health programs. I argue that the rise of human security has lead to an emphasis on health education and preventative care through policy and will in turn improve public health in Ghana and the Ivory Coast.

22. Madelyn Harvin  
**Spanish**  
A Study of El Voseo in Spanish Classrooms  
Dr. Ángela Pinilla-Herrera  

Vos is a second person pronoun used by millions of Spanish speakers in Central and South America, and notably absent in the teaching of Spanish in classrooms across the United States. This presentation will serve as a mini-lesson on this pronoun.

23. Taylor Close  
**Spanish and International Studies**  
From Hopscotch to Border Hopping: An Evaluation of the Social Factors that Trigger Child Migration from the Northern Triangle of Central America to the United States  
Dra. Leticia McGrath  

This poster will evaluate child migration from Guatemala, Honduras, and El Salvador, more commonly known as the Northern Triangle. It will investigate the push factors that continue to urge child migrants to attempt travel to the United States such as: drug and gang violence, education, economic stagnation, and political corruption.

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

The purpose of this thesis is to develop a more efficient method of measuring the fluid level in burn patients during fluid resuscitation with the use of bio-electrical impedance spectroscopy. This will potentially eliminate under- or over-resuscitation, causing adverse health issues in patients, due to improper monitoring of fluid levels.
25. James Walker  
Mechanical Engineering  
The Development of a Platform for Remote Navigation through Woodlands  
Dr. Minchul Shin  

Through the development of a remotely operated robot prototype, this research seeks to aid forest service and park maintenance staff in developing healthy forests. The primary functions of the proposed platform are the removal of invasive vegetation, promotion of healthy vegetation density, and remote forest monitoring, augmenting the human workforce.

26. Margaret Kilpatrick  
Mechanical Engineering  
Noise, Vibrations, and Combustion Emissions Comparison of IPK and S8 Synthetic Fuels in an Aero-Gas Turbine  
Dr. Valentin Soloiu  

The objective of this study was to investigate synthetic kerosene combustion parameters and their effect on noise, vibrations, and emissions in an aerospace gas turbine through analysis of the sound intensity and vibrational frequency analysis of Jet A and IPK at the intake and exhaust nozzles and combustion chamber.

27. Sophia Fleri  
Mechanical Engineering  
Pollutant Impacts on Interior Safety and Energy Efficiency  
Dr. Valentin Soloiu  

The purpose of this project is to increase the comfort of a building’s occupants while reducing effects on the surrounding environment. This project examines the Engineering Building to determine any sources of concern such as thermal leaks, thermal sustainability, or emissions. Measurables are compared to industry standards to ensure maximum efficiency.
Julia Thomas  Anthropology
Georgia Fishers’ Perspectives on the Problems the Industry is Facing and their Proposed Solutions
Dr. Jennifer Sweeney Tookes

Competition from imports and increasing costs are some of the problems affecting Georgia’s commercial fishing industry. Fishers have unique insights that could help solve these problems and implement policies that consider the human aspect of fisheries management. This research aims to better understand fishers’ perspectives on these problems and solutions.

Nomeil Boston  Criminal Justice & Criminology
Intimate Partner Violence in the LGBTQ Community
Dr. Laura Agnich

Using prior research, I aim to address how intimate partner violence affects LGBTQ communities and relationships. I also want to identify barriers the LGBTQ community face, their health risks, and what can be done to provide a better source of support. Using data collected from a survey administered at a large southeast university located in a rural area in 2014 with a sample of 786 undergraduates I will examine sexual orientation, gender identity demographics, prior abuse, and alcohol consumption.

Sherrod Hollingshed  Criminal Justice & Criminology
The War on Drugs in America
Dr. Laurie Gould

This project discusses the controversial history of the War on Drugs in America. A survey of Georgia Southern students was conducted to see their knowledge of both the War on Drugs and drug policies as well as find out their attitudes toward drug laws.

