



Agnes Scott College
Spring Annual Research Conference
Tuesday, April 25, 2023

**9:00-9:45: WELCOME & POSTER SESSION (with refreshments) Bullock Science Center, 1st floor atrium
POSTER PARTICIPANTS, LISTED IN ORDER OF FIRST AUTHOR'S LAST NAME**

Prospective Metacognition in 3-5 Year Olds : Numberlink Mazes

Author(s): Ariana Almand, Leila Reed, Giselle Elizondo, Ariana Almand, Ari Martin, Bonnie Perdue

Advisor: Bonnie Perdue

Abstract: Metacognition is best defined as thinking about thinking, or the process of recognizing one's own cognitive abilities. Generally, prospective metacognition is understood as evaluating how one might perform cognitively by planning ahead or envisioning a future state. Research on prospective metacognition is limited; however, it is generally observed that young children display more overconfidence on metacognitive tasks than older children. In other words, young children tend to predict that they will do well on cognitive tasks regardless of actual performance. The current study follows the research collected from 3-5 year old participants who have undergone a multi-day program consisting of training and testing in the completion of numberlink mazes. These mazes were created in a manner that allowed researchers to manipulate the number of stimulus pairs to be matched (2 v. 3) and feasibility of maze completion (solvable v. impossible). Pairings of mazes were created in such a way that researchers could predict correct maze choice. If children were evaluating the future outcome of both mazes before selecting, we predicted that they would choose the 'correct' maze more often than chance. Behavioral patterns in which the 'correct' maze was selected were indicative of prospective metacognition. We also collected eye movement data to supplement the behavioral findings using a Tobii Nano Pro eye tracker. Results from this research will provide insight into understanding if children in this age group have developed prospective metacognitive abilities.

The Dirt on Farming: Comparing organic and conventional farming in Croatia to farming practices in the US?

Author(s): Mekdes Aniley

Advisor: Srebrenka Robic

Abstract: With conventional, plow-based agriculture eroding inches within decades or centuries, we are losing soil at an accelerated rate. Future generations' capacity to fulfill one of the most fundamental needs of growing food is in jeopardy. However, when the environment is used sustainably, humanity's present needs are met without endangering the welfare of future generations. This project explores conventional farming compared to organic farming in Croatia versus the USA, and the role of organic farming in achieving environmental sustainability.

Soils are the greatest terrestrial carbon sink, holding roughly three times as much carbon as aboveground biomass and twice as much as that found in the atmosphere. Considering agricultural land accounts for 37% of all habitable land on the planet, raising soil organic carbon (SOC) stocks is critical to climate change mitigation. The latest figures in Croatia show that in 2017, 4,023 organic farms were 96,516 hectares, which is only 6.36% of all used agricultural land under production. One of the factors influencing the growth of organic farming is the increase in understanding of its importance for preserving the environment and human health, as well as its economic advantages. Although agriculture is one of the primary causes of carbon depletion in soil and the increase of carbon dioxide gas in our atmosphere, research indicates that using organic methods can boost soil carbon levels while lowering greenhouse gas emissions, contributing to the fight against climate change.

Exploring the Relationship Between Past Redlining Grades and Current Lead Exposure

Author(s): Narmeen Babar

Advisor: Jennifer Kovacs

Abstract: Redlining refers to the practice of assigning different grades (A, B, C, or D) to neighborhoods to indicate whether they were deemed eligible for financial services, such as home loans. These grades were often based on the socioeconomic status and race of the people living in these areas. In this research, I will investigate whether there is a relationship between past redlining grades and current lead exposure. Previous research has shown a correlation between areas with low redlining grades in the past and a current population with low incomes. Individuals living in lower-income areas may be more likely to be exposed to lead because they reside in older homes, which are more susceptible to having lead-based paint. The United States only banned the use of lead-based paint in 1978. This study will compare the ages of homes in a given area, which will serve as an indicator for lead exposure, with their past redlining grade. My hypothesis is that areas assigned a redlining grade of D will have higher lead exposure than areas assigned grades of A, B, or C. This research is crucial because even minimal exposure to lead is harmful. In children, lead exposure can cause lower IQ scores, learning difficulties, and developmental delays, while in adults, it can lead to cognitive decline and high blood pressure. High levels of lead exposure can even result in death. Overall, this study contributes to the growing body of work which highlights the importance of examining the historical context of redlining and its lasting impact on health outcomes.

The Effects of Perceived Discrimination on Self-Esteem

Author(s): Rachel Barnes and Dr. Peeper McDonald, Dr. Peeper McDonald

Advisor: Peeper McDonald

Abstract: Discrimination is an issue many people face in their day-to-day lives, especially minoritized individuals (Romero et al., 2013). Repeatedly experiencing discrimination can lead to poor mental health such as depression (Lee & Turney, 2012). This also applies to perceived discrimination, when one simply believes they have been discriminated against. This study focuses on how perceived discrimination is related to one's self-esteem, specifically monoracial people, or people who identify with one race. It is essential to study this because low self-esteem can often lead to mental health issues. In this study, there were 253 participants, but to account for uncompleted surveys and missing values, 216 were used in the final analyses. Data for this study came from McDonald et al. (2019). Participants were recruited through social media, email, and from a group of undergraduate students who received academic credit for completing the survey. After running analyses, it was shown that there is a significant negative correlation between perceived discrimination and self-esteem. This correlation was seen in men and women but was much stronger in men. The results of this study imply that efforts should be made to reduce instances of perceived discrimination for the sake of one's mental health. Because men are not as exposed to discrimination as often as minoritized individuals, they should be taught effective coping skills for their self-esteem. The study also implies women may be more secure in their self-esteem when it is threatened than men.

Investigating gut dysbiosis in autism model mice.

Author(s): Milo Beauchamp, Delano, Bielamowicz, Rosie Hagel, Yommi Tadesse

Advisor: Jennifer Larimore

Abstract: Autism Spectrum Disorder in mice can often be characterized with seizures. Many prior research studies link seizure activity to a lack of short chain fatty acids (SCFAs) in the gut and the brain. SCFAs reduce inflammation through many of their structural and chemical properties. Inflammation in the brain can be linked to seizures. This research seeks to investigate the role of Short Chain fatty acids in an autism mouse model as opposed to a control model through western blot methods. The results of this research will be presented at SpARC.

Investigating β -lactam antibiotic resistance in the bacterium *Spirosoma linguale*

Author(s): Milo Beauchamp, Gabby Hall

Advisor: Tim Finco

Abstract: β -lactam antibiotics, such as penicillin, are the most commonly prescribed class of antibiotics. Many bacteria have developed resistance to β -lactam antibiotics through the acquisition of genes that encode β -lactamase enzymes, which bind and inactivate β -lactam antibiotics. As more bacteria acquire these genes, β -lactam antibiotics become less effective. It is essential to understand the prevalence of β -lactam antibiotic resistance so we can effectively treat dangerous diseases.

Spirosoma linguale is a prevalent bacterium found in various environments that has genes with structural features similar to β -lactamases. To date, these genes have not been tested for β -lactam antibiotic resistance, so it is uncertain if they are β -lactamase enzymes. This research aims to characterize seven of these genes for β -lactam antibiotic resistance.

To test for β -lactamase enzymes, we first isolated the genes through PCR. The genes were then inserted into a plasmid and transformed into *E. coli*. Finally, the transformed *E. coli* was exposed to 14 different β -lactam antibiotics, and the diameter of inhibited growth was measured to determine resistance.

Of the seven genes tested, none presented β -lactam antibiotic resistance. However, further research remains to be done for potential β -lactamase enzymes in other *Spirosoma linguale* genes. By determining other β -lactamase enzymes, researchers could mitigate risks of further antibiotic resistance.

The comparison of Rab 11 levels between neurotypical and autistic mice

Author(s): Saia Bennett, Yeni Hernandez, Blessing Love, Akilah Shah, Ayana Williams, Saia Bennett, Blessing Love, Akilah Shah, Ayana Williams

Advisor: Jennifer Larimore

Abstract: Autism Spectrum Disorder is a developmental disorder that can affect the way people interact, communicate and learn. Symptoms can show up at any time in a human being's life span and can include: eye contact avoidance, social cue recognition disparity, not responding to name being called, and restrictive or repetitive behaviors. Although, there isn't much research to confirm what specifically causes this disorder, there is research regarding the endosomal-lysosomal system and proteins of that system that are linked to

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neurodegenerative diseases; like Alzheimer's and may also be linked to the root of ASD. We explored RAB11 protein's possible correlation to ASD. To assess the RAB11 protein's involvement in ASD we used the Cs7/Black 6 mouse control group and SHANK3B Mice ASD model and collected data on the differences of abundance of the RAB11 protein maker for both groups. We then measured the RAB11 protein levels using the Western Blot and Immunofluorescence technique and analyzed our results. Our experiment supported our hypothesis that there will be a significant RAB11 increase in the SHANK3B Mice compared to the control. This implies that there is a strong correlation between the RAB11 protein and ASD

LAMP1 Expression in SHANK 3B Mice

Author(s): Delano Bielamowicz, Zadia Batten, DeBorah Brooks

Advisor: Jennifer Larimore

Abstract: This experiment examined the levels of LAMP 1 in SHANK3B and C57/B6 mice. SHANK3B mutants are a mouse model of Autism Spectrum Disorder (ASD), and the C57B6 mice are the neurotypical control. It is predicted that LAMP1 protein markers in Shank3B mice would remain higher compared to the C57B6 mice. LAMP1 is a lysosomal marker in which it is a catabolic station. This may affect the communication between neural synapses and intercellular communication, features which have been implicated in ASD. Thus, this may have an impact on the mutated SHANK3B mice. This was tested by comparing results from Western blot and immunofluorescence analysis of samples from the SHANK3B and C57/B6 mice.

Relationship of Sunk Cost and Race on Decision Making in College Students

Author(s): Trishyne Butler, YaNaffie Gomez

Advisor: Brielle James

Abstract: Sunk cost fallacy occurs when decision making is impacted by past investments such as money, effort, or time, even if the costs outweigh the benefits. This project will explore if race and sunk costs affect college students' decisions on whether to transfer colleges. Undergraduate students at Agnes Scott College completed an online survey where they read a short vignette about a college student's decision making process on whether they should transfer colleges. The vignette included either a high or low cost by manipulating the amount of tuition paid. The participants responded whether they would transfer schools or not given the situation. It was hypothesized that Black or African American college students will experience more sunk costs compared to other races when deciding on whether to transfer because of the investment they already put into college. The results of this study will inform research about sunk cost fallacy and its connections with race and decision making, while also reaching a new demographic, college students.

How Transgender and Gender Expansive Youth Experience Safety in Relationships

Author(s): Hayley M. Caldwell, Sophia L. Bellissimo, Samanta J. Cruz, Jennifer Fulling-Smith

Advisor: Jennifer Fulling-Smith

Abstract: This study aims to better understand how transgender and gender-expansive youth (TGEY) experience safety in relationships. This research is important because there has been little research of safety as a concept to

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TGEY. This study expands upon what prior studies had brushed over as protective factors or risk factors. Data used for this study was collected using semi-structured, in-depth interviews and analyzed using a qualitative phenomenological approach. Nine participants were gathered using purposive and snowball sampling and ranged in age from 13 to 17. Common themes included invested/supportive, created a supportive and safe environment, and respecting identity regarding safe relationships. With regard to unsafe relationships, all participants noted that a lack of respect for identity was a major contributor. Participants negotiated the detrimental effect that minority stress had on their overall well-being, however, they highlighted the positive impact that support systems had on their self-esteem and safety. Support systems allowed them to experience validation, respect, and reassurance. Oppression was a major factor in the experience of unsafe relationships due to experienced violence and oppressive systems. Expressing gender/identity development was discussed as a factor where unsafe relationships were connected to the pressure of gender norms and safe relationships to freedom to fully express themselves on the gender continuum. Resilience served as a protective factor against the effects of unsafe relationships. Counselors should receive more stringent training in regard to TGEY privacy and boundaries. Treatment for TGEY should focus on community building as a protective factor.

Insulin-like Peptides in Fruit Flies: A Sweet Story of Annotation

Author(s): Bridget Carter, Nino Kalandadze

Advisor: Srebrenka Robic

Abstract: The goal of this project is annotation of the insulin signaling pathway across a group of related fruit flies, belonging to the *Drosophila* genus. Gene annotation is the process of identifying and defining the structure of the gene, including its start and stop codons, its exons and introns, regulatory regions, and its genomic neighbors. Building a gene model uses multiple lines of evidence using experimental data, computational gene model predictions, and evolutionary conservation. We are annotating the Insulin-like peptides (ILPs) gene in *D. pseudoobscura*. ILPs play an important role in regulating the metabolism, growth, and reproduction in insects. The ILP system in the fruit fly *Drosophila melanogaster* has been extensively studied, but there is still much to be learned about ILP genes in other *Drosophila* species. Annotating genes across related species will help us understand the evolution of this pathway. This project is done in collaboration with Genomics Education Partnership (GEP), a collaboration of faculty from over 200 U.S. universities and colleges dedicated to providing undergraduates with experiential learning and Course-based Undergraduate Research Experiences (CUREs) centered in genomics and bioinformatics.

Effects of Exercising Wheel Exposure on Resilience to Anxiety- and Depression-Like Behaviors in Male C57/B6 Mice

Author(s): Nesrine Chabaane, Kristen Gilbert, Ty Kakkad, Brianna Njagi, and Esther Okamoto

Advisor: Jennifer Larimore

Abstract: Exercise has been shown to improve mood and reduce symptoms of anxiety and depression. In this study, male C57/B6 mice were exposed to an exercising wheel to investigate the impact of physical exercise on resilience to anxiety- and depression-like behaviors. Results showed that mice exposed to an exercising wheel had decreased immobility time in the forced swim test and increased exploration in the open field test compared to mice without exposure to an exercising wheel. These findings suggest that exercise may be a promising intervention for improving mood and reducing symptoms of anxiety and depression in male C57/B6 mice.

Designing Molecules for Cancer Treatment: The Synthesis of Ruthenium Dimers for Use in Boron Neutron Capture Therapy

Author(s): Irène Chapeau, Shutong Guo, Diana Elozory

Advisor: Leon Venable

Abstract: This presentation explores the synthesis of and uses for ruthenium dimers in Boron Neutron Capture Therapy (BNCT), a cancer treatment where boron is directed to a cancer cell and irradiated to destroy tumors on a small scale. It describes the design of targeting molecules to be used to limit a patient's exposure to radiation and chemotherapy drugs. The project aims to synthesize new molecules to be attached to carbon and boron structures, called carboranes, and to find the most efficient methods of synthesis. This is an ongoing project.

Women's Machinery: Chile (SERNAM)

Author(s): Emelia Guadalupe Delgado

Advisor: Mona Tajali

Abstract: SERNAM also known as Servicio Nacional de la Mujer was set during the early 90s in Chile. Within this service, they work to prompt gender equality within the state but to also work with government officials to implement policies aiming for gender equity. This can be said by them forming an Equal Opportunity Plan where they had designed a promotion of equal distribution of resources and tasks regarding the access of power between men and women rather than the value of women in an economic development setting. While looking at Shin M. Rai and using her five critical women machinery list, I will look at and evaluate how Chile has had a history of applying women as your stereotypical 'housewife' which was applied by the leftist during the dictatorship of Pinochet during the seventies and eighties and even beforehand. But to also see the forthcoming of how SERNAM played a key role in order to help these women, as being a mid-level organization, with resources for education, jobs, being a part of a democratic setting, and even becoming the head of the family, this being on how they progressed to move away from these types of implications or interpretations was set forth in history based upon the outlook of women back in the 70 and 80s. I will also see and cover how based on scholarly articles how the past is being changed for the new future to come for these women in Chile being so how they cooperate with NGOs to build up the state rather than going backward in the ministry.

