



AGNES
SCOTT
COLLEGE

SPRING ANNUAL
RESEARCH
CONFERENCE

2021

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12:00 OPENING SESSION: WELCOME & PERFORMANCES

Welcome from President Zak: https://youtu.be/gLj9Qte_6Xo

12:00 PERFORMANCES: DANCE

Author: Cecilia Rodriguez

Moderated by Bridget Roosa

Zoom Session Link: <https://agnesscott.zoom.us/j/92471663007>

Type 1:4

Author: Cecilia Rodriguez

Advisor: Bridget Roosa

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1fJYblp8p_tfGUkHK_MVRdNA2RMgdP9cl/view?usp=sharing

Abstract: This performance titled “Type 1:4” uses dance to explore the current drug pricing crisis sweeping the United States. Choreographer Cecilia Rodriguez created this piece as a study of her experience living with type 1 diabetes in a time where diabetics across the nation struggle to afford insulin. This work consists of three sections: an introduction to life as a type 1 diabetic, a demonstration of the diabetes community, and a period of mourning. In the first section, Rodriguez manipulates space to signify the everyday struggles and barriers faced by type 1 diabetics. The second section demonstrates the relationship between different people with type 1 diabetes as well as the relationship between a single person and their own diagnosis. Rodriguez concludes the piece with a period of mourning for those who have lost their lives or their loved ones to the prohibitive cost of insulin. Rodriguez uses gestures to develop a diabetes-specific storyline and hopes that this work provides audience members with insight into what it’s like to live with a chronic illness. This is a modern dance work akin to other modern dance performances to date. Modern dance has a very extensive scope technique-wise, but many modern dance performances seek to tell stories as Rodriguez seeks to do with this dance.

Ceaseless Detachment

Author: Cecilia Rodriguez

Advisor: Bridget Roosa

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1hv_NVDJxbNATU_zHQ7SRK9q0MGXOuudf/view?usp=sharing

Abstract: “Ceaseless Detachment”, choreographed by Cecilia Rodriguez, is a modern dance work meant to convey a sense of hope following the seemingly endless past year. After months of living in isolation because of the COVID-19 pandemic, Rodriguez was inspired to create a work showcasing movement that was fun to perform by the dancers in locations around campus that Rodriguez missed while she was away. Rather than focusing on the isolation many of us have felt

in the past year, Rodriguez is showcasing the beauty of campus and the much-needed performance of dance that so many of us have missed since life went virtual. Although Rodriguez has decided to look forward to the future, she also hopes to incorporate themes that everyone can relate to. While including group phrases demonstrating the sense of community so many of us have lost as of late, Rodriguez also worked with solo phrases as a nod to the time alone many of us have been experiencing. This work is dedicated to all of the friends, faculty, and acquaintances that Cecilia missed while campus was closed and her family back home who kept her grounded during quarantine.

12:00 PERFORMANCES: MUSIC

Authors: Kaitlyn Mills and Mingqing Yuan

Moderated by Dawn Marie James and Wooyoung Kwon

Zoom Session Link: <https://agnesscott.zoom.us/j/92471663007>

Soprano Kaitlyn Mills '21 Senior Recital (excerpts)

Author: Kaitlyn Mills

Advisor: Dawn Marie James Accompanist: Wooyoung Kwon

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1gPcx0ooKI8olSHDatNQ_cNcn65b0ajWx/view?usp=sharing

Abstract: This video is excerpted from Kaitlyn's senior recital, given in partial fulfillment of her vocal music minor. Over the past three years, she has worked under Professor Dawn Marie James, refining classical techniques for vocal performance and mastering repertoire in five languages: Italian, French, German, Spanish, and English. The excerpted performance for SpARC features five pieces; a brief description of each will follow.

"Rêve d'amour" is composed by Gabriel Faure, and is based on a poem by Victor Hugo. Each stanza creates a dream of love, wherein two lovers joyously unite under the eyes of God. **"La mi sola, Laureola"** is from the *Canciones clásicas españolas*, composed by Fernando Obradors. In this piece, the passionate Leriano, expresses his love to Laureola and pledges his faithfulness to her. **"Verborgenheit"** is set to a poem by Eduard Mörike, which probes into the soul's innermost feelings. As the piece progresses, it grows in intensity, exposing deep feelings of depression and the comfort of rest as a form of escapism. **"Ride Up in the Chariot"** is scripturally anchored in an eagerness to get to Heaven, wherein a person would see and converse with Jesus and the angels. Pleas for mercy within the text are key references to the Judgement described in Revelation 20:11–15 and Matthew 12:36. **"Gimme Gimme"** is a musical soliloquy sung by Millie Dillmount from the musical *Thoroughly Modern Millie*. During the song, Millie realizes that wealth isn't everything, and she's ready to commit to her newfound love, Jimmy.

A Symphony to Arouse Attention to Mental Disorders: “Wish You a Good Night”

Author: Mingqing Yuan

Advisor: Wooyoung Kwon

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1pZH5Gju-8u9KCzyGrOM8sQEOpme634 v/view?usp=sharing>

Abstract: This performance is a symphony to arouse attention to mental disorders: “Wish You A Good Night.” It is a three-movement symphony dedicated to people who suffer from sleepless long nights alone. The original and special motivation for the creation of this symphony is to hope that mental and emotional disorders can receive more social attention, tolerance, and understanding. The movement present in the presentation is the second movement. The subtitle is Lost Beyond the Night. There is a long dark night between sunset and the next sunrise. And sleep or dreams are like spaces in the gaps of time. People usually experience a repeating cycle between light sleep and deep sleep. People with insomnia usually fluctuate in their mood and state during the long night. This movement can be understood from many angles. The development structure of the second movement is following the clue of the “Sound the night watches.” It means to patrol the streets at night and announce the watches. This is a folk system of telling the time at night in ancient China. The x in the figure means to use percussion to mimic that sound the night watches. The increase, decrease and horizontal lines show the chord progression, climax, and repetition.

The music style of the second movement is a more free and post-modern narrative expression. Motives and some phrases will appear repeatedly in different forms and emotional colors: intended to simulate the repeated fluctuations of people's will and emotions under the influence of mental illnesses such as insomnia and depression. The harsh and discordant music creates an overall panic and chaotic atmosphere.

12:30 OPENING SESSION: PANELS AND INDIVIDUAL PRESENTATIONS

12:30 PANEL: VIOLENCE AGAINST WOMEN IN POLITICS AND PUBLIC SPACES

Authors: Madison Cotton, Rosa Parks, and Yasmin Kahn

Moderated by Mona Tajali

Zoom Session Link:

<https://agnesscott.zoom.us/j/92021937848?pwd=ZU9kd0p3d3M0hUE>

Combating Violence Against Women in Politics in Bolivia and the United States

Author: Madison Cotton

Advisor: Mona Tajali

Abstract: This presentation examines how the United States has put forth minimal effort in combating Violence Against Women in Politics in comparison to Bolivia, which is one of the top nations in political gender parity. This presentation also examines how gender parity acts as a catalyst for change. It argues that one of the key factors contributing to limited efforts towards

addressing Violence Against Women in Politics in the U.S is the lower rates of women's political representation, in comparison to other countries such as Bolivia. This lower rates of women's representation negatively affects advocacy for women who endure political violence regularly. The topic of Violence Against Women in Politics is a recently emerging concept, with increasing scholarly work on the topic. This presentation also highlights the implications of such harassment of politically active women in their efforts to join politics and other leadership roles since suffrage. Providing this insight could lead to resolutions that would aid the United States in addressing the issue a lot more urgently and thoroughly. Hopefully, this presentation will raise awareness around this new conversation in American feminism and inspire others to search for solutions to combat the constant violence that our women political figures experience every day.

Violence Against Women in Politics: Through a Colored Lens

Author: Rosa Parks

Advisor: Mona Tajali

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1ki_Wx5uJhJaxwKsYB42mWt2QwHNJBKy7/view?usp=sharing

Abstract: Feminist scholars are increasingly researching various types of gendered violence and harassment that women in the political realm face. Research by Mona Lena Krook (2020) explains the global phenomenon that is Violence Against Women in Politics (VAWP) by identifying the five most common categories of gendered violence that aim to suppress women's ability and access to participate in politics based on their gender. These categories are: physical, sexual, psychological, semiotic, and economical. This presentation will expand on Krook's analysis by looking at these forms of violence through an intersectional lens, and highlighting how women of color in particular in recent U.S. politics have been subject to VAWP. The women who are focused on-Ilhan Omar, Cori Bush, Kamala Harris, and Alexandria Ocasio-Cortez-have all been subjected to these forms of violence, however, the ones that show up the most are semiotic and psychological violence. The research will expand on the reasoning behind these being common forms of violence against women of color. To conclude, the presentation will examine how women of color in politics are combatting this violence through consciousness-raising, speaking up, and writing policy.

The Women's Pink Rickshaw Project as a New Travel Alternative in Asian Communities

Author: Yasmin Khan

Advisor: Mona Tajali

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1DPx5Dh_hNgxsqVZix1G4IUuQCKJLXzYr/view?usp=sharing

Abstract: In the past several decades, the movement of people has changed dramatically as new forms of transportation services have established themselves in multiple cities around the world.

Trains, buses, taxis, rickshaws, etc., are being used every day and most cities and their citizens cannot function without their public transportation. While most citizens are able to freely use and enjoy these modes of transit, some have already been put at risk by using them before they even sat down. Access to transportation and safety on transportation services has now become an issue many women face as they encounter public life in their cities. Research has shown that concerns and fears about safety have influenced travel decisions made by women as they commute to jobs, schools, or other areas of the public sphere. These range from avoiding specific transit routes, only using public transportation during the day, or even refusing to use public transportation at all (Tripathi et al, 2017). Following the brutal rape and murder of a 23-year old woman in 2012 on a bus in New Delhi, the presence of women in public spaces suddenly came under threat as women's mobility was being negatively impacted. Women were suddenly more reluctant to take public transportation and as a result, they were no longer as present in public as before. Many activist groups began working on ways to make public spaces much more accessible and safer for women and thus the Pink Rickshaw Project was initiated. The use of female-driven pink rickshaws has allowed women to regain that mobility in public spaces while additionally providing new financial opportunities for women, both customers and drivers. The initiative also addresses the question of sexual safety by means of directly removing the aggravating factor: men. However, in the last few years many have argued that the project has not gained the popularity it intended and has not addressed the dangers women face in public spaces. The purpose of this paper is to examine the impact of pink rickshaws in India, Pakistan, Sri Lanka, and Malaysia. By examining the impact within these countries, this will prove that the project has caused a decrease in assaults on public transportation, allowing public spaces to be much safer and more accessible to women.

12:30 PANEL: HORIZONTAL GENE TRANSFER IN ARTHROPODS

Authors: Asmiya Kazmin, Tori Gyorey, and Paige-Renae Marcelline

Moderated by Jennifer Kovacs

Zoom Session Link: <https://agnesscott.zoom.us/j/96307945487>

Evolutionary and ecological impacts of horizontal gene transfer in arthropods.

Authors: Asmiya Kazmin, Erica Harris, Tori Gyorey, and Paige-Renae Marcelline

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1-GGyISSEvRfHL_gIFkCwBJ6lpXgAcgXq/view?usp=sharing

Abstract: Horizontal gene transfer (HGT) is the movement of genetic material between species without descent. HGT from prokaryotes to multicellular eukaryotes is believed to be rare. Thus, we are interested in determining if a particular functional gene is being transferred in multiple arthropod species and determining how common HGT is in eukaryotes and its potential role in their evolution. For this research, we will be looking at the genome of the blood-feeding flies *Protocalliphora sialia* and *Lucilia sericata* in order to identify HGTs. Previous work done in our lab identified candidate HGTs in the *P. sialia* genome based on protein sequence similarity to bacteria and dissimilarity to proteins in a database of insects and other animals. We are currently using

NCBI, a genomic database to identify similar proteins across the tree of life. If, based on our NCBI protein search, a candidate gene showcases the characteristics of one or more HGT events, we then build phylogenetic trees to further explore the possibility that the gene is the product of HGTs. This research hopes to identify and verify more eukaryotic HGT events to assist us in better understanding the role HGT plays in the evolution of eukaryotes.

Horizontal Gene Transfer in Arthropod Species

Authors: Tori Gyorey, Asmiya Kazmin, Paige-Renae Marcelline, and Erica Harris

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1JjZyoFQ82suhjg6gqz-EtJMExl_JgsBe/view?usp=sharing

Abstract: Horizontal gene transfer (HGT), the movement of genetic material between species without descent, was thought to occur commonly between prokaryotes but rarely from prokaryotes to multicellular eukaryotes. Recently, there has been mounting evidence that HGT events from prokaryotes to multicellular eukaryotes are more common than originally thought. We are interested in understanding why particular functional genes are being transferred, retained, and utilized in multiple arthropod species. Currently, we are validating, characterizing, and curating previously identified candidate genes that could be laterally transferred in blood-feeding arthropods. We are also determining the prevalence and extent of shared HGTs among distantly related blood-feeders. We predict that HGTs will be shared by multiple niche-sharing arthropod species, while being absent from other closely related, but non-niche-sharing species. We are using the genomic database NCBI and the bioinformatic program Geneious to identify and verify candidate genes. Specifically, we are using the NCBI protein database to identify similar proteins in eukaryotes and prokaryotes. For candidate genes that have taxonomic distributions consistent with one or more HGT events, we then build phylogenetic trees, diagrams that represent evolutionary relationships among species. Candidate genes with phylogenetic trees suggestive of HGT will be subject to further analyses, including genomic analysis and tissue-specific gene expression patterns. Overall, this project will identify and verify more eukaryotic HGT events and allow us to better understand the role that HGT has played in the evolution of eukaryotes.

Horizontal gene transfer's effect on the evolution of blood-feeding arthropods

Authors: Paige-Renae Marcelline, Tori Gyorey, Asmiya Kazmin, and Erica Harris

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1xZvi8kXWQLYX-MqMnn_WcVydI5C0lOxU/view?usp=sharing

Abstract: As gene sequencing technology and phylogenetic tree algorithms advance, we can more easily trace the evolutionary origins of a gene and sometimes reveal interspecies transfers

such as Horizontal Gene Transfer (HGT). HGT is the transfer of a gene from one species to another. These transfers may lead to novel traits in the receiving species that allow it to occupy a new ecological niche. Similar traits may be acquired by different species that are not closely related from independent HGT events. I am interested in exploring how HGT can allow novel niche acquisition in arthropods. Specifically, I am looking at the presence of HGTs in the blood-feeding parasitic blowflies *Protocalliphora sialia* and *Lucilia sericata*. We have identified candidate HGT genes using a bioinformatic pipeline and are investigating how many of these candidate genes are shared by multiple arthropods. BLASTp is used to find similar protein sequences, and those proteins are then used to build phylogenetic trees. We can then use those trees to confirm whether they are consistent with an HGT event. Promising candidate genes will be further investigated using genomic and gene expression data. I predict that these similar traits acquired through independent HGT events may have caused distantly related arthropod species to occupy novel niches. Understanding how new niches can be occupied can significantly impact the way scientists understand species relationships and evolution. Therefore, it is important for us to determine what factors lead to novel niche occupancy so that we can predict and regulate future changes and problems.