Erin Moore  Finance
The Dollar is Green, and American Banks Should Be Too: Clean Energy Finance and Its Circulation Through Green Banks
Dr. Axel Grossmann

The earth is at risk of irreversible damage if the carbon footprint of humans is not drastically reduced immediately. Green Banking is one method to change the environmental impact of society and has been proven to be socially responsible and economically enticing.

Jaymin Patel  Information Systems and Finance
Demonetization: An Analysis of an Instant Decision
Dr. Axel Grossmann

This analytical study examines the impact of demonetizing the Rs. 500 and the Rs. 1000 legal tender in India. This study examines the local and national impacts left in India. The ultimate purpose is to conclude whether demonetization left a better impression on India.

Emmanuel Obodoechine  Economics/International Business and Management/Entrepreneurship
Female Development and its Effect on GDP in Africa
Dr. Mariana Saenz-Ayalta

The goal of this paper is to look at the impact of the female labor force participation on African countries’ economic development and to identify each country’s characteristics in which female labor force participation is important for development.
Tanner Cormier  
Exercise Science  
Different Effects of Static and Vibrating Foam Rollers on Plantar Flexor’s Flexibility and Torque Production Capacity  
Dr. Li Li and Dr. Daniel Czech

We have examined the effects of vibrating and static rollers on ankle range of motion (ROM) and torque production among female swimmers. The results showed the vibrating roller is not as effective in increasing ROM as the static one; it also leads to a reduction in peak isokinetic contraction torque.

Austin Eubanks  
Exercise Science  
Rehabilitation Protocols for Total Hip Replacement Patients: A Comparison of Research and Practicing Physical Therapists  
Dr. Daniel Czech

Recovery protocols have been found to vary from therapist to therapist, specifically the timing of implementation of full weight bearing exercise for patients who have undergone a total hip replacement. This study seeks to compare the opinions of practicing physical therapists to current research that is available on this issue.

Bri Mazzei  
Exercise Science  
Different Effects of Static and Vibrating Foam Rollers on Ankle Dorsiflexion Flexibility and Neuromuscular Activation  
Dr. Li Li

This study researched the range of motion (ROM) and electromyography (EMG) of the dorsiflexors when using dynamic and static foam rollers. EMG results did not differ between tests, but the significant interaction in ROM indicated that vibrating and static foam rollers are beneficial in improving flexibility without altering neuromuscular activity.

Emily Coats  
Art and French  
The Impact of Patronage on Contemporary Visual Arts  
Dr. Julie McGuire and Dr. Tiffanie Townsend

Patronage is vital to the art world and the success and notoriety of its artists. Considering how patronage has changed and adapted throughout history, and understanding the influence it has, not only allows a deeper understanding of the art world but also of the world’s cultures.

Robert (Zee) Doehling  
Graphic Design  
Automation in Graphic Design  
Professor Santanu Majumdar

The exponential rate of technological advancement led to an increased number of automated jobs. Positions involving simple repetitive tasks were the first to become heavily automated; however, this research study aims to foresee upcoming effects on the creative industry of graphic design and the impact on its education process.

Lindsey Junger  
Interior Design  
Color Temperature and its Effects on Student Well-Being in University Learning Environments  
Dr. Angelita Scott

This project investigates the optimal color temperature of lighting within university learning environments related to a student’s well-being. The results of this study have implications for lighting that enhances occupant well-being as well as educates interior designers on implementing the proper color temperature for learning environments.
Lydia Odlin  
**Biology**
Localization of Aquaporin 1aa, 1ab, 4b2, 8ab, and 10b2 in the Kidney Nephrons of the American Eel, *Anguilla rostrata*

Dr. Christopher Cutler

Aquaporins 1aa, 1ab, 4b2, 8ab and 10b2 play crucial roles in the osmoregulation within the kidney nephrons of the American Eel. Through methods of immunohistochemistry, kidney nephron slides were fluorescently stained to determine localization of these aquaporins, which allow for a better understanding for how they function in eel osmoregulation.