Sleeping for Success: Understanding the Interplay between Behaviors, Health, and Wellbeing in a Post-Baccalaureate Program Student Population

Author(s): Savannah DeMil, MPH

Advisor: Carmen Carrion

Abstract: BACKGROUND: Inadequate sleep can have negative health implications and affect overall wellbeing. Undergraduate and graduate students are more likely than the general population to experience inadequate sleep quality, and poor sleep quality in these student populations has been associated with deleterious health and academic outcomes; however, similar data are limited on post-baccalaureate student populations. OBJECTIVE: This study aims to replicate a previous study of medical students' sleep and academic success in a post-baccalaureate pre-medical student population at Agnes Scott College (ASC). The primary objective of this

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presentation is to outline the methods for this project, and the secondary objective is to provide initial descriptive statistics of post-baccalaureate students' sleep duration, sleep quality, and academic performance. **METHODS:** An online Qualtrics survey was developed by compiling questions from several validated assessment tools. The survey was approved by ASC IRB and sent via email to all 2022-23 ASC post-baccalaureate students. Measures included participant demographics, wellbeing, mental health, technology use, sleep quality, sleep duration, sleep beliefs, and academic performance. Data analyses, including descriptive statistics and regression analysis, will be conducted using SPSS statistical software. **RESULTS:** Data collection is ongoing through the end of April 2023. The project methodology and survey questions will be presented, along with initial descriptive statistics. **CONCLUSION:** To our knowledge, this study is the first to assess sleep quality and academic performance among a post-baccalaureate student population. Results can be used to inform sleep interventions and health education messages for post-baccalaureate student populations.

An Investigation of How Different Gender Identities Experience Couple Privilege

Author(s): My "Kathy" Do, Sophie Harris

Advisor: Jennifer Hughes

Abstract: Couple privilege refers to the advantages, benefits, and accommodations that couples are automatically given in society over single people or non-nested partners (Shea, 2020). This research investigated the perception of couple privilege through the lens of different gender identities. We distributed an online survey and recruited 1,254 participants for the study. By using a two-way ANOVA, we found a statistically significant interaction between the effects of gender identity and relationship status, $F(5, 1179) = 16.63, p < .001$. Those who reported being single perceived greater couple privilege as compared to those in relationships, $F(1, 1179) = 5.75, p = .017$. Additionally, those who reported being a woman and those who identified as non-binary, agender, genderqueer, gender fluid, two-spirit, mähū, or muxe reported greater couple privilege as compared to those who identified as men, $F(2, 1179) = 28.47, p < .001$. Therefore, our hypothesis was partially supported. We did not expect to find that those who identified as non-binary, agender, genderqueer, gender fluid, two-spirit, mähū, or muxe and who were single to also report greater perceptions of couple privilege as compared to men.

Fabrication of Biodegradable Polymer Scaffolds via Spin Coating

Author(s): My "Kathy" Do

Advisor: Yidan Chen

Abstract: When we move our joints, our muscles contract and generate a force that transfers through the tendon enthesis, a hierarchically structured tissue that helps distribute this force. However, repairing this tissue after an injury via surgery is often unsuccessful. This study explores a new approach to restoring this vital tendon-to-bone connection by creating biodegradable polymer scaffolds with a mineral gradient that mimics the structure of the enthesis tissue. The gradient is achieved by layer-by-layer spin coating of composite films made of hydroxyapatite (HAp) and polycaprolactone (PCL) with different amounts of HAp nanoparticles. By adjusting the number of layers with different HAp/PCL ratios, we can control the slope and size of the mineral gradient to match that of the natural tendon enthesis. We also use laser drilling to create funnel-shaped microchannels in

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the scaffold, providing an optimal environment for stem cells to grow and develop. Our resulting scaffolds exhibited favorable biocompatibility in vitro and a gradation in chondrogenesis differentiation of stem cells in a spatially controlled manner.

When Less is More - Poverty, Health, and Childhood

Author(s): Kara Ebbutt, A Rieker

Advisor: Wendy Kallina

Abstract: Each year, significant resources go into collecting data via myriad national surveys. These data, while informative on their own, have the potential to yield greater insights when combined. In this study, publicly available data from the CDC's 2021 National Health Interview Survey (NHIS) and the US Census Bureau's 2021 National Survey of Children's Health (NSCH) were matched on a calculated poverty ratio variable which allowed for a comparison of child health experiences as reported by parents. Taken together, a pattern of results emerged from these datasets confirming the association between poverty level and children's health issues such as anxiety, depression, and access to care. Excel and SAS Studio were used for data preparation, transformation, and analysis. The data were then curated for the creation of a Tableau dashboard designed to facilitate exploration of the results.

How can I effectively engage the public in astronomy in a fun, creative, and educational way?

Author(s): Cara Elizabeth Ebers

Advisor: Alexandra Yep

Abstract: This exhibit showcases my year-long project of presenting the students and staff of Agnes Scott College, as well as the general public, with engaging and entertaining information displayed on bulletin boards in the Bradley Observatory. This goal was set in order to help strengthen the desire of establishing effective astronomy outreach. It was made apparent to me that there were empty bulletin boards in the Bradley Observatory and I decided to use them as a means of entertaining individuals as well as informing them of astronomical news they may not be aware of. Because of word-of-mouth, social media, and general conversation, it was made apparent to me that the bulletin boards were both informative and entertaining to everyone who was interested to look at them, therefore achieving my goal of establishing effective astronomy outreach within the student and faculty body at Agnes Scott College, as well as the public.

National Women's Machinery: Mexico

Author(s): Lissete Estrella

Advisor: Mona Tajali

Abstract: This poster will analyze and evaluate an aspect of Mexico's national women's machinery, or the policy-making bodies at the national level that are tasked with advancing women's rights. This research will examine the workings of the Instituto Nacional de las Mujeres (National Women's Institute), also known as INMUJERES, which was established by Mexico's government in 2001. INMUJERES' vision is as follows: "Strengthen the country's democracy, based on the execution of programs and coordinated actions that promote the culture of

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non-violence, non-discrimination against women, as well as seeking, promoting and supporting the full exercise of the rights of women, girls and teenagers.” Despite this women's machinery, femicide rates in Mexico have exceedingly increased from 2015 to 2021, with the former having reported over 400 femicide cases and the latter reporting over 1,000 cases. This does not include the hundreds more of miscategorized and unreported cases. In recent years, Mexico has seen hundreds of protests against the lack of security for women in the country. This research will examine INMUJERES by evaluating some of the key criteria for effective women's policy-making as outlined by Shirin M. Rai, particularly the institution's location in the government structure and its links with civil society. Relying mostly on scholarly sources, this research will especially focus on the extent that Mexico's National Women's Machinery, namely INMUJERES, influences gender-based violence in contemporary Mexico.

Sex Differences in Anxious and Depressive Behaviors in C57 & Shank3B Mice

Author(s): Aili Fisher, Amunet Jacobs, DJ Sherwin, Leilt Seleshi, and Meleah Oliver., fisher428@agnesscott.edu, sherwin234@agnesscott.edu, seleshi089@agnesscott.edu, oliver223@agnesscott.edu

Advisor: Jennifer Larimore

Abstract: Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by abnormalities in interpersonal interactions, communication, learning, and repetitive behavior. ASD is associated with both anxious and depressive behaviors. There exists a clinical disparity between the ASD diagnoses of males and females, with males being diagnosed at a higher rate. Alterations of the SHANK3 post-synaptic protein at the genetic level can elicit ASD phenotypes in mouse models. The SHANK3B deficient ASD mouse model was used here with C57/Black 6 control mice to assess sex differences in the expression of anxious and depressive behaviors in ASD. It was hypothesized that SHANK3B female mice would have heightened expression of anxiety and depressive-like behaviors comparatively to their male C57 and SHANK3B counterparts. The Open-Field Test (OFT) was used to assess anxious behaviors and the Forced-Swim Test (FST) was used to assess depressive behaviors. There was no data collection for the SHANK3B males, presenting a significant limitation. This was surpassed by using the data collected to theorize about the sex differences in SHANK3B mice. There was a significant difference in the expression of anxious behaviors between SHANK3B female mice and C57 female mice. There was no significant difference in the expression of depressive behaviors between any mouse groups. Findings suggest that there is a difference in anxiety expression between control and ASD female mouse models. This could extend to humans with ASD and have clinical applications for the concurrent diagnosis of anxiety and depression in patients with ASD.

Swipe Left or Right? Using Eye-Tracking to Explore Cognitive Heuristics and the Decision Making Process of Undergraduates When Using a Mock Dating App

Author(s): Aili Fisher, Kristin Wubbena, Ty Kakkad, Dr. Bonnie M. Perdue

Advisor: Bonnie Perdue

Abstract: The present study investigates the eye movements and decision-making process of undergraduate students who are navigating dating via popular dating apps using eye-tracking technology. This study aims to acquire an understanding of what facets of dating profiles have a greater influence on the decision-making process, specifically in individuals who identify as gender and sexual minorities. Undergraduate students from

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Agnes Scott College are assessed using a mock dating app and eye-tracking technology. The eye tracker assesses eye movements within specific areas of interest (AOIs) on mock dating profiles. Participants are also asked to self-report levels of perceived attractiveness, gender identity, sexuality, and motivations for using a dating app. We are interested in whether cognitive heuristics in decision-making identified in other populations will generalize to our student sample.

Multiracial discrimination: A comparison of college women and their counterparts

Author(s): Kennedi Franks and Dr. Peeper McDonald, Dr. Peeper McDonald

Advisor: Peeper McDonald

Abstract: This research presentation explores Multiracial individuals in higher education institutions and the racial discrimination and Multiracial identity integration that they experience. It is essential to point out the concerns of discrimination in a college setting with Multiracial individuals, given that those individuals may experience many negative interactions with others that may not acknowledge their racial identity. In this study, it was hypothesized that there is a positive relationship between having an integrated Multiracial identity and experiences of discrimination in college women. It was also predicted that Multiracial college women report increased experiences of discrimination when compared to their Multiracial male counterparts. Finally, it was hypothesized that Multiracial college women report increased experiences of discrimination when compared to their monoracial female counterparts. With McDonald et al.'s (2019) provided data, the sample included 113 Multiracial women, 109 monoracial women, and 62 Multiracial men (N =284). Only individuals with an associate's degree or a high school diploma were included in the study. Recruitment was through social media platforms or for university undergraduate research credit. A demographic questionnaire, a Multiracial identity integration survey, and a perceived discrimination questionnaire were used. A significant correlation was found in the first hypothesis. There was no significance found in the last two hypotheses. It was concluded that Multiracial individuals experience negative actions of discrimination regardless of gender. One of the strengths of the study was that it was a quantitative study that provides a more extensive look into this topic of Multiracial individuals.

Impact of Invasive Red Lionfish on Marine Biodiversity

Author(s): Ashiya Gillette

Advisor: Jennifer Kovacs

Abstract: I propose to research the impact of the invasive red lionfish on biodiversity in the Bahamas/Pacific Ocean. Understanding the far reaching impact which invasive species have within an ecosystem will allow us to prescribe better management strategies. This research will use BACI (Before-After-Control-Impact Design) to see what changes in biodiversity have occurred after the introduction of this species into the ecosystem. Using GBIF and iNaturalist data I will calculate Shannon's Diversity Index and come up with a quantitative measure of species richness and evenness for the absence and presence of lionfish in a non-native ecosystem. Utilizing a control plot (The Gulf of Mexico) I expect to find a significant overall decrease in biodiversity correlated with the presence of this invasive species. Understanding the far-reaching effects of one invasive species on the biodiversity of a whole marine ecosystem will allow us to prescribe better management strategies for supporting the resilience of similarly affected ecosystems beyond this one.

Photovoice: The Impact of Sexual Assault on Queer People

Author(s): Kaya Goosby, Zaria Griffin

Advisor: Jennifer Fulling-Smith

Abstract: The intent of this project is to outline the necessary steps for IRB application as needed for our qualitative participatory action research study. This qualitative study aims to explore the experiences of queer individuals that are survivors of sexual assault. The study will utilize photovoice methodology. Ten participants will be asked to capture images that reflect their experiences navigating their gender and sexuality. Participants will then be asked to discuss their perspectives and images with others in the study. Following this, participants will then develop common themes discussed as a group that they would like to share with the local community in alignment with photovoice. Before starting, participants in this study are given an outline of the study and asked to acknowledge and sign informed consent. Researchers will provide to participants with resources such as community and campus counseling services and other referrals that might be beneficial. This study is an important example to use while showcasing IRB application as it is a qualitative study working with a potentially vulnerable community in terms of research. This poster will highlight IRB materials specific to preparing to research with this population using photovoice methodology. Several quantitative studies have previously explored the impact that sexual victimization has on the mental health of queer survivors. However, qualitative research allows a better look into the experiences of participants. This study will be important in highlighting the experiences of queer individuals and outlining the process required for IRB applications.

The Effects of Fire on Venus Flytraps

Author(s): Emma Gosse

Advisor: Jennifer Kovacs

Abstract: Venus flytraps are carnivorous plant species that are native to the United States and are endemic to the coasts of both Carolinas. But why are Venus flytraps endemic to the Carolinas? Why aren't they found in other parts of the US? This project proposes looking at the effects of wildfire on the species distribution of Venus flytraps. Flytraps seem to be a fragile species in that they need a particular type of soil to thrive in. Based on previous research, flytraps benefit greatly from controlled burning. Whether that's due to nutrients added to the soil or destruction of competition is hard to say, but this project aims to address some of these questions. By using recent data collected from the iNaturalist database I will plot the locations of the plants on a map of North Carolina using QGIS. I will collect fire data from the National Interagency Fire Center and plot incident locations on the same map. I will then use radius buffers to visualize where the fires and Venus flytraps overlap. I predict that after a fire occurs the abundance of Venus flytraps will increase. This research is important because it will help with conservation efforts for this species. Venus flytraps are listed as a vulnerable species. Taking preventative measures now will stop them from falling further into the conservation risk scale.

The Effects of Gabapentin on Anxiety-Like Phenotypes in the Shank3B+/- Mouse Model

Author(s): Jazmyne Greene, Aleah Davis, Olivia Henry, Marissa Ryals, Kristin Wubbena

Advisor: Jennifer Larimore

Abstract: Background: Gabapentin is effective for anti-anxiety, anti-epilepsy and neuropathic relief in both rodents and humans. Shank3B mice are a mouse model for Autism Spectrum Disorder (ASD). Little is known about the effect of gabapentin on levels of anxious and depressive symptoms in Shank3B mice. Our hypothesis is that Shank3B mice treated with gabapentin will exhibit less anxiety-like behaviors, but will exhibit unchanged depressive behaviors.

Method: To test the effects of gabapentin on anxiety in male Shank3B mice we utilized a combination of behavioral tests to measure a variety of behaviors within the Shank3B mice. The Forced Swim Test (FST) is a behavioral test used to measure depressive-like behaviors as well as evaluate potential treatments for these behaviors through antidepressants in rodents. The Open Field Test (OFT) is a behavioral test used to measure a variety of behaviors from general ambulatory ability to emotionality. This allows for studying different strains of rodents to examine anxiety-like behaviors.

Three groups were used: three C57B6 control mice, three C57B6 experimental mice, and three Shank3B experimental mice. All mice used were male. The experimental mice were administered a therapeutic dose of gabapentin. Results of the FST and OFT of control and experimental mice were compared in order to determine if gabapentin has a significant effect on anxiety-like behavior.

Results: Shank3B mice treated with gabapentin exhibited less anxiety-like behaviors compared to their untreated counterparts, but still had a significantly higher level of anxiety compared to the C57B6 mice controls. All Shank3B mice exhibited high levels of depressive behavior regardless of status.

Discussion: This data suggests that gabapentin is an effective combatant for anxiety, but would need to be used in conjunction with an antidepressant to be an effective and holistic treatment option.

Biodiversity and Land Management

Author(s): Isabelle Grovenstein

Advisor: Jennifer Kovacs

Abstract: Using data from two sites with observations from the National Ecological Observatory Network, I conducted a primary inquiry into the effect of the organization/government entity managing land and biodiversity. Specifically, I am interested in the question of whether land managed by Indigenous nations is more biologically diverse than land managed by the federal government. I'm asking this question because there are good arguments suggesting that decolonizing the U.S. Federal Land Management agencies and collaborating with Indigenous nations in land management could be beneficial to the biodiversity of ancestral lands (Jacobs). The NEON sites I chose to investigate were located in the Rocky Mountain National Park in Colorado and the Marvin Klemme Range Research Station in Oklahoma. This site is located on Cheyenne-Arapaho territory. Using plant species counts on 1 meter squared, 10 meter squared, and 100 meter squared subplots from 400 meter squared plots, I calculated the Shannon diversity and richness indices for both sites, then performed an ANOVA to test whether there was a significant difference between the diversity/richness at the sites. My results indicate no significant differences between the sites. I then performed a Bray Curtis similarity statistic matrix to see how similar the communities at each site were to each other. It turns out that out of the 541 plant species

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documented at the sites, only 10 of those species were found at both sites. My next step is to consult the IUCN red list database to see whether one site has more species of greatest conservation need than the other. We expected to see greater biodiversity at the Marvin Klemme site, but we didn't see a significant difference between the sites. However, in the future, it may be beneficial to further research land managed by Indigenous nations and perform these tests on sites that are geographically closer together. The fact that these sites are so far apart may deem them less compatible for comparison than I originally thought. Finding more sites to compare may be a further challenge, due to the historical genocide, land theft, and cultural erasure of Indigenous peoples within the United States.

