
AGNES SCOTT COLLEGE

SPRING ANNUAL RESEARCH CONFERENCE

# 2026 Conference Program

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***Join us for a special closing reception in Baker Atrium at 3:30 PM***

## Poster Session A: 9:00-10:00am Baker Atrium, Bullock Science Center

### *Potential Treatment Strategies for Overcoming Drug-Resistance in Postmenopausal Women with ER+ Breast Cancer*

Author(s): Ana Anderson

Advisor: Professor Mi-Sun Kim

**Abstract**: Estrogen receptor–positive ($ER^+$) breast cancer is the most common form of breast cancer in postmenopausal women and is driven by estrogen signaling through estrogen receptor alpha (ERα). Current treatments target this pathway by either blocking the receptor or reducing estrogen production using selective estrogen receptor modulators (SERMs), selective estrogen receptor degraders (SERDs), and aromatase inhibitors (AIs). Although these therapies improve patient outcomes, resistance often develops. This study used computational modeling in Schrödinger Maestro to examine how different molecules interact with ERα and aromatase, an enzyme responsible for producing estrogen. Structural analysis of ERα bound to estradiol, tamoxifen, and fulvestrant showed that each ligand alters receptor shape differently, particularly the position of a key region known as Helix 12. Estradiol activates the receptor, tamoxifen partially blocks it, and fulvestrant destabilizes and degrades it. Analysis of aromatase showed that exemestane permanently blocks estrogen production. These results suggest that combining ERα degradation with irreversible aromatase inhibition may help overcome endocrine resistance.

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### *The Impacts of Childhood Racial Socialization Style on Racial Attitudes and Comfort Discussing Race*

Author(s): Aster Coffman and Z. Louis

Advisor: Professor Stephanie Stern

**Abstract**: The present study was designed to answer the questions of how childhood racial socialization style might relate to undergraduate psychology students' comfort discussing race and their attitudes towards race. Participants (N=32) were selected from psychology courses to take the survey. The survey measured childhood racial socialization style via the Color-Blind Racial Attitudes Scale (Neville, 2023), current racial attitudes via the Modern Racism Scale, which was modified from Morrison & Kiss (2017) who had modified the original scale by McConahay, Hardee, & Batts (1980) to utilize more sensitive wording, and a Social Distancing Scale (adapted from Stern, 2023). Participants who reported experiencing a more colorblind racial socialization style during their upbringing tended to show higher levels of racism currently. However, colorblind racial socialization was not reported to have a significant

relationship with how comfortable participants felt interacting with individuals from other racial groups. Due to some of the limitations faced in this specific study, further research is needed to continue learning how these experiences may be impacting people's lives and relationships.

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***Violence Towards Female Refugees From Islamic Countries***

Author(s): Ayelen Huque, Zanna Nguyen, Becca Kalafatas, and Allie Galifianakis

Advisor: Professor Sharmin Sadequee

**Abstract**: This presentation examines gender-based violence against refugee women from Muslim-majority countries, with a focus on the structural vulnerabilities they face during displacement and resettlement. The research analyses how these women experience compound forms of violence, including sexual violence, forced marriage and human trafficking, exacerbated by a lack of access to legal protection, overcrowded conditions in refugee camps and unequal power dynamics. Through a review of academic sources, institutional reports and theoretical frameworks, the project examines the intersection between gender, Islam and forced displacement, exploring how Islamic traditions and international human rights frameworks can complement one another to offer stronger protections. Furthermore, we analyse how cultural accommodation policies in Western democracies can have differential impacts on Muslim women. As part of the community engagement component, our team established a volunteer partnership with the Refugee Women's Network in Decatur, Georgia, an organisation dedicated to the empowerment and direct support of refugee women in the state. Our hypothesis identifies an urgent need for comprehensive, survivor-centred approaches that combine international standards with culturally sensitive frameworks to protect the fundamental rights of refugee women.

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***Synthesis and Characterization of a Vanadyl(IV) Schiff-Base Complex with Potential Anti-Diabetic Applications***

Author(s): Ben Anderson

Advisor: Professor Jennifer Hill

**Abstract**: Vanadium, V, is a transition metal and one of the most abundant on Earth. Vanadium has many natural antimicrobial, tumor suppressive, and anti-diabetic properties. This research project sought to synthesize and characterize a vanadium complex that could provide a new approach to inhibit PTP1B as a treatment for insulin resistant diabetes. Due to vanadium's ability to bind to a large variety of ligands, it is useful for investigating the structure-function

relationship of anti-diabetic activity. One example is the ability of V(IV) and V(V) complexes to inhibit the Protein Tyrosine Phosphatase enzymes (PTP), which are heavily involved in the regulation of cellular response to insulin signaling as well as many aspects of tumorigenesis in cancer cells.1 The former example will be examined more in depth for this project, and the latter provides an interesting route for future research. Over multiple weeks various vanadium complexes were synthesized and characterized before arriving at the final vanadium complex that features a V(IV) center supported by a 1,10-phenanthroline ligand and a phenylalanine-modified Schiff-base. The characterization was accomplished through IR and UV-vis spectroscopy. The usefulness of NMR was limited by the paramagnetic nature of V(IV) complexes. By moving from the more oxidized and toxic V(V) form to the more stable and physiologically compatible form of V(IV) , with a very stable modified octahedral structure, this compound could serve as a valuable tool for additional research

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***Nonfiction and Fiction Study***

Author(s): Bryn Greenwood and Danielle Howard

Advisor: Professor Stephanie Stern

**Abstract**: The purpose of this research was to find the potential difference in how fictional vs. nonfictional traumatic media invokes stressful emotions in an individual. Additionally, the study aimed to highlight the minority identities, such as people of color, and how they specifically respond to traumatic fictional or non-fictional media that covers issues that their social group may primarily relate to. The study included 27 participants who were recruited from lower-level psychology courses at a small women's liberal arts college, 52% of whom identified as Black/African-American, 41% as White/Caucasian, and 3.7% identified as both. Moreover, a written prompt, which was labeled either fiction or non-fiction, depicting an individual experiencing police brutality was used as the manipulation, and the PANAS (Positive and Negative Affect Schedule) was used to measure emotion. Finally, participants were also asked if they identified with the person represented in the story. The results found that negative emotions did not differ by condition. Additionally, identifying with the person in the story did not relate to participants' negative emotions. These findings suggest that our emotional response to stories may not differ when we know that a story is fictional or real, regardless of how we identify with the person the story is about.

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***Analyzing Post-Transcriptional Function and mRNA binding of Mutated IMPDH Enzyme in Yeast***

Author(s): Charlie Hughes

Advisor: Professor Sarah Mitchell

**Abstract**: IMPDH is an enzyme that catalyzes the rate-limiting step of guanine nucleotide synthesis, governing the metabolic pathway of DNA and RNA synthesis. The two main human isoforms of this mutation, IMPDH1 and IMPDH2, are of interest in cancer research, as their inhibition can slow cellular reproduction. Twelve mutations in IMPDH1 are known to cause blindness via photoreceptor cell death in the retina. The molecular mechanisms by which these mutations cause disease are unknown, but it has been shown that some mutations do not impact the catalytic activity of IMPDH, suggesting a non-catalytic function is impacted. We hypothesize that these mutations may disrupt mRNA binding, resulting in disease. One of these 12 mutations, L227P, was chosen for this research as it occurs at a site conserved in humans and yeast, and is known to cause autosomal-dominant blindness via a gain-of-function mutation, but does not reduce the enzyme's catalytic activity. To better understand the effect of this mutation on mRNA binding by IMPDH, we are using CRISPR to insert the mutation into a yeast IMPDH gene. Once the modified yeast strain has been created, we will use it to quantify overall changes in mRNA binding using an mRNA pull-down, followed by a Western Blot of associated proteins. If sufficient mRNA binding activity is observed in the mutated strains, we will isolate the bound mRNA and sequence them to identify changes in binding specificity. This research highlights the connection between enzyme function and health by focusing on post-transcriptional function rather than catalytic function.

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***Finding Moral Center Beyond the Bounds of Tradition: Effects of Religious Transition on Attitudes Towards Forgiveness, Karmic Justice, and Revenge in Counseling Contexts***

Author(s): Chris Araujo-Helms and Kat Jamison

Advisor: Professor Hannah Carter

**Abstract**: The purpose of this study is to further explore how adults who have undergone or are undergoing religious or spiritual (R/S) transition conceptualize forgiveness, karma, and revenge, and how these conceptualizations relate to their emotional wellbeing. This study takes into consideration that client R/S identities are important for effective treatment; doing so promotes "long term retention and treatment outcomes" and "moderately more effective treatment" for clients. The authors propose a phenomenological study to further explore how religious transition and psychological distress may change attitudes towards forgiveness, karmic justice, and revenge.

***Exploring the Effects of Runoff on an Urban Retention Pond***

Author(s): Claire McKlin

Advisor: Dr Ruth Riter

**Abstract**: Runoff from chemical fertilizers, herbicides, and pesticides can significantly impact the water quality of a body of water, especially in retention ponds designed to store runoff. Due to the substantial use of agrochemicals upstream from Lake Agnes, it is hypothesized that the water quality of the pond does not meet Georgia state standards. To determine the health of the pond, several water quality indicators–pH, temperature, dissolved oxygen concentration, conductivity, nitrate and phosphorus levels, water hardness, and lead, zinc, and iron concentrations–were measured in situ using Vernier probes and ex situ using Flame Atomic Absorption Spectrometry, UV/vis spectrophotometry, and water hardness tests. These indicators were measured twice weekly, in the morning and evening, from two sites within the pond. Preliminary results suggest that Lake Agnes exhibits poor water quality.

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***Visualizing Clinical Competencies: Observations of Teamwork and Ethical Responsibility Across Hospital Departments***

Author(s): Danielle Carter

Advisor: Professor Shoshana Katzman

**Abstract**: As a Master of Science in Medical Sciences student at Agnes Scott College, I completed a clinical internship at Piedmont Henry Hospital to gain hands-on exposure to patient care in different clinical environments. This experience allowed me to examine pre-medical professional competencies as defined by the Association of American Medical Colleges (AAMC) during real patient care situations across these clinical environments. To examine how these competencies were demonstrated, I observed physicians, nurses, and interdisciplinary healthcare teams and recorded their interactions and decision-making processes. These observations were then organized into clinical contexts, including rapid triage, medication safety decisions, procedural coordination, patient monitoring, diagnostic workflow, and team handoff communication. Two competencies, teamwork and collaboration, and ethical responsibility to self and others, were analyzed and visualized using a heat map to illustrate their relative presence across settings. Results indicated that both competencies were consistently demonstrated by healthcare professionals, with teamwork most prominent in high-acuity, team based environments and ethical responsibility most evident in patient safety-related situations, particularly medication safety decisions and patient monitoring. This experience helped me

better understand how teamwork and ethical responsibility directly influence patient safety and the overall quality of care.

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***Synthesis and Characterization of Vanadium–Amino Acid Complexes for Potential Applications in Type II Diabetes***

Author(s): Danielle Carter

Advisor: Professor Jennifer Hill

**Abstract**: Metabolic disorders such as Type II diabetes affect millions of people, and vanadium-based compounds have been studied for their potential role in treatment due to their ability to exhibit insulin-like activity. This study examines the synthesis and characterization of vanadium–amino acid complexes, specifically $VO(his)_2$ and $VO(ala)_2$, to better understand how structural changes influence function in metal-based systems relevant to medicine. Starting from vanadium oxide ($V_2O_5$), vanadyl sulfate and vanadyl acetylacetonate (acac) were first synthesized to allow more efficient preparation of the intended complexes. These intermediates provided a controlled and stepwise pathway for forming coordination complexes with histidine and alanine ligands. Both the intermediates and final complexes were characterized using infrared (IR) spectroscopy to analyze bonding interactions and confirm coordination within the complexes. In addition, a pH study was conducted to examine the speciation of the complexes at different pH values using IR and UV-Vis spectroscopy, allowing for further evaluation of how environmental conditions influence complex stability and behavior. Results showed that ligand identity and pH influenced the structure and stability of the complexes, demonstrating how the coordination environment plays a key role in determining the chemical behavior of vanadium-based systems. The usefulness of NMR spectroscopy was limited due to the paramagnetic nature of the vanadium(IV) oxidation state. Overall, these findings contribute to a better understanding of how vanadium-based compounds may be further studied for potential applications in medicine, particularly in relation to Type II diabetes and related metabolic conditions and support continued investigation of metal-based therapeutic strategies in modern medicine.

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***Stress Resilience and Lion's Mane Mushroom Supplements: An Analysis of CHRNA3 Concentration in the Female Mouse GI Tract***

Author(s): Dori Austin, Abigail Dagins, Sara Graul, and Corbin Harkins

Advisor: Professor Jennifer Larimore

**Abstract**: This study investigates the impact of Lion's Mane supplementation on acetylcholine (ACh) receptor protein levels in female mice after induced stress. Understanding these connections further will give insights into the potential influences of acetylcholine on human female stress resilience and response. The experimental group was given a Lion's Mane diet prior to undergoing stress tests. After the stress tests, their GI tracts were sampled for levels of CHrNA3, a nicotinic ACh receptor subunit. Using immunofluorescence and immunoblotting, CHrNA3 levels among groups were compared to determine the supplement's effectiveness in moderating stress from activities.

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***Effect of Self-Esteem on EDA When Viewing Oneself Versus a Stranger***

Author(s): Elliot Arp and Aurora Harkins

Advisor: Professor Joel Thomas

**Abstract**: Prior studies have raised the question of whether self-esteem may modify levels of physiological arousal, especially when viewing oneself versus a stranger. For example, Schwetlick et al. (2023) found that one's pupil dilates more when viewing a photo of oneself versus a stranger's photo. The current study sought to retest this paradigm in order to determine whether self-esteem would moderate the relationship between viewing one's own face versus a stranger's face. We decided to expand our selection of physiological measures and chose to look into electrodermal assessment (EDA) or sweat response. It is hypothesized that level of self-esteem would be inversely related to the difference between EDA levels when looking at one's own face minus EDA levels when viewing a stranger's face. Further, we predicted that EDA levels would be moderated by both explicit (conscious) and implicit (unconscious) measurements of self-esteem. Results for this study supported Schwetlick et al. 's 2023 finding in increased physiological arousal when viewing oneself versus a stranger. However, the second hypothesis was only partially supported as only explicit self-esteem was found to be statistically significant in moderating EDA outcomes. These results provide important insights into self-esteem and its implication in involuntary physiological responses, and can inform future research and clinical investigations regarding the development of a sense of self.

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***Genetic Variation Between Stages of Serous Ovarian Cystadenocarcinoma***

Author(s): Georgia Whittington

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: This analysis focuses on finding differences in genomic alterations between early and late-stage epithelial ovarian cancers using the cBio Portal bioinformatics tool and patient data from The Cancer Genome Atlas (TCGA). The results of the genomic analysis of 484 serous ovarian cystadenocarcinoma samples, ranging from stage IIA to stage IV, indicated multiple genomic alterations, including TP53 and MECOM. TP53 mutations were prevalent across all of these stages, with higher rates of mutations seen in later stages, following trends observed in TP53 mutations in most cancers. MDS1/EVI1 complex (MECOM) amplification was observed at relatively high rates in stage II ovarian tumors in this analysis but is also observed in many of the stage III and IV tumors that were analyzed. MECOM amplification appears to promote tumorigenesis and survival by elevated EVI1 expression, which is shown to promote angiogenesis and inhibit the tumor-suppressing function of TGF-beta. The MECOM complex as a whole increases proliferation by upregulating the transcription of the KRAS gene, which subsequently upregulates activation of the KRAS/ERK/MAPK pathway contributing to cell proliferation. Ovarian cancers are known for being asymptomatic until later stages and being difficult to catch early. The mutations identified in this analysis could point to biomarkers that could be used to increase early detection.

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***Storytelling Through Data: Enhancing Data Visualization to Strengthen Public Health Programmatic Action***

Author(s): Hannah Coleman and Kitely Sherman

Advisor: Professor Erin Bradley

**Abstract**: Data visualization is a useful tool in disseminating results to a diverse audience. In an era of increasing misinformation and disinformation related to public health, presenting data in a clear and accessible manner is more essential than ever. The ability to visualize complex data in a consumable and actionable display is a skill that the public health workforce needs. Strong data visualization can contextualize and humanize patient experiences in a health-based setting to inform programmatic action. As students in the Spring 2026 Program Evaluation Course, we had the opportunity to analyze and visualize real data from patients at a local clinic who participated in a Diabetes Self-Management Education and Support (DSMES) program. Using this specific evaluation data as an example, our goal is to explore the profound impact of translating raw data into meaningful and purposeful narratives that guide equitable public health decisions.

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***Invasive Plant Species on Agnes Scott's Campus***

Author(s): Indie Lorick

Advisor: Professor Jennifer Kovacs

**Abstract**: Invasive species endanger native species, ecosystems, and threaten the economic well-being of the areas they affect. Invasive plants differ from non-native species in that non-natives don't necessarily cause significant harm to the ecosystems they inhabit. During my time as an intern with the Center for Sustainability, as the Wildlife Habitat and Restoration Assistant in 2024, I began mapping invasive plant species on campus. I used the Geode GNS3 to map individual plants and clusters of invasive plants on campus, which I then uploaded to GIS. In 2025, I finished mapping the species and regions on campus. In 2026, I will begin analyzing my data and working with the Center for Sustainability and the Biology department to create a list of recommendations for the removal and/or replacement of invasive plants on campus.

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***Flexible Work Start Times and Feelings About the Commute***

Author(s): Isabella E. Camp and Versailles D. Weigel (equal authorship)

Advisor: Professor Jennifer L. Hughes

**Abstract**: This research involved flexible start times and how they impacted employee's feelings about commuting. We hypothesized that commuters with flexible start times would report shorter buffer times, feel less rushed, and feel less stressed when commuting. This study included 358 participants who were recruited using a convenience sampling method and asked to complete a Qualtrics survey. To evaluate our hypotheses we compared commuters who had flexible and fixed start times with independent sample t tests. We found that commuters with a flexible start times reported shorter buffer times ($M = 11.43$ , $SD = 13.04$) than those with fixed start times ($M = 16.07$ , $SD = 14.25$), $t(163) = -2.17$, $p = .03$, $d = -.34$. Commuters with flexible start times reported feeling less time pressures when commuting ($M = 2.44$ , $SD = 1.16$) than those with fixed start times ($M = 2.97$, $SD = 1.33$), $t(164) = -2.74$, $p = .007$, $d = -.43$. Our third hypothesis was not supported. Our study validates prior research that flexible schedules impact commuter's perceived control over their commute and allows for shorter buffer times (Gan et al. 2024; Xiao et al., 2014).

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***Unreliable Commutes: Buffer Time Seen as a Waste of Time***

Author(s): Isabel A. Ley and Isabel A. Ajatta

Advisor: Professor Jennifer L. Hughes

**Abstract**: Buffer time is the amount of time a commuter must add to their normal commute in order to ensure they arrive at their destination on time (Marker, 2015). A reliable commute to work is one that requires less than 20% of buffer time to be added to the average travel duration it takes to get to work on time (Marker, 2015). In the present study, we sought to understand whether commuters viewed this buffer time needed for unreliable commutes as a waste of time, their commute as less useful, and more stressful. With the current research, we hypothesized that commuters with unreliable commutes would feel like their commute is a waste of time, less useful, and would report more commute stress. The present study, which surveyed 274 participants through an online Qualtrics questionnaire, supported the second hypothesis and supported the third hypotheses. Pearson correlations were computed to assess the relationship between reliability of the commute to work and perceptions of the commute as wasted time, $r(271) = .09$, $p = .15$, feeling that the commute was useful, $r(272) = -.14$, $p = .02$, and feeling stressed during the commute, $r(272) = .35$, $p < .001$. Therefore, only the second and third hypotheses were supported. Gender differences revealed that only women viewed unreliable commutes as less useful. However, both women and men with unreliable commutes reported significantly more stress.

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***Investigating the Elusive Nature of Dark Matter Using Gamma-Ray Detectors***

Author(s): Jibek Ibraeva and Natalia Tapia Arellano

Advisor: Professor Natalia Tapia Arellano

**Abstract**: This project investigates whether axion-like particles (ALPs) interacting with high-energy gamma rays could account for the persistent gamma-ray excess observed in the Galactic Center. We analyzed publicly available data from the HAWC observatory using Python-based tools to construct gamma-ray flux maps and study their spatial distributions. These observations were compared with theoretical expectations to search for potential ALP-related signatures.

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***The Complex Relationships Between Racial Color-Blind Attitudes and Social Media Identity Distress***

Author(s): Katherine Araujo Hernandez

Advisor: Professor Peeper McDonald

**Abstract**: During an increasingly digital age, there has been a rising concern over the effect of social media on the mental health of users of diverse racial backgrounds and varying personal values. We set out to understand the relationship between social media identity distress and racially colorblind attitudes. We also assessed whether participants who held marginalized racial/ethnic identities would report high Social Media Identity Distress Scale (SMIDS; Ye Luo et al., 2021) scores compared to participants who identified as White, and if participants who identified as White would report high Color-Blind Racial Attitudes Scale (CoBRAS; Neville, et al., 2000) scores compared to participants of a marginalized racial/ethnic identity. A national online survey gathered data from 805 adults and collected a variety of measures like the Psychological Wellbeing Scale (Ryff et al., 2010) in addition to the SMIDS and COBRAS. A Pearson correlation test assessed the relationship between SMIDS scores and CoBRAS scores, but the results were not significant. An independent t-test was conducted to compare the statistical significance of the difference of SMIDS and CoBRAS scores between racially marginalized and White participants. SMIDS scores were statistically significantly higher for those who held marginalized racial/ethnic identities. CoBRAS scores were statistically significantly higher among White participants. Findings can have implications in the counseling space, as the higher scores on the SMIDS tests for marginalized racial/ethnic groups can provide insight to mental health professionals about stressors for people of color.

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***2-Dimensional Rovibrational Spectroscopy: Parallel Feature Analysis of Chloromethane***

Author(s): Kayla Gossett Roper

Advisor: Professor Sarah Winget

**Abstract**: In 1-dimensional spectroscopy, rovibrational movements of gas phase molecules produce spectra that can be heavily congested. This, in part, is caused by the overlapping overtones of similar frequencies. This issue is particularly prevalent in infrared spectroscopy. A large selection of rovibrational spectra, where there are both rotational vibrational motions, is neglected despite containing important information about molecular characteristics. Coherent 2-dimensional spectroscopy offers a way to interpret spectra by isolating rovibrational bands. A helpful tool in our 2-D analysis is the use of Excel-based simulations, where known constants are used to calculate transition energies to predict positions of peaks. When compared to experimental values, behaviors and peaks can then be identified. In this presentation, there is a

focus on the application of this simulation to the parallel regions in chloromethane (CH3Cl). CH3Cl exhibits severe congestion due to its six distinct vibrational modes and presence of Fermi and Coriolis resonances. As a symmetric top molecule, CH3Cl has distinct parallel regions defined by energy transitions of $\Delta J = \pm 1$ and $\Delta K = 0$. This restriction makes it easier to directly derive rotational constants (B) and bond lengths. The equation used to determine the individual level energies is BJ(J+1)+(A-B)K^2, where A and B are rotational constants. To simulate the P ($\Delta J = -1$) and R ($\Delta J = +1$) branches, the energies are added and subtracted appropriately. The results are plotted on experimental data. This simulation will aid in identifying peaks, determining rotational constants, or could reveal more complex behaviors within CH3Cl.