Lydia Bonnell  
**Biology**
Comparing Feeding Accuracy between High and Low Predation Trinidad Guppies

Dr. Emily Kane

Efficient feeding accuracy could increase an organism’s survival. Although local adaptation in Trinidad guppies is common, the effects on accuracy are unknown. Guppies were wild caught in 2015 and 2017 and filmed while capturing prey. Accuracy was not different within samples but differed across samples, possibly due to the prey types used.

Sarah Hethcox  
**Biochemistry**
Caspases and Cancer: Connections Through Circular Dichroism Spectroscopy

Dr. Michele McGibony

Pro-apoptotic factors like caspase enzymes are expected to remain dormant under normal conditions, but apoptotic suppression amid death signals is a hallmark of cancer. In this study, caspase-7 was expressed, purified, quantified, and analyzed via CD spectroscopy in the presence of metal ions for structural changes leading to apoptosis inhibition.

Caitlin Hall  
**English and Spanish**
The Myth of the Lost Cause in Margaret Mitchell’s *Gone with the Wind*

Dr. Joe Pellegrino

Margaret Mitchell’s *Gone with the Wind* is usually considered a sympathetic portrayal of the suffering and deprivation endured by Southerners during the Civil War. I argue the opposite, that Mitchell is subverting the Southern Myth of the Lost Cause, exposing it as hollow and ultimately self-defeating.

Cassie Warthen  
**Music**
Women in the Mozart-Da Ponte Trilogy

Dr. Allen Henderson

Opera is a commentary on social, political, and cultural atmospheres that is composed and performed. This research is focused on the historical and modern representations and implications of women in the Mozart-Da Ponte trilogy: *Le nozze di Figaro, Don Giovanni*, and *Così fan tutte*.

Daniel Missroon  
**English and Writing**
Speculative Fiction and Speculative Ethics

Dr. Joe Pellegrino

The Thomas Theorem suggests that Speculative Fiction creates possible futures that motivate contemporary individuals to create those futures. This work explores the futures created and denied in three SF texts by modern masters Ursula K. LeGuin, William Gibson, and Dan Simmons.
Victoria Riggs  
Philosophy  
Morality from Meaninglessness in Simone de Beauvoir’s  
The Ethics of Ambiguity  
Dr. Finbarr Curtis and Dr. Elizabeth Butterfield  

Through an examination of Simone de Beauvoir’s use of “evil” and the extent to which one’s assumption of ambiguity translates into the objective existence of value, this paper seeks to determine whether Beauvoir is justified in asserting the existence of good and evil, particularly in declaring anything “absolutely evil.”

Grace Pittman  
Political Science  
Better Left Unsaid: The Connection Between Members of Congress, the President, and Ambiguity  
Dr. Joshua Kennedy  

To what extent is the rate of congressional member ambiguity dependent upon the president’s popularity? I argue that members of the president’s party will be more likely to demonstrate ambiguity than members of the opposing party. Using a method of linear regression, I find some support for this theory.

Jarvis Steele  
Political Science and Philosophy  
Silence as a Strategy  
Dr. Patrick Novotny  

My project looks at the dichotomy between Albany, Georgia and Birmingham, Alabama as a way to assess the validity of Silent Protest as a means of orchestrating change during the Civil Rights Movement.
Ngoc Le Logistics & Intermodal Transportation
The Last-Mile Challenge: An Evaluation of the Crowdsourcing Solution
Dr. Issam Moussaoui

Despite playing a vital role in determining e-commerce success, the last-mile delivery remains the most complicated, expensive and inefficient segments of the fulfillment process. This research aims to provide greater insight into the last-mile challenge and evaluate the potential of using a crowdsourcing platform to mitigate this logistical limitation.