Jacobs, Lara A., et al. "Reimagining U.S. Federal Land Management through Decolonization and Indigenous Value Systems." *Journal of Park & Recreation Administration*, vol. 40, no. 1, Spring 2022, pp. 195–206.

Herbarium Digitization Project

Author(s): Isabelle Grovenstein

Advisor: Jennifer Kovacs

Abstract: At Agnes Scott College, we are currently in the process of digitizing our herbarium. We have two herbarium cabinets of specimens. Currently, 530 specimens have been digitized using a Canon EOS R camera with UHD 4K resolution. We estimate that there are around 2,000 specimens total in our collection. The oldest specimens we have digitized thus far are 100 years old, from 1919. Some specimens have more data associated with them than others, but an ideal collection would have the collector's name, date collected, geospatial data (often including road, city, or county information), GPS coordinates, elevation, a site description, a specimen description, the family, genus, and species. So far, we only have GPS coordinates for 5 specimens that were collected in 2003. We do not expect to have many specimens with GPS data because a lot of the collection is older than easily portable GPS technology. Our setup for digitization includes a Canon camera mounted above a flat surface with lights on either side. Each photo includes a small ruler and color swatches for scale. Our goal once everything has been digitized is to publicize this data via the Southeast Regional Network of Expertise and Collections (SERNEC) allowing the scientific community to more easily access our collection.

Impacts of probiotic, L. Reuteri, on depressive and anxiety like behaviors in SHANK3 B Female mutant mice

Author(s): Rosie Hagel, Jade Thigpen, Hudson Skye Cherry, Lizzy Singh, Rue Randall

Advisor: Jennifer Larimore

Abstract: Depression and anxiety are at an all-time high for adults due to different stressors. GABA is the main inhibitory neurotransmitter in most animals. There is some evidence that links probiotics and the gut microbiome to an increase in GABA receptor frequency. We examined the effects of probiotic *L. reuteri* on SHANK 3B autistic and depressive mice models and expected a decrease in depressive-like behaviors in mice given the probiotic. *L. reuteri* probiotic was administered through sugar water over the course of three weeks. The behavior of the mice was observed utilizing forced swim tests and open field tests.

Bhlh-Tun2 as a Candidate Regulator of Bipolar Tail Neuron Differentiation

Author(s): Jewel Hanks, Lillie Franklin

Advisor: John Pilger

Abstract: Neural crest cells (NCC) are the essential building block of the vertebrate nervous system and contribute to a variety of neural and non-neural structures. Therefore, understanding how these cells develop, receive cues to migrate, and eventually differentiate is of great developmental importance. However, studying the function of implicated neurodevelopmental genes in the regulation of the neural crest and their derived structures can prove challenging and often result in the death of the model organism. Despite once thinking that these cells were unique to the vertebrate body plan, the nonvertebrate-chordate *Ciona robusta* has neural-crest-like cells that are likely homologous to the Neural crest in vertebrates. *Ciona robusta*'s biphasic lifestyle allows for many of their NCC-like derived structures, including Bipolar Tail Neurons (BTNs), to be altered or removed without killing the organism. Research of BTN development and gene expression has the potential to broaden the understanding of the regulation of neural crest development and behaviors and how they occur. This project aims to study one of the genes implicated in the development and differentiation of the BTNs, *Bhlh-Tun2* based on its differential expression with BTN fate modulations. We have identified a proposed regulatory region which might be responsible for this gene's BTN specific repertoire that we are testing via fluorescence reporting and CRISPR-Cas9 mediated knockouts. With these experiments, we will begin to detangle the proposed regulatory role of *Bhlh-Tun2* in neural crest- like cell differentiation.

An Analysis of Exploratory Interventions on Middle School Students Science Practices

Author(s): Franklin Harvey

Advisor: Carmen Carrion

Abstract: This presentation examines the effect of a gardening intervention affects on students' ability to apply science practices. The nature of science has begun receiving more attention in the science education sphere as a primary component of scientific literacy. The nature of science is the values and beliefs inherent to the development of scientific knowledge. The classroom can be detached from the student's everyday life. Out-of-school settings, such as a school garden can provide an immersive experience. Additionally, the students participated in inquiry activities including direct and explicit instruction by the researcher. It was hypothesized that participation in a garden intervention would increase students' ability to apply scientific knowledge.

The Agriculture Industry and Its Effect on Wood Frog Habitats

Author(s): Olivia Henry

Advisor: Jennifer Kovacs

Abstract: Wood frogs (*Lithobates sylvaticus*) are amphibians that are native to the Nearctic region, which stretches from the Mexican Plateau to northern Canada and Alaska. The loss of habitat to agriculture and suburban development has put wood frogs on the list of "species of special concern" in some areas. In the United States, one in four amphibians and reptiles are endangered or vulnerable to extinction. Agriculture has repeatedly been identified as one of the largest contributors to the loss of biodiversity worldwide. This is a result

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of the substantial use of land area as well as the incorporation of pesticides and fertilizers ingrained in our current way of farming. Due to the specialized habitat needs for wood frogs, they are more vulnerable to habitat destruction which is heightened by the development of the agriculture industry. In this study I investigate the relationship between wood frog populations and agricultural land use as well as pollution. Consequently, I expect to see an overlap between wood frog habitat destruction and agricultural areas. With this, I hypothesize that the agriculture industry has contributed to the decline in wood frog populations.

Do *S.linguale* genes encode β -lactamases that confer resistance against antibiotics?

Author(s): Rosybel Hernandez and Jordyn Wood, Jordyn Wood

Advisor: Timothy S. Finco

Abstract: The majority of prescribed antibiotics are β -lactams, which interfere with bacterial cell wall synthesis, leading to bacterial cell death. *Spirosoma linguale* (*S.linguale*) is a naturally occurring microorganism with a worldwide distribution. Roughly 42 *S.linguale* genes have been identified as potential β -lactamases, which are enzymes that inactivate β -lactam antibiotics. Of the proposed genes, 7 of them were studied to determine if they function as β -lactamases.

The genes of interest were first PCR amplified and inserted into plasmids that were then transformed into *E.coli*. The *E.coli* were subsequently placed on agar plates containing 14 β -lactam antibiotics to determine if antibiotic resistance was acquired. The bacteria did not survive on the antibiotic plates, suggesting that the proposed *S.linguale* genes do not function as β -lactamases. Further research will be conducted to determine if the other genes function as β -lactamases.

Discrimination in African Americans: Examining Social Desirability and Self Esteem

Author(s): Ruth Hillo and Dr. Peeper McDonald, Peeper McDonald

Advisor: Peeper McDonald

Abstract: Current research investigates the impact of racial discrimination on an individual's mental and physical wellness but fails to examine the effect on an individual's self-identity and self-presentation (Kanter et al., 2017). This study sought to examine the relationship between racial discrimination and social desirability, as well as between self-esteem more closely to bring awareness to these effects on one's personal and social identity. Data was analyzed from the study of McDonald et al. (2019), where 150 participants with a minoritized identity were utilized in this study. Using an independent samples t-test, the results did not find a significant mean difference between the discrimination experienced by African Americans and other minoritized identities. There was also no significant mean difference discovered in the social desirability scores of African Americans and other minoritized identities. A Pearson correlation test was used to assess the relationships between perceived discrimination, social desirability, and self-esteem. While both results were statistically insignificant, along with previous research, this still presents a concern for the discrimination experienced by African Americans. Future research should be conducted with the consideration of a larger sample size, as well as the implementation of a linear multiple regression analysis to determine if self-esteem may moderate the relationship between perceived discrimination and social desirability. This study also supports the necessity of the promotion of diversity and inclusion through community gatherings, panels, and professionals that empower minoritized individuals.

Marcus Autism Center : Severe Behavior program - Internship Reflection

Author(s): Kayla Jones

Advisor: Stacey Dutton

Abstract: This presentation delves into my internship experience working at Marcus Autism Center in the severe behavior department. I worked a minimum of 12 hours a week with clients ranging from 8-16 years old. I engaged in a two day training program called MCPP training which is safety training that teaches me to defend myself while working with the clients and ensuring optimal safety for not only me but the clients. Clients had different target behaviors such as self injurious behaviors (SIB), aggression, disruption, and more. I ran sessions and worked in a team setting to administer interventions given by the lead on the case. I used applied behavior analysis (ABA) methods and helped keep data on the session and clients behaviors. I worked to become reliable for clients which means I am certified to take data on their sessions. I created amazing bonds with the kids and the employees in the unit as I worked with them. As someone who has worked in ABA before this was a new and exciting experience that has taught me lots.

The Effects of Endosomal Rab3 Protein Marker in SHANK3B Mice with Autism Spectrum Disorder

Author(s): Kira Joyner, Chayse Busby, Amelia Lorenzo, Jade Thigpen

Advisor: Jennifer Larimore

Abstract: Rab3 functions in vesicle fusion and exocytosis, it has been observed in upregulation in other disorders, but its role in the presentation of ASD has not been studied. We molecularly observed our protein marker by using western blot (measures protein levels) analysis and immunohistochemistry (to visualize protein location) to analyze our hypothesis. These methods demonstrated an increase in rab3 protein expression. This supports our hypothesis that Rab3 protein levels upregulate the SHANK3B gene that causes the ASD phenotype, therefore there will be higher levels of Rab3 protein in the experimental group than in the control C57/B6 mice. This is significant because the correlation between Rab3 protein markers and SHANK3B ASD gene expression is under researched. This study provided a better understanding of what impact the Rab3 endosomal functions have on gene expression and the phenotype overall.

The Nerve of Some BTNs: A Study of Regulatory Differences in Ciona robusta's BTNs

Author(s): Nino Kalandadze, Katherine Blank, Dr. John Pilger, Sydney Popsuj

Advisor: John Pilger and Sydney Popsuj

Abstract: The dorsal root ganglion (DRG) is a cluster of sensory neurons transmitting information from sensory receptors in the body to the central nervous system in vertebrates. The DRG develops into a structure that can respond to multiple different neurotransmitter cues and holds a lot of promise to understand how such complex structures develop. Despite being difficult to study in a vertebrate model based on the indispensability of neurodevelopmental genes, non-vertebrate chordate *Ciona robusta* provides a unique ability to study this question based on its eventual metamorphosis out of the vertebrate-adjacent body plan which renders functional work possible. Bipolar tail neurons (BTNs) of *Ciona* are possibly homologous to the DRG of vertebrates and are made up of one Anterior BTN (aBTN) that is GABAergic and one Posterior BTN (pBTN) that is

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cholinergic. However, it is not known how these BTNs receive separate cues to differentiate into distinct neurotransmitters. Focusing on VGAT (vesicular GABA transporter), this research project aims to identify the regulatory capability of VGAT in the development of the BTNs by looking for conserved gene areas in the gene model and creating reporters to assay their hypothesized role in BTN development. Furthermore, we will also knock out the gene in the BTNs using tissue specific CRISPR-Cas9 to provide a better understanding of the role this gene might play in BTN differentiation. This work will help build a regulatory network for a unique structure capable of receiving so many signals.

Does Temperature Affect Seahorses

Author(s): Silmi Kanji

Advisor: Jennifer Kovacs

Abstract: In this study, the relationship between climate change and lined seahorses, *Hippocampus erectus*, is being investigated. The purpose of this study is to understand if climate change affects the occurrence of where seahorses prefer to live. The main question that is to be answered through research is: do changes in sea surface temperature affect where seahorses live? To test this research question, data has been collected on the occurrences of lined seahorses, *H. erectus*, to see if there is a correlation between surface sea temperature and where they live. The GBIF database gave useful information on the occurrences of the lined seahorses, *H. erectus*. Since seahorses are marine animals, aquatic data was collected close to the borders of the United States. Data showed that most of the lined seahorses, *H. erectus* lived in tropical areas close to the United States such as Mexico. Many lined seahorses are also located south of the United States in the waters off of Mississippi and Florida.

Wildfires, PM2.5, and Asthma: A Statistical Analysis of California's Worst Fire Cycle

Author(s): Alma Kassim

Advisor: Jennifer Kovacs

Abstract: California has seen a rise in the frequency and severity of wildfires in recent years, resulting in considerable air pollution in the form of fine particulate matter (PM2.5). PM2.5 is a form of air pollutant that may enter the lungs and cause respiratory issues, including asthma. Exposure to PM2.5 from wildfires has been proven in studies to aggravate asthma symptoms and increase the risk of hospitalization. The particles can irritate and inflame the airways, resulting in coughing, wheezing, and trouble breathing. Children, the elderly, and those with pre-existing respiratory disorders are especially at risk. In this poster presentation, I have statistically analyzed California's worst fire cycle from 2019-2021 using data collected from California Asthma Tracking, California State Geoportal, and Environmental Protection Agency. I will be comparing fire incidence with PM2.5 and comparing that to Asthma rates over the cycle. This work provides information about the public health effects of wildfires and air pollution, particularly respiratory conditions like asthma. In light of the recent terrible wildfires in California, policymakers and public health professionals may better safeguard the general population by comprehending the connection between these flames, PM2.5 concentrations, and asthma.

A Comparison Life History Traits of Threatened and Non-threatened Georgia Trillium

Author(s): Madeleine Kenyon

Advisor: Jennifer Kovacs

Abstract: The goal of this semester-long project is to collect and compare the physical characteristics of 10 species of Georgia trillium. Trilliums are a spring perennial that generally grow under very specific conditions. While some appear to be thriving, other species are close to extinction. Of the ten trillium in question, five are vulnerable-to-endangered, and the other five are of the least concern. For this study I am interested in determining if there is any relationship between traits such as plant structure, bloom time, and dispersion method and the conservation status of 10 species of trilliums in Georgia. To do this, I will use species observations I obtained from iDigBio and iNaturalist to determine plant structure, bloom time, and dispersion method. I will also compile life history traits from the Georgia Biodiversity Portal and eFloras.org. I expect for the main factors contributing to extinction risk to be habitat, methods of dispersal, and bloom time. Due to the ever-shrinking size of fitting habitat, trillium with certain preferences may find it difficult to thrive. Additionally, effective, long-distance distribution can mitigate issues caused by habitat fragmentation. Finally, climate change is throwing off the bloom times of many perennial species, leading to a possible phenological mismatch between flowers and their pollinators.

The Role of Rab12 and OTX in Bipolar Tail Neuron Differentiation in Ciona robusta

Author(s): Arabella Lewis, Sydney Ward, Megan Selecky, Sydney Popsuj (ASC '19), and Dr. John Pilger

Advisor: John Pilger and Sydney Popsuj

Abstract: Neural crest cells (NCCs) are stem-like cells that are instrumental in the formation of the neural crest which creates essential components of the vertebrate nervous system and body plan. Despite the vital role of NCCs in development, the regulatory pathways that govern their differentiation into complex structures are not well understood. For vertebrates, these elements are so essential that the disruption of genes affecting the NCCs in model organisms result in death or the prevention of development entirely. To circumvent this problem, we will investigate a similar regulatory pathway in the tunicate, *Ciona robusta*. *Ciona* are an ideal model system because they are biphasic organisms with a larval nervous system resembling a vertebrate's, containing neural crest-like cells. These cells give rise to bipolar tail neurons (BTNs) specifically in *Ciona*, hypothesized to be homologous to dorsal root ganglia in vertebrates. This project aims to uncover more of the BTN gene regulatory pathway in *Ciona* through analysis of genes which are hypothesized to be downstream of Neurogenin, a gene important to BTN fate. Our project focuses on two candidate genes in this pathway, OTX and RAB12, and uses fluorescent reporting of proposed regulatory regions of the candidate genes as well as single guide RNA (sgRNA) design for CRISPR-Cas9 mediated knockout of our genes in the BTN lineage. Upon completion, we may better understand the role these genes play in the pathway of BTN expression which may provide useful insight into the role of vertebrate genes in development of the neural crest.

Beyond Sensory Input: A Practical Approach to Consciousness in Buddhism and Western Philosophy

Author(s): Faith V Lockhart

Advisor: Abraham Zablocki

Abstract: The relationship between the Western definition of consciousness and Buddhist philosophy's concept of citta-samtana (a stream of continuous consciousness) is more complex than it seems. While Western philosophy views consciousness as the external experiences of the world and the internal ways of processing them, Buddhism separates consciousness from solely sensory input and abstract terms to a more practical one. The relationship between mind and matter starts with the Buddhist rejection of Western dualism and the embracing of dependent origination and emptiness. These concepts are deeply layered with the intersectionality of one's existence and how it relates to the idea of "self" in Buddhism and Western philosophies.