12:30 GROUP PRESENTATION: CAN YOU HEAR ME NOW: CWS TUTOR PERCEPTIONS OF SELF-EFFICACY DURING THE TRANSITION ONLINE

Authors: Claire Moore, Elizabeth Dudley, Adelaide Harris, Chloe Gilkesson, and Laura Cain

Moderated by Mina Ivanova

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJMud-GpqTMjH9AZqvoXO7ZZWPHkMixsFlqv>

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1HO6xLFUWfYsME0I6IPnakIE4W6sk0-3t/view?usp=sharing>

Abstract: The abrupt transition from holding in-person to fully online appointments with students in March 2020 presented many new challenges for the Center for Writing and Speaking (CWS). One of these challenges remains how to foster and maintain tutor self-efficacy, the belief that tutors can effectively serve students and complete tasks while remote. However, there is little research in the writing center literature on the impacts of virtual tutoring on tutor perceptions of self-efficacy and self-confidence. This study contributes to the literature by examining the ways in which tutor training and other Center programming impact tutor perceptions of self-efficacy prior to and following the transition to online tutoring. Presenters will discuss the results of surveying the CWS staff on perceived, self-reported measures of self-efficacy before and after the transition online. In addition, this presentation will review ongoing changes made to training and give suggestions for how other centers and departments can bolster tutor/learning assistant confidence while online.

12:30 INDIVIDUAL PRESENTATIONS: GROUP 1 (ASTRONOMY)

Authors: Jingyu Zhang and Mihika Rao

Moderated by Amy Lovell and Chris DePree

**Zoom Session Link: [https://agnesscott.zoom.us/meeting/register/tJAkd-
uorzqgH9VHV36_SUTqnhTw9YTh_Ea-](https://agnesscott.zoom.us/meeting/register/tJAkd-
uorzqgH9VHV36_SUTqnhTw9YTh_Ea-)**

The Shape of Space

Author: Jingyu Zhang

Advisor: Amy Lovell

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1bCm3Y8V6firZcnrhOQIzg34I4s2jh_Jq/view?usp=sharing

Abstract: What is the shape of space? Is it finite or infinite? Does it have a boundary? Some scientists suggest that the shape of our universe could be finite but unbounded. Now, how can we explain that our observational domain seems eternally infinite? The answer can be that the entire cosmos consists of countless identical copies of our universe. We assume that our cosmos is a glued manifold which has repeating patterns that give the illusion of an endless sky. Our goal is to discover a function or pattern for the minimum angle we would need to search in order to guarantee we see a replication of ourselves. Our method included writing MATLAB code for 2D torus shape, as well as initial numerical explorations for 2D Klein bottle shape. On one hand, our numerical simulations on MATLAB has confirmed the 2D torus result as the formula for the minimum angle that an observer must look through to ensure that he/she sees himself/herself is $\theta = \arctan\left(\frac{1}{\sqrt{d^2-1}}\right)$ where d is called the sight horizon, which is the distance that an observer is able to see. On the other hand, by using lattice grids, we finished the preliminary numerical cases for 2D Klein bottle shape. This ongoing math project will contribute to the field such as topology and cosmic crystallography.

Senior Capstone: Creating tools to analyze data from an All Sky Radio Survey

Author: Mihika Rao

Advisors: Chris DePree, Anthony Beasley (National Radio Astronomy Observatory)

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1TrilvePvidLXo6MWqzc3yC9ZE5iKY-f9/view?usp=sharing>

Abstract: Exploring the entire sky at high resolution at radio frequencies can be beneficial to the scientific community in many ways. It offers a chance to discover new objects, add new data to existing databases, and start new projects and collaborations. Last summer, we proposed four 6-hr observations using the Very Long Baseline Array (VLBA). We wanted to explore the possibility of using Very Large Array Sky Survey (VLASS)-detected radio sources as both targets and calibrators in future VLBA dedicated and by-chance background observations survey. We then analysed the data from the four observations to improve the efficiency of the observations and image the high-resolution data. As a continuation of the project through my senior thesis, I have

been working on creating a calibration and imaging pipeline in Python to analyse the VLBA survey data. This pipeline will be compatible with the Common Astronomy Software Application (CASA) and has been written specially to calibrate the data from the VLBA Survey.

12:30 INDIVIDUAL PRESENTATIONS: GROUP 2 (PSYCHOLOGY)

Authors: Monique Gilmore, Ashley-Marie Tran and Maya Akbik, Kayla D'Amato, and Chloe Deutsch

Moderated by Bonnie Perdue

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJAKc-2vrzliGtTpJ29Z5ZTqOuDKbENPISbY>

Is Event-Based Prospective Memory Impaired in Children with Autism Spectrum Disorder?

Author: Monique Gilmore

Advisor: Bonnie Perdue

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1gahQwGJ7eSzcSEU7jwGi4nUKEfHxJMKp/view?usp=sharing>

Abstract: Prospective memory (PM) is memory for activities to be performed in the future. One type is event-based PM, which involves carrying out an intention upon the occurrence of a particular event. This requires the complex interplay of several aspects of executive function, including planning, attentional monitoring, cognitive flexibility, and episodic future thinking. Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by the impairment of several of these functions. However, due to a number of methodological limitations in previous studies, it is currently unclear whether event based PM is impaired in ASD. It is therefore of interest to conduct new, more robust studies on event-based PM in patients with ASD. This leads to the following research proposal question: How does the performance of children with ASD compare to that of a control group, with regard to engaging in an event-based PM task? This question will be probed using eye tracking technology, comparing the performance between children with ASD ($n = 30$) and the control group, children not diagnosed with any neurological disorder ($n = 30$). It is hypothesized that children with ASD will have lower performance in the PM task compared to the control group. This study will likely contribute to a better understanding of the effect of ASD on prospective memory, which may in turn help with improving both educational and cognitive tasks/activities for children with ASD as well as treatments related to learning, cognition, and memory in ASD.

Prospective Memory Performance in Patients with Alzheimer's Disease

Authors: Ashley-Marie Tran and Maya Akbik

Advisor: Bonnie Perdue

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/12pdibh4DGtvBDFghFig6MvY7fZV_1hU1/view?usp=sharing

Abstract: Prospective memory (PM) is a form of memory that focuses on the recall of an event or task in the future. Prospective memory is important as it plays a vital part in individuals being able to live independently. PM performance has been linked to prefrontal cortex and frontal circuits of the brain. The proposed study will be delving into how prospective memory is affected by neurodegenerative diseases, specifically Alzheimer’s disease (AD). This study will look at different brain structures in the parietal lobe, an area of the brain responsible for perception of stimuli, to better understand the pathways that affect both AD deficits and PM. Eye Tracking technology has previously been used to track the gaze pathway of the eye during computerized PM tasks. This research proposal will utilize eye tracking as a way to measure prospective memory task effectiveness in trials with AD subjects. Our model system focuses on adult patients with AD. A memory task will be utilized that incorporates both a retrospective memory task and a prospective memory task to analyze deficits within these AD subjects. Similar pathways of Alzheimer’s and prospective memory will be apparent, specifically within the parietal lobe. The hypothesis is AD causes deficits to prospective memory performance due to frontal circuit degeneration. Studies on Alzheimer’s and prospective memory are essential to the understanding of the mechanisms that underlie the significant deficits seen in Alzheimer’s disease. Prospective memory is necessary for independent living and it can be used as a threshold for independent living tests for those with AD.

Development of Prospective Memory Through Future Thinking in Children

Authors: Kayla D’Amato and Chloe Deutsch

Advisor: Bonnie Perdue

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1Hxiyi8-U-jh_4lPQuYrDRCFoks-LdX63/view?usp=sharing

Abstract: Prospective memory (PM) refers to the ability to plan, retain, and retrieve an intention after a period of time. In everyday life, prospective memory is important because it allows us to structure our time and lives accordingly. We propose using a laboratory setting to examine whether instructing children to engage in future thinking will improve their PM performance and reduce age related difficulties. Eye tracking technology is a way to measure eye movements during a PM task through the use of a specialized device (i.e., the eye tracker) and computer. This is done in order to track where the eyes of the subject are directed when completing a series of tasks. Our plan is to provide subjects with a set of instructions detailing a few tasks and the order in which we want them to be completed. The control group will immediately begin, while the experimental group will have the opportunity to utilize future thinking strategies to determine how they will complete and remember their task order. We will use eye tracking technology as a way to measure the subjects’ ability to follow the correct order, with the instructions serving as a predictor for where their eyes should go. We hypothesize that the group allowed to use future thinking will be more successful when completing the tasks compared to the control group. This research is important because it will give us an opportunity to understand both how memory develops in children as well as how it can be enhanced. Furthermore, using eye tracking to

measure prospective memory in children has not been significantly utilized, so this could introduce another way to measure the success of prospective memory.

1:00 PANEL: VIOLENCE AGAINST WOMEN IN POLITICS AND PUBLIC SPACES

Authors: Avi Barstis, Hannah Williams, and Dory Berry

Moderated by Mona Tajali

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJ0oc-iopzlvGNx98LUCBNmC7h2NFD8YrYoR>

Quotas—The Solution to Gender Inequality? A Comparative Analysis on Gender Quotas in Sudan and Tunisia

Author: Avi Barstis

Advisor: Mona Tajali

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1TjUFhSoDW4tJ4yr9O6bVnY1bQC2Le3-j/view?usp=sharing>

Abstract: When discussing women’s representation in political institutions, South Sudan and Tunisia have pulled the highest ranks in the world. As of 2021, women represent at least 28.5% and 26.3% among their corresponding parliaments, which is much higher than many western democratic states, such as the U.S. (*Monthly Ranking of Women in National Parliaments*, n.d.). With that being said, determinants that have resulted in high women’s political representation in South Sudan and Tunisia should be further analyzed. However, developing countries like Sudan and Tunisia have adopted gender quotas and have had very high numbers of women’s representation in their governments both averaging about 31%. With that being said, a question emerges: What initiated the implementation of gender quotas in Sudan and Tunisia in spite of the patriarchal systems embedded in their political institutions and the brutal civil conflicts? By utilizing a comparative analysis, I argue two main elements that have influenced the rates of women’s representation in Tunisia and Sudan. This paper will contain (1) an analysis on how women have used civil conflicts and the effects as political opportunities to incorporate gender equality into the states’ transitions towards democracy through gender quotas, and (2) an illustration depicting the dichotomy of secular versus non-secular ideologies and its effects on the implementations made for gender quotas. Finally, the last section of this paper will contain a discussion regarding what other states can learn about Tunisia and Sudan’s implementations of gender quotas.

Women with Votes

Author: Dory Berry

Advisor: Mona Tajali

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1qXqHAbIGU4qllY442_p62RRxk1-I3S_R/view?usp=sharing

Abstract: The fact that women and other marginalized genders (such as transgender and non-gender conforming individuals) are viewed as inferior beings to men in many countries across the world is not new or surprising information. One of the most obvious examples of this reality includes issues surrounding women's right to vote. Women's suffrage campaigns and successes across the globe have been connected with a steady embrace of gender equality, hence one of the reasons why this topic is of such importance. Women of the United Arab Emirates were first allowed to vote in 2006 and women of Saudi Arabia were first allowed to vote in 2015. What factors and actors led to the eventual granting of this right to women? What cultural and societal components played roles in these events? Finally, how do the processes between the countries of Saudi Arabia and the United Arab Emirates compare when it comes to the factors and actors affiliated with women ultimately being granted their right to vote? This comparative analysis will shed light on the overarching progress being made from a global standpoint in including more women in politics. I argue that women finally gained the right to vote in these countries due to pressures from other global communities, such as those that granted women's suffrage numerous years ago, the aiding of country government officials, such as those who commit their careers to empower and fight for the equal rights of women, various women's rights groups, such as those who campaign and put effort towards achieving equality.

A Role Model Case to Michael Ross, A Perpetually Patriarchal Political Sphere in Reality; South Korea's Gender Quotas and Their Effectiveness (Part of a Panel on Increasing Women's Access to Politics)

Author: Hannah Williams, Dory Berry, and Avi Barstis

Advisor: Mona Tajali

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1E4rLuU3wOiNh-TYZK5VMbw7YRgKK9ObM/view?usp=sharing>

Abstract: Gender quotas are becoming the norm in politics these days with more and more countries, including in societies with deeply ingrained patriarchies like South Korea, adopting these policies. Although South Korea first introduced gender quotas in 2000, there has not been much growth in the percentage of women in the national assembly. Before these quotas were implemented, the highest percentage of women in the national assembly was 5.9% in 2000 before the quotas. According to the International Institute for Democracy and Electoral Assistance, the first election after the adoption of gender quotas, 2004, resulted in 13% of the national assembly being women; the most recent election, 2020, has resulted in 19% women. While there is growth of 7.1% after the implementation of gender quotas and women did gain some political power, the growth is slow and falling below the expected rate of its drafters. South Korea continues to be below the global average of 23% This paints a very different picture from the one described by Michael Ross in his piece "Oil, Islam, and Women", in which he argues that the lack of oil and more export-oriented economy in South Korea allowed for women to have more representation in politics as well as allowed reform of the patriarchal and institutions that exist. One might ask themselves where this unsatisfyingly simple explanation came from and why today we are not seeing these quotas fulfill their purpose to the extent they should. By comparing

the results of different election periods, this paper will examine the implementation of gender quotas in South Korea and the results they have produced. My research will highlight other complex factors, like women's organizations and political parties, that Ross' analysis might have overlooked. I argue that political parties and women's organizations have played and continue to play influential roles in women's political participation and representation in South Korea, unlike the portrayal Ross' work gives.

1:00 PANEL: BIODIVERSITY AND GEOPHYSICAL CHARACTERISTICS

Authors: Paige-Renae Marcelline, Rosa Venegas Hernandez, and Jordyn Wood

Moderated by Jennifer Kovacs

Zoom Session Link: <https://agnesscott.zoom.us/j/93490319937>

Specific conductance and its relationship to water body type.

