

**UNIVERSITY HONORS PROGRAM
GEORGIA SOUTHERN UNIVERSITY
APRIL 21, 2017**

2017

**HONORS
RESEARCH
SYMPOSIUM**

Spring 2017 Honors Research Symposium

SCHEDULE

THESIS PRESENTATIONS

Nessmith-Lane Classrooms

Session 1

11:00 am - 12:00 pm

RECEPTION & POSTER PRESENTATIONS

Nessmith-Lane Ballroom

12:15 pm - 1:15 pm

WELCOME

Nessmith-Lane Ballroom

12:30 pm

THESIS PRESENTATIONS

Nessmith-Lane Classrooms

Session 2

1:30 pm - 2:30 pm

Session 3

2:45 pm - 3:45 pm

Session 4

4:00 pm - 5:00 pm

WELCOME

Welcome to the Tenth Annual Honors Research Symposium. This event is designed to showcase the research and creative activities of the honors students of Georgia Southern University. This year, over 125 honors students will present their work, bringing the total number of participants to over 700 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 projects, 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.



11:00AM - 12:00PM

ROOM 2901

Taylor Burns

Biology

Time of Death: Using Insects to Develop a Postmortem Interval Estimate

Dr. Edward Mondor

For a homicide investigation, a minimum postmortem interval (mPMI) estimate was developed. As insects are ectothermic, their development can be used as a biological clock for determining “time of death”. All specimens collected were consistent with the Scuttle Fly, *Megaselia scalaris*. The mPMI was estimated to be 8 days.

Mackenzie Payne

Biology

Age Distributions Of White-Tailed Deer, *Odocoileus virginianus*, Killed in Motor Vehicle Collisions On Bulloch County Roadways

Dr. Edward Mondor

White-tailed deer, *Odocoileus virginianus*, cause approximately 1 million motor vehicle accidents each year. White-tailed deer remains in Bulloch County, GA were aged by: 1) tooth eruption sequence and 2) cementum annuli aging. Deer killed were more likely to be young, on 2-lane roads, and on roads that were paved.

Oluwadamilola Oke

Biology

Blow fly (*Diptera: Calliphoridae*) Responses to Different Colors of Baited Traps

Dr. Edward Mondor

Blow flies (*Diptera: Calliphoridae*) are generally the first insects to colonize human remains. Little is known, however, about the cues they use to locate bodies. In a field experiment, three blow fly species preferred clear over green traps, indicating they use visual (as well as olfactory) cues to discover remains.

11:00AM - 12:00PM

SESSION 1

THESIS PRESENTATIONS

11:00AM - 12:00PM

ROOM 2903

Derrick Ramage

Economics

A County by County Analysis of Poverty in the State of Georgia
Dr. William Levernier

The major focus of this paper is determining the effect that demographic, educational, economic and transportation/geographic variables have on the poverty rate and what solutions exist to reduce it. We have found that attempts to reducing poverty should include increasing education, promoting the existence of commuter zones and infrastructure, and raising per capita net earnings.

Stephanie Miller

Justice Studies

School Shootings Perpetrators' Self-Reported Motives: A Qualitative Analysis of Manifestos and Other Writings
Dr. Laura E. Agnich

This study examined the self-reported motives of twenty perpetrators of school shootings throughout the world by examining their manifestos and other writings. In particular, we looked at what motivations the perpetrators expressed in their writings and which motivations were the most common.

Joy D. Bonner

Justice Studies

Do Students' Knowledge of the Student Conduct Code Correlate With Their Conduct-Breaking Behaviors on Campus?
Dr. Laura E. Agnich

Annually colleges and universities spend countless hours updating their student codes of conduct, but is this added time worth the hassle if students continue to break the code? The purpose of this study was to examine the effects a student's knowledge of a university's code of conduct may have on the amount of code-breaking behaviors committed on campus.

11:00AM - 12:00PM

ROOM 2904

Jennifer Shaffer **Mechanical Engineering and German**

A Case Study of the Underlying Causes and Implications of the Landmark GM-Opel Automobile Plant Closure in Bochum, Germany
Dr. Horst Kurz

This study examines the underlying causes of and the subsequent reactions to the sudden closure of the flagship GM-Opel plant in Bochum in December 2014 after 52 years of continuous operation in the Ruhr-valley region of northwestern Germany.

Ana Cristina Hernández

Spanish and Biology

Las Dinámicas del Mantenimiento de Lengua Entre Latinos en Áreas Rurales del Sur de Georgia: Direccionalidades Presentes y Futuras
The Dynamics of Language Maintenance among Latinos in Southern Rural Georgia: Present and Future Directionalities
Dr. Ángela Pinilla-Herrera

The United States has been considered by linguists a "tomb" for immigrant languages. This study is the first to analyze Spanish maintenance in rural and semi-rural areas of Georgia and the factors that contribute to or impair such maintenance.