The Perception of Couple Privilege Among Racial Groups

Author(s): Mahalia J. Mays, Kimberly R. Clarke

Advisor: Jennifer Hughes

Abstract: In this project, we examined perceived couple privilege among racial groups. We predicted that single, White individuals and those in couples would perceive greater couple privilege (as measured by societal expectations, social status, and being seen as an advantage) as compared to Black/African American, Hispanic/Latinx, Asian/Asian American, and multi-racial individuals and those in couples. After being approved by the IRB, we recruited 1,254 participants by asking students and faculty at Agnes Scott College, school alumni, friends, and family. Participants were asked to complete a 5-minute survey. Two-way ANOVAs were performed to assess our hypothesis. We found that our hypothesis was partially supported in that those who reported being single reported perceiving greater couple privilege when it comes to societal stereotypes than those in relationships ($F(1, 1227) = 7.51, p = .006$). However, we did not find that race impacted perceptions of couple privilege for societal stereotypes ($F(4, 1227) = 1.09, p = .36$). We also did not find differences with perceptions of couple privilege when looking specifically at social status ($F(9, 1227) = 13.09, p = .89$), or couple privilege being considered as an advantage ($F(9, 1227) = 1.36, p = .25$). One application of the findings of this study is that counselors working with clients who are experiencing couple privilege could focus on how societal stereotypes influence those feelings in their clients.

XPS study of the evolution of cerium oxide thin films grown on Al₂O₃ and SiO₂

Author(s): Fiona McLary, Emilia Pożarowska, Carlos Morales Sánchez

Advisor: Amy Lovell

Abstract: Cerium oxides (CeO₂ and Ce₂O₃) are widely used in industrial catalytic applications and have promise as an element of carbon capture and conversion technology. To understand how the Ce ion switches oxidation state between Ce⁴⁺ and Ce³⁺, x-ray photoelectron spectroscopy (XPS) was used to obtain detailed electronic spectra of the material. The ceria was grown in UHV conditions on either an Al₂O₃ or a SiO₂ substrate at room temperature and high temperature using an electron beam evaporator and spectra were taken of the clean substrate, the sample after an approximate monolayer of ceria growth, and the sample after several

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nanometers of ceria growth. Using the 10-component model of peak fitting on the Ce 3d spectra, with calibration from fitting the components of the O 1s peak, it was found that temperature was the most important factor in determining Ce species, but substrate also had an effect. At room temperature, thin-film evaporations on both substrates produced approximately equal concentrations of Ce⁴⁺ and Ce³⁺ (although the difference is larger on sapphire), and the thicker layers on both substrates were dominated by Ce⁴⁺. At high temperature, the thin film contains entirely Ce³⁺ and the thicker layer is split approximately 30% Ce³⁺ and 70% Ce⁴⁺. The results of this experiment provide further useful information for understanding how layer thickness and evaporation conditions affect the critical properties of cerium oxides.

Heritability of First Responder Behavior in Fire Ants: A Genome Sequencing and Behavioral Analysis Study

Author(s): Esther Okamoto

Advisor: Jennifer Kovacs

Abstract: During a summer research experience in a social systems biology lab, a study was conducted to investigate the heritability of first responder behavior in fire ants, a sophisticated group behavior exhibited by certain workers involved in digging out trapped individuals in collapsed mounds. To determine whether this behavior is a heritable component, conditional experiments were conducted, coupled with genetic analysis of comparative individuals. In the course of the research, molecular laboratory techniques were developed, including DNA sequencing and polymerase chain reaction (PCR), Ethidium bromide handling, Gel Electrophoresis, and UV Transilluminator use. Duplex PCR bands were identified and troubleshooting methods were employed to optimize the molecular protocols. Fieldwork was conducted to collect fire ant colonies, which were then habituated to a laboratory setting. The colonies were maintained and monitored through comprehensive husbandry logs to ensure proper care throughout the investigation. The findings from this study contribute to the understanding of the genetic underpinnings of complex social behaviors in fire ants and other social insects, with potential implications for advancing our knowledge in the fields of sociobiology, ecology, and evolutionary biology.

Impact of Probiotics on Livestock Health: A Diagnostics and Histological Analysis Internship Experience at Calpis America

Author(s): Esther Okamoto

Advisor: Jennifer Kovacs

Abstract: This internship experience at Calpis America's Research and Development Department focused on the impact of probiotics on livestock health. The main objective was to diagnose livestock health by testing and measuring the presence of pathogens before and after feeding the company's probiotic product. To achieve this, I collected feces, mucus, and other samples, including dissecting hatching chicks. Additionally, I assisted in preparing duodenum slices to create an in-house histology laboratory. Throughout the internship, I communicated with expats who imparted their expertise on the strengths of both Japanese and American microbiology in terms of knowledge, techniques, and concepts. As a result of my experience, I developed microbiology testing techniques including cultivation, staining, PCR, qPCR, and Enzyme-linked Immunosorbent assay (Sandwich ELISA). Overall, this internship provided hands-on experience in diagnostics and histological analysis, which contributed to a deeper understanding of the potential of probiotics in improving livestock health.

The Scottie Bee Palynology Project: Investigating Biodiversity and Pollination with SEM and NMR Analysis at Agnes Scott College

Author(s): Esther Okamoto, Irène Chapeau

Advisor: John Pilger

Abstract: This presentation introduces and describes the “Scottie Bee Palynology Project” and its progress using Scanning Electron Microscopy (SEM) and Nuclear Magnetic Resonance (NMR) analysis to characterize local pollen and honey. The project involves three phases of research: hive husbandry, pollen collection, and chemical and microscopic analysis. The hive husbandry phase has restored the second ASC hive in preparation for the addition of a second colony. The pollen collection phase involves ongoing palynology fieldwork, data aggregation using iNaturalist, and video recordings to track the pollen brought in by the Agnes Scott Honeybees through the nectar flow season. The analysis portion of this project aims to use SEM analysis to identify the kind of pollen collected to form an atlas of local pollen, while NMR analysis will identify marker compounds found in local honey. The knowledge and information generated by this work helps understand the biodiversity of the campus neighborhoods and to understand the process of pollination at the micro level. In addition, it will expand laboratory technique access to a diverse student body and increasing opportunities for lab work outside of the classroom.

Metacognition and Confidence Judgments in Young Children

Author(s): Audrey Partington, Shanila Huerta, Jazmyne Greene

Advisor: Bonnie Perdue

Abstract: Metacognition is a developing concept that is widely accepted as one’s awareness and evaluation of their cognitive process and the ability to organize it for the task at hand or during learning (Akturk & Sahin, 2011). The current study aims to investigate further the metacognitive skills of young children using offloading tasks preceded by a Confidence Judgment (CJ) with Tobii ProLab eye tracking software. It is only more recently that metacognition research has become widespread in children because previous beliefs were that young children did not possess the ability to act metacognitively in early developmental stages (James et al., 2021). Furthermore, much of this research has used explicit measures that are directly observable rather than more implicit measures of metacognition (Akturk & Sahin 2011). CJ refers to one's prediction of their ability to perform on a task and serves as an explicit form of metacognition. Eye-tracking is sensitive to implicit processes during CJs (Paulus et al., 2013). In the current study, areas of interest (AOIs) will be analyzed to measure the implicit aspect of young children's metacognitive skills, coupled with an explicit measure using CJs. The aim is to determine whether young children rely on their subjective judgment to navigate solving problems and if this judgment aligns with the objective difficulty of the problem. It is anticipated that children will rely more on their subjective judgment to assess the difficulty of the task.

Keywords: metacognition, children, offloading, confidence judgement

The Effects of Sea Water Temperature on Sea Stars with SSWD

Author(s): Amara Perodin

Advisor: Jennifer Kovacs

Abstract: Along the West Coast of North America, the Sea Star wasting disease (SSWD) has decimated populations of the Sea Stars species (*Pisaster brevispinus* (Stimpson, 1857)). An assortment of symptoms that are seen in sea stars are collectively referred to as sea star wasting syndrome. Typically, lesions develop in the ectoderm and then the tissue around them deteriorates, causing the body to fragment or die. SSWD, has harmed at least 20 species of sea stars including *Pisaster brevispinus*, which is increasing the mass mortality rate along the West Coast of North America. Coastal water temperatures are one environmental component that is thought to have contributed to past and present SSWD epidemics. Within the Pacific Ocean, warmer temperatures were linked to SSWD mortality, and those who resided in warmer environments had a higher risk of contracting the disease. Individuals receiving warmer treatments were also subjected to the biggest temperature changes, which could physiologically stress an individual and increase their susceptibility to SSWD. In this study, we will use species (*Pisaster brevispinus*) observation data collected from iDigBio and iNaturalist to determine how the distribution of the species has changed over the past 166 years. We will then use NASA water temperature data to collect changes in seawater temperature. I predict that we will see higher seawater temperatures in the Northeast Pacific Ocean, and an increased mortality rate of *Pisaster brevispinus*. This research is significant because Sea Stars are vital components of the marine environment.

How Contaminants Influence Macroinvertebrates

Author(s): Nadia Pflug

Advisor: Jennifer Kovacs

Abstract: This presentation aims to explore how the contaminant levels in sediment collected from lakes, rivers, and wadeable streams, affect the behavior of macroinvertebrate species, defined as organisms without a backbone that are large enough to be seen without a microscope. Aquatic macroinvertebrates are important environmental indicators, due to the fact that different species are able to tolerate different levels of environmental contaminants, so greater biodiversity tends to signal greater water quality. In this study, we are interested in whether sediment contaminants including trace metals and carbon have an observable impact on behavioral proxies, in the form of the rate of macroinvertebrate death and birth. This will be performed by using the NEON database of Sediment Chemical and Physical Properties, and comparing it against the NEON database of Macroinvertebrate Collection for the same sites and years. This research is important for conservation efforts, as more data will help provide legitimacy to the field of Behavioral Ecotoxicology. Especially in light of the many human-made cases of environmental pollution, it's important that we continue to provide support to the consequences on animal life.

Psychological Safety in Trans and Gender Expansive Youth: A Content Analysis

Author(s): Chassidy Powell, Rebekah Phillips, Eve Shumate, Jennifer Fulling-Smith

Advisor: Jennifer Fulling-Smith

Abstract: Many transgender and gender expansive (TGE) youth experience different challenges and struggles from their cisgender peers and even their LGBTQ+ peers. TGE youth shared their descriptions of psychological safety and researchers reviewed relevant research. Three themes serve as findings: safe relationships, victimization, and resilience. The aim of our research is to highlight how experiences in places such as school, community centers and even homes often have huge effects on TGE youth's psychological safety. A qualitative study was conducted through one-on-one interviews with nine participants who identified within the TGE spectrum and ages ranged from 14 to 17 years old. The interviews consisted of a 45-60 minute conversation about gender expression, what safety meant to participants, and how safety was implemented into their lives. The findings of this study illustrate the significance of relationships, experiences of victimization, and the development of resilience in defining and characterizing psychological safety among TGE youth. Content analysis of these core themes underscore opportunities for acknowledging the existence of safe and unsafe spaces TGE youth encounter in their everyday lives. The data collected furthers the overarching understanding of specific challenges impacting this community and the multitude of ways oppressive barriers can be addressed throughout society in order to perpetuate greater equity and acceptance.

A Different View on the Athletic Knee Brace

Author(s): Venkata Shiva Puttagunta

Advisor: Carmen Carrion

Abstract: Prophylactic knee brace technology in high contact sport settings has been at a stand still since the early 2000's. These knee braces, primarily made for prevention, continue to follow the same structural and functional design as did braces before them. These knee braces, used in sport and physical activity, have been deemed to be partially effective due to their ability in only protecting select parts of the knee, more specifically the anterior cruciate ligament as well as the medial cruciate ligament. Present knee brace technology shows a large emphasis on fatigue. This is due to many factors, but most importantly, when researching prophylactic knee braces, the technology and materials used are heavy and too compressive on the muscular tissue of the calves and quadriceps. These factors cause quicker fatigue, loss of maximum sprint speed, and quicker lactic acid build up within the muscle. To combat the limitations of the current knee braces on the market, literature has outlined further improvements which include more frictionless hinge systems, less compression on soft tissue, as well as adding an extra expense of casting the leg for personal knee brace use. Leading options in the market today, like DonJoy, adapt and personalize each knee brace for an individual through a casting technique. However, not only is this system expensive, but the structure of the brace is fatigue inducing and inhibits the respective athlete to reach his or her full potential. Therefore, our research asks, can a viable knee brace prototype with a less constricting structure and using malleable, rubber materials be created?

POSTER PARTICIPANTS CONTINUED, LISTED IN ORDER OF FIRST AUTHOR'S LAST NAME

Nicaragua's National Woman Machinery

Author(s): Rebecca Quiroz

Advisor: Mona Tajali

Abstract: This SpARC poster will review and evaluate Nicaragua's National Woman Machinery (NWM), the Instituto Nicaraguense de la Mujer (INIM) on various aspects of the enhancement of women's rights. This study will look at how INIM may have been shut down in the early 2000s, but Nicaragua still has roughly 51% female legislators. I will look at previous attempts at gender mainstreaming and compare them to current women's rights using Shirin M. Rai's key criteria for successful women's policy-making, particularly links to civil society and accountability, in order to understand why there are women in the government and if they're represented in policy. According to Freedom House, Nicaragua also banned the Matagalpa Women's Collective as well as 55 other regional and international organizations. Over the years, Nicaragua has a reputation for having high rates of prostitution and forced labor. In the U.S. State Department's Trafficking in Persons Report 2021, they were categorized as Tier 3 because they made no effort to help victims of trafficking. My research will be based on scholarly sources and statistics including country reports. This investigation will pay particular attention to the extent to which Nicaragua's government and Instituto Nicaraguense de la Mujer have contributed to the erosion of women's rights of agency within Nicaragua.

Climate Change's Impact on the Dusky Dolphin's Habitat Distribution Pattern

Author(s): Agina Rai

Advisor: Jennifer Kovacs

Abstract: I conducted a study on the impact of climate change on the habitat distribution pattern of the dusky dolphin. This is significant because the dusky dolphins' habitat is disappearing as a result of the incredibly quick climatic changes. It consequently influences their ability to reproduce, as well as the timing and ranges of their migration. Hence, this study will look at how water temperature variations and climatic changes negatively impact their habitat and dispersion. I will gather occurrence data from iDigbio, an online repository of museum specimens, and surface water temperature data from NASA to carry out this research. Then, using the distribution and temperature data, I will map out their habitat distribution with the aid of GIS. I will then use the distribution and temperature data to create a GIS map showing the species distribution and map any changes in the distribution over time. This would enable me to determine whether the loss of their habitat and their capacity for reproduction are impacted by climate change. My research may potentially make a link between climate change and the loss of the dusky dolphin's habitat.

Perceptions of Couples Privilege in Heterosexual and Queer Individuals

Author(s): Kendall Riley, Shaniah L. Williams, Jennifer L. Hughes

Advisor: Jennifer Hughes

Abstract: This research project entailed reviewing society's outlook on single individuals and if those views shift based on the individual's sexuality. According to Crandall and Martinez (1996) and Whitley (1990), conditions that have the potential to be stigmatized, such as obesity or homosexuality, tend to elicit more negative

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reactions when the perceived believe the condition is controllable than when they do not. Based on this research, we predicted that single LGBTQ+ individuals will perceive greater couple privilege as compared to heterosexual individuals and those in couples. For our results, we used a two-way ANOVA to evaluate our hypothesis. We found a significant interaction between the effects of sexual orientation on relationship status, $F(3,1188) = 7.14, p = .008$. A main effect was also found for relationship status, $F(1,1188) = 14.27, p < .001$, with those who reported being single perceiving greater couple privilege ($M = 39.99, SD = 8.42$) than those in relationships ($M = 38.33, SD = 8.11$). However, a main effect was not found for sexual orientation, $F(1, 1188) = .83, p = .36$). Therefore, our hypothesis was supported in that we found an interaction between relationship status and sexual orientation.