Author: Paige-Renae Marcelline

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1sWWCmPVfD_DN_DJLOQzbScLIhhORb-HI/view?usp=sharing

Abstract: Climate change can have many effects on the environment, one of which may be the specific conductivity of water, which can have significant effects on biodiversity. I am studying the relationship between water body type, specific conductivity, and biodiversity in rivers, lakes and streams. Specifically, I looked at the differences in specific conductance of lakes, streams, and rivers in Florida, Georgia, and Alabama, to see how they differed between seasons and years, and the effects this had on macroinvertebrate biodiversity in those water bodies within a 5-year period (2015-2020). I predict that in seasons and years when there is high specific conductivity, there will be low biodiversity, while in seasons and years when there is low specific conductivity there will be high biodiversity. I also predict that there will be the most change in specific conductance and biodiversity in streams. Changes in specific conductivity can have significant effects on macroinvertebrate biodiversity which can greatly impact an ecosystem and the environment as a whole. Therefore, the importance of specific conductivity should not be underestimated or overlooked when studying the causes and effects of climate change. With this information we will be able to help fix climate change and its detrimental effects on the environment and different organisms.

Dissolved Oxygen and Its Effects on Benthic Macroinvertebrate Biodiversity

Authors: Rosa Venegas Hernandez, Paige-Renae Marcelline, and Jordyn Wood

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1wqcA716L4Ew6LG1jphAWVUGZVjBkSO20/view?usp=sharing>

Abstract: Benthic macroinvertebrates are bottom-dwelling aquatic animals that lack a spine. Immature benthic macroinvertebrates are often used to measure water quality and pollution levels. Different benthic macroinvertebrates have varying levels of sensitivity to water health indicators, such as dissolved oxygen, pH, temperature, and pollution. High levels of dissolved oxygen are necessary for the survival of these macroinvertebrates. Dissolved oxygen levels can vary due to many factors such as human pollution and temperature. I am interested in understanding the extent of the effect dissolved oxygen has on benthic macroinvertebrate diversity. Specifically, I looked at dissolved oxygen and different types of benthic macroinvertebrates spanning three years from October 2016 to October 2019. The data were collected from three distinct sites in the Southeast. I predict that aquatic sites with lower dissolved oxygen levels will have lower macroinvertebrates diversity. Additionally, there will be more pollution tolerant macroinvertebrates. Water temperature directly impacts the levels of dissolved oxygen in freshwater. Lower water temperatures hold oxygen better than higher temperature waters; therefore, I am also interested in exploring temperature as it relates to dissolved oxygen and benthic macroinvertebrates. Macroinvertebrates make up a large part of freshwater food webs and hugely contribute to freshwater ecosystems. Low levels of dissolved oxygen have an impact on benthic macroinvertebrate survival; therefore, it is important to monitor dissolved oxygen levels in freshwater ecosystems and determine factors that influence levels of dissolved oxygen. This will, in turn, lead to healthier freshwater environments.

Soil ion content and its relation to mosquito populations.

Authors: Jordyn Wood, Rosa Venegas Hernandez, and Paige-Renae Marcelline

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1jsBTrtKzZUYGN1EbiQM9wxrgxfPifb3m/view?usp=sharing>

Abstract: Now that infectious diseases are spreading faster geographically as the human population continues to expand, the importance of mosquito control has increased. With public health as a main priority, it is essential to evaluate factors that could control mosquito populations and to be able to better predict potential breeding locations. I am interested in understanding how variations in a soil's water salinity affect mosquito populations. Specifically, I looked at how the soil ion content affected mosquito populations in Florida across 5 years (2014-2019). I predict that in areas with a higher soil ion content in Florida mosquito populations will be higher in comparison to areas with a lower soil ion content. I am also interested in looking at how soil water content in the state of Florida impacts mosquito populations. By understanding the ecological conditions under which mosquito populations are commonly found we can better target control efforts as well as strategically plan human population expansion.

1:00 INDIVIDUAL PRESENTATIONS: GROUP 1 (DIRECTED STUDIES IN READING & CREATIVE WRITING)

Authors: Zion Martin and Eve Barrett

Moderated by Nicole Stamant

Zoom Session Link: <https://agnesscott.zoom.us/j/98050009661>

Blooming During Dusk

Author: Zion Martin

Advisor: Nicole Stamant

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1jT8nFISqcM3Di5DQDgo3UCijWJKT4U7D/view?usp=sharing>

Abstract: The body of work presented focuses on and displays work that incorporates intersections of creative writing (poetry), discourse on Blackness (Race Theory) and queer and lesbian sexualities, while examining life experiences and queer identity. To research these ideas and for inspiration to compile work based upon Black and queer sexualities, the main source was observing the poetry and writing of Black queer or lesbian women poets including; Audre Lorde, Alice Walker, June Jordan, Dawn Lundy Martin, and more. The work presented also works to contextualize Black and queer life, reality, and history. The objective was to further understand, analyze, and reflect the emotional gravity of poetry in the Black community and in the Black queer and lesbian community and how it affects life and poetry especially in one's personal collection of work. It is concluded that poetry is an encapsulation of giving context to the life form and personal understanding of the poets observed and the same emotion and encapsulation of life is represented and inspired in the collection of work presented.

Show Me What You Eat, And I'll Tell You Who You Are: Exploring Memory & Identity Through Food Writing

Author: Eve Barrett

Advisor: Nicole Stamant

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1nUdxNM-bpgl8X-cWglNxfwE2ZdEYBCNj/view?usp=sharing>

Abstract: "One aspect of personal experience includes what we eat. What we eat is rhetorical. What we eat is also worthy of scholarly exploration," (Jeff Rice, "Falafel Memories"). This presentation is a mini-doc that explores the intersection of food writing and identity. Food writing not only serves as a way to hyper-focus on the deliciousness of food and everything that comes with the essential act of consumption, but it also identifies substance and consumption as a deeply personal experience. What we eat can inform us about the culture, the systems, the codes and language of a people and an individual and, through decoding food writing, we can also see hidden, deeper meanings of the human condition. In short, food shapes us and food writing shows us how. This presentation will also explore the intersection of food writing, life writing, and creative writing with a reading from an original creative nonfiction piece.

1:00 INDIVIDUAL PRESENTATIONS: GROUP 2 (PSYCHOLOGY)

Authors: Ayanna Bell and Kyarra Perry

Moderated by Bonnie Perdue

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJAKc-2vrzliGtTpJ29Z5ZTqOuDKbENPISbY>

Introducing New Animal Models for Prospective Memory Tasks

Author: Ayanna Bell

Advisor: Bonnie Perdue

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1svGQQ3ZO9n0FhOoif4Bq6h6Wg3bvg4V8/view?usp=sharing>

Abstract: Prospective memory (PM) is a kind of memory task that involves forming intentions of an action, remembering to execute said action, and later performing the action sometime in the future. Without prospective memory function one would not remember their grocery order, pick up their keys off the counter, or go to the gym at 3:00 pm. There have not been many studies that investigated prospective memory function in animals, and novel animal models are critical for further breakthroughs in prospective memory research since it is a fairly new subject. Eye tracking is the process of measuring either the point of gaze or the pathway of an eye relative to the head. Eye tracking in a prospective memory task involves paying attention to a task and seeing if the participant is forming an intention before executing the action. In my proposed study, the goal is to create a prospective memory task with eyetracking for non-human primates with the hypothesis that non-human primates are capable of prospective memory function in a similar manner to humans.

Using Eye Tracking Technology to Monitor Prospective Memory in Complex Environments

Author: Kyarra Perry

Advisor: Bonnie Perdue

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1nzaHOlvoST15KOVtiNYy6BUmMlt9YwGQ/view?usp=sharing>

Abstract: It is common in everyday life to be preoccupied with several tasks that compete for attention; thus, some tasks are delayed for completion at future times. This phenomenon is defined as prospective memory (PM) and concerns the ability to retrieve an intention that calls for the completion of delayed tasks. PM is often studied within environments that feature ongoing tasks, providing marked insight into the nature of PM. In particular, research has revealed patterns of attentional monitoring processes that facilitate PM. With a growing knowledge base of PM and attentional monitoring processes, several theories have been proposed about cues in the environment, subsequent monitoring for these cues, and their influence on successful PM retrieval. Typically, studies of PM employ ongoing tasks and cues that

are quite simplistic, contrary to the real world. One way such studies have been able to ascertain the presence of attentional monitoring processes or other mechanisms of PM was through the use of eye tracking technology, which allows experimenters to follow participants' gaze directly. Eye Tracking technology detects and syncs eye movements to a screen, which is often where experiments display ongoing tasks. As such, it may prove useful where PM is studied in dynamic environments (i.e., with multiple stimuli). It is often the case that memory and PM are guided not only by visual cues in the environment, but by other sources such as sound. With that in mind, the proposed study aims to make use of eye tracking technology and the rhythm game osu! to observe cases wherein PM retrieval is guided by a multitude of cues. It is possible that the observed attentional monitoring processes would differ with how many cues are present at once, which warrants further study of PM in dynamic contexts. The findings could implicate the need to refine theories of PM as they relate to environments that vary in complexity.

1:30 PANEL: RACE AND CULTURE IN PSYCHOLOGICAL RESEARCH: THE INTERSECTIONS LAB

Authors: Laura Cain, Olivia Chapman, Hajar Harda, Erin Harris, Gabby Wilson, Lee Trinh, Peyton Capehart, and Srinidhi Panchapakesan

Moderated by Maryam M. Jernigan-Noesi

Zoom Session Link: <https://agnesscott.zoom.us/j/93438960365>

Abstract: For years, the field of psychology has highlighted the importance of considering race and culture in psychological science. The Intersections Psychology Lab integrates factors such as race, culture, and other aspects of intersectional social identities into various applied research projects to better understand how human experiences influence attitudes, beliefs, and behaviors. This panel will highlight four research projects within the Lab that apply psychological theory to inform research that explores individuals' experiences across the lifespan. Projects are designed to move beyond the use of race and culture as categorical concepts and illuminate how individual and group differences inform mental and physical health outcomes, as well as relationships. This panel will provide an overview of each project and discuss how they are working to contribute to gaps in psychological science and disseminate research findings to the general public.

Black Mama Project

Author: Erin Harris and Gabby Wilson

Advisor: Maryam M. Jernigan-Noesi

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/drive/folders/1ZC1UG-ghXykcucqceOer6VFKIiXu-QZe5?usp=sharing>

Abstract: In the Intersections Lab, The Black Mama Research Group aims to study and better understand the phenomenon of Black maternal mental health and the translation and dissemination of information surrounding it. Currently, there is a public health crisis for birthing Black women and a large disparity between their negative health outcomes and their White

counterparts. According to an article by the Center for Disease Control on Racial and Ethnic Disparities Continued in Pregnancy-Related Deaths, the Pregnancy-Related Mortality Ratio for Black women was “four to five times as high as it was for White women.” Furthermore, this public health crisis is not solely a consequence of common pre-existing conditions in the Black community, but more about how Black women are often ignored and not listened to in medical contexts & environments. In terms of research conducted on Black maternal mental health, as a product of this disparity, we found little to no literature published specifically on Black women. And what little research we did find was not solution-based or focused on creating viable answers to how our public health system is failing Black women. Black Mama is designed to address this public health crisis through integrating race into scientific psychological research. Through our research, we intend to educate and enlighten Black mothers-to-be, in an effort to advocate for systemic change and improve Black maternal and perinatal health outcomes. One of the ways that we do this is through the “Ask-a-Mama-Doc” Project where we conduct interviews with Black women medical professionals and care providers who are also parents on birthing topics and various nuances within their field. We then publish these interviews on the Black Mama Instagram and Facebook social media outlets, and analyze the engagement data to determine the success of educating Black birthers on birthing-related phenomena.

White Racial Socialization among College Students Project

Author: Lee Trinh and Peyton Capehart

Advisor: Maryam M. Jernigan-Noesi

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/drive/folders/1ZC1UG-ghXykcuaqeOer6VFKliXu-QZe5?usp=sharing>

Abstract: Recent attention to anti-racism in order to promote social justice has led to a desire by some to better understand how to facilitate the development of an anti-racist identity among White individuals. As such, dismantling systemic requires inclusion of White-identified in explicit discourse about the topic of race, however research suggests that many White-identified individuals do not engage in race-related discourse. The current study used mixed-methods to investigate the racial socialization experiences of White-identified undergraduate college students in the United States. Quantitative data included Helms’ White Racial Identity Attitude Scale (1995) and a modified version of Hugh and Chen’s Parental Racial-Ethnic Socialization Behaviors Scale (1997, as found in Kelley, 2017). Qualitative data from focus groups and one-to-one interviews were used in order to explore factors that influence White racial socialization and its impact on racial identity development.

Raising Resisters

Author: Olivia Chapman & Hajar Harda

Advisor: Maryam M. Jernigan-Noesi

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/drive/folders/1ZC1UG-ghXykcucqeOer6VFKliXu-QZe5?usp=sharing>

Abstract: The Raising Resisters Project is designed to promote intersectional identity development in early learners. Early childhood is a time of remarkable growth, impressive learning and unprompted amusement. It is also a time where children start building theories to understand the world around them, and consequently form an initial sense of self. Although often discussed in relation to adolescence, identity development, especially aspects related to race and culture, is fostered in early childhood through social emotional learning. Children learn to build new skills to understand how they view themselves, how others view them, and how they may view themselves compared to their group identification. Most preschool age children in the U.S. are initially socialized in environments with caretakers and guardians in which centers SEL and identity development around parent-child interactions. Such context places guardians in the role of SEL educators, where they are able to encourage positive development in their children and open dialogue about dimensions of identity (e.g., race, ethnicity, gender) (Ramaekers, 2011).

The RR curriculum has been under development for over two years and partners with a local early learning center to pilot the curriculum and activities. Lessons are based on socio-emotional developmental goals and proposes that emotional wellbeing should be explicitly taught to children at a young age. Some topics: Race, Gender Identity and Socialization, and Building Empathy and Compassion. The presentation will feature a sample curriculum designed to assist caretakers with the task of explicitly promoting positive racial, cultural, and emotional identity development in young children.