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***Vesicular Acetylcholine Transporter in the Prefrontal Cortex of Lion's Mane Fed Mice***

Author(s): Kieko Bellinger, Sophia Edelman, Michelle Hernandez, and Amber Hitchens

Advisor: Professor Jennifer Larimore

**Abstract**: Stress is a common experience among many species and can be physical, emotional, and/or mental. There are many ways to manage stress, such as meditation, a clean diet, and prescription medication. Taking supplements can be a natural alternative that may also help manage stress. The lion's mane mushroom supplement has 5 bioactive organic compounds that exhibit various neuroprotective and anti-inflammatory properties. Could lion's mane supplements alter stress responses in model organisms? Recent research examined brain tissues from mice that consumed a diet containing the lion's mane mushroom supplement. In the brain, the vesicular acetylcholine transporter (VaCHT) functions to regulate the loading of the neurotransmitter acetylcholine into synaptic vesicles to regulate the cell in response to cellular stress. Using western blot and immunofluorescence, the VaCHT protein levels in the brain were measured, and protein markers were used to show any shifts in location. We predicted that the lion's mane mushroom would alter VaCHT. It is important to address this topic since acetylcholine dysregulation has been found to be altered in neurological disorders, and natural lion's mane supplements could potentially support stress resilience.

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***Navigating Professional Competencies in a Clinical Setting***

Author(s): Keturah Mba

Advisor: Professor Shoshana Katzman

**Abstract**: As a masters of medical sciences student at Agnes Scott College, I had the opportunity to learn aspects of medicine that contribute to providing optimal patient care, while I

participated in an internship at Piedmont Henry. During this internship, I rotated through different departments including cardiac catheterization, the hospital owned surgery center, the emergency room, and radiology. I learned that in each department there were unique procedures and operations involving the entire healthcare team. Most importantly, I was able to utilize professional competencies for aspiring healthcare workers to demonstrate during these experiences. Utilization of these competencies including, commitment to learning and growth, and empathy allowed me to learn and experience part of what healthcare professionals need in order to provide optimal patient care and to continue to work in the field. From this experience, I was able to understand not only the qualities that make a good healthcare professional, but see the other healthcare professionals use them and employ them as they interact with patients and other healthcare workers.

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***Seen, Heard and Understood: Insights from a Psychiatry Internship***

Author(s): Kyra Lunford

Advisor: Professor Shoshana Katzman

**Abstract**: As a Master of Medical Sciences student at Agnes Scott College, I pursued an internship at Avant Interventional Psychiatry driven by academic interest and personal experience. During my internship, I engaged in clinical observation and patient-centered tasks, including assisting with appointment coordination and directly communicating with patients to confirm and schedule visits. I observed patient intake, provider-patient interactions, and the development of individualized treatment plans. I also contributed to the clinic's outreach by creating educational content for their website and social media, aimed at improving patient awareness of mental health conditions. Through this experience, psychiatry emerged as both a science and an art that relies on trust, adaptability, and cultural awareness. This project highlights my growth in key professional competencies including, empathy and compassion, service orientation, and interpersonal skills. These competencies were strengthened through meaningful patient interactions, effective communication, and exposure to diverse patient backgrounds. As I continue to work toward my goal of becoming a physician, the lessons, experiences, and perspectives gained through this internship have shaped the way I approach patient care and professional growth. This experience refined my understanding of effective psychiatric care and reinforced my commitment to becoming a physician who ensures that every patient is truly seen, heard, and understood.

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***Determining Head of Salinity in the Savannah River***

Author(s): Lailah King, Caitlin Coker, Sophia Elliot, and Chistopher Hintz

Advisor: Professor Jennifer Kovacs

**Abstract**: The City of Savannah is concerned about potential saltwater intrusion into the Savannah Industrial & Domestic Water Treatment Plant on Abercorn Creek, just upstream from the I-95 bridge. The United States Geological Survey (USGS) maintains a nearby river gage on the Savannah River that has historically measured surface salinity exceeding 0.3‰ four times over the past 10 years. To assess the potential threat to Savannah's primary freshwater source, Head of Salinity (HoS) along the Savannah River was determined by three distinct methods of data collection – historical USGS river gage data, CTD measurements from Elba Island to above Abercorn Creek, and temporary logging conductivity sensors. All three methods indicate HoS lies between Drakies and McCoys Cuts above Ga-25 Houlihan Bridge in Port Wentworth (approximately RM23-RM27, 37-43 km upriver). Wavelet time-frequency analysis of conductivity at USGS river gauge at I-95 (RM 28, 45km), above the known HoS, points to semi-diurnal influences on the low, but measurable surface salinity at this location. This river gage observes salinity excursions above 0.3‰ just over 2% of days, mostly caused by stochastic events: storm surges, strong winds, tidal influence. These periodic intrusions of salt warrants additional investigation to identify HoS migration, considering the proximity, 5 km upriver, to the Savannah Industrial & Domestic Water Treatment Plant on Abercorn Creek.

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***The Enzyme IMPDH Binds mRNA to Increase Gene Expression***

Author(s): Laura Damonte, Wynona Jonathan, and Rachel Hill

Advisor: Professor Sarah Mitchell

**Abstract**: Inosine Monophosphate Dehydrogenase (IMPDH) is an enzyme that catalyzes the rate-limiting step in GTP synthesis. It's also known to have a highly conserved mRNA binding activity. The purpose of this mRNA binding activity is still unknown. Demonstrating a connection to human health, mutations in IMPDH have been found to cause hereditary blindness, however the mechanisms behind this remain unknown as some mutations don't impact its enzymatic activity. Because of the role of nucleotide biosynthesis in cellular reproduction, IMPDH is a focus of cancer research. Hence, investigating the mRNA binding activity of IMPDH provides insight into the function of this central enzyme with an important role in human health.
The purpose of this project is to characterize this mRNA binding activity in yeast IMPDH. To investigate how IMPDH mRNA binding affects gene expression, we used a tethered reporter system where IMPDH was linked to a reporter mRNA. Western blots were used to evaluate the amount of protein produced in yeast strains with and without IMPDH bound to the reporter mRNA. Our preliminary data suggests IMPDH binding increases the production of the encoded

protein. This result could be due to IMPDH increasing the amount of proteins produced by either protecting the mRNA from degradation in the cytoplasm, or by mechanically improving the binding of the mRNA to the ribosome. We will follow the initial finding up by investigating the rate of mRNA degradation using northern blots. This work establishes IMPDH as a factor that promotes gene expression via its mRNA binding activity.

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***Finding the K Dwarf Advantage: Photosynthesis Experiments Under Simulated Stellar Spectra***

Author(s): Lia Faulks, Kayla Gossett Roper, and Makaila Jennings

Advisor: Professor Hodari-Sadiki Hubbard-James

**Abstract**: K dwarf stars (spectral types K0-K9) have been proposed as optimal hosts for habitable planets due to their long main-sequence lifetimes (15-45 Gyr) and stable luminosities. Recent experiments demonstrated that terrestrial photosynthetic organisms successfully grow under simulated K dwarf spectra (Vilović et al. 2024), establishing a foundation for understanding photosynthesis under non-solar illumination. Building on this work, we test biological responses under K dwarf stellar illumination and develop protocols for future activity-modulated experiments. Young K dwarfs (< 1 Gyr) exhibit UV and X-ray emission 10-100 times higher than old, inactive stars due to enhanced magnetic dynamo activity, potentially impacting photosynthetic viability. Recent RECONS (REsearch Consortium On Nearby Stars) studies characterized over 500 K dwarfs within 40 parsecs using high-resolution CHIRON spectroscopy (R=80,000, λ=4150-8800 Å) (Hubbard-James et al. 2022, 2026). These observational constraints inform photosynthesis experiments in the ISLANDS (Interstellar Search for Life Around Nearby Dwarf Stars) Lab. Our experimental design uses three VivoSun LED grow tents: solar control (unfiltered), K dwarf simulation (yellow acrylic optical filtering), and dark control. We monitor garden cress (Lepidium sativum) and radish (Raphanus sativus) growth while tracking PAR intensity, humidity, and temperature using AC Infinity climate control systems. Results show successful growth under both solar and K dwarf conditions. Garden cress and radish reached vegetative stage under filtered illumination with root development comparable to solar controls. PAR measurements yielded 900-1100 µmol/m²/s (solar) and 450-550 µmol/m²/s (K dwarf filtered). Dark controls produced etiolated stems, confirming that K dwarf filtered light maintains photosynthetic function.

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***Undescribed Isopods on Emory The Campus***

Author(s): Lilly Brandt and John Van Valen

Advisor: Professor Jennifer Kovacs

**Abstract**: Freshwater aquatic isopods are abundant in the United States, most of them are in undescribed species, with only a loose genus application based on body shape. Even with these applications, the genera and taxonomy of freshwater aquatic isopods is rapidly changing as other species are described. Today, we will cover some basic ecological and anatomical information about 2 species of undescribed aquatic isopods that live on the Emory campus. One in the genus Lirceus, similar to described Lirceus in habitat and body plan, and the other in the genus Conocellus, and possess cave morphology. Information on the water parameters in habitat will also be provided, as well as research grade photographs and basic husbandry information. This paper is a collaboration between Emory and Agnes Scott.

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***Journeys Beyond the Classroom: Study Abroad and Student Well-Being at Agnes Scott College***

Author(s): Lucy Hall and Haylah Spence

Advisor: Professor Stephanie Stern

**Abstract**: Travel, distinct from tourism in its emphasis on challenge-seeking, boundary-transcending, and exploratory behaviors, has been proposed to promote eudaimonic well-being, which is defined by well-being rooted in meaning and purpose (B & Mahadevan, 2025). This is done through mechanisms aligned with logotherapy. Study abroad programs, as a form of travel, offer culturally immersive learning opportunities that can enhance academic skills, global citizenship, and identity transformation (McLaughlin et al., 2018; Onosu, 2021). However, study abroad also presents significant mental health challenges, including increased stress, anxiety, depression, and social isolation related to cultural adjustment and academic pressure, particularly when institutional support is limited (Bathke & Kim, 2016; Ulukök & Ufuk, 2023). Reentry following study abroad may further produce reverse culture shock, emotional distress, and identity dissonance, with psychological outcomes depending on post-return reflection and social understanding (Bathke & Kim, 2016; Onosu, 2021; Wielkiewicz & Turkowski, 2010). Using a pre-test post-test design, this study aims to analyze the impact of Agnes Scott College's Journeys program on eudaimonic well-being, academic motivation, and stress in first-year college students. Results suggest no relationship, indicating that further research is required to investigate the broader impact of study abroad on various psychological experiences.

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***Acetylcholine levels in female mice treated with lions mane during stress paradigms***

Author(s): Lyric Freeman, Mykle Williams, Rowan Schneider, Lil Gehner, and Beck Littlehale

Advisor: Professor Jennifer Larimore

**Abstract**: Acetylcholine (ACh) signaling is elevated in subjects with depression and during stress. The vesicular acetylcholine transporter (VACHT) knockdown mouse exhibits less depressive-like behaviors and increased levels of dopamine and serotonin, therefore may be a promising target for antidepressant drugs (Pádua-Reis et al., 2017). We used a stressed mouse model and found that Lion's Mane-fed mice exhibited improvement in stress resilience following behavioral paradigms (Figure 4). We collected brain samples (hippocampus and PFC) and gut samples from both the stress control group and the stress/Lion's Mane treatment groups. Western blot analyses were performed to quantify VACHT (SLC18A3, 56.9 kD), the choline acetyltransferase ChAT (81 kD + splice variants), the nicotinic ACh receptor α3 subunit CHRNA3 (57.4 kD), and the loading control GAPDH (36 kD). VACHT expression significantly increased in the hippocampus ($p = 0.04$) and the PFC ($p = 0.03$). ChAT expression significantly decreased in the hippocampus ($p = 0.039$) but showed no significant change in the PFC ($p = 0.17$). No significant change in CHRNA3 expression was observed in the hippocampus ($p = 0.48$) or the PFC ($p = 0.325$). Molecular findings align with literature demonstrating that an increase in VACHT expression is associated with an improvement in stress resilience. Lion's Mane treatment may modify stress responses through effects on cholinergic signaling pathways. These findings support the idea that altered hippocampal cholinergic balance contributes to stress-related behavioral changes and provide insight into the cholinergic regulation of stress.

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***Vetting TESS Exoplanet Candidates with TRICERATOPS and LEO-Vetter***

Author(s): Makaila Jennings and Douglas Caldwell

Advisor: Professor Hodari-Sadiki Hubbard-James

**Abstract**: The TESS Science Processing Operation Center searches for transiting planets in 160,000 targets selected from the full frame images (FFI) each observing sector. The pipeline detects several thousand potential transit signals, or threshold- crossing events (TCEs) from these targets. The TCEs must be vetted to see if they are false positives or planet candidates. We vetted the TCEs from the FFI multi-sector search of sectors 56-69. We first selected TCEs that had ExoMiner machine-learning classification scores of greater than 0.5 (likely planet candidate) and then vetted them using the TRICERATOPS and LEO-Vetter vetting tools. We identified 9 objects of interest with radii between 1.26 and 8.19 earth radii and orbital periods between 1.22 and 36.91 days. We performed light curve modeling using the Allesfitter package to get the best-fit transit parameters for these nine targets.

***Prejudice and the Formation of the Self: Identity Development Across Adolescence***

Author(s): Marian Freeman and Dayln Washington

Advisor: Professor Stephanie Stern

**Abstract**: All adolescents experience the biological, cognitive, and social transitions that are consistent with the transition from childhood to adulthood (Brittian, 2011). Identity formation is a significant developmental task during this period of life (Brittian, 2011). For minority youth, identity also includes attention to what it means to be a member of a minority group (Toomey & Umaña-Taylor 2012). Research on discrimination stigma and identity development indicates that repeated negative social feedback and exposure to prejudice can negatively disrupt development and organization of self during adolescence (Verkuyten, 1998; Spencer & Markstrom-Adams, 1990). Understanding this, this study hypothesizes that greater exposure to prejudice in early and middle adolescence will predict lower self-concept clarity in late adolescence, reflected in lower authenticity and less stable independent and interdependent self-construal. Using a survey data collection method, three separate constructs are analyzed: discrimination, authenticity, and self-construal, and investigates the relationship between them.

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***Effect of Post-Stress Magnesium Chloride Supplementation on Anxiety-Like Behavior in Male C57BL/6 Mice***

Author(s): Nuhamin Chernet, Tiana Richards, and Lynley Wheeler

Advisor: Professor Stacey Dutton

**Abstract**: Acute stress exposure is a well-established driver of anxiety-like behavior in rodent models. Magnesium (Mg) supplementation has been associated with reductions in stress-induced anxiety in human populations, though its anxiolytic effects in rodent models remain less characterized. This study investigated whether post-stress MgCl2 supplementation reduces anxiety-like behavior in adult male C57BL/6 mice as measured by thigmotaxis, the tendency to avoid the open center zone in favor of the periphery, in the Open Field Test (OFT). Five mice were tested across three conditions: a no-stress, no-supplementation baseline; a post-stress condition following 24 hours of circadian disruption without Mg supplementation; and a post-stress condition following one week of MgCl2 in drinking water. We hypothesized that MgCl2 supplementation would increase center zone exploration relative to the unsupplemented post-stress condition. Although no statistically significant differences were detected, a trend toward increased center time following supplementation suggested a partial

behavioral recovery toward baseline. These preliminary findings add to a small but growing body of work exploring whether dietary Mg status influences behavioral responses to stress.

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***The Retrospective Idealization of Analogue Media and the Commodification of Nostalgia in Digital Media***

Author(s): Phoenix Brannon and Isabella Camp

Advisor: Professor Stephanie Stern

**Abstract**: Trait nostalgia is defined as a person's propensity to feel an affectionate yearning for their past, which can be evoked in many ways (e.g. such as hearing a familiar song) and is closely associated with tangible items (Sedikides & Wildschut, 2025; Wulfs et al., 2019). Despite the evidence that people ascribe more value to physical goods, and significant preferential differences between individuals with higher or lower trait nostalgia, there remains a significant literary gap on the topic (Atasoy & Morewedge, 2017; Sedikides & Wildschut, 2024). This research was conducted to assess trait nostalgia's relationships to media preference, frequency of use, and feelings of personal connection. It is hypothesized that higher trait nostalgia scores would be associated with higher preference towards, more frequent use of, and greater feelings of personal connection to analogue media over its digital media equivalent. In this study, participants self-reported through an online survey. To test the aforementioned hypotheses, Pearson correlations were run between trait nostalgia scores and preference, frequency of use, and feelings of connection. Additionally, independent sample t-tests were run to determine if there were significant differences in preference, frequency of use, and feelings of connection between participants with high or low trait nostalgia scores. There was a significant moderate positive correlation indicating that those with higher trait nostalgia scores reported greater feelings of connection to analogue media. Results also showed that people with high trait nostalgia scores had significantly greater feelings of connection to analogue media than people with low trait nostalgia scores.

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***Facial-Based Emotional Arousal When Viewing Oneself vs. a Stranger***

Author(s): Qurban Mahary, Kaylee Gutierrez, and Alison Chen

Advisor: Professor Joel Thomas

**Abstract**: Self-esteem plays a significant role in shaping individuals' emotional and behavioral responses (Dunkley et al., 2012; Potthoff et al., 2025). However, much of the existing research has relied heavily on self-report measures, limiting the ability to capture implicit, physiological

processes associated with self-evaluation (Stake et al., 1995; Kim et al., 2023). The present study addresses this gap by examining both explicit and implicit self-esteem in relation to physiological arousal, measured through coding of emotional expression based on facial muscle movements. Explicit self-esteem refers to consciously reported evaluations of the self, whereas implicit self-esteem reflects automatic, unconscious self-associations. Using FaceReader Automated Facial Coding (AFC), a tool capable of detecting subtle facial muscle movements with high accuracy (88–89%), this study investigates differences in arousal when individuals view images of their own face compared to a stranger's face (Lewinski et al., 2014; Shen et al., 2022). The primary objective is to determine whether self-referential stimuli elicit greater physiological arousal and whether this effect is moderated by levels of self-esteem. The first hypothesis is that participants will exhibit higher arousal when viewing their own face relative to a stranger's face. Second is individuals with lower levels of both explicit and implicit self-esteem are expected to show greater differences in arousal between self and other stimuli. Evidence was found to partially support both hypotheses. This study contributes to the literature by integrating physiological measures with self-esteem research, offering a more comprehensive understanding of how individuals emotionally respond to self-related stimuli.

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***Radial Velocity Confirmation of Exoplanets Around K Dwarf Stars***

Author(s): Sasha Arbogast, Leonardo Paredes, and Tim Johns

Advisor: Professor Hodari-Sadiki Hubbard James

**Abstract**: This project aims to confirm exoplanet candidates around K dwarf stars selected from the TESS (Transiting Exoplanet Survey Satellite) candidates list using radial velocity (RV) data from the CHIRON spectrograph at the SMARTS 1.5-meter telescope. K dwarf stars are stable, long-lived stars that create favorable environments for habitable planets. The CHIRON data and Python scripts were developed as part of Paredes et al. (2021). The data were cross-matched with a catalog of 615 nearby K dwarf stars, identifying four targets with sufficient observational coverage. The Python scripts prepared the spectroscopic data by removing the blaze function and correcting for Earth's Doppler shift, then calculated precise RV values and uncertainties. None of the four stars yielded enough data to confirm a planetary companion. Follow-up observations of HIP074981 are planned using CHIRON.

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***Navigating Digital Selves: Social Desirability and Identity Distress Among Students of Color***

Author(s): Serwah B. Amoakuh

Advisor: Professor Peeper McDonald

**Abstract**: Social media plays a crucial role in identity development, especially among college students of color who may experience increased pressure in how they present themselves online. This study investigated the relationship between social desirability and social media identity distress among undergraduate students of color. Data was drawn from a larger sample of 250 participants who were originally recruited through campus-wide emails, psychology department postings, and online surveys. From this larger group, a subset of 111 participants who identified as students of color was selected for the study. Findings suggested that pressures to appear socially acceptable may be linked to the emotional strain individuals experience when managing their online identities. Although the relationshipS observed were not statistically significant, the patterns indicate that social desirability may still play a role in internal conflict related to digital self-presentation. These findings highlight the importance of understanding how marginalized groups engage with social media and the psychological implications of identity management in online spaces.

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***From Genome to Persistence: A Systems Biology Framework of Brucella Intracellular Survival***

Author(s): Shanvanth Arnipalli, Shashi Bhushan Kumar, Giridhar Goudar, Manne Munikumar, Puneeta Singh Yaduvanshi, and Virendra V. Panpatil

Advisor: Kumar, S.B.

**Abstract**: Brucellosis is a widespread and persistent zoonotic disease caused by Gram-negative Brucella species, posing significant threats to human health, livestock, and economic stability. This review provides a comprehensive insight into current knowledge on Brucella pathogenicity, genomic structure, and therapeutic challenges. We highlight the host-specific pathogenic mechanism of predominant species as *B. melitensis*, *B. abortus*, *B. suis*, and *B. canis*, focusing on their bipartite genome organization, virulence factors, and strategies for intracellular survival and immune evasion. Diagnostic approaches, including serological assays, such as SAT, ELISA, and molecular techniques like PCR molecular techniques are critically evaluated, alongside current antibiotic regimens and their limitations due to resistance and relapse. We further discuss promising developments in vaccine research—such as live attenuated, subunit, and DNA-based platforms—as well as adjunctive therapies involving nanotechnology, herbal compounds, and novel antibiotics. Emphasis is placed on the integration of genomic insights with therapeutic innovation. We conclude by identifying key research priorities, including the need for improved diagnostics, resistance profiling, and next-generation vaccines. This review

underscores the importance of a multidisciplinary approach to mitigate the global burden of brucellosis and advance translational research in prevention and treatment.

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***Effects of Raloxifene Modification on Estrogen Receptor Beta Binding***

Author(s): Sophia Calloway

Advisor: Professor Mi-Sun Kim

**Abstract**: Schrödinger's Maestro was used to examine ligand interactions and change the drug of interest. Different functional groups and elements were substituted to find better binding with estrogen receptor beta (ERβ). Substituting the sulfur with an amino group, a carbon with oxygen, and replacing a hydroxyl group with fluorine increased the multiple parameter optimization by 0.13 points, suggesting that it may be a better ligand than raloxifene.