Zane Sudan Management
Time Changes Everything: Examining Socioemotional Selectivity’s Effects on Entrepreneurial Intentions and Attitudes
Dr. David Jiang

Socioemotional Selectivity Theory puts forth predictions about a person’s goals and behavior depending on their time perspective. In this study, students’ entrepreneurial intentions and attitudes are measured based on changes in time perspective to identify the effects of time, experience, and uncertainty on entrepreneurial goals.

James Morris Management/Operations Management
Cultural Asymmetry Inside the Firm and Its Effect on Collaboration Within the Supply Chain Industry
Dr. Matthew Jenkins

Studies have discovered multiple factors that affect a firm’s collaboration. Culture is one that has drawn much inquiry. Most studies have examined the culture of the organization but very few have researched the cultures of departments throughout one firm. This research analyzes how the different departments’ cultures affect a firm’s collaboration and performance.

Timothy Sellers Psychology
Religion and Emotion
Dr. Michael Nielsen

This study observes correlations between different aspects of religious background in those who disaffiliate or leave religion, specifically centrality of religion, exclusivity of religion, and family religiosity, with the presence of anxiety symptoms after disaffiliation.

Catelyn Shipp Psychology
Individual Differences in Decision-Making
Dr. Ty Boyer

When making decisions, most people tend to avoid uncertain outcomes or risks. However, individual differences, such as optimism versus pessimism or liberalism versus conservatism, may lead to variable approaches and outcomes in the decision-making process. Thus, the goal of this research is to examine individual differences in decision-making preferences and whether these associate with certain personality characteristics.

Cassandra Thomasson Psychology
Real World vs. Media Representation of Relationships
Dr. C. Thresa Yancey

In this study, we investigated the correlations between media representation and real world views towards minority groups, specifically towards those who identify as LGBT+. To this end, participants filled out questionnaires related to their personal views on real life issues as well as their feelings towards films featuring minority characters.
Julisha Ford  
History  
Systemic Medical Racism: The Reconstruction of Whiteness Through the Destruction of Black Bodies  
Dr. Jonathan Bryant

The Tuskegee Syphilis Experiment is one of many examples of racist medicine in American healthcare. Its legacy has led to discussions on white authority and the use of Black bodies in medicine. This study examines the creation of the study and its relation to African-American distrust of American healthcare.

Jessica Forsee  
History and Political Science  
Genocide Masquerading: The Politics of the Sharpeville Massacre and the Soweto Uprising  
Dr. Cathy Skidmore-Hess

Apartheid South Africa represented a paradox as a US Cold War ally and human rights pariah. This project brings together a comparison of two events only ever studied individually and places it in the context of anti-apartheid resistance, US foreign policy, the emergence of African nationalism, and the politics of oppression.

Rachel Gay  
History and Recreation  
The Power of the Press in the South’s Battle against the Freedmen’s Bureau  
Dr. Solomon Smith

While the Civil War had just ended a new war was beginning in the South. The armies were the Freedmen’s Bureau agents and the Georgians and the battleground was the newspaper. Newspapers across Georgia were using the power of the press to create momentum against the Freedmen’s Bureau.

Hollie Bryan  
Biology  
Effects of Experimental Warming and Drought on Leaf Nutrient Concentrations and Resorption Rates of Boreal and Temperate Tree Species  
Dr. Kerrie Sendall

Climate change is predicted to cause increased global air temperatures and altered precipitation patterns, which may lead to prolonged droughts. An experimental warming and drought experiment found species-specific differences in leaf nutrient concentrations and resorption for temperate and boreal tree species, which may affect long-term nutrient cycling in these ecosystems.

Savannah Mullins  
Biology  
Identification of Bird-Associated Nonpoint Sources of Microbial Contamination in Sediments  
Dr. Asli Aslan

Enterococci are used to monitor microbial contamination of water. They are commonly found in human and animal feces, therefore we cannot identify the source of pollution. A microbial source tracking method targeting avian-associated markers is tested to explore the relation between Enterococci and non-point source pollution in Ogeechee River sediments.