Racial Trauma in Youth Project

Author: Laura Cain and Srinidhi Panchapakesa

Advisor: Maryam M. Jernigan-Noesi

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/drive/folders/1ZC1UG-ghXykcucqeOer6VFKliXu-QZe5?usp=sharing>

Abstract: The goal of the racial trauma in youth project is to gain insight into how youth experience racism and which coping mechanisms effectively mitigate the negative outcomes of racial trauma. Our team began this project this semester, reviewing current literature and creating a survey that will be disseminated to youth of color in the US. Existing literature states that youth of color experience race-based trauma as the result of discrimination due to institutional systems as well as interpersonal interactions. Decades of research shows that adolescents' perceptions of racial discrimination are associated with many negative outcomes ranging from poorer mental health and increased stress to worsened academic performance. However, certain factors such as support from one's parents or community through racial socialization can mitigate some negative results of racial trauma by increasing the pride an adolescent feels in their race and preparing them to experience bias. The present study aims to utilize aspects of current research measures in conjunction with an understanding of previous

research on these topics to gather nuanced data about how youth experience and cope with racial trauma. To gather this data, we have created a survey that will ultimately be disseminated to youth across the US to not only answer our research question, but to also give us insight into how to help youth experiencing racism.

1:30 PANEL: HOW TO FIND RESEARCH (IN PANDEMIC TIMES): CONVERSATION AND ADVICE FROM PIONEER PEERS

Authors: Kennedy Coates, Aili Fisher, Chloe Gilkesson, and Kristin Wubbena

Moderated by Molly Embree

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJEudO-hrj8iHtwBw30VLrbHO6yaGHP64Sxx>

Abstract: Was your research experience wiped out by the pandemic in 2020? You are not alone. Across the nation, most 2020 summer research programs were canceled due to COVID-19. As summer 2021 approaches, more and more people are fully vaccinated, but pandemic uncertainty continues – for individuals and for institutions. Agnes Scott students who have faced the challenge head-on of finding research over the last year share their perspectives & advice. They'll provide a quick overview of search strategies, resources, lessons learned, and the outcomes they've experienced. This session offers a brief summary from students who have pioneered creative approaches to finding research during pandemic conditions, and an opportunity for questions and active discussion with attendees. Bring your questions, or submit them ahead to STEM@agnesscott.edu with the subject: Find Research. Dr. Molly Embree, Director of STEM Mentored Research, will moderate the discussion. Participants in the session will receive a list of resources & tips for searching to help for this summer and next academic year. While the discussion has sprung from the experiences of students in STEM fields, many of the search strategies and tips may be useful to students across all disciplines. Anyone with an interest in student research experience is welcome to attend.

1:30 INDIVIDUAL PRESENTATIONS: GROUP 1 (GLOBAL JOURNEYS—IDENTITY, GLOBALIZATION, AND SOCIAL CHANGE)

Authors: Kat Janssen and Edie McGovern, Edithe-Rose Niyogushima and Kaliya Vereen

Moderated by Mina Ivanova

Zoom Session Link: https://agnesscott.zoom.us/meeting/register/tJcsd-qrgTqgH9DgCf7l-s5bcpuRj_Mp9Iji

Comparison of Sex Ed between Bulgaria and the State of Georgia and the Effect It Has on Sexual Health and Preparedness

Author: Kat Janssen and Evie McGovern

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1Ccx-CWWSUw8Wks9Wn2Nuh9pUM6xczAyl/view?usp=sharing>

Abstract: During our Global Immersion into Bulgaria for our Journeys course, we learned that there is no nationwide requirement for sex education in Bulgarian schools. This fact raised multiple questions, such as how these statistics might affect the rates of teen pregnancy and STI rates and how these rates would compare to those within our home state of Georgia where sex education with an emphasis on abstinence is required. Thus, this research project examines the similarities and differences between sex education approaches in the state of Georgia and Bulgaria as well as how these approaches affect teen pregnancy and STI rates in each region. Our hypothesis is that a lack of required sex education curriculum results in higher teen pregnancy and STI rates. To conduct this research, we will be collecting data from government reports, interviews, correlational studies, and articles to investigate the relationship between sex education approaches and increased teen pregnancy and STI rates. Furthermore, we will use this data to examine the negative effects of increased teen pregnancy and STI rates, such as increased dropout rates and unemployment rates. This data will also be used to investigate how these effects may disproportionately impact marginalized groups such as women and the Roma community of Bulgaria. We will specifically be comparing Bulgaria and the U.S. state of Georgia to connect our journeys destination to the state we went to high school in to investigate the social issues of STIs and teen pregnancy on a global level and how a lack of effective sex education may perpetuate these problems.

United States Maternal Mortality Amid COVID-19 Pandemic

Author: Edithe-Rose Niyogushima and Kaliya Vereen

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1DOhPXXxEQ2P5cNNtcEEWpwbmABev0Gbp/view?usp=sharing>

Abstract: The COVID-19 pandemic was caused by a pathogen associated with the severe acute respiratory syndrome known as SARS-CoV-2 (Ayenigbara, Israel). The strand of coronavirus responsible for the COVID-19 outbreak belongs to an extensive group of other coronaviruses that were long identified over 10,000 years ago (Wetheim, Joel). The period of contact of the COVID-19 varies, but it usually takes 2-14 days to achieve the primary signs and symptoms of COVID-19 including, high-temperature (fever), cough and severe breathing issues. However, in cases of seriousness there are symptoms of lung-inflammation, which can lead to complications of organ malfunction. This investigation will focus on the ramifications of the COVID-19 disease in pregnant women in the United States. There has been some relation between maternal mortality and COVID-19 amid the 2020 outbreak, which we will assess in this study. Undoubtedly due to systemic disparities in the healthcare system pregnant women, especially those of color, have experienced difficulties in receiving prenatal care along with adequate mental health resources. According to a study conducted by Anna Langer from the Harvard School of Public Health, Black women in the United States had a maternal mortality rate that was 2.4 to 3 times higher than

white women prior to the COVID-19 pandemic. Demographic variables such as where people work and live, as well as access to or lack of access to health care services, can both contribute to this imbalance,” (Langer, Anna). There was also an increase in patient anxiety and depression during the COVID-19 pandemic which we will investigate further into our research.

1:30 INDIVIDUAL PRESENTATIONS: GROUP 2 (INTERNATIONAL RELATIONS)

Authors: Leah Trotman and Elizabeth Dudley

Moderated by Eleanor Morris

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJYvcOmpqjMuH9JJ6HxbBtdboqOnfnh0mz7c>

A Salve and Silver Bullet: Applicability of Public Health Solutions & Protracted Social Conflict Theory to Reduce Gun Violence in the Caribbean

Author: Leah Trotman

Advisor: Eleanor Morris

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1O1mEXECTXY7aIGJNrcQuF-w8S2JCgUeu/view>

Abstract: While development efforts and overall economic growth in the Caribbean have contributed to a decrease in homicide rates in the region, past and current solutions to gun violence have either completely ignored or unsustainably addressed root causes of crime such as poverty, lack of education, and unemployment. As a result, crime remains a major threat and concern for the public. Using a discipline-combined approach of international relations’ protracted social conflict theory (PSC) and public health’s socio-ecological model, practical steps towards making sustainable change in the Caribbean are identified in this study. Application of PSC’s theory to gun violence in the Caribbean suggests that the region suffers from crime due to a number of internal (poverty, unemployment, and lack of education, etc.) and external (drug trafficking, international production of arms, etc.) factors. Public health’s socio-ecological model argues that reduction to gun violence can happen by means of addressing either set of factors. However, acknowledging that some of these descriptors are much easier to tackle than others considering the profitability and global reach of external factors (i.e., drug trafficking), this study focuses solely on how to best address the internal factors by evaluating the effectiveness of two US-based, community-based public health solutions to gun violence, Group Violence Intervention (GVI) and Cure Violence (CV). Following, this study argues that there is potential applicability of these two interventions in the Caribbean, thereby offering two viable solutions to reducing, arguably, the region’s most pressing problem: gun violence.

Education for Resilience: The Argument for Restructuring Canadian Education for Indigenous Communities

Author: Elizabeth Dudley

Advisor: Eleanor Morris

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1a2wngngwZ_9JDf7WaY-sqW_I9P3CsPBJg/view?usp=sharing

Abstract: In a world shaped by colonialism and its aftereffects, the fact remains that many Indigenous communities continue to live in conflict with the states in which they live. This research aims to assess in what ways postcolonial education systems for youth within former British colonies have been constructed to force cultural and community assimilation, and how they can be reconstructed to promote Indigenous community sustainability and self-determination, taking into account the roles of race and ethnicity in the manifestation of the violence of colonialism. Completed as the capstone requirement for the International Relations major at Agnes Scott College, this research utilized an extensive literature review that established its theoretical framing in reconciliation and postcolonial theories. It then analyzed the historical context of Canadian education systems, most specifically the residential schools and post-residential school education programs. Assessing these historical constructions through the lens of the theoretical framework, it argues that postcolonial education systems perpetuate colonial violence as a means to securitize government power. It concludes by arguing for the inclusion of Indigenous communities and their epistemologies in all attempts towards reconciliation, understanding that the conflict of educational accessibility and involvement cannot be resolved and reconciliation cannot occur until the Indigenous peoples of Canada possess the means of cultural and community preservation.

1:30 SENIOR CAPSTONE PRESENTATION: THE “BLACKPRINT” FOR UNIVERSAL EDUCATION & THE ARCHETYPAL PATTERN FOR RACIAL INEQUALITY IN GEORGIA’S PUBLIC SCHOOL SYSTEM

Author: Kaitlyn Mills

Moderator/Advisor: Mary Cain

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJYofu6spjqsE9xwXWzm9DhVSiaJ5kw3NLH3>

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1otT1c1S8ZYGyWxwzYnww3pPspv1ybe-B/view?usp=sharing>

Abstract: During Reconstruction, Black southerners began the systematic instruction of those among them who were illiterate, teaching the basics of literacy and civic lessons so they could participate in America’s democratic society—thus beginning the South’s movement for universal education. At the same time, white Southerners incorporated antebellum social norms into law, in order to deny African Americans citizenship, voluntary control of their labor, and massive growth of universal education. This antagonistic agenda shows up in direct opposition to Black progress towards educational and social equality, and is largely rooted in and disguised by the exploitative semantics and generally accepted practices of accounting and financial management practices. The HIS 490 thesis builds upon the research conducted in the HIS 420 Senior Seminar course, and upon the historiographical foundations of Anderson, Hollingsworth, Kousser, Patton, and Walsh to identify an archetypal pattern for the

maintenance of these racial inequalities and draws connections across milestones in Richmond County School System's development of public education for Black students. The research expands on these historiographical foundations by introducing a well known neoclassical economic theory, Human Capital Theory. In this paper, I argue the formative years of Georgia's education system presented an archetypal pattern of reorganization, consolidation, and control that has contributed to the sustained inequalities and achievement gaps between Black and white students in public education.

2:00 PANEL: DISTURBANCE AND BIODIVERSITY

Authors: Mathurin Kajornkiatpanich, Tori Gyorey, Dakota Mitchell

Moderator: Jennifer Kovacs

Zoom Session Link: <https://agnesscott.zoom.us/j/92325866961>

Ashes to Ashes, Bug to Bug: The Effects of Emerald Ash Borer Infestation on Insect Biodiversity Across the US

Author: Mathurin Kajornkiatpanich

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1Qn_8Q1C7ed8jXiXhdHo20V_nzfbuey6w/view?usp=drive_web

Abstract: Invasive species are foreign organisms that can negatively impact the environment they are brought into. The Emerald Ash Borer (EAB) is one of the most ecologically harmful invasive species in North America, having killed tens of millions of ash trees since its first recorded sighting in 2002. This presentation addresses how insect biodiversity changes over time, in response to EAB infestation within the local county area. It was hypothesized that higher prior insect biodiversity can increase ecological resilience to EAB infestation, as native insects fill the ecological niches that the EAB otherwise would, thereby contesting EAB infestation. Using EAB data from the Global Biodiversity Information Facility (GBIF) and insect observation data from iNaturalist, calculations were conducted on EAB sightings and insect biodiversity across five different US counties, via the program Python. Preliminary results suggest that overall insect biodiversity greatly decreases after EAB infestation in the local area – specifically, at low levels of EAB infestation there is a slight negative effect on insect biodiversity. As total EAB infestation levels increase, the gap between prior and post-EAB insect biodiversity becomes greater. These results can be used to further understanding of ecological resilience, and the effect of invasive species on local biodiversity over time.

Wildfires and Soil Microbe Biodiversity

Author: Tori Gyorey

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1T5fW3BZgSY1u2sItKVluJKII5tvZUrMi/view?usp=sharing>

Abstract: As global climate change creates warmer and drier conditions, the number of wildfires can increase, this can have far-reaching impacts on the organisms within these ecosystems. In addition to affecting the animals and plants within these ecosystems, fires can also affect soil microbial community composition. In 2016 there was the Chimney Tops 2 Fire near Gatlinburg, Tennessee that burned through most of the Great Smoky Mountains National Park. Prior to the fire, a long-term ecological study was established through the NSF NEON project that among other things documented soil microbial community composition at multiple plots throughout the park, which continued after the fires. I am using a portion of this data to study the association between the biodiversity of soil microbes and fire. I am comparing the soil microbial community in soil samples before fire and after on research plots that burned through programming language Python. I predict that the presence of the wildfire will cause soil microbe biodiversity to decrease. I am also interested in looking at how severity might impact the biodiversity of soil microbial communities. Soil microorganisms are essential to fertilizing the soil, cycling nutrients, and decomposing organic matter, so changes in soil microbial biodiversity can negatively impact its environment and make it more difficult to recover from natural disasters. Therefore, it is important for us to evaluate the impacts of wildfires on soil microbial communities to predict and potentially mitigate a huge loss of microbial diversity that allows that environment to thrive.

Bird Biodiversity and Greenspace in Georgia Ecosystems

Author: Dakota Mitchell

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1ER3BD6s8-NyCZZ2Zg_cRZ8_OO70uWMxU/view?usp=sharing

Abstract: Many homes today have bird feeders, bird baths, and other amenities that encourage birds to visit yards and homes. In cities, birds are often seen as pests, and some buildings incorporate features to deter them. Birds live in a variety of habitats, and some species inhabit both rural and urban environments. I am interested in exploring how the amounts of greenspaces and development can affect the number and variety of birds in an area. Across ecosystems in Georgia factors such as the climate crisis, increased temperatures, and lack of green space in urban areas can affect bird biodiversity. In this study, I used bird count data made publicly available through the citizen science project eBird to analyze the effects of urbanization on bird biodiversity. I am comparing the amount of birds in selected urban and rural counties in Georgia using Shannon's Diversity Index. I predict that higher concentrations and a greater diversity of birds will be found in rural environments (areas with more greenspace) than in urban environments (areas with less greenspace). Also, within those urban areas bird concentrations will be positively correlated with greenspace. By better understanding how urbanization impacts biodiversity, we can begin to determine if these factors have effects on intraspecific and interspecific interactions, such as competition.