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***The Cold Case of the Cosmos: Tracking Down Dark Matter with Paleo Detectors***

Author(s): Sophie Boilard

Advisor: Professor Natalia Tapia Arellano

**Abstract**: Dark matter makes up about 85% of all matter in the universe, but we still can’t spot it using traditional techniques. Paleo detectors—basically, ancient minerals that can store nuclear recoil tracks for millions of years—open a new window for indirect detection.We dug into existing paleo detector models and replicated their SRIM-based simulations. This let us closely examine energy loss (dE/dx) and how tracks form in different candidate minerals. After breaking down previously published data, we ran systematic replications to check the reliability of our approach. We will not stop there aiming to add new mineral structures to broaden the scope. Then we compared stopping power, track length distributions, and the impact of background sources such as neutrons and neutrinos. Our early replication lines up well with established patterns for track formation, across the energy ranges that matter for dark matter interactions. Changing up the mineral composition affects track preservation, sensitivity, and how well we can rule out background noise. The new minerals showed unique stopping behavior, pointing to some clear differences in their potential as paleo detectors. Taken together, these results make a strong case for paleo detectors as a solid complement to the usual direct detection experiments. By looking at more types of minerals, we sharpen the criteria for choosing detector materials, and we boost sensitivity to rare dark matter events. Expanding this framework further will help us pin down dark matter properties and improve detection strategies.

***Computer-Aided Structural Analysis of Antagonists Targeting Estrogen Receptor Alpha***

Author(s): Talia Funk

Advisor: Professor Mi-Sun Kim

**Abstract**: This study used computer modeling to examine how different drugs bind to estrogen receptor alpha (ERα), a protein involved in many breast cancers. Using Schrödinger Maestro, several estrogen receptor blockers, including tamoxifen, raloxifene, lasofoxifene, and bazedoxifene, were compared to see how they interact with important parts of the receptor. The analysis focused on bonding patterns and how each drug affected Helix 12, a region that helps determine whether the receptor is active or inactive. Estradiol, the natural hormone, helped keep the receptor in its active form. In contrast, the antagonist drugs shifted Helix 12 out of position, which helps block receptor activity. Among the drugs studied, lasofoxifene and bazedoxifene caused greater disruption of Helix 12, suggesting they may stabilize the inactive form of the receptor more effectively than earlier drugs such as tamoxifen. Overall, the results show that small differences in drug structure can lead to major changes in receptor shape and behavior. This helps explain why newer drugs may act as stronger antagonists and may support the development of improved therapies for ERα-positive breast cancer.

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***Impact of TP53 and TTN Gene Alterations on Overall Survival in Ovarian Serous Cystadenocarcinoma (TCGA PanCancer Atlas)***

Author(s): Thurneisha Keys

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: Ovarian serous cystadenocarcinoma is an aggressive form of ovarian cancer characterized by high levels of genomic instability. The tumor suppressor gene TP53 is commonly mutated in this cancer, and mutations in TTN are also frequently observed. However, TTN mutations are often thought to reflect the overall number of mutations in a tumor rather than acting as a primary driver of cancer development. This study examined whether TP53 and TTN mutations. are associated with differences in overall survival in patients with ovarian serous cystadenocarcinoma. Data were obtained from the TCGA Pan Cancer Atlas and analyzed using the bioinformatics tool cBioPortal. Patients were grouped based on mutation status (unaltered, TP53 only, TTN only, and TP53 + TTN co-altered). Mutation patterns were visualized using an OncoPrint, and Kaplan–Meier survival analysis was used to compare overall survival between groups. The analysis showed that TP53 alterations were present in 65% of cases, while TTN alterations were present in 21% of cases. However, survival analysis did not show a statistically

significant difference between the groups (p = 0.575). These findings suggest that TP53 mutations alone may not be sufficient to predict patient outcomes. Additionally, TTN mutations may reflect genomic instability rather than independently affecting prognosis. Future studies that examine TP53 mutation subtypes and tumor mutational burden may provide a better understanding of survival differences.

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***Impact of TP53 and CTNNB1 Mutations on Survival in Hepatocellular Carcinoma***

Author(s): Troy'Lynne LaBranch

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: Hepatocellular carcinoma (HCC) is one of the most common and deadly forms of liver cancer worldwide. Genetic mutations that disrupt key cellular pathways play an important role in the development of this disease. Two genes frequently altered in HCC are TP53, a tumor suppressor involved in cell cycle regulation and apoptosis, and CTNNB1, which encodes β-catenin and regulates the Wnt signaling pathway. This study investigated whether mutations in TP53 and CTNNB1 are associated with differences in overall survival in hepatocellular carcinoma patients. Genomic data from the TCGA Pan-Cancer Atlas HCC dataset were analyzed with the bioinformatics tool, cBioPortal. Patients were grouped based on whether their tumors contained TP53 mutations, CTNNB1 mutations, both mutations, or neither mutation. Kaplan–Meier survival curves were generated to compare overall survival among these groups, and an OncoPrint was used to visualize mutation patterns. The analysis showed that TP53 and CTNNB1 mutations occurred in a subset of tumors. However, Kaplan–Meier analysis did not show a statistically significant difference in survival between the groups (log-rank p = 0.222). These findings suggest that although TP53 and CTNNB1 mutations are common in HCC, additional genetic or clinical factors may influence patient survival. Further research may help clarify how these mutations contribute to tumor progression and whether they could serve as potential targets for future therapies.

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## 10:00am-12:40pm Teasley G-09

***Summit at SpARC: Journeys & SCALE***

Panel Participants of first-year and sophomore students

Moderator(s): Professor Tracey Laird and Associate Dean & Professor Seretha Williams

Journeys sections A-D from 10-10:40, SCALE panel from 10:45-11:30, Journeys section E-I plus Atlanta experience from 11:40-12:40

**Abstract:** For the Journeys sessions, individuals and groups from each section will present a project that represents the knowledge, experience, critical thinking and reflection that constitutes their Journeys 2026. Through course topics ranging from biodiversity to identity, from cultural change to globalization — and through the lens of destinations as far away as Bulgaria and as close as the Sea Islands — students demonstrate engagement with global learning that is a key pillar for their Agnes Scott education across majors and disciplines. In the SCALE panel, moderated by two SCALE Leaders, sophomores will share their experiences exploring leadership and careers in organizations such as Mercedes-Benz, Atlanta Dream WNBA, The Atlanta History Center and Microsoft.

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## 10:00-10:15am Bullock 103W

***The Untelevised Moral Ambition***

Author(s): Gardlyne Deshommes and Bella White

Advisor: Professor Roshan Iqbal

**Abstract**: Moral ambition as defined by Rutger Bateman is “the desire to be one of the best but measured by different standards of success — not motivated by big paychecks fancy honorifics or a huge corner office but pursuing a career dedicated to finding the best solutions to the biggest problems the world is facing now.” This research analyzes and compares contemporary women leaders such as Greta Thunberg, Stacey Abrams, and Malala Yousafzai to illustrate how moral ambition manifests differently among publicly known figures and those who create change outside the spotlight. Sources that are used include Rutger Bateman’s writings and speeches on moral ambition, as well as the courage-driven works of Greta Thunberg, Stacey Abrams, and Malala Yousafzai. Through examining articles, speeches, a book excerpt, websites, and online videos, we specifically paid attention to the moral ambition in their activism and leadership. Despite the glorification of women leaders such as Malala Yousafzai, true moral ambition is best embodied by Greta Thunberg and Stacey Abrams, as it exposes a society that

rewards recognition to non-threatening women while sidelining those who confront power. As Thunberg and Abrams challenge and change systems, Yousafzai is complicitly upholding them. Malala's image evolved into something much larger than herself, leading her to compromise with the system and appeal less threatening. By examining Thunberg and Abrams, it is clear that moral ambition is not framed by popularity or recognition, but by the driving force to confront systems, even if it means denying an award, risking one's image, or public praise. It often comes with ridicule or mockery, but it is sustained in humility and the passion to face the challenges presented in the world.

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## 10:00-10:15am Bullock 210E

***"Like Streams of Stars:" Hair and Time in Black Modernist Works***

Author(s): J. Thomas

Advisor: Professor James Stamant

**Abstract**: For Black modernists like Jean Toomer, Zora Neale Hurston, and Jessie Redmond Fauset, writing about Black culture and aesthetics was an act of what scholar Jean Marie Lutes refers to as "racial uplift" (77). Black Americans had newly acquired citizenship and were navigating assimilation and anti-assimilation discourses that often involved hair. Hair is a prominent feature in these authors' works, specifically, "There is Confusion" (1924), "Cane" (1923), "The Back Room," and "The Book of Harlem," and acts as a marker of time. Hair suggests the modern or the dated individual; it ages with the individual; it holds memories of an ancestral past and suggests a collective future; and it marks the breaking of generational and personal cycles. The emphasis on time was a significant characteristic for many modernist writers, but this specific usage of hair shows the authors' moving towards a new age of Blackness in America where White supremacist devaluation of Black hair was moving out and spending time on hair was moving in.

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## 10:00-10:15am Bullock 112W

***The Price of Paradise: Measuring Hawaii's Welfare Impacts During COVID-19***

Author(s): Camilla Hope

Advisor: Professor Ruth Uwaifo Oyelere

**Abstract**: During the COVID-19 pandemic in 2020, global travel came to a halt. This presentation is focused on Hawaii, where tourism accounts for nearly a quarter of the state's GDP. When the pandemic began, Hawaii experienced significant economic disadvantages compared to the more economically diversified US mainland. Before the pandemic, Hawaii had one of the nation's lowest unemployment rates, around 2%, and during the pandemic, it rose to over 20%. In this presentation, I examine whether the pandemic-related decline in tourism was associated with changes in the wage and income gaps between households in Hawaii and the mainland United States. I aim to answer the following questions: Did the decline in tourism from COVID create welfare impacts? What can we learn from the changes in the wage gap between households in Hawaii and Mainland USA? Using data from the Integrated Public Use Microdata Series and tourism statistics, this paper will assess these questions through an economic lens.

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## 10:00-10:15am Bullock 308

***Differential Gene Expression Analysis of Heterogeneous Low-grade Glioma Cancer Cells***

Author(s): Lexus Hardeman

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: Gliomas are aggressive and lethal brain tumors that frequently exhibit resistance to traditional therapies. Diffuse low-grade gliomas display significant cellular heterogeneity, including astrocyte-like and oligodendrocyte-like tumor states. Understanding the molecular differences between these cell populations could provide meaningful insights into the mechanisms of glioma pathogenesis, potentially leading to the identification of new diagnostic or therapeutic targets. In this study, secondary analyses were conducted on RNA sequencing data collected from human LGG275 low-grade glioma cells, which were sorted into two populations: CD44+GLAST+(POS) astrocyte-like cells and CD44-GLAST-(NEG) oligodendrocyte-like cells (BioProject PRJNA1306003). Differential gene expression analysis revealed clear transcriptional separation between populations. Astrocyte-like (POS) cells exhibited strong upregulation of VCAN, an extracellular matrix protein associated with glioma invasion, and AQP4, an astrocytic water channel involved in brain fluid homeostasis, indicating activation of reactive astrocytic programs linked to tumor progression. Additionally, elevated expression of MAP3K1, a regulator of the MEK/ERK signaling pathway, suggests increased proliferative and migratory capacity as well as potential resistance to therapy. In contrast, increased expression of HIP1, which regulates membrane trafficking and actin dynamics, supports oligodendrocyte maturation and myelin-associated functions in the oligodendrocyte-like (NEG) population. These findings validate LGG275 as an in vitro model that captures glioma cellular heterogeneity observed in patient tumors. CD44/GLAST-based sorting effectively distinguishes biologically distinct subpopulations, with VCAN, AQP4, MAP3K1, and HIP1 highlighting functional and lineage-specific differences between astrocyte-like and

oligodendrocyte-like tumor states. These results further suggest that targeting specific molecular subpopulations may improve therapeutic strategies for glioma treatment.

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## 10:00-10:15am Bullock 304E

***What's Your Favorite Scary Movie: The Impact of Horror Media on Body Image and Gender Role Beliefs in Women***

Author(s): Isabel Ajatta and Oliver Fahlen

Advisor: Professor Stephanie Stern

**Abstract**: Across research related to social learning (Pennell et al., 2015; Ward et al., 2014) and media effects (Pennell et al., 2015; Ward et al., 2014), it has been proven that the impact of fiction goes beyond entertainment. It is a mode of teaching societal beliefs, cultural norms, and role expectations (Hefner et al., 2014; Pennell et al., 2015; Wellman et al., 2021). Specifically, print media, television, films, video games and other modes of entertainment have a way of reinforcing gender role expectations (Pennell et al., 2015, Khan, 2024). It was hypothesized that the gender roles present in horror media will cause both men and women to internalize negative traditional gender role stereotypes. It was predicted that slasher films will have the largest negative impact on AFAB (assigned female at birth) audiences and their levels of self objectification and body image. It was predicted that self objectification and self esteem will be negatively correlated with each other in AFAB individuals. While a relationship was not found between horror genre exposure and body image, self objectification nor self esteem, there was a positive relationship between gender role beliefs and the supernatural horror genre.

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## 10:00-10:15am Bullock 102W

***Glass in Passing: An Architectural Examination of MARTA's Glasswork Installations***

Author(s): Molly Jean Kilcrease

Advisor: Professor Tracey Laird

**Abstract**: Aligned with the 1960s international architectural style of Brutalism, Atlanta's MARTA transit system (Metro Atlanta Rapid Transit Authority) features dense concrete exteriors, low ceilings, and limited integration of natural light sources. Public opinions on Brutalism have shifted dramatically in the last five decades, leading to a negative reputation for its imposing and aesthetically displeasing appearance. Contemporary Brutalist sites often approach this

criticism from one of two perspectives: some highlight the building as an architectural achievement representing a unique historical period, while others take structural measures to address its aesthetic shortcomings. MARTA's art engagement program, Artbound, exemplifies the latter approach. Artbound aims to incorporate public art installations at MARTA to increase public engagement with the station and create a more inviting and culturally compatible built environment for its users. This presentation analyzes how MARTA's built environment embraces both architectural and artistic traits, and how these elements work together to reimagine negative associations with Brutalist environments. The presentation will begin with an examination of two case studies featuring glass artwork installations at the Lindbergh and Avondale stations. It will then evolve into an analysis of how both installations fundamentally challenge the historical and architectural tenets of Brutalism. A combination of visual, historical, and architectural critiques will illustrate the complex interplay between art and architecture, effectively reimagining MARTA's built environment. By underscoring the importance of architecturally responsive art, it becomes clear how adaptive initiatives like Artbound provide significant interventions and innovative strategies for repurposing culturally outdated structures.

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## 10:00-10:15am Bullock 209

***Pollinator Diversity and Soil Temperature at Agnes Scott***

Author(s): Hayley Peace

Advisor: Professor Jennifer Kovacs

**Abstract**: This presentation investigates the correlation between the pollinator community diversity and soil temperature on Agnes Scott's campus, as well as how pollinator communities vary in diversity based on their location on campus. Results show that there is a strong correlation between pollinator diversity and soil temperature at sampling sites by Rebekah Hall and the Byers Tennis Courts. Furthermore, results demonstrate that pollinator communities by Byers Tennis Courts were more diverse than by Rebekah Hall, which corresponds with the lower soil temperatures found in the Byers Tennis Courts sample plot and higher soil temperatures found in the Rebekah Hall sample plot. The implications of these results for pollinator conservation on campus will also be discussed in light of rising interest in pollinator-friendly campus action within entities such as People for Pollinators and the Office of Sustainability. The correlation between lower soil temperatures and higher pollinator diversity suggest that future actions within the demonstration garden, soil regeneration plot, McCain Terrace, or other horticultural hubs on campus to lower soil temperatures may benefit Agnes Scott's pollinator community. However, to better inform these efforts before they are implemented, further research could explore the correlation between pollinator species diversity and plant diversity or how seasonal shifts impact pollinator diversity on campus.

## 10:00-10:15am Bullock 108E

***Visualizing Yard Culture: Placemaking in The Bottom through Archival Images of Gardens, Lawns and Porches***

Author(s): Adelai Robison

Advisor: Professor Enkeshi El-Amin

**Abstract**: This project examines place-making through what I have termed as "Yard Culture"–the use of gardens, lawns, and porches–in The Bottom, a historical Black neighborhood in Knoxville, TN. The Bottom was destroyed by urban renewal in the 1950s. While the neighborhood was physically erased and its residents displaced, this project aims to highlight The Bottom beyond the constraints of destruction. Although the physical landscape of The Bottom has changed, recognizing Yard Culture as a conduit of building community, autonomy, and self-expression is a way of recognizing and continuing the life of the neighborhood and the homes, families, and businesses created within it. Using archival images of the neighborhood homes alongside existing research of The Bottom, I am attempting to build a historical ethnography to recognize, humanize, and make known the strengths and agency of its former residents. I employ Black geography and place-making as key theoretical frameworks for analyzing the practices of leisure, subsistence, and decoration that occurs through engagement with gardens, lawns, and porches.

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## 10:20-10:35am Bullock 112W

***The Correlation Between Household Water Access and Educational Outcomes in Pakistan***

Author(s): Erika Mitchell-Washington

Advisor: Professor Ruth Uwaifo Oyelere

**Abstract**: Research on the correlation between access to a water source and the quality of water for a household and educational outcomes has increased due to growing attention to aging infrastructure and a significant rise in chronic absenteeism. Existing studies suggest that improving water quality, access, and sanitation leads to better educational outcomes by enhancing health, freeing up time, and reducing gender disparities. However, Pakistan has not been a major focus of much of this research. Therefore, this literature review focuses on how

current literature helps answer the question: how the correlation between household access to a water source, water quality, and educational outcomes, and will examine whether this relationship has changed substantially over time?

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## 10:20-10:35am Bullock 102W

***Peter Paul Rubens and Fatness: Aesthetic, Fetish, and Language***

Author(s): Tallulah Stroud

Advisor: Professor Tracy Laird

**Abstract**: Peter Paul Rubens was known for diplomatic presence and allegorical oil paintings in the 17th century, but his love of full-figured women created a legacy he never intended. Through historical, cultural, and visual context, this presentation argues that despite Rubens's adoration for fat women within his work, the long-term impact of his representation has held back the ability for fat bodies to be discussed in contemporary portraiture. The term "rubenesque" describes the "rounded and alluringly plump" women in Rubens's paintings. Examples of scholarship using the term "rubenesque" for contemporary portrait artists underscore how the term works to reduce body types to an artistic aesthetic instead of promoting body inclusivity. One way to move forward linguistically is to describe fatness using the feminist fat theory of body neutrality instead of maintaining Rubens as the standard source of nomenclature. Body neutrality is a response to the body positivity movement, arguing that the value in a body should not be based solely on aesthetics; rather, a neutral view frames the body objectively versus socially and culturally. Objective visual description is a core part of writing about art; however, social influences hinder writers from truly being objective. The negative social associations with the word "fat" has made many art historians defer to terminology that perpetuates fetishized and reductive language like rubenesque. This lens applies to other areas of portraiture beyond fatness, including disability, gender, and race. Body neutrality carves a path to the future of visual description across the field of art history.

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## 10:20-10:35am Bullock 209

***Secret Lives of Campus Mammals: Diversity, Density, and Habitat Use***

Author(s): Sophia Edelman

Advisor: Professor Jennifer Kovacs

**Abstract**: Small mammals play a critical role in ecosystem functioning, serving as prey for predators such as owls, coyotes, snakes, and domestic cats, while also influencing seed dispersal and soil dynamics. Different species, including squirrels, mice, and shrews, exhibit distinct habitat preferences and requirements, making them valuable indicators of habitat quality. Understanding how ground cover, vegetation structure, and other habitat characteristics influence small mammal communities can provide insights into ecosystem health and inform predictions about the presence of other wildlife. Traditional citizen science approaches, such as iNaturalist observations, are limited for small mammals due to their small size and predominantly nocturnal behavior, making systematic population surveys essential. This study surveyed small mammals on and around Agnes Scott College using Sherman live traps and non-invasive individual marking with Sharpie tags. We estimated population density, species richness, and beta diversity across different habitat patches to evaluate how habitat structure and quality influence community composition. Results from this survey will provide baseline data on small mammal populations on campus, contribute to understanding habitat health, and help predict potential interactions with other wildlife species in this urban environment.

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## 10:20-10:35am Bullock 210E

### *"An Inequity of the Universe:" Feminism, Misogyny and Female Representation in The Social Network*

Author(s): Sarah Angstadt

Advisor: Professor Charlotte Artese

**Abstract**: The 2010 film The Social Network centers on Mark Zuckerberg and his cohort of male colleagues, all of whom become his enemies in one way or another. However, notably, the film lacks any main female characters, with any sort of female representation being relegated to the tertiary or background characters. Even so, misogyny and a desire for female attention remain at the core of the film's events, resulting in the creation of the very site the film centers, even as the camera focuses its attention almost exclusively on male main characters.. A particular amount of the film's runtime is dedicated to critiquing misogyny and deconstructing the unreality of certain notions of patriarchy. Furthermore, these characters and the other, oftentimes unnamed women are given space to react to sexism. These reactions, indeed, serve to indicate to the audience how they are meant to view certain scenes, characters, and the contour of the film as a whole. That being said, that does not mean this depiction of female characters is remotely unproblematic. While women are made structurally integral, it is only to serve the film's aims, not to explore their personhood, but to be tangential, narrative points in a story about masculinity. It demonstrates most clearly the paradox of patriarchy: Women are necessary for its structure, yet entirely peripheral to any actions that result from it. They are simultaneously the most and least important elements in this film's exploration of misogyny.

## 10:20-10:35am Bullock 304E

***Chemistry vs. Capacity: What Predicts Couples Sticking Together?***

Author(s): Isabel Ley and Sarai Brigantty

Advisor: Professor Stephanie Stern

**Abstract**: Previous research suggests that belief in a soulmate and psychological flexibility play important roles in shaping how individuals navigate romantic relationships. Belief in a soulmate emphasizes immediate compatibility and the perception that partners are either inherently right or wrong for each other (Knee, 1998), whereas psychological flexibility reflects the ability to adapt, shift perspectives, and navigate challenges across life domains (Kashdan & Rottenberg, 2010). However, the relative contributions of these beliefs and capacities to relationship commitment remain understudied. In this study, we examined whether practical partner capacities, including psychological flexibility, long-term compatibility, and willingness to work through difficulties, predict relationship commitment more strongly than belief in a soulmate. Participants completed an online Qualtrics survey assessing these variables using validated self-report measures. Pearson correlations and multiple regression analyses were conducted to evaluate the relationships among variables. Results indicated that both belief in a soulmate and psychological flexibility were significant predictors of relationship commitment; however, belief in a soulmate emerged as a stronger predictor than psychological flexibility. These findings suggest that, despite theoretical emphasis on adaptability and effort in sustaining relationships, idealized beliefs about "the one" may play a more influential role in shaping commitment. This highlights the importance of considering how romantic beliefs influence relationship outcomes and may inform future interventions aimed at fostering healthy, enduring partnerships.