11:00AM - 12:00PM

ROOM 2905

Jacob Matthews

Psychology

The Relation of Race and Location with Substance Use in Bisexual Men and Women

Dr. Bryant Smalley

Not much research has been done on substance use by bisexual men and women. This study looked into how substance use in bisexual men and women was affected by race and rural location. Results showed that race and location affected use of only certain substances.

Gina Pate

Psychology

An Examination of How Current Relationship Goals Determine Continuing Educational Goals

Dr. Daniel Webster

This study is an examination of current goals and motivation of undergraduate students at Georgia Southern University. This study looks at how the ideal goals relate to the mate preferences of men and women.

J. Alex Schenk

Psychology

The Mobius Strip of Total Health: Manipulation of Thinking Prior to Exercise Activity

Dr. Shauna W. Joye

We hypothesized that if there was a correlation between physical exercise and mental health and we could motivate individuals to exercise, then that motivation would lead to better mental health. We tested this idea using various external motivational messages sent to 320 students across four months of mandated physical exercise.

11:00AM - 12:00PM

ROOM 2908

Rashida Otunba

Journalism

Use of Anonymity in College Media and Its Impact on the Believability of Print News Stories on College-Age Readers

Dr. Jennifer Kowalewski

The purpose of this research is to determine whether the use of anonymous sources in news stories affects the believability of college media. For this experiment, college students were tested to see whether they believed news stories that used anonymous sources compared to news stories that did not use anonymous sources.

Chyna James

Journalism

Race and Gender in the Coverage of WNBA Protests in Newspapers and on Twitter

Dr. Camille Broadway

This research examined newspaper and Twitter coverage of the WNBA protests, specifically looking at the ways in which black female athletes are covered in the context of a social protest. Research suggests that the WNBA did not receive much attention, and the stories strayed away from in-depth coverage, focusing on other sports protesters and athletes.

Christin Grulke

Public Relations

A Study of Chipotle Mexican Grill's *E. Coli* Outbreak Through Social Media

Dr. Michelle Groover

This thesis examines social media use during the Chipotle Mexican Grill *E. coli* crisis from October 19, 2015, to February 8, 2016, by the organization and public. Coombs' Situational Crisis Communication Theory was applied to understand the reaction and reasoning behind Chipotle's and the public's portrayal of the *E. coli* outbreak.

11:00AM - 12:00PM

ROOM 2911

Carolynn Nixon

Political Science

Helping Ourselves First: Conflict Management Strategies of Regional International Organizations

Dr. Jamie Scalera

In this paper, I examine to what extent organizational structure influences how regional international organizations intervene in times of conflict. I argue that regional international organizations should be biased to intervene in ethnic conflict but that institutional design often constrains these organizations.

Auburn Bell

Political Science and Spanish

A Revolutionary Norm: Socialism in the United States vs. Europe

Dr. Jamie Scalera

What causes socialism in the United States (U.S.) to be viewed as “radical” compared to Europe? The U.S.’s polarized two-party system causes socialism to be seen as “radical” compared to the European multi-party systems. I find that the media, familial ideology, and party representation determine America’s perceptions of socialism.

Tanner Perfect

Political Science and Spanish

Why do Latinos Vote Democratic in Presidential Elections?

Dr. Joshua Kennedy

Why do Latinos vote Democratic in presidential elections? By conducting a survey and analyzing ANES time series data, I hope to show that stance on economic policies is the most important issue in determining which candidate the Latino and Hispanic community will vote for in presidential elections.

12:15 PM - 1:15 PM

POSTER PRESENTATIONS

12:15 PM - 1:15 PM

BALLROOM

1. Jacob Hicks

HVAC Filter Settled Dust's Effect on Bioaerosol Concentrations

Dr. Atin Adhikari

We investigated the effects that settled dust on HVAC return filters had on bioaerosol concentrations. Our studies showed a 192.7 CFU/m³ (s=86.95 CFU/m³) increase in bacterial concentration inside of the chamber when filters were not maintained. This supports our hypothesis that settled dust can affect the presence of airborne bacteria.

2. Emily Deyton

Boys to Men: Accommodating the Changing Male Voice in Secondary Choir Classrooms

Dr. David Langley

The changing male voice presents a unique challenge for secondary choir teachers. Although most voices follow a predictable series of stages, no two individuals will have the same experience. This project surveys recent literature on adolescent male voices and attempts to delineate best practices for accommodating them in rehearsal settings.

3. Hugo Flores Garcia, Catie Shipp, Chris Holbrook, & Sam Torres

The Economic Effects of Georgia Southern University on the Statesboro Community

Dr. Francis Desiderio

Our research analyzes the economic role of the university in the community, with emphasis on the resulting opportunities for employment, increased commercialization, and the often conflicting economic motives of the students and the residential community. From a statistical standpoint, we compare several economic factors to understand the impact of Georgia Southern on Statesboro as a whole.

12:15 PM - 1:15 PM

BALLROOM

4. Maggie Baechle, Jared Warren, & Tyler Collins

The Impact of the Government and GSU on Statesboro's Development: An Economic Lens

Dr. Francis Desiderio

This presentation focuses on the government's and Georgia Southern's impact on the city of Statesboro. The lens this presentation is viewed through is primarily economic and developmental impact.