2:00 INDIVIDUAL PRESENTATIONS, GROUP 1 (NEUROSCIENCE)

Authors: Alex Martin, Ana Tapia, Maurisa Dawson, Diana Ghebrezadik, Lillie Franklin, Carlie Charles, Deih Sian, Claudia Hines, Ashley Mabrey, and Shanika Lammatine

Moderator: Jennifer Larimore

Zoom Session Link:

<https://agnesscott.zoom.us/j/5475746441?pwd=VUJ5UmxIZHFBcFRaYmFTOHNTUFZLdz09>

Alterations of CPEB-3 Levels in Autism Spectrum Disorder Brain and Cells Samples

Authors: Alex Martin, Ana Tapia, and Maurisa Dawson

Advisor: Jennifer Larimore

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

https://drive.google.com/file/d/114LYGVBoLdVd46WPMgB0PKy6Cv4u-gr_/view?usp=sharing

Abstract: Abnormalities in protein function have been linked to atypical behaviors seen in patients with Autism Spectrum Disorder (ASD). Previous studies have determined the involvement of cytoplasmic polyadenylation element binding proteins (CPEB) 1-4 in relation to some characteristics observed in Autism Spectrum Disorder. CPEB-3 plays a significant role in neuronal function and learning and memory, suggesting there will be lower CPEB-3 levels found in ASD mice brain tissue samples. In this study, the researchers further analyze the alteration of CPEB-3 in brain and cell samples taken from ASD mice. The data provides evidence that the CPEB-3 levels in the brain sample are lower, ultimately supporting the hypothesis that deficiencies in CPEB-3 can be identified in ASD subjects.

Disrupted Enosomal trafficking in Neurodevelopmental Disorders

Author: Diana Ghebrezadik

Advisor: Jennifer Larimore

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

https://drive.google.com/file/d/1NiP9YbJOpAEsEXa1a9fZaVARa_RBDuoE/view

Abstract: Rett syndrome (RTT) is a neurodevelopmental disorder characterized by seizures, impairments in speech, learning, memory, coordination, and repetitive movements. Rett syndrome is caused by an x-linked mutation in the Mecp2 gene. Schizophrenia (SZ) is another neurodevelopmental disorder characterized by hallucinations, disorganized thinking, depression, sleep disturbances, and impairments in learning, speech, and memory. DTNBP1 gene, which encodes for the dysbindin subunit of endosomal trafficking protein BLOC-1, is associated with an increased SZ risk. Endosomal trafficking is a cellular process that regulates the transport of vesicles from donor membrane to acceptor membrane within endosomal organelles. Endosomal trafficking is vital for proper neurite outgrowth, synaptic formation, and proper neuronal function through vesicle targeting. Endosomal trafficking is disrupted in both RTT and SZ; however, the molecular mechanism of the alteration of endosomal trafficking is not understood. The purpose of the study was to examine whether there is a phenotypic similarity between PC12 cells with stable expression of dysbindin siRNA or Mecp2 siRNA and a mouse model of RTT and

SZ. The PC12 cells lacking dysbindin had a significant reduction in neurite outgrowth compared to the control cells ($p < 0.001$). The PC12 cells lacking MecP2 had a significant decrease in neurite length compared to the control cells ($p < 0.001$). Postmortem and mouse model studies of RTT and SZ have also shown a reduction of neurite outgrowth. These indicate that the PC12 cells lacking Mecp2, or lacking dysbindin can be used to examine the mechanism of endosomal trafficking disruption in RTT and SZ pathogenesis respectively.

De novo mutation in ZNF292 and its relation to autism spectrum disorder

Authors: Lillie Franklin, Carlie Charles, and Deih Sian

Advisor: Jennifer Larimore

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1T9okbZNVUAVtvU9E_7uZSSXZ91ec5a7/view?usp=sharing

Abstract: In recent genome sequencing studies, a de novo mutation in *ZNF292* has been linked to autism spectrum disorder (ASD). *ZNF292*, codes for zinc finger protein 292, and was recently discovered by Mirzaa et al. (2018). Mirzaa et al. found that *ZNF292* is present in the brain, especially during development, and that *ZNF292* plays a role in transcription as well as being involved in the regulation of voluntary movements. Few studies have been conducted to find out more about the role of *ZNF292* in terms of risk of ASD. In this study, it is speculated that the de novo mutation or variants in *ZNF292* are pathogenic for a spectrum of neurodevelopmental disorders such as ASD and intellectual disability (ID). The results of this study indicate that *ZNF292* plays a crucial role in the development of the human brain and de novo mutation could increase the risk of ASD and ID.

The CD 98 Glycoprotein and Autism Spectrum

Authors: Claudia Hines, Ashley Mabrey, and Shanieka Lammatine

Advisor: Jennifer Larimore

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/18britobwI3gfepMgA6IPC4Ao0-rtI7Ba/view?usp=sharing>

Abstract: Impaired amino acid transport in the blood-brain barrier has been identified as a cause of Autism Spectrum Disorder (ASD). CD-98 is needed to amplify integrin signaling and for the process of transferring amino acids, which are both crucial to the survival of the cell and proliferation. However, further studies are needed to confirm the connection between CD-98's role in amino acid transporting and ASD. We hypothesize that cells from ASD affected mice will have lower levels of the CD-98 protein. We found that the Immunofluorescence and Western Blot Analysis identified lower levels of CD-98 in ASD-affected mouse cells.

2:00 INDIVIDUAL PRESENTATIONS, GROUP 2 (GLOBAL JOURNEYS—IDENTITY, GLOBALIZATION, AND SOCIAL CHANGE)

Authors: Emily Carlson, Carson Neubauer, Kai Robinson, Grace Walker, Rosie Hagel, Jazmyne Greene, and Kaela Brooks

Moderator: Mina Ivanova

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJAsce6hpjwpHdHyXuTOAotrX8oHwliG6LI3>

Art as a Political Power

Authors: Emily Carlson, Carson Neubauer, Kai Robinson, and Grace Walker

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1ThQsBbbliBlaDprHshQgZ_YUrmSYmo3P/view?usp=sharing

Abstract: After receiving a tour through one of Bulgaria’s socialist museums, we were instantly interested in the themes presented by the socialist art and how they differed from the perceptions we have coming from a country with a democracy. Propaganda is a staple aspect of American life and it highly weighs on the American conscious. As we saw recently in the capitol riots, the influence of propaganda and what politicians say is something not to be taken lightly. We want to take a look at the other side of politics and see how a socialist country like Bulgaria handles propaganda during times of great scrutiny. We are mainly focusing our project on the 1960s as America was experiencing high political tensions like the Cold War and the Red Scare which made us wary of countries under communist rule. Many people do not know the story of the opposing country and we want to be the ones to tell it through the use of art and political cartoons.

Communism and Architecture

Authors: Roisin Hagel, Jazmyne Greene, and Kaela Brooks

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1QUxYx5jOQSOX6BTmNOHxrsA8HxleFUxH/view?usp=sharing>

Abstract: Architecture in communist nations often looked very similar. Urban planning was one of the components of Stalin’s Five-year Plans, in an attempt to boost industry and the economy in communist nations. The goal of the initiative was to bring more people into the cities so that they could work. It also controlled the population and distributed it economically. The government decided who got apartments based on whether or not they were members of the communist party. To build the massive residential buildings, people would often be pulled out of their professional jobs to work on these construction sites. These residential buildings are now old and unreliable but people still rely on them for housing. While using primary sources, images, and historical research to find out more about this topic, we will be exploring the effects that urban planning had on average citizens and how they are still affected today.

2:30 PANEL: GHOSTING OF FRIENDS AND JOB APPLICANTS

Authors: Lucie Blaise, Deyana Siddiqui, and McKenna Hupp

Moderator: Jenny Hughes

Zoom Session Link: <https://agnesscott.zoom.us/meeting/register/tJAvd-6srj4sGtISdC1W2BcrzLSwMbE3Xvx5>

Ghosted Friends' Feelings of Distress, Confusion, and Lack of Closure

Authors: Lucie Blaise Lee Trinh, Rachel Barnes, and Selena Lomeli

Advisor: Jenny Hughes

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

<https://drive.google.com/file/d/17NmDDQd4djQSFaQ1sonAwtm1AxKpWxo/view?usp=sharing>

Abstract: In this study, we focused our research on the influence of being ghosted by a friend. Unlike romantic relationships, ghosting in friendships are not often discussed, even though studies have shown that more people have ghosted a friend than a romantic partner. Additionally, ghosting in the form of an unexplained absence from a friend can be traumatic, as social rejection activates the same brain pathways as physical pain. Based on this literature, we hypothesized that being ghosted by a friend causes long-term negative effects such as distress, confusion, and a lack of closure after the relationship. To test our hypotheses, we recruited a sample of 101 participants who had been ghosted by a friend in the past year, using a sample of convenience, and had them complete a survey. Our results showed that the type of friendship mattered in determining one's distress levels. Therefore, being ghosted by a close friend caused stronger levels of friendship breakup distress and less closure in comparison to those who lost a good friend. An interesting follow up study could involve exploring why ghosting a friend is considered more socially acceptable than ghosting a romantic partner, as well as further research on friendships and ghosting.

Ghosting Job Applicants and the Resulting Impact on Organizations

Authors: Deyana Siddiqui, Samantha Zheng, NyJia Lott, Tara D. Pollack, and Salav Oul

Advisor: Jenny Hughes

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

<https://drive.google.com/file/d/1S063LBjtf54CN7z25QgoaCuK8-6aWnzH/view?usp=sharing>

Abstract: While most employers require proper communication skills from employees, they themselves are often guilty of ghosting applicants. Ghosting is when one party ends communication with another and ignores their attempts at contact (Duval, 2018). To guide our research, we hypothesized that job applicants who are ghosted (i.e., not told they were rejected for a job they applied for) will not encourage others to apply to that organization, will be less likely to reapply in the future, will not have a favorable perception of the organization, and will be more likely to speak negatively about the organization. We recruited 192 participants through

convenience sampling, who then took a Qualtrics survey in which they answered questions regarding their job ghosting experiences. The data were then analyzed using independent samples t tests and the results were all statistically significant (i.e., at the p level of .01 or lower). All four parts of the hypothesis were supported: when compared to their non-ghosted counterparts, ghosted applicants were less likely to view the organization positively or encourage their friends to apply. Additionally, ghosted applicants were not as likely to reapply or speak well about the organization compared to their non-ghosted peers. Regarding practical application, human resources personnel can use this information to influence their communication policies to ensure that the company effectively and efficiently communicates with applicants during the hiring process. For future research, we would like to compare the ratio of intentional to unintentional ghosting among organizations.

Emotional Responses after Intentionally and Unintentionally Ghosting Friends

Authors: McKenna Hupp, Mayra Rosas, Trishyne J. Butler, and Leila A. Agbogu

Advisor: Jenny Hughes

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1nhTb-kXU81MZkKs38HUW-8qdcNHXwOHU/view?usp=sharing>

Abstract: Vilhauer (2015) defines ghosting as having someone that you believe cares about you, friend or someone you are dating, disappear from contact without an explanation. We hypothesized that (a) those who report ghosting friends unintentionally will report greater remorse and (b) sadness about doing it as compared to those who intentionally ghost friends because they no longer want to be friends. We also hypothesized that (c) those who intentionally ghost friends will be more likely to have moved on from the friendship and (d) will not think about the friendship as much as compared to those who unintentionally ghosted their friends. Through a convenience sample and two introductory psychology courses, we recruited 158 participants who had ghosted a friend in the past year to take our survey. We found support for our first hypothesis, those who reported ghosting friends unintentionally reported greater remorse ($M = 2.38, SD = 1.36$; a little to somewhat remorse) about ending the friendship as compared to those who intentionally ghosted friends because they no longer wanted to be friends ($M = 1.78, SD = .75$; none at all to a little), $t(101) = 2.84, p = .006, d = .53$. The other three hypotheses were not supported by the data. This was the only study that we could find that studied people participating in ghosting behaviors. Most studies look at the person who was ghosted.

2:30 PANEL: MOSQUITOS, PATHOGENS, AND CLIMATE CHANGE

Authors: Asmiya Kazmin, Nin Haliyma Jacobs, and Nikki Jackson

Moderator: Jennifer Kovacs

Zoom Session Link: <https://agnesscott.zoom.us/j/91468644930>

How does climate change help the spread of vector borne diseases transmitted by mosquitoes?

Author: Asmiya Kazmin

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1mbuXIXIOrgmS9-LEYODhV0wPUiqmbS8F/view?usp=sharing>

Abstract: Due to climate change, there have been geographic changes in landscape and temperature around the world. Because of this, mosquitoes have found new places to relocate to and live. The shifts in weather patterns and temperature have a huge impact on the spread of vector-borne disease transmitted by mosquitoes. This research focuses on investigating how temperature influences the mosquito population in four cities on the east coast over five years. I will compare differences in the biodiversity of mosquito species present in the four locations and analyze its effect on the spread of vector-borne diseases transmitted by mosquitoes. I will use the NSF funded NEON database to collect mosquito and temperature data. I will then use Python to investigate the association between the two variables. My research aims to better understand how variations in temperature can impact mosquito biodiversity and populations across multiple research sites.

How do mosquito-dense areas affect the spread of zoonotic diseases in small mammals?

Author: Nin Haliyma Jacobs

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1QuFFRbaXUqgzEGuUJnIo4V9KMVJfBy2d/view?usp=sharing>

Abstract: Mosquitos are known as the deadliest organism in the world due to their ability to transmit viral diseases from host to host as they feed on the blood of infected animals. Zoonotic diseases, namely the West Nile Virus, Zika, and Flavivirus, are of particular importance since mosquito-vectors transmit these viruses to small mammals that are common to our backyard. With this being said, I am interested in whether the total number of mosquitos in an environment are associated with mosquito-related pathogens in small mammals. Specifically, I'm looking at how mosquito-dense areas in [terrestrial] Georgia, Florida, and Virginia can affect the spread of zoonotic diseases in squirrels and chipmunks. I am also interested in looking at how the density of the small mammals is related to the presence of certain species of mosquitoes and mosquito pathogens (i.e., if there are a lot of squirrels in one area, are there going to be more mosquitos that carry their specific zoonotic diseases in that same area?). I predict that in mosquito dense areas, there will be more zoonotic diseases [West Nile Virus, Zika, and Flavivirus] compared to

areas where there are fewer mosquitos per land plot. I also predict that there will be more zoonotic diseases in areas where there are more hosts to continuously spread the virus. The current health crisis is attributed to the mutation and spread of a coronavirus species that has a natural reservoir in small mammals making it all the more important to determine the extent that zoonotic pathogens can travel in nature.