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## 10:20-10:35am Bullock 308

***Adherence and Persistence in Hypercholesterolemic Patients Treated with siRNA Therapy: Insights From a Systematic Review Practicum***

Author(s): Matt Utz

Advisor: Professor Thalita Abrahao

**Abstract**: Nucleic acid therapeutics have emerged as a novel strategy for lipid lowering, with inclisiran offering a twice-yearly dosing regimen targeting PCSK9 synthesis. While its efficacy in reducing low-density lipoprotein cholesterol (LDL-C) is well established, its impact on treatment adherence and persistence remains less clearly defined. As part of a graduate independent research course, we performed a systematic review practice aimed to evaluate whether inclisiran (280 mg - 300 mg injected twice annually) improves adherence and persistence compared to more frequently dosed lipid-lowering therapies in adults requiring additional LDL-C reduction beyond maximally tolerated statin therapy. A systematic review protocol was developed in accordance with PRISMA guidelines and registered prior to study selection. Literature searches were conducted and managed using Zotero, with screening and data extraction performed in Covidence. Randomized controlled trials (RCTs) evaluating inclisiran in adult populations were included. Due to limited direct reporting of adherence outcomes, proxy measures such as treatment discontinuation, completion rates, and dosing compliance were extracted. A total of 15 records were identified through database searching, with 4 studies included following screening. The included studies primarily consisted of phase II and III RCTs. While adherence and persistence were not consistently reported as primary outcomes, available evidence indicates only minimal differences between inclisiran and comparator therapies.

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## 10:20-10:35am Bullock 108E

### *Complex Genders, Complex Language: The Sociolinguistics of Gender Transformation in Ovid's Metamorphoses*

Author(s): Anna Hillesheim

Advisor: Professor Belisi Gillespie

**Abstract**: In Ovid's Metamorphoses there are four stories regarding specifically gender transformation. In "Iphis and Ianthe", Iphis is born female but raised as a boy and is terrified of their ruse being discovered when they marry Ianthe, until Isis transforms them into a male. The son of Hermes and Aphrodite is raped by the nymph Salmacis and when she wishes never to be parted from his beauty, they are combined into one person– Hermaphroditus, neither male nor female. Tiresias was once transformed into a woman for seven years after killing some snakes in a forest, so Juno and Jupiter decide he's the perfect candidate to resolve their dispute. Caeneus is raped by Poseidon and given a boon: they choose to be transformed into a man, so that such a thing will not happen to them again. This presentation analyzes these four stories from a cultural and linguistic point of view, looking at the Latin text and how Ovid chooses to gender these characters through the lens of the cultural context in which they were written. It argues that in the stories in which the transformations are more socially fraught and the characters reside in the spaces between genders, Ovid uses more obfuscating and neutral language to refer

to them. In contrast, in the stories in which the characters are transitioning in a completely binary manner, and where the transformations are explicitly or implicitly approved by the gods, the language used is much more clear and without ambiguity.

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## 10:20-10:35am Bullock 103W

***Not Quite Human: Yōkai in Japanese Folklore***

Author(s): Hannah Porch

Advisor: Professor Abraham Zablocki

**Abstract**: Yōkai are mysterious supernatural beings or forces that reveal aspects of Japanese culture and beliefs through their interactions with humans in Japanese folklore. This presentation will examine four folklore stories: a shape-shifting tanuki who resides in an abandoned Buddhist temple, a kappa that threatens to eat a boy fishing on the river, a young kitsune who wants to learn more about human farming, and a mysterious ghost that plays tricks on townspeople. In Japan, supernatural creatures and unexplained phenomena have been part of cultural imagination since the start of documented history. Yōkai are not separate forces of human daily life; like nature, they are part of the forces that surround people. Yōkai are also not inherently "evil" entities. They reside on a boundary existing between rational and irrational, between orderly and disorderly worlds. Analysis of the four selected folklore narratives suggests that yōkai occupy a threshold that blurs the line between human and non-human. Additionally, they reflect the anxieties and uncertainties of everyday life, as well as both Shinto animistic traditions and Buddhist moral frameworks. Overall, these stories highlight religious and cultural practices integral to Japanese social thought.

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## 10:40-10:55am Bullock 108E

***"Led on by Some Modern Miriam": Methodist Camp Meetings and Women's Religious and Non-Religious Leadership in Middle Tennessee, 1825–1844***

Author(s): Emma Anne Stephens

Advisor: Professor Mary Cain

**Abstract**: This presentation explores the intersection of religion, politics, and gender in mid-nineteenth century Middle Tennessee. It argues that women were able to assert their value

as members of political and religious communities through non-traditional gatherings like camp meetings and, later, political rallies. Methodist camp meetings provided spaces outside of the traditional structures of the nineteenth-century church that allowed for some of the patriarchal interpretations of scripture and tradition to be interrogated and subverted. Methodist women in Tennessee were able to organize and assert their value as leaders at camp meetings. Subsequently, Tennessee women were able to bring their experience of organization and leadership from camp meetings to the political rallies of the presidential elections of 1840 and 1844. This presentation will further examine the ways that women were able to act as leaders in nineteenth-century Methodism and politics despite not being able to vote or hold official positions of leadership in either institution.

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## 10:40-10:55am Bullock 112W

***Racial Disparities in Food Access: Evaluating the Impact of the COVID-19 Pandemic***

Author(s): Leah Mokry

Advisor: Professor Ruth Uwaifo Oyelere

**Abstract**: This project examines changes in the racial disparities in food insecurity in the United States following the 2020 pandemic. Previous research suggests that people of color, namely Black, Hispanic, and Indigenous people have consistently faced higher rates of food insecurity compared to White people. This disparity persists despite improvements in the economy and the presence of assistance programs like SNAP. Using data from the U.S. Census Bureau's Current Population Survey, this study employs the Ordinary Least Squares (OLS) and Probit regression models to estimate the probability of food insecurity for different groups before, during, and after the pandemic. Early results suggest changes in the gap in food insecurity across race during the pandemic period.

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## 10:40-10:55am Bullock 304E

***Belonging in a World That Demands Approval: Social Desirability and Well-Being***

Author(s): Nina Henderson

Advisor: Professor Peeper McDonald

**Abstract**: This study examined the relationship between social desirability and psychological well-being across the intersections of race and gender identity. Participants were recruited through institutional mailing lists and social media platforms. The sample included Asian (6.7%), Black (8.9%), Indigenous/Aboriginal/First Nations (6.5%), Latinx/Hispanic (8.7%), Middle Eastern (1.5%), Other (0.1%), Multiracial/Biracial (22.2%), and White (75.5%) participants, with only genders categorized as male (48.0%) and female (44.8%). Self-report questionnaires were analyzed in PSPP using bivariate correlations and t-tests. Previous research has examined social desirability as a response bias, personality trait, or confounding variable influencing psychological well-being, but few studies have considered the impact of race or ethnicity. Most prior work focused on specific populations, such as children, older adults, or women with depressive symptoms. Results aligned with previous findings, showing a positive association between social desirability and psychological well-being. Though gender differences were not significant, women reported higher well-being. As hypothesized, people of color scored higher on social desirability and lower on well-being. The low well-being scores among people of color potentially reflected scales that failed to reflect racial and ethnic disparities. Future research should employ a two-way ANOVA test to explore gender differences across racial and ethnic groups. Findings support connecting belongingness theory with social desirability, suggesting that a sense of belonging through social networks and community may buffer distress related to racial and ethnic identity and enhance psychological adjustment and well-being.

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## 10:40-10:55am Bullock 308

***Learning by Doing: How Course-Embedded Research Improves Science Identity***

Author(s): Nailah Desamu-Thorpe

Advisors: Professor Jennifer Hurst-Kennedy, Professor Thalita Abrahao, and Professor Shoshana Katzman

**Abstract**: Science identity describes how individuals see themselves in relation to science and the scientific community. Science identity is linked to STEM student persistence and retention, in particular among students from minoritized backgrounds. Accordingly, pedagogical interventions that cultivate science identity, such as course-embedded research experiences (CUREs), can positively impact STEM student success. In this study, we explored the impact of a CURE on science identity within a cohort of pre-health, master's-level graduate students, the majority of whom identified as female and Black or African-American. This cohort completed a semester-long, in silico cancer genomics CURE using data from The Cancer Genome Atlas (TCGA), as part of a graduate-level cancer biology course. Participating students completed pre-/post surveys, with targeted Likert-scale and free-response questions to assess science identity and attitudes towards participation in the CURE. Quantitative analysis revealed that the CURE increased student confidence in identifying as a scientist and improved perceived faculty

recognition of them as scientists. Furthermore, students reported positive attitudes about participation in the CURE. Thematic analysis of free responses demonstrated a positive shift in student perceptions of their roles in research and in their conceptualization of physicians as scientists. Taken together, these data suggest that engaging prehealth students in cancer genomics research can strengthen science identity and support the development of relevant research skills.

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## 10:40-10:55am Bullock 103W

***Exploring Race and Place in the South through The Emerging Controlling Image of "Soft Black Girl" Challenged by Hyper-femme Gender Expression of Black Lesbians***

Author(s): Kennedy McNeal

Advisor: Professor Enkeshi El-Amin

**Abstract**: This presentation examines how the "Coquette/Soft Black Girl" aesthetic functions as a site of negotiation and reinterpretation for Black hyper-femme lesbians in the U.S. South, specifically among students at Agnes Scott College in Georgia. It argues that while this aesthetic draws on historically white, Southern belle ideals of femininity (characterized by softness, delicacy, and heteronormative desirability) it is actively reworked by Black femme lesbians in ways that unsettle its original racialized and heterosexual foundations. This is because dominant definitions of hyperfemininity have long been tied to heterosexual male desire and relational dependence, positioning femininity as both racialized and inherently heteronormative. However, within lesbian contexts, hyperfemininity (or "femme" identity) emerges as a deliberate and self-defined performance that is not oriented toward the male gaze or heterosexual validation. As a result, Black hyper-femme lesbians adopt and adapt the visual and behavioral markers of the "Soft Black Girl" aesthetic (such as pastel color palettes, softness, and emotional vulnerability) while simultaneously rejecting its embedded expectations of male-centered intimacy and respectability politics, particularly within the cultural context of the U.S. South. By tracing these shifts, this presentation demonstrates how Black femme lesbians use aesthetic and embodied practices to reconstruct femininity beyond its traditional constraints. Using a KnightLab Timeline, it situates this reinterpretation within a broader historical trajectory of controlling images in both heterosexual and queer Black communities, revealing how contemporary digital aesthetics can serve as tools for resistance, identity formation, and regional critique.

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## 10:40-10:55am Bullock 209

***The Effect of Excess Dietary Protein on Abundance and Growth Rates of Probiotic Bacterias***

Author(s): Mack Phillips and Taylor Debarr

Advisor: Professor Srebrenka Robic

**Abstract**: In recent years, the amount of high protein products sold has dramatically risen and it is estimated that 50% of Americans overconsume their daily dietary protein intake. The risks of protein overconsumption to the survival of native gut bacteria are known but little research has been done on the effects of increased protein intake on probiotic bacteria. Alongside protein consumption, probiotics have become popular too and their use has notably increased. As these phenomena coincide, the researchers aim to determine the effect that protein overconsumption poses on the abundance and growth rates of probiotic bacteria. This was tested by measuring the growth rate and colony counts of probiotic bacterial cultures added to liquid and agar media with low, medium and high levels of supplementary proteins (casein from bovine milk and beef extract powder). The growth rates and colony abundance of each trial group were compared; at the highest levels of protein concentration, the data suggests that growth rates were more variable than those of the control, medium, or low concentrations.

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## 10:40-10:55am Bullock 210E

***Competing Power Structures in Chrétien de Troyes' "The Knight of the Cart"***

Author(s): Ireland McCage

Advisor: Professor Charlotte Artese

**Abstract**: Twelfth-century French poet Chrétien de Troyes' "The Knight of the Cart," stands out among the many works that make up the literary sphere known as Arthurian mythology because it is the first instance of Lancelot, a knight under King Arthur, being featured as a main character. Lancelot is forced to balance the conflicting obligations he has as both a knight of the kingdom and a secret lover to Queen Guinevere, Arthur's wife. Guinevere, too, has to face this type of internal conflict, submitting to others as her place as a woman demands, while simultaneously holding power over Lancelot through their relationship. These kinds of conflicting power dynamics run rampant throughout "The Knight of the Cart." There is a surface-level power dynamic that makes up the structure of the society in this text, while, at the same time, Lancelot and Guinevere maintain their own contrasting power structure within the confines of their relationship. In "The Knight of the Cart," Guinevere and Lancelot defy the societal expectations that have been placed upon them by the existing societal power structure,

while attempting to continue living in and being part of the society they are rejecting. This struggle to maintain two incompatible power structures at once, one in public and one in private, is too much for society to bear, leading to the eventual downfall of Camelot that is present in later Arthurian works.

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## 10:40-10:55am Bullock 102W

***The Memory Maze: Community in Art***

Author(s): Kali Wood

Advisor: Professor Tracy Laird

**Abstract**: The Memory Maze is a graphic novel that presents a surrealist horror mystery. The story's protagonist Anabelle Grimm needs to recover her identity to save herself and a mysteriously masked and bound friend from a maze of her memories constructed by Judgement. Ultimately, The Memory Maze is a story about community as a basis for the strength you need to save yourself. The focus on community is why, despite Anabelle's being alone throughout the story, there is still a large cast of characters in her memory. In writing this first chapter of what will become a full-length graphic novel, a real-life process unfolded for the author: like Anabelle, finding strength in community and the realization that no one needs to make it alone. The Memory Maze is set slightly anachronistically in the Georgian period. It uses a lot of Georgian fashion and architecture, but without maintaining the rules of representing a time or place accurately. Through this story the tenets of Surrealism, such as the dreamlike representation of the human mind, are being used in order to explore the feeling of dissociative disorders like PTSD. Surrealism at its core is about the human mind. Historically, this artistic movement arose alongside psychotherapy, and many early Surrealists employed the ideas of Freud in their pieces. In modern cultural consciousness the most popular Surrealist literary work is Lewis Carroll's Alice's Adventures in Wonderland. The dreamlike structure makes it a perfect framework to explore the confusion, fear, and intensity of a flashback.

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## 11:00-11:15am Bullock 308

***Pathway-Level Transcriptional Changes in Stress, Interferon, and Cell Cycle Programs Following Belinostat Treatment in Glioma Cells***

Author(s): Zihao Liu

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: Histone deacetylase (HDAC) inhibitors such as Belinostat have demonstrated antitumor activity across multiple cancer types, yet their transcriptional effects in glioma cells remain incompletely characterized. In this study, we analyzed gene expression changes following Belinostat treatment in glioma cells expressing either green fluorescent protein (GFP) as a control or the transcriptional co-activator TADDZ, a key regulator of tumor growth and proliferation, to identify coordinated pathway-level responses. A curated panel of genes chosen to capture key functional pathways implicated in tumor progression and treatment response. Belinostat treatment induced a consistent transcriptional shift across both GFP and TAZ conditions. Interferon-associated genes (IFI44L, IFIH1, OAS1, RSAD2) were significantly downregulated, while stress-response genes (HMOX1, ATF3, SRXN1) were upregulated. In contrast, key proliferation and survival genes (FOXM1, BIRC5, CCNB1, PLK1, UBE2C) were also significantly suppressed. Log2 fold change analysis revealed a clear separation between gene groups, with stress genes exhibiting positive fold changes and both interferon and cell cycle genes showing negative fold changes. These differences were statistically significant across all comparisons ($p < 0.01$). Overall, these findings demonstrate that Belinostat induces a coordinated transcriptional reprogramming in glioma cells, characterized by activation of stress-response pathways and suppression of interferon-associated and proliferation-associated gene programs. This bidirectional shift indicates that HDAC inhibition reshapes tumor-associated transcriptional programs by suppressing proliferative signaling and enhancing stress-response pathways, offering insight into the molecular basis of its therapeutic effects.

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## 11:00-11:15am Bullock 103W

***Like Real People Do: (Re)Defining Third Space in the Digital Age***

Author(s): Piper Smith

Advisor: Professor Yvonne Newsome

**Abstract**: How do you define community? In today's digitally-led life, that becomes a difficult question to answer. The average American dedicates their life in a seemingly endless cycle of work, home, phone, sleep, repeat, with little room to develop a sense of place in their physical community. Constantly in a balancing act between home and work life, American society continues to isolate itself away from an informal, public, social life. Although technology has promoted some positive social connections, it's not enough to replace the fulfillment gained from sharing and interacting with other people in a physical capacity. Urban sociologist Ray Oldenburg describes this demonstrated lack of a sense of "place" as being the primary motivator behind high levels of American stress. Observing this imbalance, Oldenburg's concept of "third places" emerged, now sometimes called third spaces. This film aims to discuss the

impact of third spaces and their functions, inspect why third spaces are declining, and redefine the idea through an inspection of The Supermarket, a multi-use creative event space in the Poncey-Highland neighborhood of Atlanta. The presentation will consist of a partial showing of the film, followed by a brief discussion about the research and production of the film. The full film will be viewable after the presentation.

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## 11:00-11:15am Bullock 112W

***Regulatory Reform and Financial Adoption: Evidence from Mexico's 2018 Financial Technology Law***

Author(s): Nicole Young

Advisor: Professor Ruth Uwaifo Oyelere

**Abstract**: This research examines whether Mexico's 2018 Financial Technology Law affects the gap in adoption of financial accounts by less educated individuals compared to those with more education. The law established the first comprehensive regulatory framework for fintech institutions in Mexico, with financial inclusion as a founding principle. Despite years of legislation in the financial services sector, access to formal financial services in Mexico remains biased toward higher-educated individuals, raising the question of whether regulatory reform can facilitate the closure of that gap. Previous research has found that financial service expansion has maintained or widened existing inequalities, as digital financial adoption tends to remain concentrated among more educated populations. Despite a growing literature on fintech and financial inclusion in Mexico, to the best of my knowledge, no existing study has examined how a fintech-specific regulatory law impacts the adoption of financial accounts across education levels. Using a difference-in-differences approach across five waves of Mexico's National Survey of Financial Inclusion (2012–2024), this study examines four outcomes among individuals without a high school diploma compared to their more educated counterparts: formal account ownership, bank credit card ownership, debit card ownership, and fintech adoption. It also examines whether financial literacy is correlated with adoption across different educational groups. Preliminary findings suggest that lacking a high school diploma is associated with lower adoption across all four outcomes in both the pre- and post-law periods, with the education-based gap in financial product adoption persisting following the law's introduction.

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## 11:00-11:15am Bullock 209

***Investigating Mechanisms of Symbiont-Mediated Pathogen Clearance in Squash-Bug Models***

Author(s): Mykle Williams, Laura Avila, Tiana Scott, and Nicole Gerardo

Advisor: Professor Jennifer Kovacs

**Abstract**: Squash bugs (*Anasa tristis*) are a common agricultural pest that rely on a symbiotic relationship with the bacteria *Caballeronia*, without which they are not able to mature normally or survive in the presence of an environmental pathogen *Serratia ureilytica. S. ureilytica* causes yellow-vine disease in squash plants, infecting the bugs that eat the plant and severely reducing crop yields (Bruton et al 2003). *Caballeronia*-inoculated bugs are able to clear the pathogen at significantly higher rates compared to *Caballeronia*-deficient bugs with no signs of upregulation in immune genes (Mendiola *et al*., 2022). This project investigates the mechanisms of this symbiont-mediated pathogen clearance to draw broader conclusions about the role of microbiota in host immune response. Three mechanisms were proposed: exploitative competition, interference contact-dependent and contact-independent competition. Microbial assays were performed in plates and liquid culture to test each proposed mechanism. Negative results indicated that the *Caballeronia* symbiont does not have a direct killing effect on the pathogen Serratia, but instead initiates an indirect response pathway that depends on the interplay of pathogen, host, and symbiont. Further research is ongoing to understand this complex 3-way immune response *in vivo*.

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## 11:00-11:15am Bullock 210E

***"Til the End of the Line": Queering Steve Rogers, Captain America***

Author(s): Ansley Rickson

Advisor: Professor Charlotte Artese

**Abstract**: With comics in continual publication since 1964 and a starring role in the Marvel Cinematic Universe, Captain America is one of the most recognizable superheroes of this day. Prior to the events of Avengers: Endgame (2019), Captain America's civilian identity was Steve Rogers, a man whose life was riddled with sickness and hardship due to his weak immune system and poor economic status; after receiving an experimental super soldier serum during World War II, Steve becomes the superhero known and loved today. In the Captain America trilogy, Captain America: The First Avenger (2011), Captain America: The Winter Soldier (2014), and Captain America: Civil War (2016), Steve Rogers's teenaged sidekick in the comics becomes Bucky Barnes, Steve's childhood best friend whose friendship with Steve dramatically influences

and sometimes even directly causes the events of the movies. This presentation analyzes the importance of Bucky's character to both the plots of the films and to Steve himself and Steve's relationships with women to argue that Steve is portrayed as queer. Further, it considers the events of Avengers: Endgame in relation to Steve's character to question American perceptions of queerness in a supposedly progressive society.

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## 11:00-11:15am Bullock 304E

***Psychological Well-Being and Social Desirability: Implications for Age and Gender Identification***

Author(s): Sarah Rouse

Advisor: Professor Peeper McDonald

**Abstract**: Due to the relative newness of the field of psychology, it is important to constantly be learning and developing more in terms of our understanding of human feelings and behavior, and how those feelings and behavior stem from norms and constructs surrounding social desirability. That is why this study focuses on mental wellbeing as well as social desirability. This study included 783 participants and collected data from an online survey that included demographic measures, Ryff's Psychological Wellbeing Scale (RPWBS; Ryff, 1989), and a short version of the Marlowe Crowne Social Desirability Scale (MC-II; Strahan & Gerbasi, 1972). After the data was analyzed, it was found that higher psychological wellbeing is associated with higher social desirability (individuals that portrayed themselves in a more socially desirable light), and that higher psychological wellbeing is associated with higher social desirability in Straight individuals (but was not significant in Queer individuals). A significant difference was also found between the psychological wellbeing and social desirability scores of younger and older individuals. It was also found that older individuals had lower levels of both social desirability and psychological wellbeing compared to younger individuals. This study gives insight into how social desirability can affect situations that help treat with mental health treatment, as well as help to better understand how different measures can be affected by socially desirable answering (across sexual orientations and ages).

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## 11:00-11:15am Bullock 108E

***Staying in the Kitchen and Shooting from the Balcony: Exploring Women's Domesticity, Complicity, and Violence in Nazi Germany***

Author(s): Emma Magnus

Advisor: Professor Kristian Blaich

**Abstract**: From mothers to murderers, women in Nazi Germany were vital in defending the Volksgemeinschaft and maintaining the regime's ideals of a superior race. The vision for the German family was shaped by a desire to depart from the values of the Weimar Republic, fears surrounding a declining birthrate, racial purity, eugenic objectives, and the importance of mothers. Reproduction and family planning were no longer the choice of individuals, and instead became a systematic operation by the state to produce as many children as possible. Even as the Nazis sought to construct the ideal German household by emphasizing men's influence in the public sphere and restricting women's roles in society to the private sphere, women supported the party and became active participants in the regime's agenda. Within the Third Reich, German mothers were empowered, viewed as the core of the Volk, protectors of the Aryan race, and were regarded with the highest praise. As well, the ongoing genocide against Jewish people was not separated from the home, and women and their families engaged in violence and murder. This presentation examines the Nazis' use of financial incentives and propaganda to encourage female cooperation with Nazi ideology. Additionally, this presentation analyzes different scholarly arguments on women's roles in Nazi society. It will emphasize that women were mobilized to promote and support the ideals of the party through the regime's empowerment of motherhood. As well, women participated in acts of persecution and killings independently, without influence or pressure from Nazi authorities or combatants.