5. Austin Sumner, Johnathan Spathelf, Haley Noelle Anderson, Erin Scooler, & Caitlin McOsker

How the Blue Mile Affects Place: Unification of Statesboro as a Place Between Residents and Students

Dr. Francis Desiderio

We examined the effects of the Blue Mile on Statesboro socially and observed how it will affect both the students of Georgia Southern as well as the current long-term residents of Statesboro. We looked at buildings that tried to unite the university and downtown, and how they affect Statesboro overall.

6. Kelsea Mabie, Sara Frost, Jacob Greene, & Margaux Solheim

How Athletics Affect Georgia Southern University

Dr. Francis Desiderio

With the slogan, G.A.T.A, and Paulson Stadium on fall Saturdays, it is no guess that athletics, and especially football, have a huge role at Georgia Southern University. This research focuses on three main aspects of impact athletics has pertaining to marketing, admissions, and student morale.

12:15 PM - 1:15 PM

BALLROOM

7. Bailey Kirk

Mathematics Education Through College Algebra and Calculus

Dr. Ha Nguyen

Georgia Southern University's faculty conducted assessments on College Algebra and prerequisite skills for Calculus. This poster presents the further analysis of these data to show trends within the data that can be used to improve the teaching and learning of some concepts in College Algebra and prerequisite skills for Calculus.

8. Marina Michaud

Synthesis of Multifunctional Polyacrylates and Binding to Hemoglobin

Dr. Hans Schanz

Traumatic brain injuries coupled with severe hemorrhaging represent a leading cause of morbidity and mortality due to hypoxia in the injured brain tissue. Our research aims at a novel synthesis of Polynitroxyl Pegylated Hemoglobin, which exploits the oxygen transport mechanism of extracellular hemoglobin to restore oxygen flow in the body.

9. Conner Clark, Isabelle Lennon, Parker Intonato, & Christina Sartain

Reintroduction into Society Using Animal Assisted Therapy

Dr. Jerri Kropp and Dr. Trent Maurer

Our poster covers the use of therapy animals as a method to help reintegrate patients into society. The patients include a wide range of subjects including college students, drug addicts, teens, and people with emotional, physical, and psychological disorders from an array of different cultures.

12:15 PM - 1:15 PM

BALLROOM

10. Sarah Rogers, Shivani Patel, Caitlin Shelby, Ryann Heninger, & Ashlyn Smith

Unforeseen Friends: The Effects of Animal-Assisted Therapy on Children with Atypical Behaviors

Dr. Jerri Kropp and Dr. Trent Maurer

This study addresses the settings, populations, benefits, and locations of animal-assisted therapy on children exhibiting abnormal behavior with attention to global cases and studies. This can include children with autism spectrum disorder and special needs, children with cerebral palsy, hospitalized children, children with ADHD, and others.

11. Olivia Thompson, Emily Schroeder, Jordan Flemming, & Kaitlyn Bjork

Animal Assisted Therapy and Mental Disabilities

Dr. Jerri Kropp and Dr. Trent Maurer

Animal assisted therapy has gradually become a popular and normalized treatment for those with mental disabilities. The purpose of our presentation is to convey what these treatments are, how they better the lives of those who are treated, and where these treatments are taking place in the world.

12. Rachel Yu, Sierra Reese, & Kaitlyn Holcombe

Animal Assisted Therapy with Trauma Victims

Dr. Jerri Kropp and Dr. Trent Maurer

This project involves animal assisted therapy to help those who have faced some form of physical or emotional trauma in a global perspective.

12:15 PM - 1:15 PM

BALLROOM

13. Richard Steele

An Area Based Fan Beam Projection Model

Dr. Jiehua Zhu

Currently the area based fan beam projection model for computed tomography involves approximations in a rotation matrix Q when simulating the rotation of the emitter detector pair. We derive an exact formula for entries of Q that phases out approximations and minimizes error in the projection data for image reconstruction.

14. Sydney Wright

Primer Design for Amplification of Genes Encoded by a Chromosomal Insert in *Rickettsia philipii*

Dr. Marina Eremeeva

Rickettsia philipii is an emerging rickettsial pathogen and the nearest relative of *Rickettsia rickettsii*, the agent of Rocky Mountain spotted fever. Our goal is to use PCR for confirming the presence of 11 unique bioinformatically predicted genes in isolates of *R. philipii* and to examine their distribution in other *Rickettsia*.

15. David Moore

Utilizing Scalable Video to Optimize Video Playback on EPONs

Dr. Rami Haddad

Video compression decreases the bandwidth required to stream video but also creates high levels of delay jitter which is experienced by the end user as buffering. By selectively dropping packetized quality layers from a video stream, delay jitter is decreased and buffering can be effectively prevented.

12:15 PM - 1:15 PM

BALLROOM

16. Wesley O'Quinn

Video/Image Quality Enhancement Using High-Resolution Frame Equalization

Dr. Rami Haddad

This research proposes an image referencing technique that can take a low quality image and recreate it such that the resolution and quality can be improved. This will be accomplished by using a reference high quality image in addition to a combination of filtering methods.