Courtney Telfort  
Biology  
Herbicide Toxicity to Nontarget Aquatic Organisms Does Not Increase in Mixtures with Surfactants  
Dr. Risa A. Cohen

Weed-control chemicals (herbicides) enter streams via runoff. Herbicide (atrazine) mixed with surfactants (APG) improve chemical effectiveness but may adversely affect aquatic microalgae and zooplankton. Abundance of plankton exposed to increasing atrazine concentrations with or without APG decreased at high concentrations of atrazine, but these effects were not enhanced by APG.
Pneumonia is a life-threatening respiratory disease caused by a bacterial infection. The goal of this study is to develop an algorithm using Convolutional Neural Networks (CNNs) to detect visual signals for pneumonia in medical images and make a diagnosis. Although pneumonia is prevalent, detection and diagnosis are challenging. The deep learning network AlexNet was utilized through transfer learning. A dataset consisting of 11,318 images was used for training, and a preliminary diagnosis accuracy of 72% was achieved.

With the rise in popularity of the modernized microgrids (MMGs), the addition of a controller to maximize economic efficiency while taking into account environmental impact is crucial. In this paper, the interior-point algorithm is proposed and utilized in order to minimize the required objective.

Deep learning is a powerful machine learning technique being applied in a broad array of fields to solve complex nonlinear problems. In this thesis, deep learning is utilized to identify and mimic steering patterns, given images of a road as an input.
Morgan LaBalle  
**Physics**

*Boundary Problems in Metamaterial Photonics*

Dr. Maxim Durach

Optical properties of materials have been studied for centuries. This paper examines the properties at the boundary of anisotropic, non-reciprocal media. We study the additional waves supported at these boundaries and the necessary boundary conditions to describe them.

---

Thomas Mulkey  
**Physics**

*Quartic Metamaterials: The Inverse Method, Perturbations, and Bulk Optical Neutrality*

Dr. Maxim Durach

A primary goal of photonics is designing material structures that support predetermined electromagnetic field distributions. We have developed an inverse method to determine material parameters for a quartic metamaterial from six desired plane waves. This work inspired us to study how perturbations to the parameters can result in optical neutrality.

---

Sarah DeLoach  
**Mathematics and Mechanical Engineering**

*Patterns, Symmetries, and Mathematical Structures in the Arts*

Dr. Hua Wang

Mathematics is an academic discipline that can be found everywhere. In particular, connections between mathematics and art have been discovered since the fourth century BC. In this presentation, we will study connections found in mathematics, dance, and music.

---

Alana Bray  
**Elementary Education**

*Teacher-Parent Relationship Building*

Dr. Michelle Reidel

Problems can develop when clashes with culture or daily schedules occur and when communication skills break down. In order to build relationships with parents/guardians, teachers must develop the necessary skills to overcome those possible challenges. Teacher education programs should design more successful models to prepare future teachers for relationship building.

---

Maci Wood  
**Elementary Education**

*Motivating the Unmotivated: How Are We Supporting Struggling Readers in Upper Elementary Classrooms?*

Dr. Michelle Reidel

Motivating struggling students to read is a question considered by many general education reading teachers and special education teachers alike. Because of today’s classroom pressures, it is hard for students to be motivated to read. This study will analyze how teachers are motivating students and facilitate dialogue on exchanging resources.