The Effect of the SHANK3B Mutation on the AP-3 Protein Marker

Author(s): Kylie Roach, Morgan Durham, Mira Katt

Advisor: Jennifer Larimore

Abstract: Autism Spectrum Disorder (ASD) can be portrayed in a wide range of symptoms. Typical symptoms in humans can include difficulty with social communication, repetitive behavior, restricted interests, and varying degrees of intellectual disability. Symptoms of ASD in mice include repetitive behaviors, and impaired communication and social abilities. SHANK3B mice present symptoms of ASD due to a mutation in the SHANK3 gene. This experiment observes if a mutation at the SHANK3B protein, causing ASD in mice, affects the endosome AP-3 by increasing/decreasing function, impacting regulation, or altering effectiveness. These mice are the mutated group that will be compared to the neurotypical phenotype present in C57B6 mice. It is hypothesized ASD in both mice and humans can affect protein markers. We will be observing the function, regulation, and effectiveness of the AP-3 protein in both groups of mice. AP-3 is a protein marker that works with the Golgi apparatus to regulate and sort what proteins will be transported in the early stages of the endosomal pathway. The AP-3 protein complex works to target selected materials and proteins to lysosomes for transport. We hypothesize that there will be a decrease in the amount of AP-3 in mutated SHANK3B mice when compared to the non-mutated control group.

The Implications of Climate Change in Historical Redlining

Author(s): Xochilt Rodriguez

Advisor: Jennifer Kovacs

Abstract: Throughout the years we continue to see the implications of climate change. Unfortunately, many historically underserved communities have witnessed or experienced this firsthand. The increase in temperature, for example, has had a greater impact in urban communities. This is because urban areas have the perfect conditions to absorb and re-emit the sun's heat more than natural landscapes. This often creates a heat island. I propose to examine climate inequities, specifically how much temperatures have increased in historically redlining areas with a high grade ranking and compare them to how they are now. This is important to do because it will allow us to see if underserved communities continue to be impacted by the effects of climate change. To conduct this research I will use historical redlining data from ArcGIS to look at the different grades, specifically in the county of Los Angeles, and compare them with the air quality using the data from PurpleAir. After finding the communities with a low- and high-grade ranking, I will compare their air quality from

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the year 2010 and 2022 to get an understanding of what can happen in a decade. I expect for the results to show that the redlining areas with high and low grade rankings still continue to show the same patterns implying that not much is being addressed on how the effects of climate change continue to affect underserved communities.

Sunk cost fallacy influence on decision making bias involving college students' in a housing environment

Author(s): Madison Rowe, Shanieka Lammatine

Advisor: Breille James

Abstract: Sunk cost fallacy is when an individual continues to invest in a situation despite a negative outcome in order to avoid feeling like they've wasted money, time or efforts. This project will explore the sunk cost fallacy influence on decision making bias involving college students' in a housing environment. Undergraduate students at Agnes Scott College completed an online survey, where participants read a short vignette about various conflicting incidents that affects a student's overall well-being and productivity. The vignette included a high or low-cost investment by manipulating the price of tuition to be either \$60,000/15,000. Participants then reported if they would remain in that housing environment or if they would leave. It was hypothesized that participants would find another place to stay because of the low cost of investment. Furthermore, participants will remain a campus resident if the cost of investment is higher. The results of this study will inform researchers about the decision-making process of college students when influenced by high cost of investment vs low cost of investment while in a negative housing situation.

Ethiopia's National Women's Machineries

Author(s): Kaisa Sazama-Framil

Advisor: Mona Tajali

Abstract: Ethiopia's National Policy on Women was created in 1993, and enacted in 1995 with the goal of institutionalizing the political and socio-economic rights of women in creating appropriate structures in government institutions. This policy is responsible for addressing discriminatory practices in law and social status, mainstreaming women's issues into existing laws and policies, and to enable women's power in decision-making structures. It is also designed to promote research and awareness in all areas concerning women and development and gender equity. Despite these efforts, there are several limitations of women's rights in Ethiopia. Among them, women's rights to reproductive health is limited, women and girls are disproportionately under-educated and struggle with social mobility. The pure lack of women in high power government positions has led to the gender-related development index (UNDP Global Development Report) ranking Ethiopia 124th out of 145 countries. Using Shirin Rai's critical elements of National Machineries of location and human and financial resources. This research will determine how the extent of patriarchy in governments affects the policies affecting the mass amount of sexual violence reported in the Tigray conflict. These sexual attacks are a form of ethnic cleansing of the Tigray people by the Ethiopian and Eritrean militaries. The Ethiopian government denied involvement with the Eritrean government in this attack for months. Ethiopia failed to protect women from disproportionate violence and discrimination, failing to provide remedies for this violence. This determines that Ethiopia's National Women's Machineries do not have enough political power to implement effective policy.

The Roles of DCX and EMX genes in Bipolar Tail Neuron Determination in the Nonvertebrate Chordate, Ciona robusta

Author(s): Lizzy Singh, Leilt Seleshi, John Pilger, Sydney Popsuj

Advisor: John Pilger

Abstract: Neural Crest cells (NCCs) are important for the creation of the nervous system in vertebrates. NCCs migrate throughout the developing organism and eventually account for core features of the vertebrate body plan and nervous system. The gene Neurogenin has been implicated as an important regulator of this behavior between migration and differentiation but is difficult to study in vertebrate models because these traits are too important for the organism to survive being knocked out. However, because of the NCC-like cells of nonvertebrate chordate *Ciona robusta*, functional studies in the context of the neural crest can be assayed. This study aims to study genes implicated in the differentiation of the neural crest by focusing on bipolar tail neurons (BTNs), a neural-crest-like derived structure in the *Ciona robusta* model. This approach is possible because while *Ciona* contains genes required for vertebrate-like neurodevelopment, their biphasic lifestyle renders them nonessential for long term survival making them ideal targets for knockouts. Previous study from the Stolfi Lab identified thousands of candidate genes via RNA-sequencing that are implicated in BTN development based on their proposed regulation by Neurogenin. Among these genes, we selected genes DCX and EMX to test for BTN-specific regulatory potential. To study these genes in the context of NCC-like differentiation, we looked for cis-regulatory regions in the gene models and created fluorescent reporters and single guide RNAs (sgRNAs) for CRISPR-Cas9 mediated knockouts to better understand if these genes play a role in BTN development.

Gene regulation of ADRA2A and Dlx.b in neural crest cell derived structures in Ciona robusta

Author(s): Ana Tapia and Laura Gerken, Laura Gerken

Advisor: Sydney Popsuj

Abstract: Neural crest cells (NCCs) are migratory cells which produce a wide range of cell types. Underdevelopment of NCCs can result in structural deficits within the peripheral nervous system and craniofacial features. NCCs were originally thought to only be found in vertebrates however research has shown nonvertebrate chordate *Ciona robusta* possess possible homologues to these cells too. As tunicates, *Ciona robusta* is one of the closest invertebrate relatives to humans and serves as an excellent model system due to having an excellent genetic screen which allows for gene knockouts without death of the animal. Our project focuses on Bipolar Tail Neurons (BTNs) based on their derivation from the neural-crest-like cells in *Ciona*. Previous research compiled a list of genes which may play a role in NCCs by using RNA sequencing to compare modulations of Neurogenin, a marker for BTN differentiation. Using the list compiled of overexpressed genes, we analyzed ADRA2A and Dlx.b to discern if these genes may play a role in the gene regulation necessary for proper BTN development. We used fluorescent reporting of understudied intergenic regulatory modules as well as designed single guide RNAs (sgRNAs) for CRISPR-Cas9 mediated knockouts of our genes in the BTNs. Ultimately, this research would contribute to gene regulatory maps containing the various genes responsible for the development and differentiation of neural crest cells.

STEP: Context Elicitation Model for Self-Adaptive Systems

Author(s): Dax Vandevoorde

Advisor: Rebekka Wohlrab

Abstract: This poster and technical report introduces the STEP (State, Task, Event, Perception) model, an adaptable and modular modeling language for defining context, designed for ease of use during human user context-elicitation. Oftentimes, Self-Adaptive System(s) (SAS) users will have distinct requirements for different contexts the SAS may face. Specifying contexts (1) allows users to describe their requirements accurately and (2) allows developers to design SAS that satisfy user needs. Previous context specification methods tend to revolve entirely around difficult or impossible to quantify natural language categories, or represent context via vector clusters that aren't applicable to user communication/requirements elicitation. The gap between these two approaches is addressed by STEP, a modeling language for context elicitation that lends itself to both usability in requirements-elicitation, and streamlined implementation in development. The design phases and initial iterations are delineated, as well as motivation for downstream modifications that resulted in the current modeling language. Preliminary model usage results and comparisons to other cyber-physical modeling language systems are also described.

How Different Age Groups Perceive Couple Privilege

Author(s): J'Lynn M. Vellon, Katherine N. Carr

Advisor: Jennifer Hughes

Abstract: According to DePaulo and Morris (2005), the stigma for being single increases with age and the pressure to marry. This stigma is felt by many singles today as individuals put more emphasis on their personal and professional goals rather than on shared goals, such as getting into a long-term relationship. We predicted that single older individuals would perceive greater couple privilege as compared to younger individuals and those who are in couples, themselves. We had 1,254 participants complete the survey. Out of these, 29.1% were 18-24, 34.5% were 25-34, 20.5% were 35-44, 8.3% were 45-54, 7.1% were 55 or older, and .5% preferred not to answer.

A two-way ANOVA revealed that there was a statistically significant interaction between the effects of age and relationship status, $F(9, 1212) = 2.59, p = .035$. A main effect was also found for relationship status, $F(1, 1212) = 21.80, p < .001$, with those who reported being single perceiving greater couple privilege ($M = 40.05, SD = 8.36$) than those in relationships ($M = 38.30, SD = 8.08$). In addition, a main effect was found for age, $F(4, 1212) = 5.64, p < .001$, with those who reported being 35–44 perceiving greater couple privilege ($M = 40.48, SD = 7.31$).

Our hypothesis was supported. Single individuals who were older in age perceived greater couple privilege as compared to younger individuals and those in couples.

Species Distribution of Arctic Fox

Author(s): Marian White

Advisor: Jennifer Kovacs

Abstract: The arctic fox (*Vulpes lagopus*), also known as the snow fox, white fox, or polar fox, is a species of fox that is found in the tundra areas of Russia, Canada, coastal Alaska, Greenland, and Iceland. This species is able to survive the cold temperatures due to their thick fur coat and generally rounded body shape with a bushy tail, small rounded ears, short legs, and short muzzle. The fur of this species of fox changes, depending on the season, in order to better camouflage with their surroundings. Climate change is also affecting the availability of their habitat due to increasing temperatures. While the planet's average surface temperature has been rising since the late 19th century, it has become especially prominent within the past 40 years, with 2016 and 2020 being tied for the warmest year on record. For this project, I will be comparing the distribution of the arctic fox in the late 20th century to their distribution in the 21st century. In order to conduct this research, I will be gathering the data from online databases such as iNaturalist and GBIF. This data will provide us with information about the species distribution of the arctic fox. I will then be using R to clean up the data before importing it into QGIS in order to visualize how the distribution of the arctic fox has changed over the past 35 years, and then quantify the differences in the distribution of arctic foxes over this time period. This research will provide insight for how much the distribution of the arctic fox is being affected over the past few decades with increasing temperatures.

Climate change and the common octopus

Author(s): Lauren Whiteley

Advisor: Jennifer Kovacs

Abstract: Climate change has been a major ecological concern since the mid-nineteenth century. Organisms have been pressured to adapt to rapidly changing conditions predominantly a rise in temperature. Animals in marine ecosystems are especially sensitive to these changes, considering many groups, such as cephalopods, depend on specific temperatures for their growth and development. The goal of this project is to understand the impact of climate change on the common octopus (*Octopus vulgaris*) which are vital to the survival of temperate ecosystems. Our first goal is to examine how octopus species distribution changes over time, with relation to changing environmental conditions of our oceans due to climate change (predominantly sea surface temperature). We expect the octopus species distribution to change with correlation to its ambient temperatures possibly moving into deeper waters. We also expect the overall population counts and observations to decrease in shallow water areas where octopuses lay their eggs since temperature changes in those areas can cause developmental issues and a decreased survival rate of eggs. Our second goal (if time permits), is to examine how climate change is stressing vulnerable food webs, by overlaying species distribution of octopuses with the species distribution of their prey. We expect prey distribution densities to experience fluctuations, since increased temperatures has caused prey specializations in octopus (which are adapted to prey upon a wide species of prey but have since specialized because of energy stresses).

POSTER PARTICIPANTS CONTINUED, LISTED IN ORDER OF FIRST AUTHOR'S LAST NAME

The Social Pressure of Digital Decision-Making in Undergraduates

Author(s): Zakiah Whittaker, Faith Lockhart, Zakiah Whittaker, whittaker623@agnesscott.edu

Advisor: Brielle James

Abstract: The Sunk-Cost Fallacy is a phenomenon that occurs when decision-making is affected by a past outcome that is not relevant to the current situation or the choices that are available. Usually, a person is reluctant to leave or abandon the situation because they have already invested money, time, and effort. This phenomenon is examined through this research. Through an online vignette that depicts a couple hosting a live stream event for their favorite band, which experiences technical difficulties, Agnes Scott undergraduates have to navigate the monetary investment allocated to its success. The themes of emotional investment, social pressure, desire for success, and fear of failure are analyzed in the context of the Sunk-Cost Fallacy within the digital age. The findings might suggest that emotional attachment to an event, pressure to succeed, and fear of failure may positively influence the decision to continue investing in an event despite the lack of potential for success. This research highlights the importance of potential success or failure through the lens of Sunk-Cost Fallacy.

The Impact of Societal Beliefs and Stereotypes of Zodiac Signs on Decision-Making

Author(s): Shengyi Zhang, Miller K. Pascale

Advisor: Brielle James

Abstract: The anchoring effect is a cognitive bias that occurs when a person bases a decision on significant information they are given with a high or a low anchor. This survey research project will explore the effects of perceived stereotypes surrounding astrological signs and if a person will believe those biases have an effect on music choice. Undergraduate students at Agnes Scott College completed an online survey about decision-making. Participants read a short vignette about zodiac sign belief and music preference. The vignette manipulates the social belief of a certain astrological sign to have either a higher or lower preference for music. Participants then had to give a number that was either high or low based off of the anchor given to see if the anchor had an effect. It was hypothesized that after the participant was given the anchor, they would then answer the questions under the influence of the anchor. The results of this study have a significant impact on the research field by indicating the possibility of utilizing social beliefs as an anchor to affect the decision-making process.

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Global Perspectives on Health: Health Disparities in Bulgaria

Author(s): Mia Cisewski, Frances Pujeh

Advisor: Mina Ivanova

Location: Bullock 210E

Abstract: Healthcare disparities and inequities refer to unequal access to quality healthcare and treatments due to one's membership to a certain group and/or because one is disadvantaged. In Bulgaria, a European Union member state, ethnic populations such as Romanians and Turks are disadvantaged in their access to quality health coverage compared to the rest of the Bulgarian public. In this presentation we will share our immersion Journeys experience in the country and examine how ethnicity, socio-economic status, and geographic location pave the way for inequalities in the nation's healthcare system. We consider the political foundations of such factors as we focus specifically on the ways in which Roma women and children were particularly affected by the COVID-19 pandemic. Inequities in healthcare access are rooted in both systemic and wider issues within Bulgaria and reflect other social ills within the society. The project resonates with the core Journeys themes, particularly Self, Identity, and Other and Globalization.

Laterality of hippocampal volume differentially predicts verbal versus nonverbal memory performance

Author(s): Tess Dishaw, Kelsey Hewitt Psy.D., Adam Dickey M.D., Ranliang Hu M.D., Daniel Drane Ph.D., Cady Block Ph.D.

Advisor: Jennifer Larimore

Location: Bullock 108E

Abstract: Epilepsy is a chronic neurological disease, and surgery is a common treatment option for persons who do not respond to medication. Neuropsychology plays an important role in the epilepsy presurgical workup, characterizing the cognitive functioning of patients with epilepsy as well as assisting in the determination of which hemisphere seizures originate in the brain through testing of different cognitive functions. NeuroQuant is a relatively newer software that analyzes clinical neuroimaging to quantify brain volume. Cognitive performance and NeuroQuant bilateral hippocampal volume were examined in a cross-sectional sample of 37 patients with epilepsy. All patients had undergone a comprehensive presurgical neuropsychological evaluation as well as magnetic resonance imaging (MRI). A series of linear regression analyses were performed to determine if changes in left versus right total hippocampal volume predicted changes in verbal versus nonverbal memory performance. Total left hippocampal volume was a significant predictor of delayed verbal free recall (RAVLT $F(1, 31) = 4.79$, $p < .036$, $R^2 = 0.13$, and $\beta = .37$, $p < .036$). Even when controlling for the effects of biological sex, education, and depression, left hippocampal volume remained a significant predictor ($\beta = .42$, $p < .025$). Total left hippocampal volume did not predict other verbal memory scores. Total right hippocampal volume was a significant predictor of delayed nonverbal figure recall (RCFT $F(1, 31) = 6.46$, $p < .016$), $R^2 = .17$ and $\beta = .42$, $p < .016$). When controlling for the effects of biological sex, education, and depression, right hippocampal volume remained a significant predictor ($\beta = .404$, $p < .026$). Total right hippocampal volume did not predict other nonverbal memory scores. These findings validate prior research demonstrating the importance of the left hippocampus in verbal memory and right hippocampus in nonverbal memory.