17. Brittany Hollowell, Ben Kennerson, Hawk Cole, & David Vaughn

LinkedIn Alumni Tool and its Benefits

Dr. Thomas Case

Over time, the use of social media in networking has increased exponentially. This study researches the social media outlet, LinkedIn, and its effects on business and career networking between alumni and universities. Subsequently, it was found that the LinkedIn Alumni tool gave universities an advantage in networking with past students.

18. Devin Ferrell, Amanda Snyder, James Nguyen, & Jalen Womack

Improving Career Services Practices at Georgia Southern

Dr. Thomas Case

The LinkedIn Alumni Tool can be used to further improve Georgia Southern University Career Services Processes.

19. Stephanie Gomez Hernandez, Dylan Alvis, Katherine Fugett, Collin Williams, & Shelton Fowler

LinkedIn Alumni Tool and University Admissions

Dr. Thomas Case

The LinkedIn Alumni tool is currently utilized by many colleges, but it is not yet being used by Georgia Southern University's Office of Admissions. LinkedIn can be used by potential students to connect with alumni in their field of interest. Universities can use this tool to advertise themselves to interested students.

12:15 PM - 1:15 PM

BALLROOM

20. Taylor Close & Kate Wood

#NiUnaMenos

Dra. Leticia McGrath

#NiUnaMenos is a movement that protests femicide in Latin America. Our poster will evaluate how the movement started, how it is currently spreading, and the impact of intervention strategies at both the local and global scale.

21. Benjamin Cosby & Matt Stier

El Día de los Muertos and Hispanic Culture's View of Death

Dra. Leticia McGrath

Our poster focuses on the traditional death practices in Latin America, and talks about the widely known celebration of death El dia de los muertos.

22. Camille Philips & Alexandria Lee

Let's Shrink the Gap! Education and Inequality in Latin America

Dra. Leticia McGrath

Latin American countries receive little international donations and provide insufficient funding for their education programs. Latin American children are unable to reach the tertiary stage of education because of their poor schooling beforehand, a result of meager funding to primary institutions. This negatively affects their labor force and economic growth.

23. Adrianna Collins, Cameron Driskell, & Hailey Baker

What's Life Like Inside North Korea? Stories from North Korean Defectors

Dra. Leticia McGrath

This poster has quotes from two people who escaped North Korea describing what it was like living on the inside. The purpose of this poster is to raise awareness of the human rights violations happening in North Korea on a daily basis.

1:30 PM - 2:30 PM

SESSION 2

THESIS PRESENTATIONS

1:30 PM - 2:30 PM

ROOM 2901

Harley Kitching

Biology

The Effects of Elevated CO₂ Levels on *Vicia faba*, Broad Bean, Growth/Defense Tradeoffs

Dr. Edward Mondor

Plant growth/defense tradeoffs may be altered by climate change. Broad bean, *Vicia faba* L., plants grown under ambient CO₂ levels had heavier stem weights, while elevated CO₂ plants produced more extrafloral nectaries and extrafloral nectar. Plants grown under elevated CO₂ invested more in defense than growth.

Maggie Howard

Biology

Inbreeding Depression in the Introduced Spider *Latrodectus geometricus*

Dr. J. Scott Harrison

Introduced species are thought to have high inbreeding rates during introductions, which can eliminate recessive deleterious alleles. This project quantified inbreeding depression in introduced populations of the brown widow spider. The results indicate significant inbreeding depression suggesting little inbreeding occurred during the introduction.

Isabel Moran

Biology

Determining the reproductive patterns of the Titan Acorn Barnacle (*Megabalanus coccopoma*) in its introduced range

Dr. J. Scott Harrison

Megabalanus coccopoma is a hermaphroditic barnacle introduced to the southeastern U.S. Genetic analysis was performed to determine if multiple paternity is common and if barnacles that are isolated from mates self-fertilize. Results indicate that multiple paternity is not common and isolated barnacles are able to reproduce but not by self-fertilization.

1:30 PM - 2:30 PM

ROOM 2903

Sean Spurlin

Chemistry

Regioselective Electrolytic 5,8-Difluorination of Quinolines

Dr. Abid Shaikh

The introduction of fluorine uniquely affects the biological properties of organic molecules. This work describes the development of a new methodology to incorporate fluorine into organic compounds involving a regioselective electrochemical 5,8- difluorination of quinolines using HF:pyridine as both the reagent and supporting electrolyte.

Olivia Perdue

Chemistry

Preventing Gene Expression through the Interruption of DNA Binding

Dr. Amanda Stewart

The interruption of DNA binding is a gateway to the inhibition of unregulated expression of genes which leads to illnesses such as cancer. The goal of this research is to produce DNA-binding molecules which could displace the binding of natural transcription factor thus reducing the expression of various proteins.