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## 11:00-11:15am Bullock 102W

***Anyone Can Cook/Make Music***

Author(s): Zymaria Patten

Advisor: Professor Tracey Laird

**Abstract**: This presentation showcases a self-produced song/digital media project, inspired by three individuals of the Avant Garde music era. It explores the process of metaphorically cooking with the available ingredients, using knowledge acquired in an academic year to make something that could be qualified as music. Henry Cowell, John Cage, and Julius Eastman were avant garde musicians with vastly different education levels, who each developed different approaches in their respective field: music. Henry Cowell had little formal education and is mostly self-taught. His compositions represent a wild method of cooking. John Cage pursued an education, but in a completely different field. His compositions represent cooking from an outsider perspective. Juilius Eastman earned  a bachelor's degree in music, and creative arts surrounded his entire life. His compositions represent taking a recipe apart to construct an

original dish. These individuals also have vastly different career trajectories. Henry Cowell and John Cage are taught in music history classes even today. Julius Eastman is hardly known, needing effort to be searched out. This project conveys the idea that "Anyone Can Cook/Make Music" because these people each worked hard to be composers, musicians, and theorists, using the learned and natural skills they had. Using production experiments guided by their examples and categories, this presentation will teach the audience that one need not strive for the highest education level or the exact degree made for a specific field of creativity; one just needs the passion to get far.

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## 11:20-11:35am Bullock 112W

***The Impact of Immigration and Travel to Thailand***

Author(s): Phoenix Robertson

Advisor: Professor Ruth Uwaifo Oyelere

**Abstract**: This research examines the past literature with the aim to better understand how foreign travel and immigration may impact Thailand. In particular, three central questions will be explored: What pull factors attract non-Thais to Thailand? How does foreign travel to Thailand affect the country's economy? Which countries send the most visitors to Thailand? Using the past literature, available data, and a blend of both quantitative and qualitative analysis, this research addresses each question and identifies trends in global mobility and its impacts on Thailand. Building on these findings, this research also highlights areas for continued study.

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## 11:20-11:35am Bullock 304E

***"I Wish They Taught Girls More About This Stuff": Feminist Ethics of Care and Clinical Failures in Online Contraceptive Discourse***

Author(s): Sadie Berg

Advisor: Professor Amy Patterson

**Abstract**: This paper explores the ways that patients engage with health decision making, embodied storytelling, communal risk management, and—critically—each other on the r/birthcontrol online forum. The ways communities uplift and protect one another beyond the reach of traditional medicine and public health reveal the pressing informational and relational needs that have yet to be met within them. Using feminist ethics of care as a theoretical frame

for social media studies, this work aims to identify the extrainstitutional practices of reproductive justice in an increasingly hostile climate. Through emergent themes qualitative analysis of more than 300 posts and comments, this study reveals key themes of clinical failure and the compelling practices of care that respond to them. In understanding the ethics that characterize feminist public health praxis, this research seeks to build more encompassing and caring systems of public health and medicine.

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## 11:20-11:35am Bullock 210E

***Poetry as Praxis: Critical Engagement with Sir Thomas Malory's Le Morte d'Arthur through Creative Medievalism***

Author(s): Sarah Angstadt

Advisor: Professor Robert Meyer-Lee

**Abstract**: Through the lens of writing free verse poetry in response to the text, I have elected to examine the structural power of the women of Le Morte D'Arthur and how they are both victims and perpetrators of violence. In my short collection "The Legend of Arthurian Women," I assume the positionalities of a variety of women, ranging from Guinevere and The Lady of the Lake all the way to Percival's Enchantress and beyond. By writing these poems in tandem with reading and engaging with scholarship on Malory, I have found that poetry and creative writing in general can serve a worthwhile function for modern readers, particularly undergraduate students, to connect with the medieval texts. Through my presentation, I will outline the general process and approach I took in this project and advocate for the implementation of creative medievalism as a pedagogical tool to encourage students to create a meaningful rapport with these texts. While medieval texts may seem largely disconnected from the lives of those reading them in 2026, I hope to demonstrate that, through engaging with creative writing, students can discover and subsequently advocate for the relevance of medieval literature in our contemporary worldview.

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## 11:20-11:35am Bullock 209

***Investigating the structural and functional differences of eIF3 in evolutionary divergent fungal species Candida Albicans and Saccharomyces cerevisiae***

Author(s): Yashi Jadhav, Madison Allegretti, Andrew, Shi, and Sohail Khoshnevis

Advisor: Professor Sarah Mitchell

**Abstract**: The eukaryotic translation initiation factor 3 (eIF3) complex plays a central role in translation initiation by coordinating the recruitment of other initiation factors. Although eIF3 is conserved across eukaryotes, its subunit composition varies across species. In mammals, eIF3 contains thirteen subunits, whereas the budding yeast Saccharomyces cerevisiae has a simplified complex composed of six core subunits. Some fungi, including *Candida albicans*, encode additional eIF3 subunits that are absent from *S. cerevisiae*. Given that *S. cerevisiae* has evolved more recently compared to other fungi, this suggests that the complex has evolved through the loss of modular structural components. This project investigates whether eIF3 subunits f, h and m from *C. albicans* can integrate into the *S. cerevisiae* eIF3 complexes and if these structural additions cause phenotypic changes. To test whether this scaffold can support cross-species assembly, the genes encoding *C. albicans* eIF3f, h, and m were integrated into the *s* via plasmid vectors. Using immunoprecipitation and western blotting, we examined interaction between the endogenous *S. cerevisiae* eIF3 and the *C. albicans* eIF3f, h, and m subunits. Additionally, growth assays in stressor conditions helped determine phenotypic differences caused by the additional subunits. Collectively our data proposes interaction between S. cerevisiae eIF3 and C. albicans eIF3f, h, and m along with phenotypic differences.

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## 11:20-11:35am Bullock 308

### *Efficacy of Anti-sense Oligonucleotide in Type-1 Spinal Muscular Dystrophy: A Systematic Review Experience*

Author(s): Thomas Osorio

Advisor: Professor Thalita Abrahao

**Abstract**: Spinal muscular atrophy (SMA) is a severe genetic neuromuscular disorder and a leading cause of infant mortality characterized by progressive muscle weakness and respiratory failure, due to a defect in the SMN1 gene, which leads to reduced survival motor neuron (SMN) protein. SMN2 gene, a paralog of SMN1 gene, is a therapeutic target for reversing SMA in these patients. Nusinersen, an FDA-approved antisense oligonucleotide treatment, alters SMN2 gene splicing and increases production of full-length SMN protein. This systematic review practice aimed to determine whether intrathecal nusinersen reduces progression to long-term assisted ventilation or death in symptomatic infants with infantile-onset 5q SMA compared with sham procedures. A PRISMA-based protocol was used to identify and screen randomized controlled trials. Retrieved studies were managed in Zotero, and screening and data extraction were performed in Covidence. Inclusion criteria were limited to trials involving symptomatic infants who were not permanently ventilated at baseline, and that reported ventilation-related outcomes. Twenty-one randomized controlled trials (RCTs) were screened, and data were

extracted from 5 studies. We evaluated nusinersen treatment association with a reduced risk of death or permanent assisted ventilation, along with improvements in overall clinical outcomes compared to control groups. The use of a systematic review template demonstrates the value of unbiased, comprehensive evidence synthesis in determining the efficacy of emerging nucleic acid therapies in addressing life-threatening conditions such as spinal muscular dystrophy.

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## 11:20-11:35am Bullock 102W

***Rain Tastes Like ___.***

Author(s): Lala Zhang

Advisor: Professor Tracey Laird

**Abstract**: This senior project presents a multidisciplinary concept album and visual photo book titled “Rain Tastes Like ___.” The work is a multi-track exploration that breaks traditional boundaries of sound and sight to engage the sense of gustation. While music is fundamentally auditory, this project posits that the atmosphere of rain is a visceral experience that can be "tasted" through emotional resonance. By leaving the title open-ended, the work invites the audience to become active participants, challenging them to synthesize their own sensory conclusions from the diverse musical and visual "flavors" presented. The album includes genres that mirror these emotional shifts: stripped-back acoustic arrangements capture moments of vulnerability, while high-energy pop-rock represents the chaotic momentum of a heavy storm. Produced in Logic Pro X, the sonic landscape features a deliberate blend of piano and violin and cello pizzicato. The vocal performance with different singing styles also acts as a dynamic instrument that shifts with the "palate" of the tracks. The project incorporates digital art with the audio to evoke specific atmospheric "aftertastes." By drawing directly onto photographs, the gap is bridged between the heard and the seen. This project is significant because it explores the synesthetic potential of art, and connects hearing and seeing to the taste. By refusing to name the emotions and instead providing the tools for the audience to define their own experience, “Rain Tastes Like ___.” reclaims the concept album as an interactive inquiry into how people perceive the environment.

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## 11:20-11:35am Bullock 108E

***"Les Américains en Amérique !": French Opposition to Post-War American Domination***

Author(s): Lindsey Berry

Advisor: Professor Kristian Blaich

**Abstract**: In the decades following World War II, the United States gained outsized influence over Western Europe through financial agreements (adoption of the Marshall Plan), military presence (establishment of US bases in Europe), political agreements (creation of the North Atlantic Treaty Organization), and cultural capital (increased production in Hollywood). Though these Cold War strategies were an overall success in countering Soviet influence, the United States was not always met with a warm welcome in its soon-to-be satellite states, especially France. Using the 1950 short film "Les Américains en Amérique !" as a point of departure, this research examines French discontent with American military presence and material influence in the lead-up to the 1967 expulsion of American troops from Metropolitan France by President Charles de Gaulle. Many French citizens, coming from all social and economic backgrounds, opposed the importation of American goods, the construction of American and NATO military bases on French soil, and the growing popularity of American culture. Met with the paradox between their role as a quasi-vassal state to the United States and their control over a still vast empire, French politicians (of all parties) considered how to project power in the post-war world. Laying the blame for various struggles of post-war life at the feet of Americans became key to reasserting sovereignty in both the cultural and political spheres and, ultimately, defined the Franco-American diplomatic relationship as it stands today.

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## 11:20-11:35am Bullock 103W

***Order of the Shepherd; Execution of the Sheep: Leaders and Followers in the Pastoral Mediterranean***

Author(s): Charlie Hughes

Advisor: Professor Maribelisa Gillespie

**Abstract**: Early Greek communities did not suddenly become urban, rather, they evolved out of small, kinship-based, agrarian groups. As Greek society transitioned from these pastoral communities into more complex urban structures, they retained their pastoral roots to structure their society and values, and in turn, their art, to conceptualize authority. While many of Homer's epithets are formulaic, the use of the phrase "shepherd of the people" is used to explore ideas of leadership, social structure, and divine order. The figure of the shepherd carries

deep cultural significance rooted in familiar pastoral societies, where the shepherd symbolizes guidance and protection over their dependent community. Within this framework, leadership is not only a function of power, but also a reflection of the larger natural and divine order of the world. The shepherd-king maintains this balance by protecting the community, exercising restraint, and acting in accordance with the will of the gods. Were Homeric leaders good at this? The text provides mixed and tragic answers. Hector, embodying the ideal shepherd, prioritizes his community's prosperity and accepts his role within the broader cosmic order; Agamemnon's leadership, on the other hand, is undermined by his selfishness and arrogance, thereby disrupting the order. By juxtaposing these figures, Homer uses this common metaphor as a critical tool to examine authority, revealing the structural and moral expectations underlying heroic society and the natural order of the world that it reflects.

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## 11:40-11:55am Bullock 209

***Leading Collaboratively: A Study in Undergraduate Peer Leadership and Professor Partnership***

Author(s): Anjali David, Hannah Porch, Sophia Totten, and Tenley Gallagher

Advisor: Imani Young Bey

**Abstract**: At Agnes Scott College's Center for Writing and Speaking, undergraduate student tutors link influential leadership with academic experience, facilitating their development as peer leaders. The Research Committee of the CWS identified a gap in the connection between academic department expectations and knowledge of the center's various services. We examined this relationship through the results of surveys distributed among both students and professors, which assessed the impact and efficacy of tutors as peer leaders in the campus community. The results of this research identified particular leadership skills for tutors to apply in their lives as leaders beyond college. Our research proposes that representing the Writing Center and advocating for its importance via individual outreach to academic departments will help tutors demonstrate collaborative leadership with professors on campus. This research is conducted within the genre of student leadership on campus and was previously presented at the Southeastern Writing Center Association. We intend to examine this link through the results of surveys distributed among students and professors, which will assess the impact and efficacy of tutors as peer leaders in the campus community. The results of this research will identify and prioritize particular leadership skills for tutors to apply both in the writing center and in their lives as leaders beyond college.

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## 11:40-11:55am Bullock 102W

***All Dogs Go To Heaven***

Author(s): Elena Riley

Advisor: Professor Tracey Laird

**Abstract**: This presentation features my triptych artwork titled All Dogs Go To Heaven, accompanied by an examination of its narrative: a flock of sheep is attacked by a wolf, and the sheep are protected by their sheepdog, who kills the wolf. The sheep dog is then surrounded and admired by the flock, while the wolf's body returns to the earth in death. I will discuss the typical characteristics and Christian medieval European origins of triptychs, and how my choice of subject matter and treatment of the triptych format both diverge from and align with those origins. I will also address how the triptych's sculptural, movable nature creates an interactive experience with the visual narrative for the viewer. All Dogs Go To Heaven's narrative is informed by the symbolism of dogs in art and media, as well as Western culture's relationship with them. It then utilizes this relationship to explore themes of nature, divinity, and death, reflecting on the brutality and beauty of nature and the acceptance of death as a natural process.

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## 11:40-11:55am Bullock 108E

***Mothers For Germany: Exploring Far-Right German Women and the Alternative For Germany***

Author(s): Emma Magnus

Advisor: Professor Eleanor Morris

**Abstract**: In the past decade, there has been a surge of far-right and conservative ideologies globally. Since the 2015-2016 Cologne New Year's Eve attacks in Germany, the Alternative für Deutschland (AfD), a far-right political party, has become increasingly influential and is now the second-largest party in the country's parliament. The AfD has utilized the Cologne attacks to manufacture a gendered anti-immigration and Islamophobic sentiment in the name of protecting women and women's rights. Simultaneously, the party promotes a more conservative stance toward feminism, emphasizing women's roles as mothers to safeguard German culture. While the AfD rejects core feminist ideals, it weaponizes women's rights to advance xenophobic and nationalist narratives. Additionally, two women have served as leaders of the AfD since 2015, and more and more women have been drawn to support the party. As part of a larger senior seminar project examining to what extent feminist international relations theory can account for this phenomenon, this presentation will specifically analyze various AfD political

advertisements, the influence of Alice Weidel's and Frauke Petry's identities and leadership, and the party's relationship with social media. This presentation explores why women participate in far-right movements, such as the AfD. Ultimately, it emphasizes that the AfD has constructed an agenda that fuses anti-immigration rhetoric, Islamophobia, and an idealization of nationalist motherhood. Therefore, German women are being mobilized to support the party through imagery and nativist language that casts the protection of German children as imperative against external threats.

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## 11:40-11:55am Bullock 103W

***Othermothers and Motherwork from a Black Feminist Perspective***

Author(s): Jess Sheffield

Advisor: Professor Yvonne Newsome

**Abstract**: Most theorizing about Black motherhood and motherwork has been done from a dominant, western-centered view that places work in and outside the home as separate and distinct spheres. This study applies Black feminist theory to analyze motherhood and motherwork from Black women's intersectional locations and standpoints. It goes beyond the limiting assumptions made by western-centered scholarship and brings to light new and existing insights about motherwork from Black women's perspectives. Taking this approach reveals and emphasizes the critical role of othermothers and motherwork in Black communities. The study explores and analyzes the significance and contributions of motherwork by othermothers in the preservation and survival of Black individuals and communities. Primary data were drawn from two community othermothers' narratives on their own motherwork, with one being Susie King Taylor's self-authored personal chronicle of her life during the Civil War and Reconstruction era and the other consisting of an in-depth interview with and case study of my paternal Aunt. Secondary data were derived from research findings and theoretical arguments presented in past scholarship. Using personal narratives values the Black feminist theoretical framework that emphasizes recognizing, centering, and empowering Black women, their voices, and Black communities. The study reveals how Black motherhood is dynamic, dialectical, and inherently contradictory (Collins, 2000). At the same time, it supports Patricia Hills Collins' (1994; 2000) argument that Black motherhood functions simultaneously as a site of self-definition and—relatedly—of individual and group survival and empowerment. The paper concludes that Black feminist perspectives work to generate and reimagine existing narratives and research in ways that give voice to, center, and empower Black women and Black communities.

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## 11:40-11:55am Bullock 112W

***Epicenters of Interfaith: The College Campus***

Author(s): Zoë Goode

Advisor: Professor Roshan Iqbal

**Abstract**: This presentation will highlight the work of Agnes Scott's Interfaith Council under the Office of Religious and Spiritual Life and The Interfaith Bridgebuilders before concluding with several recommendations for the future of interfaith at Agnes Scott. To provide context for this work and its significance the author draws on the writing of interfaith scholars such as Eboo Patel, Chris Stedman, and Emily Jendzejec, case studies from two American universities, surveys of university students, and the presenter's own experience as an interfaith student leader and intern. Interfaith in this presentation and in the presenter's work means cultivating intentional community between different religions and faiths through education, experience, and relationality. This presentation will analyze the importance of interfaith work, examine the factors that make colleges ideal environments for interfaith organizing, and explore the different ways interfaith work is taking place across campuses in the United States. Interfaith community is particularly important on college campuses where young adults are encountering new worldviews and forming their own identities and beliefs outside of the culture they were raised in, beliefs that they will carry with them into their lives beyond college.

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## 11:40-11:55am Bullock 308

***Computational Neuropharamacology: Understanding Drugs and the Brain Through Big Data and Computational Modeling***

Author(s): Malaysia Hodge

Advisor: Professor Jennifer Larimore

**Abstract**: Computational neuropharmacology combines the methods, data, and research from computer science, neuroscience, and pharmacology to aid in drug discovery, interaction, and development research. This field might not have always had a name but computational methods are nothing new to this research. With the rise of artificial intelligence (AI) and other computational interdisciplinary fields the question of the necessity of AI in these fields begins to rise. Currently roadblocks like the lack of trustworthy and large datasets on top of the large amounts of power required to run the proposed methods are making it hard for the field to progress. While AI is not a necessary next step for the field of neuropharmacology, with further research, investment in creating vast and diverse datasets, and stronger regulations the growth

of the field of computational neuropharmacology will naturally happen as it will no longer be held back by the current roadblocks.

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## 12-1:00 pm Lower Evans Dining Hall

***Scottie Math Bowl***

Exponential hilarity abounds in this game-show style math competition hosted by the wittiest department on campus. Count on the math professors for countless laughs! Grab your lunch and join us in Lower Evans- unquantifiable fun for participants and spectators!

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## Poster Session B: 1:30-2:30pm Baker Atrium, Bullock Science Center

***Matrix Coding: 2D Rovibrational Spectrum of Chloromethane***

Author(s): Aloyo Paul and Peter Chen

Advisor: Professor Sarah Winget

**Abstract**: Two-dimensional rovibrational spectroscopy is a powerful tool for resolving the spectral congestion in traditional one-dimensional infrared spectra. Four-wave mixing signals are generated by overlapping broadband NIR and narrowband mid-IR laser pulses. The resulting two-dimensional patterns reveal information about the rovibrational symmetries of coupled modes. This study attempts to use computational analysis tools, such as Python-based matrix coding, to construct, manipulate, and interpret two-dimensional spectral data. It combines the prolate symmetric rotor model optimized with Coriolis coupling and known literature values of chloromethane ($CH_3Cl$), found in the HITRAN database. The Python implementation could provide operations to identify the isolated coupled rovibrational modes and peaks that are obscured in one-dimensional spectra. The use of these methods is being investigated to comprehend the 2D perpendicular pattern in the two-dimensional spectra. Although this study focuses on gas-phase molecules, the assertion of this matrix-based model could be transferred to other systems, such as water science. In particular, the ability to resolve overlapping rovibrational features provides a foundation for future studies of water vapor, hydrogen-bonded clusters, and other systems critical for understanding water chemistry. This matrix-driven Python framework could potentially offer a scalable tool for analyzing complex systems through two-dimensional spectroscopy.

***From Observation to Advocacy: Clinical Immersion, Competency Development, and Advancing Equitable Care***

Author(s): Amari Pitters

Advisor: Professor Shoshana Katzman

**Abstract**: As a current Master's in Medical Sciences student at Agnes Scott College, I was tasked with completing a structured clinical internship at Piedmont Henry Hospital. Through this experience, I was able to examine how clinical immersion as a student supports the development of professional competencies for entering health professionals, while shaping a commitment to equitable, patient-centered care. In this internship, I rotated through multiple departments, including the emergency room, cardiac catheterization lab, endoscopy suite, and outpatient surgery. Using reflective journaling and direct clinical observation as primary methods, I analyzed patient-provider interactions and team dynamics, applying these observations to inform and assess my own competency development. The following three competencies were central to my experience over the last few months: Ethical Responsibility to Self and Others, Interpersonal Skills, and Oral Communication. Clinical exposure revealed persistent disparities in care, particularly affecting Black patients and individuals from underserved communities, reinforcing the ethical obligation to advocate for equitable treatment and accountability in healthcare. Strong interpersonal skills were essential in building trust with patients who may feel unseen or unheard within the medical system, as well as with staff to promote an effective and supportive work environment. Additionally, clear and consistent oral communication among care teams proved critical in ensuring patient safety and preventing error. This experience holds personal and professional significance as it affirms my purpose in medicine: to help create spaces where patients of color feel safe, respected, and empowered to take ownership of their health. In a system where Black communities have historically experienced neglect and exploitation, representation and culturally responsive care are essential to building trust and improving long-term health outcomes.

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***Recursive Sequences and Prime Numbers***

Author(s): Ansley Rickson and Kathryn Frank

Advisor: Professor Alan Koch

**Abstract**: The Fibonacci sequence is a sequence such that the first term is 0, the second term is 1, and the following terms are found by adding the two previous terms together: 0, 1, 1, 2, 3, 5, 8, 13, and so on. Sequences similar to the Fibonacci sequences, in which terms depend on the

two previous, are called recursive sequences. Dividing each term in a recursive sequence by a prime number p and considering their remainders reveal interesting patterns, and since there are only p possibilities for the terms of the sequences, these remainders will repeat at a point that is called the period of the sequence. If every possible remainder appears in the sequence, then the sequence has what is called a complete residue system, so every number between 0 and p-1 appears in the sequence. This project studies how changing the values of the first two terms in the sequence affects the period as well as how changing coefficients of the terms affects whether there is a complete residue system.