Do Mosquito Pathogens Follow Black Communities?

Author: Nikki Jackson

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1nRo4jGsL3iRHhRH9_MDWdg0CbI0VqrG/view?usp=sharing

Abstract: Race, as a major determinant of health, predisposes Black Americans to a higher risk of negative health outcomes than their peers of other races. For this reason, I am interested in whether a necessary component of epidemics - communicable pathogens - is more present around Black communities. Specifically, I will organize positive mosquito pathogen test results collected by the National Ecological Observatory Network (NEON) in four regions: mid-Atlantic, Appalachians and Cumberland Plateau, Ozarks Complex, and Southeast US. I will also use human census data from the zip code of each field site to determine the percentage of Black people living nearby. I will look for a correlation between positive test results and percent Black people living nearby, and I will run a t-test to determine whether percent positive test results is significantly affected by percent Black people in the vicinity. I predict that positive test results will more often be found among Black communities. Results could help further support the reasoning that institutional racism creates a less safe physical environment for Black people.

2:30 INDIVIDUAL PRESENTATIONS, GROUP 1 (NEUROSCIENCE)

Authors: Neha Nasar, Skylar Clark, Shanieka Lammatine, Lillie Franklin, Kira Joyner, Maya Akbik, Alisha Vegdani, Daryen Morgado, Markia Carr, Julia King, Kennedy Coates, Anabel Braziel, and Sydney Y. K. Brown

Moderator: Jennifer Larimore

Zoom Session Link:

<https://agnesscott.zoom.us/j/5475746441?pwd=VUJ5UmxiZHFbCFRaYmFTOHNTUFZLdz09>

The Effect of Classical Music on Anxiety-like Behaviours in C57 Mouse Model

Authors: Neha Nasar, Skylar Clark, Shanieka Lammatine, Lillie Franklin, and Kira Joyner

Advisor: Jennifer Larimore

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

<https://drive.google.com/file/d/1TdwaIRKbF3HZfrclmMX1mBWY4TDnee38/view?usp=sharing>

Abstract: While anxiety is a well-researched topic, little is known about the impact of music on animal physiology, behavior, and anxiety levels. According to studies conducted in the past, the

use of Mozart music has affected reasoning skills and the ability to solve spatial problems amongst individuals. The purpose of this study was to explore the relationship between classical music and anxiety levels in C57 mice in order to determine potential treatment options for anxiety. The control mice will be housed with normal sound wave conditions, while the variable mice will be housed while classical music is being played for 2 hours prior to the forced swim and open field tests. These tests to measure anxiety levels will be administered to both groups of mice and mice movement and exploratory behaviors will be recorded. We hypothesized that mice exposed to classical music will exhibit less anxiety-like behaviors during the forced swim test and open field test.

Effects of Aromatherapy on Anxiety and Depression with Behavioral Test Performance in Female Mice

Authors: Maya Akbik, Alisha Vegdani, Daryen Morgado, and Markia Carr

Advisor: Jennifer Larimore

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1cwN0kiVSWKo_pjNjGgn_eGYtpQfa6XPx/view?usp=sharing

Abstract: Aromatherapy is a holistic style of treatment that uses natural plant extracts to promote and improve a person's health and well-being. Aromatherapists blend several essential oils together and then put the oils into a diffuser. In recent studies, certain oils in aromatherapy have been shown to "omit stress" and induce a feeling of relaxation. This study aims to find further evidence on the effectiveness of aromatherapy in reducing anxiety and depression. The researchers compared lavender and chamomile's effects on the performance of female mice in a forced swim test and an open field test. The results show that the mice performed better in both the forced swim test and open field test after receiving aromatherapy than before indicating that the oils reduced anxiety and depressive symptoms. The results also show that lavender was more effective than chamomile. This study provides evidence on the effectiveness of aromatherapy on depression and anxiety levels. It is important to perform further research on this claim in order to utilize aromatherapy as an actual treatment for anxiety and depression.

The Effects of Intermittent Fasting on Depressive and Anxiety Like Behaviors in Male Mice

Authors: Julia King, Kennedy Coates, Anabel Braziel, and Sydney Y. K. Brown

Advisor: Jennifer Larimore

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1yTQ1jWYrBAD_6LHsS5joZb975BShP02M/view?usp=sharing

Abstract: In Western society, humans typically eat at least three meals a day, while laboratory animal models are fed ad libitum. Mammals have evolved from environments in which means of sustenance were insufficient. As time elapsed, mammals adapted to their environment, developing communities and agriculture, fostering increased survival and elevated physical and

cognitive functioning. Fasting has been practiced for many years and is observed in numerous religious groups. Typically, fasting is characterized by reduced consumption of food and fluids for periods ranging from 12 hours to three weeks. In this study, we will utilize a subgroup of fasting known as intermittent fasting. Intermittent fasting is the practice of consuming meals according to a meal schedule to induce caloric restriction and ketogenesis. Studies have shown that intermittent fasting could also induce anti-depressant effects. This study aims to investigate the effects of intermittent fasting on male mice. We will be utilizing the daily time-restricted method of intermittent fasting in 12-week old male mice, which will be subjected to behavioral tests. Force swim and open field tests will be conducted to evaluate depressive and anxiety-like behaviors in subjects.

2:30 INDIVIDUAL PRESENTATIONS, GROUP 2 (GLOBAL JOURNEYS—POST-COLONIAL LEGACIES)

Authors: Kit Tures, Ayanna Raulston, Becca Robinson, Seren Davis, Maleah Slade, Maddy Buisch, Grace Haslam, Maia Sheridan, and Cameron Glasscho

Moderator: Philip Ojo

Zoom Session Link: <https://agnesscott.zoom.us/j/93674017342>

Jazz as a Respite from Oppression

Authors: Kit Tures, Ayanna Raulston, Becca Robinson, and Seren Davis

Advisor: Philip Ojo

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1wVcrpUYqhs6GZ32wUm4YwdBjSdLhauHL/view?usp=sharing>

Abstract: Beyond jazz’s origins as interpretations of American and European classical music entwined with African and slave folk songs and the West African cultural influences, this group digital project examines the true rationale for the creation of a music genre that originated in the African-American communities of New Orleans, Louisiana, in the late 19th and early 20th centuries. The central questions of this project are as follows: Why was jazz created? How did the cultural blending help achieve the goal of the music? How has jazz shaped the culture and identity of New Orleans? What is the place of Jazz in contemporary New Orleans society, and in a global perspective? Using archival and digital resources, this project seeks to demonstrate that this blend of multiple cultural traditions (African, Caribbean, European, and American) was originally created as a respite from the oppressive colonial system. This project is part of a larger digital story on (post)colonial legacies in New Orleans, Louisiana (NOL) and Martinique, which itself, is part of the “Virtual Global Learning Showcase.”

Gender Roles and Expression in Martinique and New Orleans

Authors: Maleah Slade, Maddy Buisch, Grace Haslam, Maia Sheridan, and Cameron Glasscho

Advisor: Philip Ojo

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1Xpol3wC5K5xuiBVa-Rxc3pqZWndNM698/view?usp=sharing>

Abstract: This project examines gender roles and expressions in postcolonial Martinique and New Orleans. The goal is to critically analyze an array of gender-based socio-cultural and economic issues, such as patriarchy, education, employment, domestic violence, the Carnival in Martinique, and gender binary in both societies. Using archival and digital resources, the project seeks to address gender-based issues and their divergent manifestations in the French Caribbean Island and New Orleans, Louisiana. The project will ultimately challenge damaging stereotypes often attached to women; it will also educate people about gender nonconformity and its significance to gender issues in society. This project is part of a larger digital story on (post)colonial legacies in New Orleans, Louisiana (NOL) and Martinique, which itself, is part of the “Virtual Global Learning Showcase.”

2:30 SENIOR CAPSTONE PRESENTATION: HYPER-VISUALIZED SOCIAL MEDIA CONTENT AND ITS EFFECTS ON BLACK GENERATION Z WOMEN

Author: Afia Wells

Moderator/Advisor: Regine Jackson

Zoom Session Link: <https://agnesscott.zoom.us/j/93430699704>

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/16FmZWpD3nHSKo-DkYjh50xsiISNnlGpu/view?usp=sharing>

Abstract: Since the murder of Trayvon Martin in 2012, social media has been used by Black Gen Z activists as a platform to advance social justice causes. We see new stories describing Black people’s interactions with racist police officers, medical professionals, teachers, bosses, and even regular civilians who believe they can exercise authority over them. For those born between 1997-2012, social media has become the platform to expose the people who uphold and benefit from the Prison Industrial System, redlining, and voter suppression and other racist systems. While the murders of Ahmad Arbery (2/23/20), Breonna Taylor (3/13/20), and George Floyd (5/25/20) helped to grow the movement and mobilize allies, an unintended consequence is that by bringing attention to systemic racism, these deaths have been sensationalized. This project focuses on the relationship between social media content and mental health. I evaluate the mental health effects of these triggering stories being internalized by Black women on social media. I specifically focus on women because historically, the Black male experience is hyper visualized, often ignoring the intersectional problems Black women face. I will also highlight the community’s response through social media and the unique use of comedy. Based on an analysis of comments made by Black women on TikTok, I argue that Black creators use comedy as a coping mechanism and to express Black experiences that are not generally accepted as reality by the more privileged society.

3:00 PANEL: RESPONSES FROM SUPERVISORS, PARENTS AND FRIENDS WHEN GOOD THINGS HAPPEN (I.E., CAPITALIZATION) AND THE QUALITY OF THE RELATIONSHIPS

Authors: Bethany Velarde, Chloe Deutsch, and Lee Trinh

Moderator: Jenny Hughes

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJAodOGhrT4jH9PM6zMyskKtkrtdxxE-Cvdc>

How Capitalization Can Improve the Quality of Supervisor/Employee Relationships

Authors: Bethany Velarde, Alexis Skeen, and Alex Varner

Advisor: Jenny Hughes

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1gW1nIN9fqgV5i6ND2UMqgcFpKKX8Xvu7/view?usp=sharing>

Abstract: Capitalization is a process where individuals share positive events with others, especially in close relationships (Gable et al., 2004). Gable et al. (2004) found that capitalization is linked to positive effects, including higher positive affect and greater life satisfaction, in close relationships and between romantic partners. In situations where reactions were active and constructive as opposed to passive and destructive, positive effects resulted in an increase in relationship trust, positive emotion, and enhanced social bonds. To further investigate the outcomes of Gable's research, we examined the effect of capitalization on relationships between employees and their supervisors. We predicted that active-constructive responses would be positively associated with the quality of the supervisor and employee relationship (i.e., affective commitment to their supervisor, commitment to their supervisor, satisfaction with their supervisor, and trusting their supervisor), whereas passive-destructive, active destructive, and passive-constructive would be negatively associated with relationship quality. Through survey research using 180 employees, we found our hypothesis supported for active-constructive, active-destructive and passive-destructive responses. However passive-constructive responses were not found to be significant for all measures. One benefit of this study is that it examines the positive effects of capitalization in supervisor-employee relationships and adds to the existing research, which is largely concentrated on romantic relationships. For example, future work could focus on passive-destructive responses and the negative effects on productivity and relationships, or could focus on a specific industry, affinity groups' supervisor employee capitalization, and even look at other close relationships such as those between students, teachers, or mentors.

Parents: Responding Positively to Your Adult Child's Positive Experiences Matter

Authors: Chloe Deutsch, Mia Azani, and Jessica Rao

Advisor: Jenny Hughes

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1miAE3jzhrYR_M8T8Z351I_20mH_jUDvW/view?usp=sharing

Abstract: Capitalization is the sharing of positive events, and seminal research has demonstrated its ability to produce positive affect for the person who shares their experiences with others (Gable et al., 2004). However most of the research studied has been on capitalization between romantic partners and friends, therefore we were interested in replicating Gable et al.'s (2004) work with a sample focused solely on the relationship between individuals and their caregivers. After IRB approvals, 9 members of our lab recruited 101 participants who completed a survey about their parents, with 84.5% of the participants selecting their mother. Using correlations, we found support for our hypotheses that active-constructive responses were positively associated with the quality of the parental relationship, whereas passive-destructive, active destructive, and passive-constructive were negatively associated with relationship quality. This study is important because it demonstrates how a parent's response to their child can impact their relationship and the child's development of positive experiences. We hope to do further research to affirm Gable et al.'s (2004) findings by gaining more male participants in order to conduct a gender analysis, as well as evaluate participants of different ages to see relationship development throughout life.

Happy for You: A Study of Capitalization in Friendships

Authors: Lee Trinh, Shaniah Sanford-Williams, and Kayla D'Amato

Advisor: Jenny Hughes

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1X6qnP28DlaZL4UkV3TjSG3aGkuSNSct9/view?usp=sharing>

Abstract: Capitalization, as referred to by Gable et al. (2004), refers to positive responses to good events in another's life, and is proposed to generate additional positive effects alongside the event itself. Gable et al. (2004) found that active-constructive responses correlated positively with relationship satisfaction, while passive-constructive, active-destructive, and passive-destructive were all negatively associated with relationship quality. In the current study, we investigated the influence of capitalization on friendship dynamics. We predicted that active-constructive responses would be positively associated with relationship quality, whereas passive-destructive, active destructive, and passive-constructive would be negatively associated. Participants were recruited in introductory psychology courses and by using a convenience sampling method. In total, we collected data from 184 participants using a Qualtrics survey. Like Gable et al. (2004), we found support that active-constructive responses are positively associated with relationship quality, whereas passive-constructive responses were negatively associated. Active-constructive and passive-destructive were found to be unrelated to relationship quality. The study provides important insight on capitalization within friendships and how the method of capitalization can affect both personal relationships and individuals positively. A strength of this current study is that we used scales with established reliability and evidence for their validity. After this research, we would like to continue to investigate capitalization within friend groups to see if people pair off with friends with similar levels of capitalization usage.