Delanie Newbery

Chemistry

Photodynamic Cancer Therapy: A Study of the Photochemical Properties of meso-Tetra (2,3,4-trifluorophenyl) Porphyrin and meso-Tetra (2,3,5,6-tetrafluorophenyl) Porphyrin

Dr. Jim LoBue

Porphyrins are light sensitive molecules that use absorbed energy to excite oxygen, which gives them candidacy for a type of cancer treatment called Photodynamic Therapy. Photolysis and Carbon-13 NMR experiments were performed on meso-Tetra (2,3,4-trifluorophenyl) and meso-Tetra (2,3,5,6-tetrafluorophenyl) porphyrin to determine the reaction order and percent decomposition of 9,10 diphenylanthracene.

1:30 PM - 2:30 PM

ROOM 2904

Donald Roberts

History

Full Circle: The New Deal and the Great Recession
Dr. Craig Roell

A paper on the detrimental effects of intrusive government economic policies, this paper examines the neo-progressive movement that began during the Great Depression under President Franklin Roosevelt and was expanded under several future presidents, specifically Johnson, Nixon, and Clinton. This paper explains how these programs have negatively affected the American society and economy and contributed directly to the Great Recession of 2008.

Juliana Hafner

History

Free Speech in Wartime: Sedition Acts during the Presidencies of John Adams and Woodrow Wilson
Dr. Johnathan O'Neill

An analysis of two wartime eras based on the American federal government's creation of the Sedition Acts of 1798 and 1918, through examinations of both period's specific acts, political atmospheres, in-depth case analyses, government and public reaction to the acts, and their overall impact on the development of American Constitutionalism.

Cierra Tomaso

History

Jewish Resistance in World War II & Zionism: Making Aliyah in the Death Camps
Dr. Brian K. Feltman

This thesis shows that Zionism played a key role in the motivations of Jewish resistance fighters in World War II. It will examine how as Jews found that their home countries cut ties with them, they found refuge in their identity as Zionists.

1:30 PM - 2:30 PM

ROOM 2905

Clinton Ford

Human Resource Management

Organizational Health : Researched Problem Analysis
Dr. Robert Hoell

Through the use of scholarly research, this project presents a recovery plan for the problems facing a professional organization. The topics discussed will tie heavily into increasing membership and retention.

Rebecca Burchette

Psychology

Narcissism and Short-Term Mating
Dr. Nicholas Holtzman

This study aimed to evaluate the correlation between narcissism and the active selection of short-term mating. I hypothesized that there would be a positive correlation. However, the results were nonsignificant.

Samaria Hamilton

Psychology

The Effects of Pointing Gestures on Visual Attention
Dr. Ty W. Boyer

Visual attention involves concentrating on features within the environment. The present study examines how pointing gestures and motion affect attention using a visual search task. The findings revealed an interaction, which suggests a complex effect of gestures and motion in capturing attention.

1:30 PM - 2:30 PM

ROOM 2908

Amanda Boyd

Exercise Science

An Examination of Goal Orientation between Genders - An Exploratory Study

Dr. Daniel Czech

Goal orientation is defined as the perceptual-cognitive frameworks that determine how an individual approaches, interprets, and responds to achievement situations. Results revealed significantly higher goal orientation in females than males.

Jordan Nourse

Exercise Science

An Examination of Spasticity of the Lower Extremity among Young People with Cerebral Palsy

Dr. Gavin Colquitt

Spasticity is the most common symptom among individuals with cerebral palsy (CP). This study will present a new measure of spasticity using dynamometry, by calculating torque values during constant velocity. Significant differences in peak and mean resistive torque values of the quadriceps were observed between functional groups at varying velocities.

Christina Chandler

Mathematics

Network Modeling of Infectious Disease: Transmission, Control and Prevention

Dr. Hua Wang

In disease control and prevention, it is inevitable to consider the general population and the relationships between individuals, which calls for advanced mathematical modeling approaches. We use the concept of network flow and the modified Ford-Fulkerson algorithm to demonstrate the transmission of infectious diseases over a given period of time.

1:30 PM - 2:30 PM

ROOM 2911

Margaret Delisle

Writing & Linguistics

Lights Over Coney

Prof. Jared Yates Sexton

This thesis follows the family of Romanian Jewish immigrants through three generations as well as the evolution of Coney Island from the opening of Sea Lion Park to the closing of Steeplechase Park in 1964.

Summer Kurtz

Writing & Linguistics

Andropomorphic: A Poetry Collection

Prof. Christina Olson

Andropomorphic follows the journey of a young adult through the obstacles and triumphs of maturity through a series of poems. The speaker explores challenges with mental illness, sexuality, and becoming independent.

Aleyna Rentz

Writing & Linguistics and English

Flannery O'Connor in Boxing Gloves and Other Stories

Prof. Jared Yates Sexton

Flannery O'Connor in Boxing Gloves and Other Stories is a collection of experimental short stories. By fictionalizing famous writers, these stories explore the cult of personality and what it means to be both a reader and a writer.