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***Social Consequences for Employees with Long Automobile Commutes***

Author(s): Audrey Rich and Katherine E. Cox

Advisor: Professor Jennifer L. Hughes

**Abstract**: Past research has shown that longer commutes can undermine social support and have negative effects on well-being (Christian, 2012). Researchers discuss that long commutes cut into personal relationships, affecting time spent with spouses, children, and friends (Christian, 2012). Based on this past research, we predicted that salaried workers with longer automobile commutes in time would socialize less with coworkers outside of work. We also predicted that salaried workers with longer automobile commutes in time would report fewer work friendships. Additionally, we predicted that salaried workers with longer automobile commutes in time would be less likely to stay late and that salaried workers with longer automobile commutes in time would be less likely to attend non-required events. Three hundred and fifty-eight participants completed an online Qualtrics survey, 84 of which we dropped because they were not employed, did not have a driver's license, or did not commute at least once a week via automobile. The significant findings included that men who commuted to work for longer amounts of time expressed being more likely to go to non-required events, $r(52) = .28$, $p = .04$. Women who commuted to work for longer amounts of time expressed being less likely to attend non-required events $r(202) = -.14$, $p = .04$. Because women were less likely to participate in non-mandatory work events, future research should explore why this is true for women rather than men.

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***Food Security as a Human Right: Unequal Dishes in Atlanta and Abroad***

Author(s): Aurora Porter, Kayla Cuthbert, and Roën Rosenberg

Advisor: Professor Sharmin Sadequee

**Abstract**: Food insecurity remains a critical human rights issue, shaped by structural inequalities, economic disparities, and uneven food distribution systems. This poster project examines food insecurity in Atlanta as both a local and global concern, emphasizing its connection to poverty, racial inequality, and urban planning. Grounded in Article 25 of the United Nations Universal Declaration of Human Rights, this project argues that access to nutritious food is a fundamental human right. Using a community-based research approach, the study combines academic analysis with fieldwork conducted alongside Food Well Alliance and its network of urban farms and community gardens. Engagement at local initiatives, including workshops and volunteer activities, highlight how grassroots efforts foster food access, education, and community resilience. These initiatives address food deserts and promote sustainable, locally driven solutions, while also revealing ongoing challenges of limited funding, seasonal constraints, and a lack of community awareness. The project further evaluates public and nonprofit responses, including SNAP and regional food access programs, assessing their effectiveness in reducing hunger and improving nutritional equity. Findings suggest that while community gardens and local programs play a vital role in expanding access to fresh food, they must be supported by broader policy changes to address systemic inequities. By connecting local experiences in Atlanta to the United Nations Sustainable Development Goals, particularly the Zero Hunger initiative, this research underscores the global scale of food insecurity. Ultimately, the project demonstrates that addressing hunger requires integrated solutions that combine community action with structural reform to ensure equitable food access for all.

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***The Gambler's Fallacy***

Author(s): Blake Vance and Sarah Par

Advisor: Professor Brielle James

**Abstract**: The gambler's fallacy is the cognitive bias in which people believe that past random events influence future outcomes, even though each event is independent. This project explored how past outcomes influence decision making in situations involving chance. Undergraduate students at Agnes Scott College completed an online survey. Participants read a short vignette involving an Agnes Scott College student participating in a monopoly game night with their friends. Who is either in a streak condition where they have rolled the same number twice in a row or non-streak condition where they have only rolled the same number once. Participants were then asked to answer if they believed the main character would roll the same number again on their next roll. The results of the study will show how gambler’s fallacy may affect decision-making within a low stakes environment. Understanding the gambler’s fallacy can help improve awareness of how people misinterpret randomness, which has implications for gambling behaviors and real-life decision making.

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***From Classroom to Clinic: Building the Skills of a Future Physician***

Author(s): Camryn Paige Jones

Advisor: Professor Shoshana Katzman

**Abstract**: As a Master of Medical Sciences Student at Agnes Scott College, I completed a clinical internship at Piedmont Henry Hospital to gain early exposure to patient care and real clinical environments. This experience gave me a better understanding of the professional competencies needed to become a physician. By observing different clinical settings, I was able to see how healthcare providers communicate with patients, work together as a team, and make decisions in real time. I paired these observations with reflection to better understand how skills such as communication, teamwork, resilience, and adaptability manifest in everyday clinical practice. During my internship, I focused on patient-provider interactions, team dynamics, and how decisions are made in a fast-paced environment. I observed how the healthcare teams work under pressure and how providers adjust to altering patients' needs while still maintaining professionalism. These experiences helped me recognize the importance of each team member's role in delivering efficient and effective patient care. This experience showed me that being a physician is about more than just understanding medicine. It's also about how you show up for patients, building trust, communicating clearly, and working well with others. Overall, this presentation highlights how early clinical exposure can help students begin developing the skills, mindset, and compassion needed to provide meaningful and patient-centered care.

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***Developing Core Competencies Through Clinical Internship Experience***

Author(s): Catherine Robinson

Advisor: Professor Shoshana Katzman

**Abstract**: As a master's student in a medical sciences program, I pursued an internship at Piedmont Henry Hospital to gain experience and deepen my understanding of the clinical healthcare environment. As my first hospital internship, my initial perception of the clinical environment quickly evolved into a greater appreciation for the complex network of specialized teams working together to provide comprehensive patient care. I observed how physicians, nurses, technicians, and patients each contribute to accurate diagnosis, efficient workflow, and positive patient experiences. As the internship progressed, I noticed the constant collaborations required across and within departments to ensure effective communication and patient-centered care. Observing healthcare professionals in fast-paced environments highlighted the importance of adaptability when responding to unexpected situations. I also

gained a greater understanding of ethical responsibility for both patients and healthcare teams. I observed how healthcare professionals have to consistently prioritize patient safety even when a patient disagrees with some decisions. Overall, this internship provided valuable insight into the teamwork, adaptability, and ethical responsibility required to provide effective and compassionate healthcare.

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***The Effects of Functional Groups on Estrogen Receptor Beta Binding***

Author(s): Charles Muse

Advisor: Professor Mi-Sun Kim

**Abstract**: Estrogen Receptor Beta (ERβ) exerts anti-proliferative and pro-apoptotic effects across multiple tissues, making it a promising therapeutic target. Using Schrödinger's Maestro, this study evaluated how single functional group modifications to the estradiol scaffold affect binding within the ERβ ligand-binding domain. The ERβ–estradiol crystal structure (PDB: 3OLS) was prepared, docked, and used as a reference. R-group enumeration generated analogs with nine substituents (–OH, $–NH_2$, –F, –Cl, $–CH_3$, $–NO_2$, $–CF_3$, $–OCH_3$, –COOH), each assessed via Ligand Interaction Diagrams. Small, polar, hydrogen-bond-donating groups performed best: –OH preserved anchor interactions at Glu305 and His475 while adding a hydrogen bond, and $–NH_2$ showed a similarly strong profile. Halogens and methyl were well-tolerated, while bulky electron-withdrawing groups ($–NO_2$, $–CF_3$) disrupted binding geometry. Future work will combine top modifications on a single scaffold, obtain quantitative glide scores (GScores), and assess ERα/ERβ selectivity.

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***Structure-Based Design of WEA001: A "Goldilocks" ERα Antagonist for Endocrine-Resistant Breast Cancer***

Author(s): Chelsea Weaver

Advisor: Professor Mi-Sun Kim

**Abstract**: This project applies structure-based drug design to evaluate the novel small molecule WEA001 as a potential inhibitor of estrogen receptor alpha (ERα) in endocrine-resistant breast cancer. Crystal structures of estradiol-bound ERα (1A52), wild-type antagonist-bound ERα (3ERT, 4-hydroxytamoxifen), and resistance-associated mutants Y537S (6CHZ, H3B-9224) and L536S (6SBO, fulvestrant-bound) were prepared in Maestro to capture clinically relevant receptor conformations associated with endocrine response and resistance. WEA001 was built,

ligand-prepared, and docked with Glide into each receptor structure to compare binding poses, GlideScores, and residue-level interactions against reference ligands including estradiol, fulvestrant, 4-hydroxytamoxifen, and the covalent antagonist H3B-9224. Across wild-type and mutant ERα, docking predicted stable antagonist-like poses for WEA001 within the ligand-binding pocket, with favorable GlideScores and maintenance of key contacts in the hormone-binding cavity. In the clinically relevant L536S mutant (6SBO), WEA001 achieved a GlideScore of approximately −7.1, comparable to or more favorable than reference antagonists in this structure, indicating energetically favorable binding in a resistance-associated receptor context. Analysis of residue interactions showed that WEA001 can preserve contacts with helices that regulate receptor activation and helix-12 positioning, including residues in helices 3, 11, and 12, features typically associated with antagonistic or degrader-like ERα modulation. Together, these results support the hypothesis that WEA001 can effectively engage both wild-type and mutant ERα in conformations consistent with receptor antagonism. This work provides a computational foundation for optimizing WEA001-like scaffolds as candidate therapies for endocrine-resistant ER-positive breast cancer and prioritizes these scaffolds for experimental testing in L536S/Y537S-engineered ER-positive models.

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***Black Women's Experiences of Provider Communication During Hospital-Based Maternity Care in the United States***

Author(s): Daphne Washington, Reeshemah Cameron, and Amanda Lott

Advisor: Professor Hannah Carter

**Abstract**: Black maternal mortality remains a serious and urgent concern in the United States. National data show that Black women continue to die from pregnancy-related causes at significantly higher rates than White women. In 2024, the maternal mortality rate for non-Hispanic Black women was 44.8 deaths per 100,000 live births, compared with 14.2 for non-Hispanic White women (Hoyert, 2026). These numbers reflect real women, families, and communities experiencing loss, trauma, and long-term emotional impact. Although maternal mortality is a medical outcome, the issue also has direct relevance for counseling because pregnancy and childbirth experiences can affect emotional well-being, trust in health care systems, family functioning, and later help-seeking. Prior research suggests that disparities are shaped not only by medical risk factors but also by differences in hospital quality, delays in care, provider bias, and unequal treatment within health systems (American College of Obstetricians and Gynecologists [ACOG], 2024; Howell, 2018; Njoku et al., 2023).

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***Development of a Unified Method to Normalize Retention Indexing in Gas Chromatography***

Author(s): Dora Wu, Nancy Kilpatrick, and John Dimandja

Advisor: Nancy Kilpatrick

**Abstract**: The normalization of gas chromatographic retention was first introduced by Kovats in 1958 to account for changes in retention times caused by differences in operating conditions (such as flow rate, column length, and temperature) from one user to another. Retention indexing involves the interpolation of retention times relative to the elution of a homologous series of saturated alkanes. In this project we have investigated several different types of temperature programs on a non-polar stationary phase column to study the relative retention variations of 150 compounds that include a great variety of functional groups (ketones, alcohols, phthalates, lactones, etc.). The preliminary results of this work show that aliphatic compounds show significantly less variation than aromatic compounds, and suggest that there is a relationship between retention index information obtained at isothermal conditions versus temperature programmed conditions. The implications of these findings are that there may be a path towards the normalization of retention indexing on a compound-by-compound basis, which will strongly enhance current gas chromatographic databases for the identification of volatile organic compounds.

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***The Influence of Framing Effects on Help-Seeking Behavior in College Students***

Author(s): Elom Mulatu and Ariyona Yancey

Advisor: Professor Brielle James

**Abstract**: Framing Effects are when biases are caused by a tendency to evaluate outcomes as positive or negative changes from their current state. This project explored how care- versus harm-framed messages influence college students' willingness to seek help for burnout. Undergraduate students at Agnes Scott College completed an online survey. Participants read a short vignette about a student experiencing burnout and considering whether to seek professional help through a program promoted on a college campus. The vignette included either a gain or loss frame by manipulating the message to be either care-based which emphasizes benefits of seeking help or harm-based that highlights outcomes of not seeking help. Participants then had to respond by indicating their likelihood of seeking help. The results of this study will inform research about how framing effects shape help-seeking behavior and behavioral intentions in mental health for college students.

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***Online/Offline: Identity Integration in Multiracial Populations across Digital and Physical Spaces***

Author(s): Em Rowland

Advisor: Professor Peeper McDonald

**Abstract**: Various positive and negative psychological effects are associated with different identity outcomes, as well as those effects associated with social media use. Given this, the current study seeks to examine a theorized correlation between measures of Multiracial Identity Integration (MII; Cheng & Lee, 2009) and Social Media Identity Distress (SMID; Luo et al., 2020) within a multiracial population. Therefore, this study used bivariate analyses to inspect data collected via digital self report survey distributed using a convenience sampling procedure of a mostly undergraduate student population. There were 805 respondents to this survey, from which 179 participants (22.2%) fulfilled the inclusion criteria for the study. The results of these correlational analyses indicate a significant negative relationship between MII and SMID scale scores. Significant negative relationships were also found within sub-samples who: reported experiencing congruency in how they identified and were perceived racially, disagreed that their racial identities were in conflict, and attended mostly in-person courses. This suggests that heightened MII scores among these populations should correlate to lower SMID. These results have the potential to drive future undergraduate research in new directions, seeking an understanding for the effect of identity processes as a buffer on social media use outcomes.

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***Differences in Traits of Bird Species Due to Extreme Heat Changes in Urban Areas***

Author(s): Evie Lee

Advisor: Professor Jennifer Kovacs

**Abstract**: Urban environments create gradients in temperature and vegetation that influence bird biodiversity. This study examines how factors such as urban heat and canopy cover affect bird community composition and functional traits in urban areas around Atlanta. We use bird observation data from eBird and trait data from AVONET to measure biodiversity through species richness and Shannon's Diversity Index, while analyzing bird traits such as body size. Temperature and canopy cover data are combined with bird observations to assess how environmental conditions influence avian communities. ArcGIS is used to map spatial patterns of heat and vegetation, and R is used to analyze relationships between these factors, bird diversity, and trait distributions. We test whether hotter, less vegetated areas support fewer species and favor traits associated with heat tolerance. Seasonal variation is also considered to evaluate how bird communities shift throughout the seasons. Overall, this study is examining

how environmental conditions influence the number and types of bird species present as well as their characteristics.

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***Predicted Microbial Functional Differences Across SHANK3B Genotypes***

Author(s): Finley Turner

Advisor: Professor Jennifer Kovacs

**Abstract**: Alterations in the gut microbiome are increasingly recognized as contributors to the pathophysiology of neurodevelopmental disorders, including autism spectrum disorder (ASD) and schizophrenia. Recent work (Turner et al. 2025) demonstrated that Shank3B heterozygous mice exhibit sex-dependent shifts in gut microbial diversity, with "increased biodiversity in Shank3B+/- males and reduced biodiversity in Shank3B+/- females" and notable genotype-by-sex interactions in community structure. While this study identified taxonomic differences across phylum to species levels, the functional consequences of these microbial shifts remain unknown. PICRUSt2, a bioinformatics analysis tool, was applied to predict the metabolic potential of the gut microbiome in Shank3B homozygous and heterozygous mice. Gene family abundances and metabolic pathways were inferred from 16S rRNA data, allowing functional differences associated with genotype and sex to be examined. Through this approach, potential alterations in microbial functions related to metabolic processing and gut–brain axis activity can be assessed. This functional profiling enables evaluation of whether the microbial communities altered in Shank3B mutants possess distinct metabolic capacities that may influence neurodevelopmental phenotypes associated with ASD-related conditions.

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***Sunk Cost Fallacy***

Author(s): Gelila Bekele, Chloe Bell, and Lex J. Heilig

Advisor: Professor Brielle James

**Abstract**: Sunk cost effect (SCE) refers to an individual's tendency to continue to invest in a situation due to prior time, effort, or resources. Even when the investment is no longer beneficial. The present study examined whether underclassmen or upperclassmen at Agnes Scott College were more susceptible to the SCE in an academic context. It was hypothesized that underclassmen would be more susceptible to SCE in a hypothetical scenario-based task than upperclassmen. Therefore, reflecting greater sensitivity to prior investment. Undergraduate students (N = 82) completed an online Qualtrics survey in which they were presented with a hypothetical vignette describing a struggling academic course decision. Participants were asked

to decide whether they would continue or withdraw from the course. Class standing (underclassmen vs. upperclassmen) served as the independent variable, and the decision to continue or withdraw served as the dependent variable. Data were analyzed using a chi-square test of independence to examine differences between groups. With these findings, they will show the class ranking and the susceptibility to the sunk cost effect. Demonstrating how experience in college affects decision making in their college career. Failing investments and college ranking did (not) correlate with each other.

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***An Investigation of the Selectivity for Estrogen Receptor Alpha Over Beta in Estrogen Receptor Antagonists***

Author(s): Georgia Whittington

Advisor: Professor Mi-Sun Kim

**Abstract**: It could be beneficial to selectively target ER-α over ER-ß with ER antagonists in ER positive breast cancer treatments based on findings suggesting possible antitumor effects of ER-ß. The purpose of this investigation was to use a structural comparison to identify potential areas that could be used to develop ER antagonists that preferentially bind to ER-α over ER-ß. This analysis used Schrödinger Maestro Software to compare the binding sites of the α and ß subtypes of the human estrogen receptors. First, the ER-α and ER-ß binding sites were aligned and compared structurally. Then, the molecular structures of several ER antagonists were aligned and compared structurally to identify traits unique to the ER-α-selective antagonist and characteristics similar to estradiol. The first findings were two polar residues in the ER-α where there is a nonpolar residue in the same location in ER-ß, which could be used for future drug design to develop an ER-α-selective antagonist. Another finding was the presence of an oxygen-containing appendage that is parallel to the main body of the structure that was unique to the MPP molecule. MPP also exhibits a high degree of polarity on one side of the molecule. Each of these unique characteristics likely contribute to the molecule's affinity for ER-α. A common negatively charged protrusion was found in both the raloxifene and lasofoxifene molecules which appear to prevent the conformational change of helix-12 structure that is required for activation of the receptor.

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***Communication, Empathy, and Compassion in Healthcare***

Author(s): Georgia Whittington

Advisor: Professor Shoshana Katzman

**Abstract**: As a master's student at Agnes Scott College, I participated in an internship at Piedmont Henry Hospital in Stockbridge, Georgia. In this experience, I rotated through different departments within the hospital. Throughout this experience I gained knowledge related to the different roles of healthcare providers within the medical system. Two of the main things that I took away from this experience were directly related to the professional competencies of pre-heath students including communication and empathy and compassion of healthcare workers. Strong oral communication skills allow for good communication with other members of the healthcare team and with patients, both of which are vital in a career in healthcare. Empathy and compassion allow a doctor to provide better care for their patient because they do their best to understand the patient's perspective and needs and then tailor their care accordingly.

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***Artificial Intelligence in Neuropharmacology Research for Major Depressive Disorder***

Author(s): Hannah Warsame

Advisor: Professor Jennifer Larimore

**Abstract**: Artificial intelligence (AI) is increasingly being applied in neuropharmacology research to address major challenges in the treatment of major depressive disorder (MDD), including delayed treatment response and high rates of non-response to antidepressants . Machine learning approaches have been used to analyze complex clinical datasets in order to predict individual treatment outcomes, identify patients at risk for treatment-resistant depression, and support more personalized prescribing strategies  Moreover, AI-driven tools are being incorporated into early stages of antidepressant drug discovery, where they can assist in identifying and optimizing novel compounds more efficiently than traditional methods. These applications suggest that AI has the potential to improve both the speed and precision of depression treatment. However, several limitations remain, including moderate predictive accuracy, limited generalizability across populations, and the risk of overfitting due to small or biased datasets . Furthermore, many AI models lack interpretability, which may reduce clinician trust and complicate real-world implementation. Ethical concerns, such as data bias and transparency in decision-making, also present significant challenges.

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***Use of Buffer Time During Commuting as a Coping Mechanism***

Author(s): Isabel Ley and Chloe N. Bell (equal authorship)

Advisor: Professor Jennifer L. Hughes

**Abstract**: Previous studies indicate that commuters use buffer time to provide support for travel time variability. However, the evaluation of psychological and situational factors has lacked research as a coping mechanism (Baek et al., 2021; Desmond & Matthews, 2009; Fosgerau & Engelson, 2011; Liu et al., 2021). In this study, we evaluate levels of driving anxiety, fear of being late, and dislike of feeling rushed amongst commuters as a coping mechanism. Participants completed a 10-minute Qualtrics survey that assessed levels, a 5-point scale assessed the participants' responses. Pearson correlations were computed to assess the relationship between the use of buffer time when commuting to work and commute anxiety, $r(270) = .19$, $p = .002$, fearing being late to work, $r(270) = .24$, $p < .001$, and not wanting to be rushed, $r(271) = .17$, $p = .004$. This means that commuters who used greater buffer times reported greater commute anxiety, fear of being late, and not wanting to be rushed, which supported all of our hypotheses. After comparing men and women, women used buffer time as a coping strategy for managing commute stress, whereas no significant associations were found for men. This highlights the importance of recognizing that commute behaviors can reflect underlying anxiety, not just logistics, and that interventions may need to target women's experiences specifically.

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***Pain Management Internship***

Author(s): Isha Patel

Advisor: Professor Shoshana Katzman

**Abstract**: As a Master of Medical Sciences student, I strengthened my professional skills in areas of future clinical educational settings with an internship in an outpatient clinical office at the Alliance Spinal Center, a pain management clinic. During my internship at the clinic, I took patient histories, documented patients' vital signs, set up procedure rooms, set up injectables, and cleaned the areas before spinal injections, and helped physician assistants with patient treatments. This has given me a chance to acquire a number of important professional skills with regard to patient care. Direct patient involvement during the process of taking patient intakes and the preparation of the procedures improved my service orientation skills, especially when patients showed signs of anxiety during the process of dealing with chronic pain and the uncertainty of the treatment process. My oral communication skills improved significantly as I observed the doctors explaining the process of the injection to the patients and reassuring them before the injection process. My teamwork skills improved exponentially as I worked with various teams of doctors, nurse practitioners, medical assistants, receptionists, and imaging technologists as they coordinated the whole process with the goal of ensuring the patients are comfortable during the process. This helped me to comprehend the importance of teamwork in improving productivity and the comfort of the patients during the process. Overall, the internship has helped me improve my ability to work effectively in a clinical setting and succeed in my future roles in the healthcare field, especially in areas of teamwork and communication.