3:00 SESSION: INDIVIDUAL PRESENTATIONS, GROUP 1 (NEUROSCIENCE)

Authors: Kai Thomas, Aluel Deng Arou, Anabel Braziel, Ximena Guillen, Karina Dalal, Alisha Vegdani, Yommi Tadesse, Rachel Peterson, Monique Gilmore, Esmeralda Lagunas, Deyana Siddiqui, and Ana Tapia

Moderator: Jennifer Larimore

Zoom Session Link:

<https://agnesscott.zoom.us/j/5475746441?pwd=VUJ5UmxiZHFBCFRaYmFTOHNTUFZLdz09>

14-3-3 protein expression in PTEN KO PC-12 cells

Authors: Kai Thomas, Aluel Deng Arou, Anabel Braziel, and Ximena Guillen

Advisor: Jennifer Larimore

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

<https://drive.google.com/file/d/1X6qnP28DlaZL4UkV3TjSG3aGkuSNSct9/view?usp=sharing>

Abstract: Abstract: It is commonly understood that insomnia plays an important role in autism spectrum disorder (ASD). Along with this, inconsistent sleep patterns and sleep deprivation alter a person's executive and bodily functions. Insomnia alters one of the most important cognitive functions which is the ability to create long term memories. Various proteins in the brain makeup specific functions in regulating sleep as well as monitoring circadian rhythm. Sleep deprived brains have a reduced amount of 14-3-3 epsilon proteins which results in increased synaptogenesis. Reduced 14-3-3 protein levels expression is also linked with impairments in learning and memory. We investigated protein levels of 14-3-3 in model systems of ASD. We hypothesize that these model systems will have altered protein 14-3-3 expression. We found that (include after completed exp).

Relationship between CPEB4 Protein and Aut2 Gene in Autism Spectrum Disorder

Authors: Karina Dalal, Alisha Vegdani, Yommi Tadesse, and Rachel Peterson

Advisor: Jennifer Larimore

Video Presentation Link (*only accessible with .agnesscott.edu accounts):

<https://drive.google.com/file/d/1b-2P3Y84opxzBXOkLX6b1guExKCvbnPr/view?usp=sharing>

Abstract: Autism spectrum disorder is a common developmental disorder (DD) that is characterized by challenges with repeated behaviors, communication, and overall social interactions. The severity of these challenges can vary based on certain functions of certain proteins and genes. The Aut2 gene, is a gene that has previously been determined to be a candidate gene for numerous neurological disorders, which includes ASD and DD. The transcription and translation between genes and proteins can impact how a protein functions. CPEB4, a binding protein that adjusts the poly-(A)-tail of mRNA, which assists in mRNA translation, and plays a role in synaptic plasticity and embryonic development, is also found to be associated with ASD. This research aims to find the correlation, if any, between CPEB4 and the increased presence of Aut2 protein generated by the Aut2 gene along with the impact that this relationship has on autism-like symptoms. Using a mice model and molecular techniques,

researchers will determine the potential correlation. The results support the hypothesis that CPEB4 and the Aut2 gene have an important relationship that is key to the prevalence of autism-like symptoms.

Impact of Altered Dietary and Exercise Habits on Anxiety and Depression-Like Behaviors

Authors: Monique Gilmore, Esmeralda Lagunas, Deyana Siddiqui, Ana Tapia, and Jafnun Kaderin
Advisor: Jennifer Larimore

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1c24nQ5I5-wk2j7NnnRjU4BnpDbsKAIVz/view?usp=sharing>

Abstract: Obesity, anxiety, and depression are three disorders commonly linked to one another. Of the comorbidities linked to COVID-19, obesity ranks as one of the highest, with epidemiological data suggesting that men have 2.5% greater mortality due to COVID-19 than women. Due to COVID-19 lockdown restrictions, individuals have increased their time spent indoors, which appears to have increased food intake and decreased physical activity, thus increasing risk of obesity. Furthermore, isolation and lack of activities during lockdown seems to have increased anxiety and depression levels around the world, with a Hong Kong study revealing an uptick of anxiety along with other mental disorders in their population during lockdown. Currently, it is unknown whether increased eating & decreased physical activity induces anxiety & depression or if anxiety & depression induce an increase in eating & decrease in physical activity. It is hypothesized that there will be a positive correlation between increased food intake & decreased levels of physical activity and anxious & depressive-like behaviors in mice.

3:00 SESSION: INDIVIDUAL PRESENTATIONS, GROUP 2 (COVID-19)

Authors: Brittany Saxon, Leo Skaer, and Sophia Gooch

Moderator: Yvonne Newsome

Zoom Session Link: [https://agnesscott.zoom.us/meeting/register/tJwpcuqvpzqjE9Wdr-vNPOE0MTGng_LnG0aN](https://agnesscott.zoom.us/j/9201234567890)

The Truth About Our Masks

Author: Brittany Saxon

Advisor: Tomiko Jenkins

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1krPSk8hCF6eTLyrGoq5sKdBhtaWs9Dal/view?usp=sharing>

Abstract: This children's book, *The Truth About Our Masks*, informs audiences about the importance of mask-wearing. It also mentions CDC COVID-19 public health policies and presents facts about the Coronavirus vaccine. The literature focuses on individual strategies that everyone can use to limit the spread of the COVID-19 virus. In addition, *The Truth About Our Masks* highlights women of color in STEM and how they are proactive in creating the vaccine. Overall, the book emphasizes how everyone plays an integral role in limiting the spread of COVID-19.

Outreach in the Age of Covid

Authors: Leo Skaer and Sophia Gooch

Advisor: Chris DePree

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1krPSk8hCF6eTLyrGog5sKdBhtaWs9Dal/view?usp=sharing>

Abstract: With the onset of the COVID-19 pandemic in Spring 2020, Agnes Scott's Bradley Observatory made the transition from in-person to virtual community outreach. Prior to the pandemic, some of the events that took place regularly at the observatory were tours for school groups, as well as monthly open houses that featured a variety of guest speakers, and equinox concert performances. After it became clear that in-person programming would not be possible for the foreseeable future, students and professors in the Physics & Astronomy Department collaborated to bring Bradley outreach to the local community through the internet. The major components of Bradley virtual outreach are educational videos and virtual planetarium shows, as well as livestreamed and recorded events. The planetarium shows and educational videos were created using Stellarium-Web, Screen-Cast-O-Matic and PowerPoint. The videos cover a variety of information sorted by grade-level according to Georgia Department of Education guidelines on various astronomy topics. These videos are accessible through the Bradley Observatory WordPress website. The open houses are conducted via Zoom meetings, and continue to host speakers across many disciplines related to physics and astronomy. The reception of the new Bradley outreach programs has been positive, and the department looks forward to continuing to bring accessible astronomy education to the Agnes Scott community and beyond.

3:00 INDIVIDUAL PRESENTATIONS, GROUP 3 (GLOBAL JOURNEYS—POST-COLONIAL LEGACIES)

Authors: Emily Utz, Ariyanna Cotterell, Rowan Pottorff, Rubi Islas, Grace Ashton, Simone Harris, Jewel Hanks, Ashley Aulis, and DeBorah Brooks

Moderator: Philip Ojo

Zoom Session Link: <https://agnesscott.zoom.us/j/93674017342>

Food as a Window to New Orleans Multicultural Identity

Authors: Emily Utz, Ariyanna Cotterell, Rowan Pottorff, and Rubi Islas

Advisor: Philip Ojo

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/19w-sGSFngOhxxL6A_PvpY-IEjJwnsVz/view?usp=sharing

Abstract: People say that food is the single most important element of a person's cultural identity. Food reflects historical, social, cultural, and economic experiences. Based on personal experiences, observation, and archival sources, this group digital project examines food as a window to New Orleans multicultural identity. Thanks to the colonial enterprise, New Orleans cuisine reflects multiple origins and influences (Africa, the Caribbean Islands, Europe, and the

Americas), which brought in diverse cooking traditions, ingredients, and flavors. The goal of the project is to acknowledge that colonization influenced contemporary New Orleans cuisine, as well as led to food inequities. This research provides us with a robust understanding of New Orleans history, which helps to refute stereotypes and misinformation that can be created by the commodification and simplification of a complex society. The project is part of a larger digital story on (post)colonial legacies in New Orleans, Louisiana (NOL) and Martinique, which itself, is part of the “Virtual Global Learning Showcase.”

Religious Pluralism in Martinique

Authors: Grace Ashton, Simone Harris, Jewel Hanks, Ashley Aulis, and DeBorah Brooks

Advisor: Philip Ojo

Abstract: Religion in the French-Caribbean Island of Martinique is defined by its rich cultural and historical heritage, both of which were and continue to be shaped by colonization. This digital project seeks to explore the multifaceted and multicultural nature of religion in Martinique through three main axes: Catholicism and its colonial roots, Afro-Caribbean religion and its place in contemporary society, and religious syncretism. The goal is to demonstrate that religious pluralism in Martinican society is a direct result of the colonial experience. This project is part of a larger digital story on (post)colonial legacies in New Orleans, Louisiana (NOL) and Martinique, which itself, is part of the “Virtual Global Learning Showcase.”

3:00 INDIVIDUAL PRESENTATIONS, GROUP 4 (GLOBAL JOURNEYS—IDENTITY, GLOBALIZATION, AND SOCIAL CHANGE)

Authors: Madison Ellerby-Muse, Tania Hernandez, and Mia Jones

Moderator: Mina Ivanova

Zoom Session Link:

[https://agnesscott.zoom.us/meeting/register/tJUqcOqtqD0sGdCD4sHFwt1zQSFcl4U54dX](https://agnesscott.zoom.us/join/agnesscott.zoom.us/meeting/register/tJUqcOqtqD0sGdCD4sHFwt1zQSFcl4U54dX)

Bulgarian Nestinarstvo as a Component of National Identity

Authors: Madison Ellerby-Muse, Tania Hernandez, and Mia Jones

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1I9VMNuehzJo4jYJ3wujBXT-2DQaeUfy8/view?usp=sharing>

Abstract: Nestinarstvo is the Bulgarian practice of walking barefoot on Embers. It is an act that is said to bring well-being, health, and fertility. This popular ritual brings natives to celebrate and loads of tourists also; Despite Nestinarstvo influencing the gathering of all people. It is a perfect example of understanding why cultural practices are an integral part of identity. Bulgaria has had its fair share of change in power. The earliest practices of Nestinarstvo traces back to Thracian rule, which changed under the Roman emperor Constantine. This shift changed Nestinarstvo from a pagan holiday to a Christian one. Elements of Christianity were added but not much. It

stayed the same for the most part up to Communist rule, which banned people from taking part in Nestinarstvo. Despite the wishes of these new powers Bulgarians still took part in secret until they could practice it in public when communism fell. Despite that, Nestinarstvo withstood these alterations and has not changed much over the years. This resilience is what we want to highlight in our Sparc presentation. We want to show how Nestinarstvo is an example of preserving national identity. Thousands of people travel each year to take part in this important tradition. The festival's significance to Bulgarians is an important example of why people should respect how other cultures' history and traditions impact their identity.

Comparing Music

Authors: Ashley Rogers and Caelin Hinds

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1iOUswNUGA4AB1SaBoeymdatLkDk8Pcrz/view?usp=sharing>

Abstract: This topic was inspired by one of the speakers from “peak week”, who discussed the differences between different traditional singers in Bulgaria from different regions. The purpose of this presentation is to compare the music in different countries and try to find similarities. In order to accomplish this, literature review and survey research will be used to help examine and analyze what is being listened to. Through this project, a better understanding of music from different countries will be developed.

The Fashion Industry: Fast Fashion (Worker Exploitation)

Authors: Myah Hasan, Kollen King, and Fabiola Garcia

Advisor: Mina Ivanova

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1PrqeCWVXNcfo7IsZlwTeP_pB9VfGC-Sy/view

Abstract: This topic was inspired by one of the speakers from “peak week”, who discussed the differences between different traditional singers in Bulgaria from different regions. The purpose of this presentation is to compare the music in different countries and try to find similarities. In order to accomplish this, literature review and survey research will be used to help examine and analyze what is being listened to. Through this project, a better understanding of music from different countries will be developed.

3:30 PANEL: THINGS ARE CHANGING IN THE W49A STAR-FORMING REGION

Authors: Mihika Rao, Azia Robinson, Jingyu Zhang, and Natalia Garza Navarro

Moderator: Chris DePree

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJwkce6rrDqjHNTZIKHBwLI5A7pc09hcvuBy>

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/drive/folders/1O7XojFEUXA2Y6w2gZ44xY9Wbo0kvgk_T?usp=sharing

Abstract: W49A is a massive star-forming region near the galactic center, containing ~50 individual sources. Over the past ~20 years, we have observed changes in the flux density of a few of the individual sources with the Jansky Very Large Array (VLA). We have previously detected and analyzed flux density variations discovered with new high-resolution radio continuum observations of W49A. Most recently, we have also detected significant variations in line widths in recombination line data from a few sources. Through this analysis, we have resolved new morphological details and detected several previously unknown sources. The project is funded by an NSF grant, which gives students an opportunity to participate in collaborative radio astronomy research and learn new analysis techniques. The research group has been able to present the research at large conferences and publish papers with new findings. The Massive Star Formation (MSF) Group has submitted a new NSF proposal (in conjunction with collaborators at the Harvard Center for Astrophysics and the American Museum of Natural History to continue this project. The group is also working on completely updating the research website.

3:30 PANEL: BIODIVERSITY, LAND USE, & CLIMATE CHANGE

Authors: Katie Bailey, Katherine Hutchison, and Ximena Guillen

Moderator: Jennifer Kovacs

Zoom Session Link: <https://agnesscott.zoom.us/j/91569747258>

A Honking Hot World

Author: Katie Bailey

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/19vPHbc9tFhLTrr7Ur1HMkUugmP9xRAN4/view?usp=sharing>

Abstract: Have you ever looked up to the morning sky and seen it darken with a passing flock of honking wild geese? For many of us, when we were little we were taught that as the weather gets colder, it stays nice and hot in the south, and that the geese would migrate every winter like clockwork. This is no longer the case. Scientists hypothesize that climate change is affecting the migration route and timing of migratory birds. I am interested in studying the effects of these warmer temperatures on migratory bird behavior with my research. Specifically, I am investigating whether rising temperatures are causing migratory ducks to begin their migrations earlier in the year which in turn shortens their reproduction cycle. Using wood duck observation data from 2015-2020 in Texas I have documented a trend of the ducks arriving earlier in the

spring in progressive years. I predict this trend will correlate with the warmer temperatures. Using this data, I will focus on the time of year the ducks are seen, the average temperature of the season, and the number of birds observed at a time. I will also be using previously published data to get a consistent average for the birds' usual behaviors and their reproduction cycle. Overall, global climate change has the potential to reshape vital migration patterns which in turn throws off the food chains of each location along their migration route. This research will allow us to better understand how one species of waterfowl may be affected and allow us to predict potential patterns for a wide array of other bird species.