2:45 PM - 3:45 PM

ROOM 1909

Kayleigh Hunter

Early Childhood Education

Technology and Student Achievement in STEM Subjects: Perspectives from Teachers in Grades 3rd-5th

Dr. Meca Williams-Johnson

This qualitative investigation examined how technology is used and integrated into selected elementary classrooms in southeast Georgia. The influence of technology on student achievement was investigated, and more specifically the role of teachers' perspectives on technology and devices they use most often was analyzed.

Anna Dowdell

Early Childhood Education

Preferred Behavioral Management Strategies of 3rd - 5th Grade Teachers

Dr. Meca Williams-Johnson

The purpose of this study was to investigate the preferred behavioral management strategies among 3rd - 5th grade teachers. The study explored the main discipline problems that these teachers experience in their classrooms and how they handle them. It also explored the teachers' opinions of the effectiveness of their preferred behavioral management strategies

Nneka Dean

Early Childhood Education

Women's Education: An International Perspective

Dr. Meca Williams-Johnson

The purpose of this study is to dissect a topic that is heavily discussed around the world: women's education, and the many diverse ways in which it is practiced. This presentation will discuss the similarities and differences among women's education in the United States and in other countries around the world.

2:45 PM - 3:45 PM

SESSION 3

THESIS PRESENTATIONS

2:45 PM - 3:45 PM

ROOM 2901

Monique Kellman

Biology

The Biological Stress Response in Bluegill Sunfish (*Lepomis macrochirus*) to Variations in Environmental Temperature and Dissolved Oxygen Content

Dr. Johanne Lewis

Understanding the impact of a warming environment, with coinciding decreases in oxygen, on aquatic organisms, is becoming increasingly important due to the reality of climate change. This study investigated the effect of increased water temperature and decreased oxygen on the aerobic scope of a local, freshwater fish species, bluegill sunfish.

Eudiah Ochieng

Biology

The Effect of Acute Thermal Stress on Gene Expression Levels of Hsp70 in the Antarctic Notothenioid, *Notothenia coriiceps*

Dr. Johanne Lewis

Antarctic fish are well adapted for life in the Southern Ocean. Recent climate changes are posing a threat to this stable, cold environment. This study investigated the capacity of *Notothenia coriiceps* to mount a heat-stress response by measuring gene expression changes of erythrocyte Hsp70 in response to acute thermal stress.

James Long

Biology

Comparative Floristic Studies of Georgian Sandhill Ecosystems Reveals a Dynamic Composition of Endemics and Generalists

Dr. John Schenk

Sandhills are a unique habitat and home to multiple rare and endangered species, however, increased human population growth and development fragment and destroy these habitats. To gain a more comprehensive understanding of these ecosystems, we sampled four Georgian Coastal Plain sandhills and compared species occurrences and life history patterns.

2:45 PM - 3:45 PM

ROOM 2903

Megan Mears

Biology

Application of RNA Probes for Detection and Identification of the p120 Ortholog of *Ehrlichia ewingii*

Dr. Marina E. Ereemeeva

Ehrlichia chaffeensis and *E. ewingii* are tick-borne obligate intracellular bacteria. *E. chaffeensis* is well-characterized, but little is known about genes and antigens of *E. ewingii* because of its uncultivable status. This project applies molecular methods to identify and characterize the *E. ewingii* gene(s) encoding protein antigens cross-reactive with *E. chaffeensis*.

Laina Latsch

Biology

The Surfactant Alkylpolyglucoside Affects Phytoplankton Communities Differently Alone than in a Commercial Mixture in Artificial Streams

Dr. Risa Cohen

Alkylpolyglucoside (APG), commonly found in cleaning products, may have different effects on aquatic organisms alone vs. in commercial mixture. Microalgae were exposed to APG or an APG-containing product in two seasons. Microalgal responses to APG-containing product differed by season and species, suggesting complex interactions with other chemicals in the mixture.

Stacey Zeestraten

Chemistry

Product Optimization of Tire Pyrolysis for Oil Well Rehabilitation

Dr. Don McLemore

A catalyst, Zeolite, and a stainless steel filter have been added to a pyrolysis reaction to optimize Tire Pyrolysis Oil (TPO) for use in oil well rehabilitation. Past studies indicate that catalytic cracking can decrease the amount of heavy weight hydrocarbons and increase the amount of light weight hydrocarbons within a sample of TPO. The study looked at the effects of a filter on the decomposition of crumbed tire rubber, and the study looked at the effects of a filter and a catalyst on the distillation of TPO.

2:45 PM - 3:45 PM

ROOM 2904

Caleb Still

History

Lost Boys and Girls: Navigating Experience and Identity during Operation Pedro Pan

Dr. Christina Abreu

Over 14,000 unaccompanied children came from Cuba to the United States during Operation Pedro Pan. Once they arrived they faced an entirely new living situation and were forced to adapt. The Catholic Church played a significant role in shaping these children's fluid concept of their ethnic, national, and religious identities.