***Effect of Self-Esteem on Pupil Dilation When Viewing Oneself Versus a Stranger***

Author(s): Jessica Pinsker, Bella Leonardi, and Jenesis Narcisse

Advisor: Professor Joel Thomas

**Abstract**: Schwetlick et al. (2023) found that due to higher emotional arousal, participants experienced greater pupil dilation when looking at their own face compared to a stranger's. Zeitner & Weight (1979) also found that females with low self-esteem had greater pupil dilation when looking at themselves; however, they used outdated measures of self-esteem. In order to address these concerns, the current study explored how implicit and explicit forms of self-esteem may be reflected in pupil dilation. It was predicted that pupil dilation would increase when viewing images of oneself versus strangers. Furthermore, it was predicted that lower implicit and explicit self-esteem would be inversely related with pupil dilation when looking at oneself versus strangers. There were 44 participants in the study who were recruited via convenience sampling. Participants completed the Rosenberg Self-Esteem Scale and the Self-Esteem Questionnaire Implicit Association Test to measure explicit and implicit self-esteem. Participants also answered a facial aesthetics control question ("I like the way my face looks"). A standardized photograph was taken of each participant and matched in luminosity to the stranger photos extracted from the Chicago Face Database. Participants followed the same visual paradigm as Schwetlick et al. (2023) regarding how many milliseconds they saw images of themselves versus strangers. The first hypothesis that pupils would dilate when looking at oneself versus a stranger was supported. The second hypothesis was not supported; self-esteem did not have an effect on pupil dilation. Future research should examine other measures of self-esteem and how self-esteem can affect other physiological responses.

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***Osteosarcoma : survivability among patients with TP53 mutations***

Author(s): Kathomias Turnge

Advisor: Professor Jennifer Hurst-Kennedy

**Abstract**: Osteosarcoma, a bone cancer that mostly affects younger individuals, is characterized by masses growing called osteoids, which are caused by the overgrowth of the bone-creating cells, osteoblasts. The cancer is normally found along the long bones, such as the proximal tibia or distal femur. The cancer is considered highly aggressive, frequently causing metastasis up to the lungs. In this study, the bioinformatics tool, cBIoPortal, was used to examine commonly altered genes in osteosarcoma: TP53, a tumor suppressor, and LINC09001, is a long non-coding RNA that may be helping with tumor-suppressing pathways. TP53 was deleted in 7 out of the 8

patients. For the LINC09001, 6 of the 8 showed a mutation. Kaplan-Meier analysis for the 8 patients comparing the effects of the two most prevalent gene mutations showed extreme decline in the survival of the patients. According to the Kaplan-Meier plot it showed progression less than the 50 days mark. The work collected should give insight into a more specialized approach to slowing or eradicating the progression of osteosarcoma.

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***Social Behaviors Between Group Housed Male Mice and Novel Mouse***

Author(s): Kieko Bellinger, Zainab Ghannoum, and Azariah Leslie

Advisor: Professor Stacey Dutton

**Abstract**: Anxiety-like behaviors in rodents are commonly used in research labs as models to study how the effects of social stress, dominance, drugs, memory, and general locomotion activity trigger responses of aggression. In laboratory settings, male mice are often aggressive towards one another to establish dominance, especially with mice they are unfamiliar with. Mice that were born from the same mother or housed together from a young age do not act as aggressive to each other and are less anxious, as mice naturally stay in colonies. Humans also exhibit stress, anxiety, protectiveness, and fight-or-flight when it comes to interacting with new people or a person who is perceived as a threat. Based on an initial interaction, the behaviors another person exhibits can cause anxiety, isolation, or fight-or-flight. This study examined whether exposure to social aggression from a novel mouse induced anxiety-like behaviors in C57BL/6 mice. And based on reduced center time and rearing, increased grooming, and altered locomotor activity, our findings suggest that aggressive novel mouse interactions would induce anxiety-like behaviors in male mice.

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***CHrNA3 Levels in Lion's Mane Tissue of Female Mice***

Author(s): Kitely Sherman, Lyric Freeman, Carmen Gorav, and Taylor Dover

Advisor: Professor Jennifer Larimore

**Abstract**: Extensive research has examined the neurobiological effects of Lion’s Mane mushroom (Hericium erianaceus), particularly its anti-inflammatory properties, enhancement of stress resilience, and neuroprotective potential. Despite this growing body of literature, little is known about its effect on CHrNA3 protein expression. The neuronal acetylcholine receptor subunit alpha-3 is a critical component of ligand-gated ion channels that mediate fast synaptic transmission in the peripheral nervous system (PNS), facilitating the relay of sensory and motor information to the central nervous system (CNS). As an essential subunit of the neuronal

nicotinic acetylcholine receptor complex, CHrNA3 plays a significant role in cognitive function and cholinergic neurotransmission. To investigate whether Lion's Mane influences CHrNA3 expression under stress conditions, we analyzed CHrNA3 protein levels and localization in female mice treated with Lion's Mane. Protein abundance was quantified using Western blot analysis, and spatial distribution was assessed via immunofluorescence. These approaches allowed us to determine whether stress exposure alters CHrNA3 expression and whether Lion's Mane modulates these stress-induced changes.

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***Investigating Localization of Vesicular Acetylcholine Transporter: An Analysis of the GI Tract***

Author(s): Lauren Smith, Maria Munoz-Ayala, Yashi Jadhav, and Raelyn Mornay

Advisor: Professor Jennifer Larimore

**Abstract**: Stress impacts individuals globally: 43% percent of adults suffer adverse health effects from stress. Lion's Mane mushroom supplementation has been linked to increased stress resilience and neuroprotective properties. It has shown an effect on anxiety reducing effects on mouse models who show behavioral disorders. Vesicular Acetylcholine Transporter (VAChT) releases acetylcholine in neurons for neurotransmission. Acetylcholine is stored in the membrane of synaptic vesicles and later transmitted to support cholinergic function throughout the nervous system. Acetylcholine is important for neurotransmission in the nervous system and the cellular stress pathway. This study looked at how Lion's Mane affects acetylcholine neurotransmitters. This study used western blotting and immunofluorescence in order to determine presence of VAChT in mouse GI tract samples treated with Lion's Mane. Decreased VAChT expression is linked towards neurological and cognitive alterations. The acetylcholine released in neurons indicates alterations in neuroprotective properties for increased stress resilience. The effects of Lion's Mane supplementation on stress resilience shows promise for natural dietary interventions in improving women's brain health.

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***Exploring the Intersection Between Faith and Medicine***

Author(s): Leila Powell

Advisor: Professor Shoshana Katzman

**Abstract**: As a pre-medical master's student at Agnes Scott College, I participated in a 4-month internship experience at Piedmont Henry Hospital. In this experience, I engaged in and developed numerous core professional competencies, which are skill sets that medical schools seek in prospective students and future physicians. Based on my experience, this internship

helped me develop and improve my interpersonal skills, empathy and compassion, and critical thinking. My primary role was to observe and ask questions about what I observed in the departments I circulated through. Throughout this experience, I discovered that practicing my own faith/religion within the department enhanced my experience and interactions with patients and healthcare professionals, aligning with the development of my core competencies. Furthermore, I learned a considerable amount about myself as I aim to become a physician, which has given me the opportunity to consistently monitor my behavior, the discipline required to enter the profession, and to take note of what I have learned to improve my interactions with my future patients and colleagues. This experience highlighted the importance of communication, knowledge, compassion, and professionalism required for a successful physician and or a singular shift within a department.

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***Sexual Violence and Institutional Failure: A Human Rights Issue***

Author(s): Lideya Mullualem

Advisor: Professor Sharmin Sadequee

**Abstract**: This project examines how institutional failures contribute to the persistence of sexual violence, using Atlanta as a case study. While sexual violence is often viewed as an individual act, this analysis argues that systems such as universities, law enforcement, and legal institutions play a major role in shaping outcomes for survivors. The project draws on a qualitative review of research on reporting barriers, institutional responses, and human rights frameworks, along with an analysis of campus policies and local support systems in Atlanta. Findings show that underreporting, victim-blaming, lack of transparency, and weak accountability systems discourage survivors from coming forward and limit access to justice. Institutions often prioritize reputation and liability over survivor wellbeing, reinforcing harm. These patterns demonstrate how institutional responses can act as barriers rather than sources of protection. From a human rights perspective, these failures violate the rights to safety, dignity, and equal protection under the law. The project emphasizes the need for structural reform, including survivor-centered policies and stronger accountability measures.

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***Crossroads of Identity Conflict in Undergraduate and Graduate Students of Color***

Author(s): Madisyn Porcena

Advisor: Professor Peeper McDonald

**Abstract**: This study explored whether identity conflict differed between graduate and undergraduate students, and whether these differences would be present for Black and multiracial students. Prior research (Mills, 2020; Vaccaro, 2017) shows that students of color at predominantly White institutions often feel pressure to adapt to institutional norms while staying true to their cultural values. The final data were analyzed using independent t-tests for a total of 121 participants from a larger pool of individuals who completed an online survey. The survey instrument included items from the Aspects of Identity Questionnaire–IV (AIQ-IV). Findings show that graduate students reported higher identity conflict, but this difference was not statistically significant. Identity conflict did not differ between Black undergraduate and Black graduate students, nor between multiracial undergraduates and multiracial graduate students. These nonsignificant findings were likely influenced by small sub-sample sizes. Overall, the study highlights the need for more racially diverse and multiracially inclusive samples to better understand how identity conflict varies across academic levels and racialized experiences.

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***Rage Baiting Interviews: Anger's Influence on Anchoring Effects in Salary Negotiation***

Author(s): Makayla Myles, Kai Edem, and Cadi Zoeller

Advisor: Professor Brielle James

**Abstract**: Anchoring effects occur when people rely too much on a piece of prior information when making judgments. The information, referred to as "anchors," can affect decisions even when implausible. There is differing research into how emotional state may impact the anchoring effect and subsequent decisions. This project explored how anger may influence the anchoring effect. Undergraduate students at Agnes Scott College completed an online survey. Participants read a short vignette about an internship salary negotiation scenario in which they are given a financial package offer after a brief backstory where they had a negative past roommate relationship with the interviewer. The vignette included either a high or low anchor by manipulating the dollar amount the participants would receive upon acceptance of the offer to be either $2,160 or $4,320. Participants then had to respond with a counteroffer to the financial package or accept the offer given. The results of this study will inform research about the possible relationship between emotions and decision-making when presented with the anchoring effect. The results may have implications for the robustness of negotiation processes in interviews and professional settings.

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***The Self-Esteem and Positive Depictions of Black People in the Media***

Author(s): Melissa Parker and Cedra Davis

Advisor: Professor Stephanie Stern

**Abstract**: The presentation examined the relationship between self-esteem and positive portrayals of Black people in popular media. This study was motivated by the abundance of research on the effects of negative depictions of Black people, using terms such as ghetto, ignorant, and violent (Ward & Bridgewater, 2023). These negative portrayals have been shown to reduce self-efficacy and self-esteem, especially among adolescents heavily engaged with media (Ward & Bridgewater, 2023). However, there had been little research on positive depictions and their effects on self-esteem. Consequently, it was hypothesized that increased exposure to positive portrayals would be associated with higher self-esteem, particularly among Black individuals. The results demonstrated that there was no significant relationship found between the two variables.

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***Identifying mRNAs Bound by the Yeast Imd2 Enzyme***

Author(s): Reaghan Pierre

Advisor: Professor Sarah Mitchell

**Abstract**: Inosine Monophosphate Dehydrogenase (IMPDH) is an enzyme that catalyzes the rate limiting step in the synthesis of guanine nucleotides. Mutations in IMPDH are known to cause disease in humans but the mechanism is not completely understood. Prior research shows that IMPDH binds to messenger RNA (mRNA), but the type of mRNAs bound and the biological role of this interaction is still unclear. Previous work in the Mitchell lab has identified mRNAs bound to two of the three yeast paralogs of IMPDH, Imd3 and Imd4. While these enzymes bind a highly overlapping set of mRNAs, mRNAs bound by the third yeast IMPDH enzyme, Imd2 have not yet been identified. Imd2 differs from the other two yeast IMPDH enzymes in several ways, suggesting it may also differ in mRNA regulation. We are working to isolate mRNAs bound by Imd2 and identify them by sequencing. The low level of expression of the Imd2 protein has posed a challenge in these studies. Understanding how IMDPH regulates mRNAs will reveal a new aspect of mRNA biology and deepen our understanding of this key enzyme.

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***Child Labor and Consumer Responsibility: Local Advocacy Efforts on Global Issues***

Author(s): Ryan Schmidt, Dalyn Washington, and Dymond Greene

Advisor: Professor Sharmin Sadequee

**Abstract**: This project explores the relationship between child labor, ethical consumption, and human rights, focusing on how these big global concepts appear at the local level. In collaboration with Voices for Georgia's Children, this study examines how child advocacy organizations make children's rights frameworks more relevant and understandable in everyday life, enabling communities to better understand and act on these issues. Specifically, this study analyses how local organizations connect global human rights principles to everyday consumer choices and individual responsibility. It explores the role of human rights education, advocacy efforts, and child labor awareness in shaping understanding of these concerns. The findings suggest that while global human rights frameworks are strong, their impact is limited without local application. Organizations like Voices for Georgia's Children help bridge that gap by raising awareness, influencing policy, and encouraging more intentional consumer behavior. Overall, this project highlights how ethical consumption is shaped by awareness, education, and local advocacy efforts, emphasizing the importance of connecting global human rights to everyday decisions.

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***Effects of R-Group Substitution on Intermolecular Interactions Between Estrogen Receptor α and Antagonists***

Author(s): Tamia Smith

Advisor: Professor Mi-Sun Kim

**Abstract**: Estrogen receptor α is heavily expressed in the breast as well as the uterus, ovarian theca cells, in the prostate stroma, in Leydig cells in the testis, epididymis, and the liver. These receptors can promote the growth of cancer cells, so antagonists are used as a method of cancer treatment. Antagonists are drugs that bind to the ligand-binding domain of a receptor and inhibit its function. The two Erα antagonists analyzed were Tamoxifen and Raloxifene(Begam et al., 2017). The purpose of this research is to analyze the intermolecular bonds between Erα and Tamoxifen and Raloxifene, as well as analyzing the effects of R-group substitution on the interactions between Erα and antagonists. In order to achieve this Schrödinger Maestro was used to prepare the protein and perform R-enumeration. The common intermolecular forces observed were π-π stacking interactions, salt-bridge interactions, and hydrogen bonding interactions. An R group was modified on Tamoxifen in which the same interaction was displayed as the group it replaced.

***Scrolling vs. Self: How Social Media Identity Distress Relates to Undergraduate Well-Being and Gender***

Author(s): Tanvi Tummalapalli

Advisor: Professor Peeper McDonald

**Abstract**: Social media has become an integral part of daily life for young adults, shaping how they define and present themselves. This study examined how social media identity distress relates to psychological well-being among undergraduate students and whether gender differences exist in these experiences. It was predicted that higher identity distress would be associated with lower psychological well-being, that women would report higher distress than men, and that women would report lower well-being. Participants included 136 undergraduate students recruited from a Southeastern college and using convenience sampling via social media (73 men, 63 women). Students completed measures of social media identity distress and psychological well-being. Results showed that students who experienced greater identity distress related to their social media use also reported lower levels of psychological well-being. Contrary to expectations, men reported higher social media identity distress than women, and there were no significant gender differences in psychological well-being. These findings suggest that identity conflict on social media can negatively influence mental health for college students. The study highlights the importance of developing programs that promote digital authenticity and emotional awareness to help students navigate online identity pressures and enhance their overall well-being.

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***Avant Psychiatry Internship; Insights into Human Behavior and Collaboration***

Author(s): Thurneisha Keys

Advisor: Professor Shoshana Katzman

**Abstract**: As a masters student in a medical science program, I pursued an internship at Avant Psychiatry to gain hands- on clinical exposure and strength During my internship, I helped prepare patient documentation, organize clinical materials, and keep the workflow running smoothly during appointments. I also observed interactions between patients and providers, which gave me a better understanding of how psychiatric care is delivered in a real clinical environment. Through this experience, I developed skills in teamwork and collaboration as well as a stronger understanding of human behavior. Working alongside clinical staff, I learned how important communication, shared responsibility, and staying organized are in a fast-paced setting. I also observed how patients presented with conditions like anxiety and depression and how providers assessed these symptoms by looking at biological, psychological, and social

factors. This helped me start thinking more critically about how patient behaviors connect to diagnosis and treatment. Overall, this experience showed me how important teamwork and behavioral understanding are in healthcare. It helped me grow as a future physician by improving my ability to work with others, communicate effectively, and take a more holistic, patient centered approach to care.

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***Clinical Exposure and Competency Development***

Author(s): Troy'Lynne LaBranch

Advisor: Professor Shoshana Katzman

**Abstract**: I am a Master of Science in Medical Sciences student at Agnes Scott College who completed an internship at Piedmont Henry Hospital. During this experience, I rotated through multiple departments, observing the day-to-day workflow of patient care and healthcare professionals across different settings. My most impactful experiences occurred in endoscopy and surgery, where I observed procedures and patient care in both pre- and intra-operative settings. These rotations strengthened my competencies in communication and teamwork. In endoscopy, I observed how providers clearly explained procedures to patients and worked together to maintain an efficient workflow before and during procedures. In surgery, I observed ENT procedures such as tonsil and sinus surgeries, where effective teamwork and precise communication between the surgical team were essential for maintaining patient safety. These experiences showed me that successful patient care depends on both clear, patient-centered communication and strong collaboration among healthcare professionals. Through this internship, I gained a deeper understanding of how these competencies work together in high-pressure clinical environments and how I can apply them in my future career.

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***Structural Analysis of ERα Antagonist Binding and Its Role in Ligand Modification***

Author(s): Troy'Lynne LaBranch

Advisor: Professor Mi-Sun Kim

**Abstract**: Estrogen receptor alpha (ERα) is an important target in hormone-responsive breast cancer, but mutations such as Y537S can lead to resistance by altering ligand binding. This study investigated how structural differences among ERα antagonist-bound X-ray crystal structures affect ligand interactions and how these differences can guide ligand modification. Three ERα ligand-binding domain structures were analyzed: two wild-type (1R5K and 1X7E) and one Y537S mutant (7UJW). Structures were prepared and aligned in Maestro, and ligand interaction

diagrams were used to compare binding interactions. Alignment results showed strong global structural similarity, with low RMSD values indicating that the overall protein structure is conserved. However, differences were observed within the binding pocket. In the wild-type structures, key interactions involved residues such as Asp351, Glu353, and Arg394. In contrast, the mutant structure showed reduced involvement of Asp351 and increased hydrophobic interactions, with the ligand positioned deeper in the binding pocket. These results suggest that mutation-associated changes affect local binding interactions rather than the overall protein structure. Based on these findings, future ligand design will focus on maintaining the core scaffold while modifying peripheral groups to improve interactions with key residues and better fit the altered binding environment in the mutant receptor.

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***Attachment Style and Archetypes***

Author(s): Zadeea Graham and Jourdyn Peoples

Advisor: Professor Stephanie Stern

**Abstract**: This poster explores the relationship between adult attachment styles and the archetypes of individuals' preferred fictional characters. Attachment style influences the strength of parasocial relationships, with people varying in how intensely they connect with media figures based on their attachment orientation (Cohen, 2004; Cole & Leets, 1999). Furthermore, individuals tend to favor characters that mirror aspects of their own personality, with perceived similarity affecting both character preference and parasocial engagement (Gardner & Knowles, 2008; Webster & Campbell, 2023). Attachment theory suggests that secure, anxious, and avoidant attachment styles shape how people view closeness, trust, and emotional bonds, and these patterns may also appear in parasocial relationships (Collins & Read, 1990). Archetypes categorize fictional characters based on shared personality traits and narrative roles (Faber & Mayer, 2009). However, limited research has examined whether attachment style is linked to preferences for specific character archetypes. This study examines whether attachment style influences preference for certain archetypes, based on the hypothesis that attachment orientation will correlate with archetype preference, reflecting underlying interpersonal tendencies in character selection. Participants (N = 21) completed the Adult Attachment Scale and identified a favorite fictional character, which was then categorized into an archetype cluster.

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***Unveiling the Systematic Review Process Through the Lens of Nucleic Acid Therapy in Duchenne Muscular Dystrophy***

Author(s): Zohra Wadhwania

Advisor: Professor Thalita Abrahao

**Abstract**: Systematic reviews are the cornerstone of evidence-based practice, providing a thorough and transparent framework for synthesizing scientific data while reducing bias, ultimately producing meaningful insights from the collective body of research. In a graduate-level research course, we studied and applied the core elements of a systematic review of interventions. As a practical example, we examined nucleic acid therapies (NATs) for treating Duchenne Muscular Dystrophy (DMD). The key principles and methodology of systematic reviews are summarized in four steps: planning, literature search, data extraction, and reporting. From a graduate student perspective, using real-world examples such as nucleic acid therapy trials can enhance understanding of the systematic review process while emphasizing their practical value in transforming scattered, inconsistent, and sometimes conflicting evidence into a coherent and reliable synthesis to inform clinical practice and policy.

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## Music Performance, 1:40-2:20pm  Maclean Auditorium, Presser Hall

***Solo Voice Recital***

Author(s): Ryan Barber

Advisor: Professor Dawn-Marie James

**Abstract**: This SpARC presentation takes the form of a solo voice recital and serves as the culmination of Ryan Barber's work over her past six semesters of voice lessons. The program includes arias, art songs, arranged African-American spirituals, and musical theater selections. This wide selection of songs will be performed in Italian, German, Spanish, and English. Ryan Barber is a senior from Durham, North Carolina, majoring in Creative Arts with a music concentration and minoring in Spanish. She is a mezzo soprano from the studio of Dawn-Marie James, and is accompanied by Dr. Wooyoung Kwon on piano.

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## Theatre & Dance Performances, 2:30-3:35pm Winter Theater

***Untitled***

Author(s): Aster Coffman

Advisor: Professor Bridget Roosa

**Abstract**: This piece is a study of the interactions between women in scenarios such as the Handmaid's Tale, with parallels drawn to current events. The plot follows four women who are experiencing the horrors of their situation together, with the culminating event being one woman's attempt to escape.

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***I Like to People Watch on Busy City Streets***

Author(s): Zara Johnson, Annette Rodriguez, Narnia Blackwell, Angela Seoung-Matthews, and Sinai Lockett

Advisor: Professor Bridget Roosa

**Abstract**: This performance explores, through dance, the community and diversity found in cities and crowds.

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***Chance Encounter (2026)***

Author(s): Marley Crosby

Advisor: Professor Bridget Roosa

**Abstract**: "Chance Encounter" (2026) is a choreographed duet that explores a tumultuous relationship between two entities representing a person and a recurring omen or sign from the universe. Beginning with their chance meeting, an invisible and unknown force pushes them together and forces them apart, while their own emotions attempt to take control. The movement draws inspiration from Modern and Post-Modern styles, as well as influence from Hip-Hop and Contact Improvisation, to portray moments of harmony and tension as the dancers move together and attempt to hold onto their individual identities. Music: "Recovery" by LVDF

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***The Call/Breath of fire***

Author(s): Annette Rodriguez

Advisor: Professor Bridget Roosa

**Abstract**: This solo performance by Doris Humphrey is a very significant piece in the history of modern dance. This illustrates the early development of modern dance and the growth of the individual. Humphery's describes this performance as a "call to a new vision."