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Findings also demonstrate the clinical utility of neuropsychological evaluation in determining laterality in the epilepsy presurgical workup process, as well as support NeuroQuants' inclusion as an additional consideration in that process.

Close Stellar Encounters

Author(s): Ayla Evans, Nia Suitt, Carey Felius

Advisor: Alexandra Yep

Location: Bullock 304E

Abstract: When groups of stars collide, stars may pass very close to each other, potentially kicking up comets from each other's Oort clouds and causing heavy bombardment events. To ascertain how frequently association collisions occur and what effects these may have on stars and their solar systems, we survey six stellar associations in the plane of the Galaxy, looking for association interactions and resulting possible close stellar encounters. We find that an association in this region may experience an association collision every 20 Myr, and stars within that association may on average experience a close stellar encounter every 84 Myr due to association collisions.

The Eclectic Dimensions of (Post)Colonial Legacies in Martinique

Author(s): Madison Jackson, Cory Brittan, Leah Mokry, Adrionna Foster

Advisor: Philip Ojo

Location: Bullock 210E

Abstract: This group digital project, which brings together students of GBL 102-I: Journeys - (Post)Colonial Legacies in Martinique, seeks to explore the multifaceted and multicultural dimensions of contemporary Martinique through five main axes: Creole and the linguistic landscape, religious syncretism, global cooking traditions, music as a depository of global influences, and the multinational nature of fashion. The goal is to demonstrate that the eclectic structure of (post)colonial legacies in Martinique are the direct results of the colonial experience that blended multiple cultural origins, traditions, and experiences: African, Caribbean, European, and American. The product of this collaborative project will be presented in digital format for enhanced dissemination.

A Declassified Graduate School Survival Guide: What You Need to Know about All Things Graduate School

Author(s): Taylor Jaczko

Advisor: Peeper McDonald

Location: Bullock 103W

Abstract: Are you interested in graduate school but need help figuring out where to start? Then this presentation is for you! There has been an uptick in adults obtaining graduate degrees in the past decade, but applying to graduate programs can be prohibitively confusing. This presentation will cover all aspects of selecting a program, deciding the schools to apply to, gathering application materials, and

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completing applications. In-depth explanations will be delivered regarding what a Statement of Purpose is, how to ask for letters of recommendation, and what to expect in graduate interviews. The presentation will also discuss a literature review regarding the demographics of graduate students and which soft skills were found to be critical while in one's graduate studies. There will be time at the end of the presentation for a discussion about what was presented and questions from the audience.

To Gaze Upon Oneself in a Racial Society: A Research Study on Racial Embodiment and Black American Perceptions of Medical Discrimination

Author(s): Jasmine Ariel Keyes

Advisor: Doug Falen

Location: Bullock 102W

Abstract: The American medical system remains entrenched with systemic forms of oppression that affect African Americans. Exploring the embodied, interpersonal rituals of healthcare lends itself to revealing the quotidian ways African Americans navigate their health and systems of power. The purpose of this research is to investigate the lived and embodied experiences of African American patients in a healthcare system by exploring constructed meanings of race, gender, and income. Additionally, this research examines the meanings African Americans make about power and oppression as a result of their experiences. This study emphasizes the corporeal experiences of African Americans through quantitative and qualitative data to examine African Americans' tacit yet impactful perceptions of healthcare practices. The methodology of this study includes a quantitative survey as well as a coded analysis of interviews from Agnes Scott students. Key themes that emerged from the results are that medical experiences are internalized within one's perceptions of self which shifts the locus of control the respondent experiences. Furthermore, respondents declared that self-advocacy is a form of resistance in healthcare environments. While the sample size is too small to draw generalized conclusions, this line of study has the potential to make a substantial contribution to our understanding of cross-cultural competency in the medical industry by providing the narratives of a minority group.

Citizen Science in Reporting Disease Vector *Ixodes scapularis* (Deer Tick)

Author(s): Arabella Lewis

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: Human-deer interaction has long been fraught with battles over backyard gardens and flower beds, but recently a more sinister effect of this phenomenon has emerged. As human populations increase, so do their encroachments on deer habitat. Health experts have noticed a relationship between this increased human-deer interaction and an uptick in the number of cases of tick-borne illness in the United States. Ticks are known to parasitize a number of mammals, deer being one of their primary hosts. As a result, humans are being exposed to ticks now more than ever and contracting sometimes debilitating illnesses. Because of this, it is important for health organizations to keep track of tick numbers and location in order to best respond with prevention and treatment. For instance, the CDC catalogs tick numbers in counties across the United States, rating counties as A, B, or C. This

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research asks whether citizen science projects such as iNaturalists could be used in lieu of CDC surveillance and provide us with the same level of information needed to make public health decisions. To examine this, tick data collected by the CDC was compared with the accuracy of individually collected and reported tick sightings on the site iNaturalist. This data was then mapped by U.S. county using the geospatial database, QGIS for comparison. Overall, this study assesses the usefulness of citizen science data for vector surveillance.

Unaffordable Housing and Health: Findings from a Literature Review

Author(s): Jayla Norman

Advisor: Erin Bradley

Location: Bullock 112W

Abstract: Affordable housing is a critical social determinant of health recognized by many public health experts. Social determinants of health are the social and economic conditions that impact health outcomes and underlying health inequities. This presentation uncovers many findings that surfaced during a literature review of housing affordability and negative health impacts. The literature review examines health holistically, utilizing the World Health Organization's (WHO) definition of health—physical, mental, and social well-being. There was additional specific interest in reviewing literature that covered structural or systemic racism in housing and how these historical occurrences contribute to the experiences we see today. This review went on to inform a qualitative research study examining the perceived health impacts of unaffordable housing and residential displacement amongst current and former residents of westside Atlanta neighborhoods, particularly Grove Park, Atlanta, GA. The findings of the literature review will be presented as it relates to impacts on each of the three facets of health: physical, mental, and social well-being.

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Endosomal Proteins in SHANK 3B Mice

Author(s): Delano Bielasowicz, Rosie Hagel

Advisor: Jennifer Larimore

Location: Bullock 108E

Abstract: Autism Spectrum Disorder (ASD) is a neurological disorder which can involve a wide range of symptoms, including delayed language skills, repetitive behaviors, and difficulty understanding nonverbal communication. Abnormalities in synapse structure have been implicated in ASD, including dendritic spine structure. The endosomal pathway is crucial in dendritic spine development, so this experiment examines the expression of endosomal proteins EEA1 and AGAP1 using SHANK3B mice as a model system for ASD and C57/B6 mice as a control. Protein expression is evaluated using Western blot and immunofluorescence analysis.

National Women's Machineries: Case Study of France

Author(s): Emily Carlson

Advisor: Mona Tajali

Location: Bullock 304E

Abstract: The Department for Women's Rights and Gender Equality (SDFE) is one of France's main national women's machineries, or bodies responsible for policy-making from a gendered lens at the national level. The SDFE is a department within the Directorate General for Social Cohesion (DGCS) that has existed since 2015, however, there have been extensive updates and overhauls since 2022. Though the department mainly covers four themes: equal access, professional equity, development of an equality culture, and the fight against sexual violence; they have a specialized mission appointed to them by the Prime Minister on violence against women. The Interministerial Mission for the Protection of Women against Violence and the Fight against Trafficking in Human Beings (MIPROF) has been placed under the SDFE department since 2016. However, even with this mission in place, violence against women has not shown much of a decline. The 2017 #MeToo (#BalanceTonPorc) movement in France highlighted some of the immediate pitfalls of MIPROF and since there have been many protests on sexual violence in an act to foster more systematic action, education, and change. This presentation aims to analyze the extent to which this department has been effective in addressing violence against women relying on Shirin M. Rai's criteria on evaluating women's national machineries with a focus on the clarity of mandate and functional responsibility as well as links with civil society groups supportive of the advancement of women's rights and enhancement of women's status.

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PARTICIPANTS, LISTED IN ORDER OF FIRST AUTHOR'S LAST NAME

Clearing the Air: Investigating the Success (or Failure) of EU Air Quality Regulations

Author(s): Nino Kalandadze

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: Air pollution is a critical and urgent public health issue, thus, many countries have introduced and implemented regulations regarding air quality, including those within the European Union (EU). Since 2013, the EU has monitored and controlled the concentration of pollutants within its borders in hopes of maintaining safe levels, as dictated by the shared regulations within the union. However, just how effective this approach has been within different countries remains unclear. The aim of this project is to analyze the air quality of EU countries over time, focusing on specific controlled pollutants, as well as analyze how location in relation to other countries can change the outcome. The air quality of EU countries is evaluated through trends and patterns in the concentrations of pollutants to assess the effectiveness of air quality regulations. The data for this analysis is collected from the European Environment Agency (EEA) website, where all collected air pollutant data is publicly available. This data covers the hourly concentration of five commonly controlled pollutants (CO, NO₂, O₃, PM₁₀, SO₂) in major cities of all EU member countries. The change in the average concentration for each pollutant over 9 years is analyzed and compared between regions and individual countries to test the effects of regulations in each area. The findings from this research project can contribute to the ongoing efforts to improve air quality and public health in the EU, as well as provide insight into the reality of implementing air quality regulations in different countries.

Color-Blindness, Discrimination, and Integration in Levels of Education for Multiracial People

Author(s): Rayah Kassis and Dr. Peeper McDonald, Dr. C. Peeper McDonald

Advisor: Peeper McDonald

Location: Bullock 103W

Abstract: Multiracial people face social justice issues in the education systems like racism and lack of belonging in an environment (Clayton, 2020; Wong et al., 2021). The purpose of this study was to examine the relationships between levels of education and the factors of racial color-blind attitudes, perceived discrimination, and identity integration in Multiracial people. It was hypothesized that in Multiracial people, there is a negative relationship between racial color-blind attitudes and levels of education, a positive relationship between reported experiences of discrimination and levels of education, and a positive relationship between identity integration and levels of education. The study was conducted using an established data set (McDonald et al., 2019). There were 288 Multiracial people who were recruited by an undergraduate research pool, email requests to colleagues and faculty at institutions around the country, and social media posts. The majority of the participants received a high school diploma or associate's degree as their highest degree. Racial color-blind attitudes were tested by using the Color-Blind Racial Attitudes Scale (CoBRAS) (Neville et al., 2000). Experiences of discrimination were examined using the Brief Perceived Ethnic Discrimination Questionnaire-Community Version (Brief PEDQ-CV) (Brondolo et al., 2005). Identity integration levels were tested using the Multiracial Identity Integration (MII) scale (Cheng and Lee, 2009). The results partially supported the hypotheses

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but were not statistically significant. Implications for future research include implementing multicultural training for school counselors, providing outlets for activism, and promoting inclusive environments on school campuses.

Stigma's impact on HIV testing by geography, race, and sexuality

Author(s): Lily Olander

Advisor: Amy Patterson

Location: Bullock 112W

Abstract: Social mechanisms such as stigma frequently interfere with public health prevention efforts. This presentation based on a literature review uses the HIV stigma framework proposed by Earnshaw & Chardoir (2009) to investigate how stigma can impact the utilization of HIV testing by geography, race, and sexuality. The author used keywords such as "HIV Testing", "Stigma", "sexuality" and others to explore academic search engines for relevant literature. The literature revealed that intersectional stigma further complicates which groups are more likely to face stigma barriers when considering HIV testing, common stigma mechanisms which prevent HIV testing, and which populations are more likely to be delayed testers as a result of stigma and structural factors. The author underscored fear of HIV, perception of HIV as taboo, concerns for social repercussions, and stereotypes as common stigma mechanisms which prevent HIV testing. Though this review was originally conducted for the benefit of the CDC Foundation's HIV Self Testing team, it has great value to general public health practice because it can inform intervention developers of common ways in which stigma interferes with HIV screening efforts.

Perspectives from Journeys: Music, Arts, and Community (Navajo Nation)

Author(s): Zoe Nicholson

Advisor: Tracey Laird

Location: Bullock 210E

Abstract: Globalization is the process by which dominant nations and corporations create an interconnected network of trade and communication for the sake of development and so-called progress. However, this comes at the expense of marginalized groups like Indigenous peoples who are exploited for the sake of economic gain. The case study of uranium mining in the Navajo Nation provides one window into understanding the impact of globalization on the Dine people and other marginalized communities. By seeing the land as property and seeing non-western heritages as disposable, too often threatening erasure through poverty and environmental injustice, globalization reveals itself to be tied to a colonial legacy that Indigenous activists and authors have explored and critiqued, asking the question: Is development worth the cost of people's lives and their sovereignty?

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Addressing Early Marriage: An Anthropological Perspective on Human Rights

Author(s): Mariam Zohbe, Lilli Barnes, email: barnes945@agnesscott.edu

Advisor: Doug Falen

Location: Bullock 102W

Abstract: This presentation will explore the topic of early marriage and the underlying factors that contribute to its prevalence in today's world. Early marriage is more prevalent in developing countries and is classified as a human rights issue. Anthropological research can provide insights into the social and cultural factors that contribute to the prevalence of early marriage. The research aims to identify the most suitable and culturally appropriate approach to addressing early marriage, including the classification of early marriage as either a human rights issue or a developmental issue. Furthermore, the research aims to deepen the understanding of the humanitarian-development nexus and how it can be utilized to address early marriage effectively and sustainably. To achieve these goals, a thorough literature review of anthropological research on early marriage has been conducted, including an examination of the sociocultural and economic factors that contribute to this phenomenon. Through this research, the objective is to increase awareness of the underlying causes of early marriage and provide insights that can inform the development of culturally sensitive human rights policies and context-specific interventions aimed at addressing this issue and advocating for children's welfare.

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Mapping and tracking populations changes of Anopheles Culicidae in Central and South Florida

Author(s): Sukainah Abid

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: Marsh mosquitos (*Anopheles Culicidae*) are the only genus of mosquitoes that are able to transmit the Malaria virus. *Anopheles* populations thrive across the world, save for the northern and southern tips of the globe. Of the more than 100 breeds of *Anopheles* that can transmit malaria to humans, only 30-40% have the ability to transmit Malaria to humans living in endemic areas. Due to their particular habitat needs, malaria affects tropical and subtropical regions the most, and cases are not often seen in North America. However, some regions of North America mimic tropical climates and may develop these climatic conditions as global temperatures continue to rise. Over the past century, the average temperature in the Florida Peninsula has risen by 1 °F, and average rainfall per year, hurricanes, and tropical storms have all increased. Florida is becoming warmer and wetter, and it's creating an ideal habitat for *Anopheles Culicidae*. In this research project, I use data collected from the National Ecological Observatory Network (NEON) to track the population of *A. Culicidae* in Florida over the past 10 years to see if the population has increased. I will use data from the Orlando NEON site to track the different types of mosquitoes collected in and around Orlando to track if the count of *A. Culicidae* has increased as the state has become more hospitable for this breed. Based on my results, I examine the likelihood of a future scenario in which domestic cases of Malaria increase alongside the mosquito population.

Understanding the Role of the Genes KLF1/2/4 and SRRM4 in the Formation of the Neural Crest in Ciona Robusta

Author(s): Ashiya Gillette, Teresa Lee, John Pilger, Sydney Popsuj

Advisor: John Pilger

Location: Bullock 108E

Abstract: Neural Crest Cells (NCCs) are responsible for forming structures vital to the evolution and development of the vertebrate body plan. However, because of the indispensability of these structures, functional studies of the genes likely regulating the neural crest are difficult to study in vivo. The Bipolar Tail Neurons (BTNs) in the marine invertebrate *Ciona robusta*, that is thought to have neural-crest-like cells, is potentially homologous to the vertebrate neural crest cell derived dorsal root ganglia. This means it is an excellent model to understand differentiation of the neural crest into derived structures because *Ciona robusta* only need these structures during the larval phase. We profiled genes upregulated with the BTN precursor Neurogenin and found that KLF1/2/4 and SRRM4 show similar patterns, indicating they could have a regulatory relationship in BTN differentiation. Thus far, these genes have only hypothesized roles in the neural crest in other model systems but functional work has been limited. To address this research gap, we will use the "find it" technique for SRRM4 using genetic fluorescent reporting and the "lose it" CRISPR technique for KLF1/2/4. Based on previous scientific literature, we hypothesize that SRRM4 and KLF1/2/4 are significantly involved in promoting NCC-like cell-derived cell activity in the BTNs.