Shrubs and Shrews: A Long Term Correlation Study Between Small Mammal Diversity and Plant Biomass Across the Southern United States

Author: Katherine Hutchison

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/1VWHlyndWPB42VYWEEh4_Txs-UNAwOEdK/view?usp=drivesdk

Abstract: Through classic ecological studies, we know that on a large scale, plant biomass is positively correlated with diverse animal populations. These studies have largely focused on temperate habitats and general animal traits. For example, many studies show that in temperate, dense forests, there are a variety of different animal populations that are defined by their distinct characteristics, such as color or size. This limits our understanding of animal diversity because it fails to address animals that may look similar but are different species and may occupy different ecological niches. We wanted to see if this positive correlation between plant biomass and animal biodiversity was sustained over long term observations with species-specific animal data. We analyzed small mammal trapping data from five ecological data collection sites across the United States collected from 2013-2019. We are particularly interested in the relationship between small mammal biodiversity and the plant area index (PAI) across research sites. The PAI is a way to measure plant biomass through high resolution images. Through preliminary analysis, we expect to see a positive correlation between PAI and biodiversity. Highly diverse animal populations are vital to the survival of these habitats, so having a better understanding of how plant biomass affects animal diversity over longer periods of time can give us possible solutions to protect biodiversity during conservation efforts.

The Impact of Altitude on Mosquito Biodiversity

Author: Ximena Guillen

Advisor: Jennifer Kovacs

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/drive/folders/1sljduUHFgnUUBW3ZtQLw_eJslMPuyCiX?usp=sharing

Abstract: The amount of biodiversity, the variety of different organisms inhabiting an area, can be influenced by temperature changes in an environment that may originate from climate change. I am interested in investigating if the biodiversity of mosquito species living at different altitudes is affected by the increasing temperatures due to climate change. In particular, I examined data from six sites on the East Coast with average altitudes that range from 20 meters to 1170 meters. I expect there will be overlap between the species found along the East Coast considering the lack of natural barriers that would otherwise hinder mosquitos from traveling throughout this region. I predict that there will be a decreased number of mosquito species at higher altitudes. I anticipate this relationship because there tend to be lower temperatures at higher altitudes which is not traditionally the preferred living space for mosquitos. A few other factors to consider for this research include average annual precipitation, annual minimum, and maximum temperature, and average temperature which will help to gain a clearer understanding of how environmental temperature can shift mosquito ecological niche. As temperatures continue to increase on a global scale, the species of animals that are able to survive may be altered since the conditions will affect the areas where mosquitoes can extend their populations' habitats.

3:30 INDIVIDUAL PRESENTATIONS: GROUP 1 (MIXED TOPICS)

Authors: Rylee Reeves and Bethany Velarde

Moderator: Jenny Hughes

Zoom Session Link:

<https://agnesscott.zoom.us/meeting/register/tJMvdeyuqDsjHdDterDCYLmGNOSwkQ7aE7kh>

ADHD in Female College Students

Author: Rylee Reeves

Advisor: Jenny Hughes

Video Presentation Link:

https://www.canva.com/design/DAEa6LXyXVE/ozcJHwm42PfAKk4jxcnM1w/view?utm_content=DAEa6LXyXVE&utm_campaign=designshare&utm_medium=link&utm_source=recording_view

Abstract: Many research studies on ADHD have overwhelmingly large numbers of male participants, which does not accurately reflect the experience of every person with ADHD. There are many symptoms that appear unique in women with ADHD (CHADD, 2021). This study focused on female college students with ADHD, analyzing three topics of interest: friendship quality, academic motivation, and fatigue levels. We hypothesized that the female students with ADHD would report higher levels of fatigue and lower levels of both achievement motivation and friendship quality, compared to their peers without ADHD. We distributed a survey to students in introductory psychology courses and those registered with the Office of Accessible Education. Using independent t tests, we found a significant difference for fatigue between those with ADHD ($N = 25$, $M = 3.48$, $SD = 5.36$) and those without ADHD ($N = 31$, $M = 24.23$, $SD = 7.58$), $t(54) = 5.15$, $p < .001$, $d = 1.41$. We did not find a significant difference for academic motivation, $t(54) = 1.03$, $p = .31$, or friendship quality $t(54) = .14$, $p = .88$. This study shows that fatigue is much more of an issue for women with ADHD as compared to women without ADHD. In future research,

researchers should continue to investigate ADHD symptoms that women experience but also evaluate nonbinary individuals when investigating symptoms of ADHD. There is little literature specifically focusing on nonbinary people who have ADHD.

Fruhlingserwachsens' Toxisches Mannlichkeit

Author: Bethany Velarde

Advisor: Barbara Drescher

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/17PKihoDZamaBKDkYmUbhzoTaSi_VzBpD/view?usp=sharing

Abstract: This presentation examines one way in which Frühlingserwachen (Spring Awakening) by Frank Wedekind continues to capture the attention of Western audiences, even succeeding as a musical adaptation over 100 years later, because of its modernist portrayal of youth, authority figures, sexualities, societal flaws and more. Drawing from a feminist analysis of the male characters Melchior, Moritz and the adults in Wedekind's play, this presentation uncovers how the controversial and dramatic themes portrayed unveil varied and realistic representations of toxic masculinity.

3:30 INDIVIDUAL PRESENTATIONS: GROUP 2 (MIXED TOPICS)

Authors: Gwen Kirschke, Tamaria (Te) Reed, and Sydney Y. K. Brown

Moderator: Molly Embree

Zoom Session Link:<https://agnesscott.zoom.us/meeting/register/tJAvdO-hrjMqEtM3eW1Inl4-OLsl2twZWN8A>

Quantifying Nectar Trait Responses to Natural Variation in Water Availability in Subalpine Plant Communities

Author: Gwen Kirschke

Advisor: Molly Embree

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1Ny19Yz7Gb63FC7rBwmbKQVDfiJEG7m2-/view?usp=sharing>

Abstract: Floral rewards are crucial for plant reproductive success and pollinator survival. Nectar volumes and sugar concentrations have been quantified for many species of flowering plants. However, questions remain regarding sources of intraspecific and interspecific variation, including the effects of abiotic factors, such as temperature and precipitation, on community nectar production. Many of these abiotic factors are being altered under climate change, limiting our ability to predict the production of this important resource. To help address this knowledge gap, I quantified nectar traits (volume, sugar concentration, and total sugar content) for 24 pollinator-visited plant species in subalpine meadows varying in water availability. This allowed me to quantify interspecific variation in nectar traits, and to compare nectar traits at both the community and species levels (1) between dry and wet meadow habitats, and (2) between a dry,

early-snowmelt year and a wet, late-snowmelt year. I observed considerable variation in nectar traits among species. When comparing community nectar traits across dry and wet meadows for the entire summer growing season, I observed that nectar volume was greater in wet meadows. When comparing nectar traits across years, I found no overall differences in nectar traits between years, but a variety of patterns for individual species considered. Taken together, this research provides an image of the nectar resource landscape, and improves our ability to predict how this resource landscape may continue to respond to climate change.

The Synthesis and Fourier-Transform Infrared Spectroscopy (FTIR) Analysis of Geranyl Esters as Potential Anti-inflammatory Drugs

Author: Tamaría (Te) Reed

Advisor: Yakini Brandy

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

<https://drive.google.com/file/d/1xIqYvnLKoD4wo8DSpGXSn8QM4RFK3gp5/view?usp=sharing>

Abstract: The overexpression of Cyclooxygenase (COX-2) mediates inflammation, and its inhibition will reverse such symptom. Celebrex, a selective COX-2 inhibitor, is FDA-approved, but its family of drugs is cardiotoxic. Therefore, there is still a need for safer anti-inflammatory medications. Lemongrass is generally regarded as safe and may be an ideal precursor for making anti-inflammatory drugs. Geraniol, one of lemongrass's active compounds, has some anti-inflammatory benefits but is only therapeutically relevant in high dosage. The overarching goal was to optimize the anti-inflammatory properties of Geraniol by synthesizing some derivatives.

Esters are abundantly found in pharmaceutical drugs because of their ease of hydrolysis and solubility. Aspirin, pethidine (an opioid), and benzocaine (a topical local anesthetic) are just a few of the well-known pharmaceutical drugs. Esterification historically makes esters of alcohol and carboxylic acid; this synthetic method requires a catalytic amount of sulfuric acid, large amounts of alcohol and produces water that reverses the reaction. Recent boron chemistry research revealed boric acid's success in making esters with stoichiometric amounts of alcohol. Boric acid is cheap, non-hazardous, and readily available. So, the reaction was refluxed with a catalytic amount of boric and sulfuric acids and stoichiometric amounts of alcohol and carboxylic acid for 24 hours. TLC was then utilized to ensure the reaction went to completion and FTIR monitored for functional group changes. These preliminary analyses will assist in optimizing an efficient route to make the geranyl esters.

Expression of Benzo(a) Pyrene Biotransformation Enzymes in Spleen of a Rat Model of Colon Cancer

Author: Sydney Y. K. Brown

Advisor: Aramandla Ramesh

Video Presentation Link (**only accessible with .agnesscott.edu accounts*):

https://drive.google.com/file/d/17a7sJ_ndiOufCkeC9YpdWL5XwfYyHOFy/view?usp=sharing

Abstract: Polycyclic aromatic hydrocarbons (PAHs) are a family of pervasive environmental toxicants produced by incomplete combustion of organic matter. Benzo(a)pyrene [B(a)P] is a representative PAH compound and is found in grilled red meats, tobacco smoke, and fossil fuel emissions. Drug metabolizing enzymes (DME) convert B(a)P into several carcinogenic metabolites such as benzo(a)pyrene diol epoxide (BPDE), benzo(a)pyrene 7,8-dione, 3(OH) benzo(a)pyrene, etc., which bind with DNA and cause mutations. B(a)P has been shown to have harmful effects on biological systems resulting in toxicity and cancer. One of the organ systems affected by B(a)P exposure is the immune system. Literature suggests that B(a)P metabolites can affect the white blood cells, allowing immunosuppression to ensue as the membrane integrity of macrophages is compromised during the progression of cancer. A vital component of the immune system and its largest organ is the spleen. The spleen filters blood, recycles old red blood cells, and stores lymphocytes and macrophages which are used to fight off infections. As B(a)P has been shown to have adverse effects on the immune system, our goal was to assess the expression of DMEs in the spleen of a rat model of colon cancer to gain an insight into the possible immunosuppressive activity of B(a)P and if there are any sex-specific effects in the B(a)P biotransformation in the spleen.

Spleen samples were taken from male and female polyposis in rat colon (PIRC) rats dosed with 50µg/kg body wt B(a)P for 60 days, to determine if any differences exist in the activity of B(a)P metabolites between sexes through the assessment of DME expression via western blot analysis. Our phase one proteins of interest, cytochrome P450 1A1 (CYP1A1) and CYP1B1 were known to activate the metabolism of B(a)P. Our phase two proteins of interest, Glutathione S- transferases (GST) and sulfotransferase 1A1 (SULT1A1), were known to detoxify the B(a)P by facilitating the conjugation of B(a)P metabolites into polar compounds for excretion out of a system. Our results suggest that unaltered cytochrome P450 1A1 expression in male PIRC rat spleens likely dissuades B(a)P-induced immunosuppression. Control male PIRC rats had an increased expression of CYP1A1 when compared to control female PIRC rats. Female PIRC rats exposed to B(a)P have a significantly increased expression of CYP1A1 when compared to male PIRC rats exposed to B(a)P ($p \leq 0.05$). On the other hand, there was no significant difference in CYP1B1 expression in male or female PIRC rats. B(a)P exposure caused no difference in CYP1B1 expression in PIRC rats. In summary, our studies showed CYP isozyme-related effects in B(a)P biotransformation in spleen. Future studies are expected to unravel if there is any B(a)P dose-response effect on DME expression in the spleen of PIRC rats.

4:00 UNTITLED MATH TRIVIA PROJECT

Moderator: Alan Koch

https://agnesscott.zoom.us/meeting/register/tJEkf-qvqzovGtFEcAZzAl2N_Rn_xd5CUZl0

Teams of (up to four) compete in a pub-style trivia game featuring math and math-adjacent questions. Guaranteed by moderator Professor Alan Koch to be virtually fun!

11:00-4:00 "RELEASE & FIND PEACE": WELLNESS CENTER SERIES

<https://agnesscott.zoom.us/j/95679471090?pwd=akhRUFlxSEl2cElPTUpYQzFRYUNtZz09-success>

Release & Find Peace

JOIN THE WELLNESS CENTER IN TAKING A
BREAK BEFORE & DURING SPARC

11:00AM - 11:20AM	Progressive Muscle Relaxation (Pre-Recorded Session)
11:20AM - 11:40AM	Deep Breathing Relaxation (Pre-Recorded Session)
11:40AM - 12:00PM	Quiet Space w/t Nature Sounds (Pre-Recorded Session)
12:00PM - 12:20PM	Stretch It Out! (Hosted Live by Mal Pai, LPC)
12:20PM - 12:40PM	Sound Bath Experience (Pre-Recorded Session)
12:40PM - 1:00PM	Affirmations & Self Compassion (Hosted Live by Jennifer Smith, LPC)
1:00PM - 1:20PM	Progressive Muscle Relaxation (Hosted Live by Makini Austin, LPC)
1:20PM - 1:40PM	Deep Breathing Relaxation (Pre-Recorded Session)
1:40PM - 2:00PM	Quiet Space w/t Nature Sounds (Pre-Recorded Session)
2:00PM - 2:20 PM	Stretch It Out! (Hosted Live by Mal Pai, LPC)
2:20PM - 2:40PM	Sound Bath Experience (Pre-Recorded Session)
2:40PM - 3:00PM	Affirmations & Self Compassion (Hosted Live by Jennifer Smith, LPC)
3:00PM - 3:20PM	Progressive Muscle Relaxation (Pre-Recorded Session)
3:20PM - 3:40PM	Deep Breathing Relaxation (Hosted Live by Makini Austin, LPC)
3:40PM - 4:00PM	Quiet Space w/t Nature Sounds (Pre-Recorded Session)

Drop in at anytime, even in the middle!
JOIN US HERE (Password is Scotties21)