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***Easy Bake Oven***

Author(s): Alecia Brown

Advisor: Professor Tracey Laird

**Abstract**: Easy Bake Oven is a 10-minute drama that explores the tense relationship of two sisters, Charlie and Bridget. Charlie tries to understand their dynamic over a series of dinner conversations and reflection. The work has realist elements, with the story based on interactions the author and her sister have had over the past year. Charlie, the youngest of her mother's children, has spent most of her life living without siblings. Because of their twenty year age gap, Bridget is in her mid forties while Charlie is in her early twenties, Charlie has struggled especially to connect with her sister. This is the case despite living with her sister for some time as a preteen and now, as a young adult, Charlie has complicated feelings to remedy about her sister. Although very personal, this work explores nuanced feelings about family dynamics, love, and the ability to move on that characterize the human experience. Development for this project began in December, with an extended period of proximity between two real-life sisters, making it impossible to avoid reflecting on their relationship and how it has evolved. Through writing multiple drafts of the script and overseeing rehearsals, alongside initiating positive real-life interactions with her sister, the author was able to explore the sibling dynamic and reach an inner resolution about their relationship.

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## 2:30-3:15pm Teasley

***Beyond Artificial Intelligence: Professional Integrity in a Digital Era***

Author(s): Shanvanth Arnipalli, Danielle Carter, Em Boyle, Sharodon Jenkins, and Thurneisha Keys

Advisor: Lauren Harris

**Abstract**: The Graduate Honor Council will hold intentional dialogue space called a listening lab. The listening lab would engage participants to explore past emerging technology as a bridge to contextualize future impacts that Artificial Intelligence will have on professions, information, and workspaces in healthcare and education. The learning objectives are the following.
- Engage in reflective dialogue that allows us to think of the responsible use of emerging technologies.
- Understand how increased access to globalizing technology affects professional roles with respect to accountability, and learning.
- Evaluating the ethical concerns of Artificial Intelligence (AI) in healthcare and education.
The objectives were formed based on the three tenets of integrity (ethics, accountability and professionalism) that were established through the ASC faculty/staff integrity committee AY 24'-25'.

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## 2:30-2:45pm Bullock 102W

***Crushing Reef:a visual novel***

Author(s): J. Bell

Advisor: Professor Tracey Laird

**Abstract**: Crushing Reef is a visual novel that tells the story of three teenagers Margot, Cari and Becket, who live in a dystopian future where humanity is relegated to floating suburbs. The three take Margo's stepfather's speed boat for a joy ride and, after a game of spin gone wrong, they discover a devastating secret that endangers everyone they know. A visual novel is a genre of narrative-based video game in which the story is told through dialogue options, sprites [a technical term meaning one-to-two-frame animation cells for characters to emote and react to player choices], backgrounds, music, and voice acting. In this case, the game's core themes are the trust between parent and child, and the trust needed to make a community. Players can achieve one of five endings based on a series of multiple-choice questions that will determine preset story beats. The vehicle for presenting Crushing Reef will be a pitch deck, a format used to present a game idea to developers and studio executives. The presentation includes cover art as well as art for each character, a summary of the game narrative, and a two-to-three-minute gameplay demo. The demo will show how players interact with the characters using the dialogue options, and how that pushes forward the story. Finally, it will describe two comparable games on the market and advocate for how Crushing Reef innovates and advances the genre of visual novels.

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## 2:30-2:45pm Bullock 209

***A Study of Agnes Scott Campus Buildings for Lead in Interior Paint***

Author(s): Paige Kelly

Advisor: Professor Ruth Riter

**Abstract**: This presentation is a culmination of my semester-long analytical research to determine if detectable amounts of lead are present in various interior paint samples across the Agnes Scott campus. I have focused on buildings that have not experienced major renovations since 1978 when the Lead Based Paint Poisoning Prevention Act was passed. These buildings include Dana, Inman, Walters, Winship, Buttrick, and Presser. My findings and potential treatment methods will be discussed.

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## 2:30-2:45pm Bullock 308

***Politicizing the Sisterhood: Identity, Belonging, and Politics Within Sororities***

Author(s): Kylah Adams

Advisor: Professor Eleanor Morris

**Abstract**: This study examines how political discourse about participation, particularly voting, occurs within collegiate sororities and how intersecting identities shape members' willingness to engage in these conversations. While political participation is often understood as an individual behavior, this project utilizes feminist theory to reconceptualize it as a social and discursive process shaped by norms of belonging, identity, and social dynamics within group spaces. Drawing on feminist standpoint theory, social identity theory, and intersectionality, this research explores how race, sexuality, socioeconomic status, and strength of sorority affiliation influence both the risks and possibilities of engaging in political dialogue. Using preliminary qualitative interviews with members of sororities situated in varying contexts, this study investigates how organizational culture and identity structure when, how, and whether political conversations become possible. By centering discourse as a form of participation, this project contributes to broader understandings of political engagement as socially embedded, highlighting sororities as critical yet understudied sites of political socialization and identity negotiation.

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## 2:30-2:45pm Bullock 210E

***Mapping Nantes through the Lais of Marie de France and Study Abroad***

Author(s): Camilla Hope

Advisor: Professor Julia Knowlton

**Abstract**: “The one to whom God has given understanding and a gift for speaking, must neither remain silent nor hide it, but he must be willing to show it.” Marie de France (1160-1215), known as the first poet (male or female) to write in French, created a trend of preserving memory. My presentation begins with an overview of who Marie de France was, what life was like for women in medieval France, and the literary significance of her writing. I will discuss the themes of her book’s Prologue, which was a letter to a king, assumed to be Henry ll of England, a profound and brave thing for a woman to write at that time. This presentation will explore Marie de France’s story "The Lay of Chaitivel," set in the city of Nantes. By retelling the story of the Lady of Nantes and her four suitors, I will show the connection between the writing style in Marie de France’s Prologue and "The Lay of Chaitevel," both of which are in French and will be translated into English. Finally, I will compare Marie de France’s texts and the present by connecting these stories to my own experience while studying abroad in Nantes. By reflecting on my time there and the city’s landmarks and culture, I aim to provide context and photos of the city mentioned in the story while sharing with students the importance of studying abroad. I hope to share how my semester in Nantes allowed me to connect with Marie de France’s writing in a way that goes beyond reading her book. I am submitting another Sparc presentation (Economics Senior Seminar) and wanted to let you know to avoid a schedule conflict.

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## 2:30-2:45pm Bullock 103W

***"But You Don't Look Autistic:" Diagnostic Bias in Perceptions of Black and White Women***

Author(s): Chandler Grant

Advisor: Professor Stephanie Stern

**Abstract**: Black women are underrepresented in Autism research, leading to a lack of understanding of how Autism may present among them (Lovelace et al., 2021; Secci et al., 2023). Given this, Black women go underdiagnosed and/or wrongfully diagnosed with other conditions (e.g. Attention-Deficit/Hyperactivity Disorder (ADHD), Generalized Anxiety Disorder (GAD) or behavioral disorders (e.g. Oppositional Defiant Disorder (ODD), as opposed to Autism (Dupuis et al., 2022; Lovelace et al., 2021; Obeid et al., 2020). This study examined whether

participants more readily associated Autism symptoms, as opposed to other mental health conditions or behavioral disorders, with a White subject than a Black subject. Participants were randomly assigned the Black or White Condition, where those in the Black condition read about Black women, and those in the White condition read about White women. They were then asked to identify whether they thought the subject had Autism, Oppositional Defiant Disorder, Attention-Deficit/Hyperactive Disorder, Generalized Anxiety Disorder, or no disorder. There was no relationship found between race and the mental condition chosen by participants.

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## 2:30-2:45pm Bullock 112W

***Using Program Evaluation to Analyze a Diabetes Self-Management Program at a Local Health Clinic***

Author(s): Iris Ray, Rhyenne Jenkins, Yarelis Arevalo, and Briuna Edmond

Advisor: Professor Erin Bradley

**Abstract**: In spring 2025, students from the public health department's program evaluation course collaborated with a local community health clinic to develop a Culturally Responsive and Equitable Evaluation (CREE) plan for their Diabetes Self-Management Education and Support (DSMES) program. The DSMES program focuses on patients who have uncontrolled type 2 diabetes and aims to increase their diabetes knowledge, help them create healthier lifestyle habits, and enhance overall diabetes self-management. Students from the spring 2026 program evaluation course continued the evaluation process by analyzing de-identified patient data from the baseline questionnaire. Our analysis utilizing descriptive statistics examined the patients' knowledge of diabetes, which is a critical factor in effective diabetes management. Using the knowledge assessment, we aim to identify patterns that reveal where patients lack critical diabetes information. This analysis of the data from the questionnaire will give insight needed to make possible improvements to the DSMES program.

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## 2:50-3:05pm Bullock 209

***Using Eye-Tracking to Explore Perception of Sources of Information: AI or Expert?***

Author(s): Sophie Boilard

Advisor: Professor Bonnie Perdue

**Abstract**: This project investigates how people process and interact with AI-generated information compared to expert-authored information during online searches. As artificial intelligence is a larger component in day-to-day living, it matters that we understand how users process sources that compete for their attention. Instead of just asking whether people trust these sources or think they're accurate, this research digs into how people actually gather information—specifically, where their attention goes when multiple sources appear simultaneously. Using a within-subjects experimental design, participants view simulated search engine results pages while their eye movements are recorded. Each page presents a question alongside both an AI-generated response and an expert-authored response, with source order systematically varied to control for position effects. Eye-tracking measures, including fixation duration and count within defined areas of interest, are used to capture patterns of visual attention. Following the eye-tracking task, participants completed a self-report survey assessing AI usage and information-seeking behaviors, allowing for comparison between their self-reported processing and directly measured attention allocation. We also compared engagement changes depending on the nature of the question—fact or opinion. Expected results could reveal clear gaps between what people think they do and what they actually do when gathering information. This work offers insight into how AI is shaping the way individuals navigate, prioritize, and process information in real time.

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## 2:50-3:05pm Bullock 308

### *Engineering Trust: How Technical and Institutional Structures Enabled U.S.–Russian Collaboration in Space*

Author(s): Isabelle Adams

Advisor: Professor Eleanor Morris

**Abstract**: The partnership between the US and Russian space programs has no single origin point. It was a product of an immensely complex military and political situation and resulted in a strong working relationship between two otherwise antagonistic nations. The most influential current space mission is the International Space Station, a joint mission between the National Aeronautics and Space Administration (NASA), Russia, Canada, Japan, and the European Space Agency (ESA). In light of current geopolitical relationships, four out of five of these partners make sense. But how is it that Russia, a long time opponent of NATO and Japan, is a critical partner in this project, without which it would never have been possible? This might seem like a somewhat obscure question, however, space is rapidly becoming a vital frontier for both military and civilian exploration and development. It is clear, now more than ever, that we must learn how to share space with each other and work together to ensure the safety of everyone in orbit and that space will not become a weapon. This paper seeks to understand the historical origins of one of the most influential, if counterintuitive, partnerships in space and examines

the major factors that made it a success. And after establishing a framework for understanding collaboration in space, it will look at what happens when partnerships break down and the consequences of working in isolation.

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## 2:50-3:05pm Bullock 304E

***The use of Artificial Intelligence in Neglected Tropical Diseases and Global Mental Health***

Author(s): Sasha Mack

Advisor: Professor Amy Patterson

**Abstract**: This presentation summarizes the results of two literature reviews about uses of AI in global health, one with the focus on NTDs and one on global mental health. Literature platforms such as PubMed and Google Scholar were used to collect literature. Articles kept included NTDS covered by the Carter Center, ML, or GenAI models, articles focusing on AI in mental health training and clinical decision-making. Articles about AI being used by patients, NTDS not Carter Center related, and non-ML or GenAI models were excluded. Results showed that AI was used for drug discovery and diagnosis, and was a tool for areas with limited resources because it had accuracy equivalent to human experts. For mental health training, AI could be used in blended training for areas that have limited resources to train health providers, and it could be used as a tool to create treatment plans. AI was less accurate when considering cultural differences and empathy in mental health diagnosis. AI could be helpful during resource scarcity, but some issues exist. Diagnosis errors occur, and there are biases and privacy risks. Field standards should be created, and training data should be specific to the country of interest. In conclusion, AI could be a tool that makes treating NTDs and global mental health easier and more effective, but there are considerations to be held, and its results should be considered carefully.

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## 2:50-3:05pm Bullock 102W

***The Microsoft SCALE Experience***

Author(s): Kayla Cuthbert, Morgan Ingram, and Jibek Ibraeva

Advisor: Professor Stacey Dutton

**Abstract**: This presentation examines the SCALE (Sophomore Class Atlanta Leadership Experience) externship within Microsoft and how it introduced students to workplace culture, leadership, innovation, and the growing role of artificial intelligence (AI). It explores how Microsoft's values and environment shape professional development and collaboration, while highlighting how AI is integrated into both daily life and future career pathways. The

presentation also discusses leadership approaches within the company, society's use of AI, and an applied AI project developed during the externship. Overall, exposure to Microsoft through SCALE shaped students' understanding of innovation, leadership, and artificial intelligence, while influencing future academic and professional aspirations.

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## 2:50-3:05pm Bullock 112W

***Program Evaluation as a Tool to Promote Diabetes Self-Management at a Local Community Health Clinic***

Author(s): Gianna Urrego, Amna Elbeiti, Mari Radtke, and Zoe Price

Advisor: Professor Erin Bradley

**Abstract**: Public health program evaluation assesses the design, implementation, and health outcomes of interventions and plays a significant role in understanding the efficacy and equity of these programs in relation to the community's needs. This spring, students from the public health program evaluation course partnered with a local community health clinic to analyze evaluation data from their Diabetes Self-Management Education and Support (DSMES) program, which was implemented with patients who have uncontrolled type 2 diabetes. Diabetes self-management is vital for the health of patients, as it allows them to address their health needs holistically, helping them experience fewer symptoms of diabetes and live longer lives without intensive medical intervention. Diabetes self-management behaviors include following a diabetes-friendly diet, engaging in physical activity, adhering to prescribed medication, and monitoring glucose levels. To understand how well the emerging DSMES program is performing at educating patients about diabetes management, our team analyzed de-identified data, generating descriptive statistics and analyzing self-management behaviors practiced by patients with different lengths of diagnosis. This evaluation will help the health clinic calibrate their DSMES program going forward and develop a program better tailored to their community.

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## 2:50-3:05pm Bullock 210E

***Bird in a Cage: The Nightingale as a Symbol for Female Entrapment and Liberation within Marie De France's Le Laüstic***

Author(s): Aurora Harkins

Advisor: Professor Julia Knowlton

**Abstract**: Marie de France, a notable literary powerhouse in medieval France who wrote between the years of 1160-1215 CE, has recently been renowned as a prominent feminist figure for modern scholars. Considered to be the first female French poet, Marie de France's most iconic work is her Lais, a collection of narrative poems exploring themes of love, adventure, betrayal, and fate. Most importantly however, her Lais contains an underarching theme of female entrapment and empowerment within medieval France. This work will explore the theme of female exploitation and liberation within Marie de France's Le Laüstic, or The Nightingale, through careful analysis of various English and French translations. Particular focus will be placed on the nightingale and its symbolic presence in the poem, as a physical representation for the entrapment of women.

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## 2:50-3:05pm Bullock 103W

***Recreational Landscape of the Mississippi River***

Author(s): Nora Fairbanks

Advisor: Professor Amy Patterson

**Abstract**: How do recreational relationships with the Mississippi River change from source to sea? The Mississippi River is one of the longest rivers in the country, and a vital hub of both commercial and recreational traffic. This research aimed to understand the recreational landscape in three distinct sections: Northern Minnesota, Missouri, and Louisiana. This was conducted as part of a program called the River Semester, four months spent paddling and camping along the Mississippi River. I took a mixed methods observational approach, collecting frequency data for boat traffic on the water, field notes, and quotes from informal unstructured interviews with residents. From North to South commercial traffic greatly increases, and recreation predominantly moves from on-water to on-shore. Residents further South also interact with more pollution, especially in Cancer Alley, an 80 mile stretch of the river that houses about 25% of the country's petrochemical industry. Recreational relationships in Cancer Alley emerged as a distinct focus point in the overall project. The recreational landscape of the Mississippi River is varied along its length and residents live under very different contexts. Incorporating river-long thinking into recreational planning can strengthen connections between residents along the river.

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## 3:10-3:25pm Bullock 308

***Too Much and Simultaneously Not Enough: Understanding the Effects of Civic Programming on Student Political Efficacy***

Author(s): Kylah Adams

Advisor: Professor Julia Gutiérrez

**Abstract**: This research proposal seeks to understand how higher education institutions function as sites of political socialization, with particular attention to how campus-based election initiatives shape students' perceived political efficacy. Situated within the context of the 2024 United States Presidential Election, as well as student reactions to the results, this research focuses on Agnes Scott College as a case study to explore how students experience institutional efforts to promote political participation. Drawing on scholarship that situates collegiate institutions as environments for identity formation, civic learning, and resource acquisition, this study engages existing literature on student involvement, political efficacy, and the unequal distribution of civic resources. This proposal's foundation is built upon Sandra Harding's Standpoint Theory, as well as Kimberlé Crenshaw's Intersectionality Theory, to produce a feminist methodological approach to answer questions surrounding the efficacy of students in this political climate.

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## 3:10-3:25pm Bullock 102W

***SCALE at the International Rescue Committee***

Author(s): Versailles Weigel, Sarah Fredrick, Erin Fox, and Aurora Porter

Advisor: Professor Julia Knowlton

**Abstract**: During our SCALE internship at the International Rescue Committee (IRC) in Atlanta, we gained firsthand insight into the organization's efforts to support refugees as they integrate and thrive within Georgia communities. The IRC serves as a centralized resource, offering a wide range of services including financial assistance, legal case management, adult and youth education, mental health counseling, and economic empowerment programs for individuals affected by humanitarian crises. Throughout the SCALE experience, we engaged with department leaders to better understand the scope of the IRC's work and the complex challenges faced by refugee populations in Atlanta. These discussions highlighted barriers such as language access, employment, and cultural adjustment. In addition to these learning opportunities, we contributed directly to IRC programming by assisting in ESOL (English as other language) classes and supporting the New Roots community garden initiative, which promotes

leadership skills in refugee youth. This experience deepened our understanding of the multifaceted needs of resettled populations and the importance of holistic, community-based support systems. In our presentation, we will reflect on our experiences, share key insights gained through both observation and participation, and highlight the impactful work being done by the IRC to empower individuals to rebuild their lives.

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## 3:10-3:25pm Bullock 112W

***Bridging the Gap Between Federal Work Study Experience and Career Development: The Utilization of a College Education for both Academic Pursuits and Hands-On Career Experience***

Author(s): Kylie Krause

Advisor: Chris Bishop

**Abstract**: This presentation details a model for bridging the gap between an undergraduate Federal Work Study experience and career development, specifically regarding the development of applied learning for prospective library science students interested in librarianship and the vast amount of career development resources that libraries provide. This need created the opportunity to develop and curate resources, including a robust virtual and physical professional book collection to address the needs of the library, given the varying needs of librarians to depend on one another for insight within their career field. In order to remedy the need for a vast virtual and physical professional book collection, there was a necessity for reviewing and updating library science-related texts in McCain's collection through a weeding and collection development process. This ultimately led to creating a dedicated professional collection. Further, there was a lack of information about librarianship career development, specifically regarding McCain's research guides, which led to the creation of a LibGuide featuring relevant book titles, internship and practical experience resources, interviews with library professionals, etc. To assure accuracy and usefulness for career development of librarians, the LibGuide was peer reviewed by McCain librarians. The product of this long-term Professional Librarianship Collection development project is an informative resource for both current and aspiring librarians that will outlive my time at Agnes Scott College. The LibGuide is a culmination of skills garnered throughout my three years of experience working in McCain Library, including hands-on work in multiple areas of responsibility.

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## 3:10-3:25pm Bullock 103W

***The Cultural Logic of Manifestation in Pulaani: How the Fulani of West and Central Africa Use Moral Philosophy to Produce Social Order and Collective Well-Being***

Author(s): Kalina Coleman and Kennedy McNeal

Advisor: Professor Douglas Falen

**Abstract**: This presentation examines the Fulani West African community's moral code of conduct, Pulaani, as a cultural framework that structures social behavior and shapes collective well-being across Fulani societies. It argues that Pulaani functions not only as an ethical system guiding interpersonal relations, but also as a mechanism through which ideas akin to "manifestation" are culturally produced and sustained. The Fulani are a widely dispersed Indigenous group found across West and Central Africa, including Senegal, The Gambia, Guinea, Guinea-Bissau, Mali, Niger, Nigeria, Cameroon, Chad, Burkina Faso, Sierra Leone, and the Central African Republic, and their shared code of Pulaani plays a critical role in maintaining social cohesion across these regions. This is because Pulaani operates as a structured set of values (emphasizing discipline, self-restraint, respect, and moral integrity) that governs both individual conduct and communal expectations. When examined through the anthropological frameworks of structuralism and functionalism, Pulaani reveals itself as both a symbolic system that organizes meaning and a functional tool that sustains societal stability. In this way, it mirrors key principles found in contemporary notions of manifestation, where one's internal state, behavior, and moral alignment are believed to influence external outcomes. However, unlike individualized Western interpretations of manifestation, Pulaani is collectively oriented, embedding personal conduct within a broader social and spiritual order. By situating Pulaani within these theoretical frameworks, this presentation demonstrates how Fulani moral philosophy offers an alternative, culturally grounded understanding of manifestation, one that is rooted in communal ethics, social responsibility, and the reproduction of harmonious society.

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## 3:10-3:25pm Bullock 304E

***From Training to Transformation: A Systematic Review of WHO's mhGAP Effectiveness in Enhancing Mental Health Care in LMICs***

Author(s): Olivia Yanes

Advisor: Professor Amy Patterson

**Abstract**: The disparity in mental health resources is a global crisis, particularly in Africa where there is an average of only one mental health worker per 100,000 people. This systematic

review conducted as a result of Agnes Scott College's Bevier program evaluates the effectiveness of the World Health Organization's Mental Health Gap Action Programme (mhGAP) in increasing the knowledge, attitudes, and clinical competence of primary healthcare practitioners in Low- and Middle-Income Countries (LMICs). Utilizing the PICO(TS) framework and tools such as Covidence and Research Rabbit, this study analyzed peer-reviewed, full-text articles published from 2010 onwards across three databases. The search targeted healthcare providers in LMICs, specifically assessing outcomes related to mental health service delivery and practitioner competence following mhGAP implementation.Preliminary findings indicate rapid gains in practitioner knowledge and confidence. In Ethiopia, the proportion of workers with "good knowledge" of psychosis rose from 34% to 87% post-training, with favorable attitudes surging from 34% to 89%. Significant increases in knowledge were also documented in Iraq (25%) and Uganda (18–20%). Furthermore, Nigerian workers saw a 30% improvement in diagnosing emotional complaints. While skill retention remains high at six to nine months, results suggest that management plans improved by 38% when supported by remote supervision, highlighting the necessity of ongoing support and refresher interventions. The mhGAP program is a highly effective tool for integrating mental health into primary care settings. To ensure long-term impact, future implementation should focus on telehealth integration, referral pathways, and refresher courses.

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