Malik Raymond

History

Gloria Anzaldúa's El Mundo Zurdo: The Necessity of a Historical Assessment

Dr. Christina Abreu

Gloria Anzaldúa, a Chicana feminist lesbian theorist is known for her landmark book, *Borderlands/La Frontera: The New Mestiza* and her theories. However, none have been assessed historically. I contend that one of her lesser known theories, El Mundo Zurdo, is best understood biographically.

Nancy Balczionas

History

The Music and Politics of Willy Chirino

Dr. Christina Abreu

Cuban musician and singer Willy Chirino, who came to the United States as a child of Operation Pedro Pan, has used his long career in music to spread a political agenda in a variety of ways.

2:45 PM - 3:45 PM

ROOM 2905

Andrew Perry

Computer Science

Development of the Fast Fourier Transform Algorithm in the Go Language

Dr. Juan Vargas

In 2009, Google released its flagship programming language: Go. This capstone thesis translated the Fast Fourier Transform (FFT) into an algorithm in the Go language. By successfully developing the FFT algorithm, Go will have the potential to replace older and less efficient languages used with older machinery utilizing the FFT.

Charles Arvey

Computer Science

Expanding the Availability of the Distributed Data Protocol: A Python Implementation

Dr. Juan Vargas

This paper covers an implementation of a DDP Server in Python 3.5. The Python ecosystem boasts an eclectic set of libraries that few other languages can compete with. Notably, Python provides libraries that provide immense support for scientific computation that are even more useful when used in conjunction with DDP.

Caleb Orban

Computer Science

Analyzing Sorting Algorithms Across Various Languages and Operating Systems

Dr. Juan Vargas

When sorting mass amounts of data, there are many algorithms with different approaches to sorting. This thesis seeks to compare the time efficiency of the execution times of several basic sorting algorithms across several operating systems.

2:45 PM - 3:45 PM

ROOM 2908

Lacey Dennis

Athletic Training

The Effects of Static Stretching on Pennation Angle and Muscle Power Production in the Triceps Surae Complex

Dr. Li Li

The purpose of this study is to see how pennation angle and muscle power production is affected by a static stretching protocol. We hypothesize that an increase in pennation angle between pre and post testing will be accompanied with less muscle power production after static stretching is completed.

Kolyse Wagstaff

Exercise Science

The Effect of Stretching the Gastrocnemius on Electromechanical Delay and Decreased Muscle Power Production

Dr. Daniel Czech

Studies in biomechanics show that statically stretching muscles before explosive athletic events decreases muscle power production. Current research does not explain why power production is lessened due to static stretching. Electromechanical delay is the delay between muscle stimulation and force, and EMD was examined during jumping and decreased power production.

Eva Blais

Exercise Science

Effects of Static Stretching on Proprioception and Decreased Muscle Power Production

Dr. Li Li

The purpose of this study was to explore how stretching affects proprioception, which in turn affects power production. Using the Biodex, repositioning was used to determine each participant's proprioception in the ankle joint.

2:45 PM - 3:45 PM

ROOM 2911

Tony Hudson, Jr.

International Studies

Individual Domestic Terrorism: An Analysis of the Motivations and Radicalization of Terrorism in the United States

Dr. Srobana Bhattacharya

Individual terrorism has increased in the United States. What are the motivations behind these attacks, and what has led these individuals to participate in this form of political violence? I combine rational choice, sociological, and psychological theories in order suggest a similar path towards radicalization by such individuals.

Maria Alejandra Amiel **International Studies and French**

Exploring the Role of Corporate Social Responsibility (CSR): European French Corporations' Compliance and Future with CSR

Dr. Matthew Flynn

This research seeks to analyze how corporate social responsibility (CSR) provides tools and skills for corporations in effort to improve their initiatives with the goal of creating better outcomes. Additionally, this study aims to discover if the implementation of CSR policies result in positive observable outcomes European region, namely France.

Kellie O'Boyle **International Studies and Writing & Linguistics**

The Dragon's Flight to the Tropics: China's Involvement in the Caribbean

Dr. Christopher M. Brown

The 2008 economic downturn in the United States caused it to withdraw from certain regions. Their absence in the Caribbean created a vacuum, which China swiftly filled with investments and trade agreements. This use of soft power lead me to analyze: could this indicate a change in Chinese foreign policy?

4:00 PM - 5:00 PM

ROOM 1909

Serenah Tyson

Multimedia Film & Production

The Process of Directing for Screen: (Sincerely,)

Prof. Tyson Davis

This project seeks to embody the sentiments and realities that people of the LGBTQ community experienced around the country during the time of the Stonewall Inn Riots in New York City in the late 1960s through a short fiction, narrative film.

Mikalah Guyton

Multimedia Film & Production

Gangsta Rap and the Trapped Mentality

Prof. Shana Bridges

This research provides a historical background of the evolution of Hip Hop culture and its subcultures, Gangsta Rap and Trap music. Through the unfolding of events, explanation is further given to confirm rap as a creative form of communication, as it reflects the stories and lifestyles of its emcees.