---

Madison Hayes  
**Philosophy**

*Who Is Baby Girl? A Philosophical Discussion of the Legal Obligation to Define Authenticity*

Dr. Finbarr Curtis

American law has attempted to address unjust treatment of Native Americans through legislation like the Indian Child Welfare Act, which has created complex legal questions about exactly what constituted Native identity. This paper will draw on philosophical discussions of authenticity to reimagine legal conceptions of individual and collective identity.
Lindsay Perrin  
Athletic Training
Effect of Sleep on Division One Women’s Basketball Players’ RPE, Scoring Percentage, Injuries, and Illnesses
Dr. Stephen Rossi

Basketball season occurs over several months and involves heavy traveling, training, and scholarly duties. Twelve female basketball athletes recorded the number of hours of sleep, RPE following practice, and scoring percentage every day for six weeks. Statistical analysis showed no significance in all variables across the six weeks of the in-season.

Kali Todd  
Exercise Science
The Effect of Perceived Level of Social Support on the Fear of Falling
Dr. Daniel Czech

Perhaps the most prevalent cause of anxiety among the elderly is the fear of falling. The Falls Efficacy Scale-International and the Multidimensional Scale of Perceived Social Support were administered to individuals ages 60 and older to examine the relationship between perceived social support and fear of falling.

Abigail Greer  
Recreation
Caregiver Perceptions of the Effects of a Therapeutic Camp on Well-Being Using the Flourishing Through Leisure Model
Dr. Brent Wolfe and Dr. Katy Gregg

This study examines caregiver perceptions of the impacts of a therapeutic camp on their child’s well-being. The camp was tailored for adolescents with disabilities focusing on life skills, physical activity, recreation, and personal goals. Qualitative data was examined and interpreted through the lens of the Flourishing Through Leisure Model.

Chase Robinson  
Biology
The Sucking Louse Fauna of Mongolian Rodents: Host Associations, Molecular Phylogenetics and Description of Two New Species
Dr. Stephen Greiman and Dr. Lance Durden

This study aimed to screen Mongolian rodents for sucking lice (Insecta: Phthiraptera: Anoplura) to better understand host-parasite associations for this understudied region. Nine species, including three previously unsubscribed, from four genera were identified. A molecular phylogeny based on two mitochondrial genes of collected louse specimens is included.

Briana Sesmundo  
Biology
Molecular Survey of Helminths Infecting Ground Dwelling Birds in the Grouse Subfamily Tetraoninae
Dr. Stephen Greiman

Alaskan grouse and ptarmigan are significant game birds in Alaska and are found to harbor a fairly diverse helminth parasite fauna. In this study we conducted a molecular and morphological survey of the parasite fauna and developed a new molecular probe to screen for microfilaria (larval nematodes).

Grayson Walker  
Biology and Chemistry
Geometric Morphometric Analysis of Redbreast Sunfish (Lepomis auratus) over their Native Range
Dr. Jamie Roberts

Redbreast sunfish are a widely distributed freshwater generalist species commonly found in the North American Southeast. Redbreasts were obtained from three different ecoregions in four different river basins. This study aimed to look for consistent morphological variation between either the ecoregions or river basins through geometric morphometric analysis using tpsDig.
Daniel Missroon  
Writing and English  
The Boyd Manuscript  
Professor Jared Yates Sexton

This creative work explores the interplay between author and narrative through interconnected stories in multiple genres. Scholarly critique and annotation affects the way in which works are interpreted, and as such this work also investigates the intersection of scholarly writing and narrative structure through the lens of metafiction.

Paige Peterson  
Writing  
The Places We Called Home  
Dr. Lisa Costello and Professor Christina Olson

An excerpt from a novel-in-progress following the lives of three related women, told via interconnected chapters. This thesis represents the stories of two women: Esther and Robin. Borrowing the technique of memoir to tell a fictionalized account of their lives, these stories are finally being shared in effort to recast societal narratives and reveal empowerment in the unlikeliest places.

Kassie Bohannon  
Writing  
Okay: A Short Story Cycle  
Professor Jared Yates Sexton

Okay is a literary short story cycle that follows a young man from adolescence into adulthood as he lives with clinical depression. The project examines exterior influences on one’s mental health and their relationships with others, including poverty, parental abandonment, substance abuse, and the refusal to seek professional help.