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Decolonization of Berlin

Author(s): Doreen Harerimana, LynnAnn Koh, Julia Norcross, Jeilani Daniel

Advisor: Barbara Drescher

Location: Bullock 210E

Abstract: In doing this project we were posed the question, "How can we decolonize Berlin?" For this presentation we're offering a proposal to how Germany and the city of Berlin can do just that. Our main focus is how Germany can pay reparations for the horrific atrocities they committed to the Namibian people during their colonial rule in Africa. One way among other ideas is a monument/memorial to the murdered people during the Namibian Genocide. In our project you get to see historical context and visuals to how the memorial could look.

Italian Fashion: Image and Industry

Author(s): Camille Hope

Advisor: Willie Tolliver

Location: Bullock 210E

Abstract: Students in the course Journeys Milan: Italian Fashion, Image and Industry reflect on their Peak Week experiences in ways that relate to the Journeys themes of Colonialism and Globalization. The focuses of analysis and interpretation will include such travel sites at the La Scala Museum, the Why Not Modeling Agency, the Taroni Silk Factory, the Armani/Silos, and the Silk Museum in Lake Como.

Social Media and Personal Identity

Author(s): Taylor Jaczko and Dr. Peeper McDonald, Dr. Peeper McDonald

Advisor: Peeper McDonald

Location: Bullock 103W

Abstract: Social media use has exploded over the last 20 years, but the research literature has lagged. Moreover, research regarding personal identity in relation to social media identity is scant. Social media use has been shown to significantly impact our personal identity, belief in our ability to accomplish goals, and our overall sense of self. The precise algorithms that are the backbone of social media websites create echo chambers that tend to humankind's inherent need for community and a sense of belonging. Despite humanity's inclination towards connection, these online communities can be catalysts for the generation of discriminatory thoughts and ideology. Colorblind ideology is interwoven throughout social media under the guise of being accepting and "fair." However, research findings point to a vicious cycle of spreading hate, gaining attention, and continuing to spread discriminatory ideas and microaggressions. On the other hand, research has investigated how a sense of safety and acceptance can be generated through online communities. People with marginalized identities have curated specific corners of the internet that promote embracing who you are and a strong sense of community. This presentation will deliver the current literature on social media and personal identity to educate the

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public on how social media can be used to find community—whether the community is founded on hate or a celebration of similar marginalized identities.

Afrocentrism and the Racialization of the Ancient Egyptians: A Review of the Phenomenon of Afrocentric Thought Within Classical Studies

Author(s): Laurel Killough

Advisor: Scarlett Kingsley

Location: Bullock 304E

Abstract: This paper examines the extent to which Afrocentrism dominated recent discussion on the racial formation and identity of the peoples referred to as the ancient Egyptians. Additionally, it presents an opposing racial construction of the Egyptians according to classical sources and their respective postmodern scholarly critics, arguing that the racial identity and construction of ancient peoples goes beyond simple binaries of “black” and “white.” These binaries, in turn, work to enforce current politicized racial tensions and hierarchies.

Afrocentric thought and “Egyptomania” are phenomena emerging and piquing in both academia and popular culture in the late 20th century, spurred by both the American Civil Rights Movement of the 1960s and the release of Martin Bernal’s “Black Athena.” The latter’s subsequent backlash within the classics community both underscored the advancement of Afrocentric thought within classical academia, while fanning the fire of racism within American political thought. This is contrasted with primary sources that illustrate a variety in physiognomy across North Africa and the Mediterranean around the time of classical period, as well as a general lack of discussion of race as it is understood in the postmodern world—that is, in terms of somatic difference, such as “black” versus “white.” Therefore, this paper argues that the newfound phenomenon of Afrocentric theory within the discussion of the origins of ancient Egypt and the broader field of classics is damaging to the fight to dismantle systemic racism in the West today.

The use of Social Media by Immigrants/ Refugees to access health Information

Author(s): Rejoice Lopuke

Advisor: Amy Patterson

Location: Bullock 112W

Abstract: At the onset of COVID-19, health professionals, health clinics, hospitals, and other health settings were forced to rethink how best to safely deliver care and health information to millions in the middle of a pandemic. Clarkston Community Health Center, Inc. was no different. CCHC switched to using telehealth technology, social media, and other communication strategies to continue to care for their diverse patient population with an all-volunteer workforce of licensed professionals. A project to learn how other health professionals, clinics and hospitals were disseminating health information about COVID-19 during the pandemic to their patient populations was crafted to draw strategies that Clarkston community can look into to help serve their patient immigrants/refugee population better. As an intern, I conducted qualitative desktop research to gather information regarding how immigrants and

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refugees gather information, barriers such as insurance coverage that subject different populations to miscommunication, their engagement with social media to access health-related information and institutional study of health facilities. The findings indicated an increased usage of social media among immigrants and refugees during the COVID-19 and a challenge of finding culturally relevant information by different immigrant populations groups. From the findings from the institutional evidence-based study, I was able to come up with some recommendations such as Town Hall meeting, CCHC community briefing regarding COVID-19, deciphering data and Health podcast in the vision clinic at Clarkston Community Health Center to reach more patient population.

The "Self" on Hinge: An Investigation of How Emerging Adults Self-Present on Dating Applications

Author(s): Lilia Memarzadeh

Advisor: Doug Falen

Location: Bullock 102W

Abstract: In recent years the popularity of digital dating applications has surged, fundamentally changing the dating experience. Social scientists have taken notice of this phenomenon, and there is a growing body of research investigating how individuals self-present and behave in these applications. However, the current literature pays little attention to the emerging adult population or Generation Z. This presentation will discuss the researcher's study into how emerging adults construct and present their identities on dating applications. A survey was conducted among 88 users of the Hinge dating application between the ages of 18 and 25. Participants completed a self-report questionnaire about their Hinge profiles and their experiences on the application. The results were then analyzed through SPSS. A smaller group of semi-structured interviews were conducted to obtain a deeper understanding of the various considerations involved in self-presentation on dating applications. These interviews were transcribed and thematically coded by the researcher. The results indicate that users who were seeking a long-term relationship were more likely to emphasize the importance of authenticity. This suggests that conscious management of self-presentation is used to achieve a desired outcome. Furthermore, the results show that self-presentation on dating applications is a complex balance between presenting an ideal self and an authentic self. This study highlights that the digital self is not spontaneous, but rather it is a conscious curation. Further research on the self-presentation, behaviors, and experiences of this demographic can give social scientists insight into how future generations will be shaped by this post-modern, digital world.

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A Postcolonial Examination of Hoodoo

Author(s): Shelby Connor, Kylee Frazier

Advisor: Doug Falen

Location: Bullock 102W

Abstract: Hoodoo is defined as a set of spiritual practices, traditions, and beliefs that were created by enslaved Africans in the Southern United States. The Transatlantic Slave Trade brought around 500,000 enslaved people to the United States between the sixteenth and nineteenth centuries, and in doing so brought influences of Vodun from the Fon people in Benin and Togo, in addition to other elements from the Yoruba religion. As such, hoodoo is thought to be a spiritual culmination of beliefs from around the world, with a particular focus on traditional African spiritualities, Christianity, and elements of indigenous botanical knowledge. This combination of global influences would not have been possible without the direct impact of African people working in tandem with those that practiced a variety of religions. By focusing on a postcolonial approach while still taking heed of Marxist influences, this presentation aims to trace the roots of hoodoo from its formation in the Southern United States, to its spread across the United States through the research of factors such as race, religion, and modern marketing practices.

Emotion Inhibition as it Relates to Emotion Perception, Peripheral Empathy, and Cultural Identity

Author(s): Kaelyn Dicks, Katie Carr, Dash Acker, Georgia Anderson, Desire Egboh, Charlotte C. Snoad, Rue Randall, Anise White

Advisor: Joel Thomas

Location: Bullock 108E

Abstract: Background: Inhibition of emotion has often been a symptom of traumatic experiences; however, few studies have observed whether this varies depending on emotion perception, empathy, and cultural identity. Objective: To examine whether a schema of emotional inhibition holds implications for clinical populations. Method: The current study utilized an online survey that was distributed to a convenience sample. The survey assessed the following factors: emotional inhibition, emotion perception, peripheral empathy, and endorsement and perception of the Strong Black Woman schema (SBWS). Results: We used a correlation and a moderation analysis to analyze the data. Higher levels of the emotional inhibition schema were associated with lower levels of emotion perception ability and higher endorsement of the SBWS, but only if the view of the SBWS leaned towards self-sacrificial, hostile, and emotionally contained. Higher levels of the emotional inhibition schema were not associated with peripheral empathy nor with the SBWS based on levels of self-esteem. Discussion: The negative correlation between emotional inhibition and emotion perception supports the idea that how we process our own emotions influences how we recognize emotions in others. Our results also support the importance of an individual's perception of the SBWS as an indicator for their conformance to the SBWS. These findings can influence the development of culturally inclusive medical care. Limitations include limited demographic diversity of participants and a small sample size. Future work can further test the relationships found in this pilot study in larger samples.

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Translating Differences: Bridging the Gap Between International Students and Writing Centers

Author(s): Adelaide Harris, Arabella Lewis, Shutong Guo, Rejoice Lopuke

Advisor: Mina Ivanova

Location: Bullock 304E

Abstract: Previous studies have found variable results surrounding what international tutees find beneficial in on-campus tutoring. Conversely, tutors have expressed concerns about their own ability to tutor international students. Though the Center for Writing and Speaking's (CWS') tutor training includes best practices for and common misconceptions regarding tutoring international students, there remain knowledge gaps according to a review of the literature and tutors' reported perceptions of past appointments. This project aimed to investigate international tutee experiences and their preferred tutoring strategies, as well as to identify potential instances of bias within the Center for Writing and Speaking. Based on a review of the literature, questions regarding these concerns were crafted and posed to a focus group of Agnes Scott's international students. This focus group was held to collect qualitative data from current international students who were willing to share their background, experiences, tutoring preferences, and open-ended reflections on the CWS. The information gathered from the focus group was analyzed to draw patterns, illuminate insights, and propose solutions. With the results from this study, center materials, training and marketing will be updated to reflect the unique and evolving needs of this student population.

Maternal Healthcare Policy in Georgia

Author(s): Madison Jennings

Advisor: Tina Pippin

Location: Bullock 112W

Abstract: This presentation examines maternal healthcare policy during the Georgia 2023 legislative session. With Georgia's brand being the "best place to live, work, and raise a family", this presentation investigates how Georgia leads the United States in maternal death. Through a government affairs internship, this presentation cites economic and healthcare legislation as well as hands on learning experiences.

The Virality of Blackness: An Analysis of Meme Culture and the Commodification of Digital Blackface

Author(s): Sanaa India LaCore

Advisor: Yvonne Newsome

Abstract: When engaging with the media, it does not take long for one to come across images of Black people being applied to express a multitude of emotions and situations by non-Black users. While seemingly innocent in its employment, this paper argues that this practice is harmful and results in negative racialized, sexualized, and gendered implications for Black people. My paper seeks to uncover the various intentions behind utilizing digital Blackface, whether that be through the commodification of a constructed Black persona or the use of Blackness and Black faces when participating in "meme

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culture” during online discourse. To better understand these motives, I bring forth the work of various scholars and critics to examine the relevance of Blackness in the age of social media along with the causes that lead to the virality of Black "characters" and personas. I maintain the assertion that this conversation must be considered through the racialized and gendered lens of its victims, regardless of the subconscious state in which users claim to reside when taking part in conversations online.

Journeys Cuba: A Conversation on Race

Author(s): Victoria Colón Lopez, Linda Danavall

Advisor: Carmen Carrion

Location: Bullock 210E

Abstract: Over the long course of the slave trade, slave merchants delivered more than four million enslaved Africans to the Caribbean. Driven by the sustained boom in sugar and coffee in Cuba, a large group of American merchants joined forces with traders and planters in Havana. The results had long-term repercussions: Cuba became the largest slave colony in all of Hispanic America, with the highest number of enslaved persons imported and the longest duration of the illegal slave trade. Today, the legacy of slavery and colonization has influenced identity formation and racial relations in Cubans. As a Global Student Leader (provided by the Schmidt Scholar award), within my immersive travel to Cuba, I had the opportunity to engage in conversations about race and recognized the commonality in the stories from these conversations. These dialogues accentuated the intersections between the concepts of identity, self and ‘the other’ throughout the African diaspora. These conversations were analyzed using an ethnographic approach to understand how beliefs on race, and how the social context of contemporary Cuba shapes, and is shaped by, individuals. In this presentation, I will provide an analysis of the qualitative data of the development of racial perceptions through the various narratives shared with me.

Black Hole Demographics in the First Galaxies

Author(s): Tien Nguyen, John Wise, Danielle Skinner, Sandrine Ferrans

Advisor: Alexandra Yep

Location: Bullock 209W-A

Abstract: Black holes are regions in the universe with such immense gravity that nothing can escape from. Black holes range in size from stellar-mass to supermassive. Supermassive black holes have been found within the first billion years of the universe, which challenges current theories of black hole astrophysics. There have been many theories for why supermassive black holes could exist at such an early time such as the growth of stellar-mass black holes, the direct collapse of a primordial gas cloud, or the stellar collisions and dynamical instabilities in dense star clusters. We are interested in the scenario that supermassive black holes grow from stellar-mass black holes by accumulating their surrounding material in a process called accretion and by mergers of black holes. We used the computer simulation code Enzo to simulate the formation and growth of stellar-mass black holes, and analyzed the simulation using the Python toolkit. In our data analysis, we look at the mass growth and orbital evolution of the black holes, and from that determine if the black holes will “sink” to the galaxy center after their

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formation and especially after a galaxy merger. Our work will contribute to our current understanding of how stellar-mass black holes can grow into supermassive black holes in the early universe. Moreover, since black holes may merge in the early universe, our results will also constrain the relationship between gravitational wave events and early galaxy formation.

Acknowledgement: This work was supported by the STEM Scholars Program 2021 Funding from Agnes Scott College: The Frances Marx Shillinglaw Women in Science Endowed Fund, The Maria Wornom Rippe '64 STEM Research Expendable Fund, The Sherman Fairchild Foundation Summer Stipend Program.

Journeys Alaska: Exploring Alternative Energy Sources and Conservation in Alaska

Author(s): Zoe Price, Indie Lorick

Advisor: Jennifer Kovacs

Location: Bullock 210E

Abstract: One of the main focuses for our immersion week experience for “Journeys Alaska: Decolonizing Conservation” was learning about renewable energy projects in Alaska. The main destination for our journey was Anchorage, Alaska. Anchorage is Alaska’s largest city with a population of ~300,000 people. Anchorage also has the largest electrical grid in the state. Currently this grid is mainly reliant upon natural gas which is extracted from the Cook Inlet. Recently it has been estimated that the natural gas in Cook Inlet will run out in 2029 at the current rate of consumption creating a very real and pressing need for the region to explore and begin alternative energy generation. As part of our week, we visited several organizations with a focus on energy generation, both conventional (Chugach Electric) and alternative (CIRI Wind Farm and Renewable Energy Alaska Project). We will report about the current state of alternative energy initiatives in Alaska and exciting work using microgrids in villages off the grid throughout the state. Additionally, in the class and throughout our travel week, we have explored issues surrounding conservation of natural spaces, including questions around what we conserve and why. This presentation will include a brief exploration of the role of beauty in discussions of conservation and what impact the perception of beauty has on conservation initiatives.