4:00 PM - 5:00 PM

SESSION 4

THESIS PRESENTATIONS

4:00 PM - 5:00 PM

ROOM 2901

Bolanle Osi Efa

Biology

Soil Microbial Community within Loblolly Pine and Eucalypt Tree Plantations at the Extreme Ends of a Groundwater Depth Gradient

Dr. Tiehang Wu

Microbial communities found in soil organic matter have for so long been recognized in aiding the recycling and decomposition of nutrients in the ecosystem. Both biotic factors, such as plant species, and abiotic factors, such as soil physical and chemical properties, affect the diversity and functional genes of the soil microbial community.

Jesse Carpenter

Geology

Locomotion and Skeletal Morphology of Late Cretaceous Mosasaur, *Tylosaurus proriger*

Dr. Kathlyn Smith

While many specimens have been discovered and described, the tail morphology and locomotive pattern of *Tylosaurus proriger*, a Late Cretaceous mosasaur (*Reptilia: Squamata*), is somewhat unclear. Using morphometric and comparative analyses on various specimens, this study shows that *T. proriger* exhibits posterior propulsion methods driven by a hypocercal caudal fluke.

Anne DeLua

Geology

A Geophysical Investigation of Stratigraphy and Structure on St. Catherines Island, Georgia

Dr. R. K. Vance

A MALÅ ground-penetrating radar is used to determine where salt water is intruding into shallow wells on St. Catherines Island. We also use this data to create a more complete stratigraphical picture of the island. We found structural conduits in the shallow aquifer that may permit salt water intrusion.

4:00 PM - 5:00 PM

ROOM 2903

Karen Campbell

Biology

Immunohistochemical Localization of Ion and Water Transporters in Elasmobranch and Teleost Fish

Dr. Chris Cutler

The location and specific types of water and ion transporters in the elasmobranch nephron are still elusive. In the current study, we used immunohistochemistry to visualize co-localize ion and water transporters along the nephron of dogfish sharks.

Lauren Thompson

Biology

Testing the Optomotor Response in *Sepia bandensis*

Dr. Christine Bedore

The purpose of this study is to test the visual acuity of *Sepia bandensis* using an optomotor response mechanism that allows for interpretation of behavioral responses. There has been increasing interest in cuttlefish vision due to the organisms' camouflage abilities, but *S. bandensis* has never been experimentally tested or compared to other species.

Sydney Doolittle

Biology

The Influence of Autism Linked Gene Topoisomerase 3B (Top3B) on Neural Development in Zebrafish

Dr. Vinoth Sittaramane

Human gene Top3b encodes the enzyme Topoisomerase3B which has been indicated as a contributor to the phenotypic defects in Autism Spectrum Disorders. The current study aims to better understand the specific roles top3b plays in early neurological development through an in-vivo study using zebrafish embryos as a vertebrate model system.

4:00 PM - 5:00 PM

ROOM 2904

Cassandra Villers **Middle Grades Education**
Characteristics of a Motivating and Engaging Middle Grades Classroom
Dr. Meca Williams-Johnson

This study explored students' thoughts on what keeps them motivated, and what they want from their teachers for engagement. It also investigated how teachers encourage pupils and suggestions for motivation and engagement. In a mixed methods study, pupils were selected from six classrooms and surveyed. Then, six teachers were interviewed.

Elizabeth Boyd **Middle Grades Education**
Motivating Students with Different Needs
Dr. Meca Williams-Johnson, Dr. Yasar Bodur, Dr. Michelle Reidel

The study conducted focused on the similarities and differences in the way teachers of gifted students, teachers of students with special needs, and teachers who teach on-level students, motivate their students. The gap that this research filled are ways that can be used to motivate students across multiple ability levels.

4:00 PM - 5:00 PM

ROOM 2905

Haydon Cass Lynch **Electrical Engineering**
S.H.A.D.O.W: The Stimulus Hunting Animatronic Dog of Wonder
Dr. Rocio Alba-Flores

S.H.A.D.O.W is an animatronic black lab who searches for outside stimulus to react to. This comes in the form of movement, noise, touch, and body position. S.H.A.D.O.W is going to be used to research robotic movement and to study the fields of human-machine interaction and lifelike robotics development.

Jennifer Shaffer **Mechanical Engineering and German**
Investigation of the Thermal Performance of Small Sierpinski Carpet Fractal Fins in a Natural Convection Environment
Dr. David Calamas

This experimental investigation evaluates the thermal performance of the first four iterations of the Sierpinski carpet fractal pattern in a natural convection environment by assessing efficiency, effectiveness, and effectiveness per unit mass. The Sierpinski carpet fractal fin design has been found to be more effective than traditional rectangular fins.

Elizabeth Ashwood **Physics**
Developing Tools for a Precision Measurement of Newton's Gravitational Constant
Dr. Mark Edwards

I propose new atom-interferometric schemes to measure gravitational fields in micro-gravity environments on the International Space Station. The interferometer splits harmonically confined Bose-Einstein condensates into pieces which accumulate different phases, producing interference patterns. I have derived equations to simulate these schemes using Lagrangian variational approximation of the Gross-Pitaevskii equation.



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Designed by Elise Rustine ('18)