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Fabry Disease: A Case Study in the Application of Gene Therapy

Author(s): Bridget Carter

Advisor: Timothy S. Finco

Location: Bullock 112W

Abstract: Fabry Disease (FD) is an X-linked, lysosomal storage disease found in 1 in every 5,495 births in the United States. This presentation covers what FD is, how gene therapy works, and current gene therapy trials for FD. The disease is caused by a mutation in the GLA gene, which encodes for the enzyme α -galactosidase A (α -Gal A); the resulting deficient levels of α -Gal A lead to an accumulation of its substrate, globotriaosylceramide (Gb3), in the lysosomes of cells across a wide variety of tissues. While the disease is primarily seen in males, females with the mutation can also exhibit FD symptoms. The current treatment options for FD are enzyme replacement therapy and, for a minority of FD patients, pharmacological chaperone therapy. However, these treatments have drawbacks, including high costs as well as limited symptom reduction ability, among others. Gene therapy is being pursued as an alternative treatment for FD. In general, there are three gene therapy methods: the CRISPR/Cas system, treatment with genome-integrating vectors, and treatment with non-integrating vectors. Four kinds of viral vectors (retroviral, lentiviral, adenoviral, and adeno-associated viral) are being examined. FD gene therapy treatments with all these methods and vector types have been investigated utilizing cell cultures and animal models; two ongoing clinical trials held at Emory University School of Medicine are testing non-integrative gene therapies with adeno-associated viral vectors to treat human FD patients. Interviewed current participants in these studies are hopeful that this innovative method will result in an effective treatment for FD.

The Search for Avian Bioindicators in Obligate Brood Parasites

Author(s): Eli Freeman

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: This research examines if the Brown-Headed Cowbird, the most common obligate brood parasite in the United States, is a good bioindicator for avian species (birds). A good bioindicator would, in this case, be identified if the presence of the Brown-Headed Cowbird was strongly correlated to a higher richness of birds. The Brown-Headed Cowbird is the species of targeted research given that they are an obligate brood parasite and thus need the presence of other birds, and their nests, to reproduce, as they have lost the ability to create and raise their offspring. In previous studies conducted by Yun, S., & Lee, J.-W., they concluded that the common cuckoo bird, an obligate avian brood parasite found in Europe and Asia, was an excellent bioindicator within those regions. This study will use eBird data to identify if the Brown-Headed Cowbird is a good bioindicator within Georgia using Indicator Value analysis developed by Dufrêne and Legendre. This analysis uses specificity, the proportion of individuals of the Brown-Headed Cowbird in a particular county, and fidelity, the proportion of counties that contain the Brown-Headed Cowbird, to identify bioindicators. Suppose the Brown-headed Cowbird is an identified bioindicator of avian richness. In that case, we may be able to more broadly apply that knowledge in other areas to identify and indicate avian species richness in other areas of the US.

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The Human Rights Violations of Religious Minorities: The Uyghurs in China

Author(s): Anissa Nourdine, Destiny Tisdale

Advisor: Doug Falen

Location: Bullock 102W

Abstract: This presentation examines the way the Chinese government has violated the human rights of religious minorities, in particular the Uyghurs. The Uyghurs are the minority Turkic Muslim group who have migrated to the Ghulja region near the Kazakhstan border and close to the mainland Han Chinese area. As this region is rich in exploitable resources, the Chinese government did everything to take control of it, starting by trying to get rid of its inhabitants. And for some reasons this forced expropriation was of unprecedented violence, using tactics such as AI surveillance, sterilization in concentration camps, and censorship. We point out the inconsistency of China as a supporting nation of the United Nations Declaration on Human Rights. From our analysis of academic literature, we found discrepancies amongst the justifications of the Chinese government for the treatment of Uyghurs and found similar commonalities amongst the minority Christian population in China as well. Using our findings and a universalist approach, we will provide recommendations for China to remedy the issue at hand. Finally we will argue that the cultural assimilation that has been forced upon the Uyghurs in China has led to a genocide, becoming a human rights crisis.

Environmentalism and Sustainability

Author(s): Ansley Rickson, Yashi Jadhav, Ava Bierley, jadhav995@agnesscott.edu,
bierley937@agnesscott.edu

Advisor: Atieno Mboya Samandari

Location: Bullock 210E

Abstract: Students in the course focused on The Good Life (Pura Vida) in Costa Rica to reflect on their Peak Week experience in ways that relate to the 4 Journeys themes: Self, Identity, and Other; Ethics of Travel; Imperialism, Colonialism, Diaspora; Globalization. The specific lens for the group presenting is environmentalism and sustainability under globalization. Costa Rica is among the top ten countries in the world that are leading in this field. The group will also share how the Journey has raised their awareness on the importance of promoting environmentalism and sustainability in the US.

Edwardians to Flappers: How Fashion Reflects a Changing Society

Author(s): MaryRose Schwier

Advisor: Kristian Blaich

Location: Bullock 108E

Abstract: This presentation uses historical fashion as a means of analyzing changes in gender roles, socio-economics, and public opinion of mechanization and mass culture from pre to post World War I Europe. Fashion reflects society and tells the story of women throughout history whose only means of self-expression and rebellion was through clothing. Therefore, it can be utilized by historians as a unique

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method of understanding how individuals lived in and responded to societal change. Fashion history has been considered by many to be frivolous, but that is denying how it was the only means of self-expression that many women have had. While not every woman could afford or safely wear a flapper dress, anyone could take a pair of scissors and cut their hair into a bob.

The shift in women's fashion from the Edwardian Era to the 1920s is one of the most radical changes in European fashion history. Edwardian fashion was focused solely on excess, luxury, and boasting one's wealth. The styles were restrictive, forced hyper-femininity, and was one of the only times in which tight-laced corsetry was worn on a large scale. 1920s fashion was the opposite of Edwardian ideals: it embraced androgyny and comfort. The styles were accessible to all classes as they were cheaper, easier to sew, and produced on a larger scale. Hemlines rose and the shift silhouette did not require undergarments for shaping. Feminist and youthful subcultures that actively rebelled against returning to pre-war ideals thrived and received global attention.

Exploring Resident Perspectives: Qualitative Data Analysis of Grove Park Renewal's Affordable Housing Program in Atlanta, Georgia

Author(s): Akshita Singh, Alma Kassim, Anna Crane, Brittany Saxon, Lily Olander, Ruth Hillo, Tsering Shola

Advisor: Erin Bradley

Location: Bullock 304E

Abstract: Grove Park Renewal (GPR) is a community based affordable housing nonprofit in Atlanta, Georgia. This semester, Public Health 375 students had the opportunity to work with GPR to analyze qualitative and quantitative data from residents of GPR housing. This presentation will focus specifically on findings from the qualitative data analysis of resident interview responses. Two groups of data were presented for analysis: needs and growth opportunities and satisfaction with GPR. Before accessing data, researchers familiarized themselves with the history of Grove Park and gentrification in Atlanta. Then, representatives from Grove Park Renewal (both administrators and clients) spoke during class to aid in familiarization. Once data were collected, de-identified, and shared with student research teams, the researchers cleaned the data, created a code book to code qualitative data, and identified themes. Findings from this research will have great significance to GPR because it will provide insight into areas of improvement and how GPR can best assist residents.

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The Role of Hyperglycemia in Smooth Muscle Cell Phenotypic Plasticity

Author(s): Aili Fisher, Noah Perry, Mete Civelek

Advisor: Noah Perry (mentor w email address), Dr. Mete Civelek (Principal Investigator)

Location: Bullock 304E

Abstract: Coronary artery disease (CAD) is the leading global cause of death with a related 17.8 million deaths per year. Heritability estimates suggest that CAD is 40-70% heritable, indicating a strong genetic facet to disease risk. Genome-wide association studies have linked certain genetic loci to CAD risk. Within the arterial wall, vascular smooth muscle cells (VSMCs) contribute to the initiation and progression of atherosclerosis. VSMCs possess high phenotypic plasticity that allows them to dedifferentiate into various cell types that can be either athero-protective or atherogenic, and genetic variants affect the manifestation of certain VSMC phenotypes. VSMCs dedifferentiate in response to vascular injury, a common comorbid type of injury is hyperglycemia in diabetes. Diabetes confers a greater risk for developing CAD and contributes to certain atherogenic phenotypes in VSMCs, but a direct mechanism for this process has not been elucidated. Using previously generated RNAseq data, Weighted Gene Co-Expression Network Analysis (WGCNA) generated 54 gene co-expression modules. Using a list of genes differentially expressed in hyperglycemic conditions from a data set of mouse aortic SMCs cultured in high and low glycemic conditions (GEO accession #GSE66280), Fisher Exact enrichment tests found modules overrepresented with genes predicted to be modulated by diabetes (FDR < 0.05). To interpret the gene-to-gene interactions in co-expression modules of interest, Bayesian networks (BNs) were created using RIMBANET and key driver analysis (KDA) was performed to identify key drivers (KD) genes driving VSMC gene regulatory network topology. PHGDH and PCK2 were identified to be KD genes of the BN.

Science Sprint to Stop Cop City

Author(s): Isabelle Grovenstein

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: On Saturday April 15th, we are having a science sprint researching the ecological cost of the cop city project. A science sprint is a one-day research project where a group of around 20 students get together for the whole day and collaboratively work on a predetermined research topic. For this year's science sprint project, we'll be using a program called iTree canopy to estimate the ecological benefits of Weelaunee People's Park and the ecological cost of the proposed cop city project in the South River Forest on the southside of Atlanta. iTree canopy is a tool developed by the Forest Service that allows the user to survey the canopy cover within the given boundaries. It places a crosshair on a point, and the user selects what they see at that point, tree canopy, turf, roads, buildings, water, etc. The more points surveyed, the more accurate the estimates will be. The program gives monetary and removal rate values of air pollution benefits, hydrological benefits, and carbon sequestration and storage. Each student researcher will be assigned a section of Weelaunee People's park to survey. Using Shapefiles with the boundaries of the proposed project and the buildings/impervious surfaces that will *not* be built, we will be able to determine the monetary and ecological impacts of removing the existing tree canopy to

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build the proposed infrastructure for cop city. The goal of this project is to estimate the ecological benefits that will be lost if cop city is built.

Immigrant or Student; How immigration status affects access to higher education in Georgia

Author(s): Arizbeth Sanchez Gutierrez, Alex Roquemore

Advisor: Doug Falen

Location: Bullock 102W

Abstract: One would think that higher education is accessible for everyone who resides in the United States, but for undocumented students, it is a challenging journey. Undocumented students are banned from public higher education in Georgia. As stated in Article 26 of the Universal Declaration of Human Rights "...higher education shall be equally accessible to all on the basis of merit." The Georgia policies that were enacted to exclude immigrant youth are Policy 4.1.6, which bans them from applying to the top institutions in the state. Furthermore, Policy 4.3.4 prohibits them from receiving in-state tuition. We argue that the human rights of undocumented students are under threat due to the Deep South's history of educational segregation, American attitudes which perpetuate their criminalization, and the difficulties with obtaining citizenship. During the Civil Rights Movement, different organizations targeted issues at the local, state, and federal levels in order to end educational racial segregation for American citizens. Some organizations are already attempting to address the issue among immigrants; for instance: the NGO Freedom University assists undocumented students to get into higher education by aiding students with the college application process. We similarly recommend that organizations working at different levels work in tandem with each other to produce the best results. These organizations include the US Human Rights Network (a human rights organization based in Atlanta) and the Georgia Budget and Policy Institute (a policy-oriented organization) which will facilitate change at the state, international, and institutional levels.

Urban Lives: Evaluating the Impact of Gentrification in Grove Park Residents

Author(s): Victoria Colón Lopez

Advisor: Erin Bradley

Location: Bullock 103W

Abstract: The process of gentrification is the urban development of an area in which a city neighborhood experiences the influx of more affluent residents and businesses, increasing the cost of amenities and displacing low-income residents. For many years, the Grove Park neighborhood, which is the west of downtown Atlanta, Georgia was a thriving center for Black families and businesses on Atlanta's west side. However, decades of disinvestment took a toll on the community and its residents. The neighborhood's population declined and the economic infrastructure collapsed, bringing school closures and a loss of commerce. Through the Bevier Summer Public Health Internship program, I interned at Grove Park Renewal. Grove Park Renewal is a non-profit organization that seeks to provide housing, as well as various human services, to the Grove Park community in order to stimulate its renewal and combat gentrification. Via this internship experience, I designed a growth assessment (traditionally referred to as a needs assessment) that examined 8 dimensions of wellness, using the

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model from the Substance Abuse and Mental Health Services Administration (SAMHSA), for Grove Park Renewal residents: career, physical, social, spiritual, emotional, environmental, financial, and intellectual. In my presentation, I will discuss the assets and barriers related to the aforementioned holistic wellness component in order to implement necessary programs that will benefit Grove Park Renewal residents.

Religion in Japanese Animation/Pop Culture

Author(s): Kamaria McCrary

Advisor: Abraham Zablocki

Location: Bullock 210E

Abstract: In the west, animation is not considered a respected form of media, and is mostly marketed towards children. However, just by the sheer amount of content available, Japanese animation dominates Western animation, with media like manga and anime becoming widespread in the early 21st century. Essentially, these art forms reflect some of the realities of Japanese society from classism and social order/hierarchy to sexism, ageism, and racism. This of course also includes the myths, beliefs, rituals, traditions, & fantasies of the contemporary society. Understanding what they represent paired with the supposed origins of the art forms, better leads us to comprehend how religion has served as a source of conscious and unconscious inspiration for the mangas/animes we see today. This presentation will investigate and analyze the main religious influences, Shinto, Buddhism, Animism, and Christianity, seen in said popular media. Some examples include, Spirited Away, My Neighbor Totoro, Princess Mononoke (Studio Ghibli), Kamisama Kiss, Natsume's Book of Friends, Neon Genesis Evangelion, and Death Note.

The Scottie Bee Palynology Project: Investigating Biodiversity and Pollination with SEM and NMR Analysis at Agnes Scott College

Author(s): Esther Okamoto, Irène Chapeau

Advisor: John Pilger

Location: Bullock 108E

Abstract: This presentation covers the "Scottie Bee Palynology Project" and its progress in using SEM and NMR analysis to characterize local pollen and honey. The project involves three phases of research: hive husbandry, pollen collection, and chemical and microscopic analysis. The hive husbandry phase has restored the second ASC hive in preparation for the addition of a second colony. The pollen collection phase involves ongoing palynology fieldwork, data aggregation using iNaturalist, and video recordings to track the pollen brought in by the Agnes Scott Honeybees through each nectar flow. The analysis portion of this project aims to use SEM analysis to identify the kind of pollen collected to form an atlas of local pollen, while NMR analysis will identify marker compounds found in local honey. The knowledge and information generated by this work helps to address questions surrounding the biodiversity of the campus neighborhood and to understand the works of pollination at the micro level, as well as expanding laboratory technique access to a diverse student body and increasing opportunities for lab work outside of the classroom.

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Repression and Expression in Bram Stoker's Dracula

Author(s): Mary Shawhan

Advisor: Waqas Khwaja

Location: Bullock 112W

Abstract: There have been many adaptations of Bram Stoker's 1897 novel *Dracula*, most of which make major changes to the original narrative. Francis Ford Coppola's 1992 film adaptation, titled *Bram Stoker's Dracula*, is no exception. Most notably, this movie introduces a destiny-driven romance between Mina Harker and Count Dracula, an arc which is not present in Stoker's original novel. Through this and other narrative alterations, the movie depicts with less ambiguity the book's subtextual themes of repression, transgression, and sexuality. This presentation explores the challenge of adapting a work into a new medium, especially the attempt to preserve an original text's themes by significantly altering elements of its content, and how effective these adaptational decisions are in *Bram Stoker's Dracula*. In particular, this presentation focuses on themes of sexual repression and expression, drawing on both critical academic sources and direct comparison of the book and movie.

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A Growth Assessment Evaluation of the Grove Park Renewal Project using the CREE (Culturally Responsive and Equitable Evaluation) Framework

Author(s): Abigail Alvarez, Ariel Henderson, Rejoice Lopuke, Alex Roquemore, Leilt Seleshi, Peigton Smith, Hnu Hnu Win, & Amy Yarin

Advisor: Erin Bradley

Location: Bullock 103W

Abstract: Grove Park Renewal (GPR) is a multifaceted non-profit organization that addresses the housing crisis, and other community needs in Grove Park, a neighborhood in West Atlanta. GPR fights against gentrification by building and providing affordable and high-quality housing. To engage the community, GPR incorporated CultivateATL, an assets-based program to encourage personal growth as GPR residents learn new ways to interact with one another and the neighborhood as a whole. As part of the Public Health Capstone course, we used the Culturally Responsive and Equitable Evaluation (CREE) framework to interact with the community organization and analyze data from their recently conducted growth assessment (traditionally known as a needs assessment). We calculated descriptive statistics to summarize neighborhood demographics and social connections within the community. We will share our methods used to analyze the quantitative demographic data collected by the GPR staff to help us understand what is needed to assist residents and discuss the visualization of the descriptive analysis.

Beyond Color: Examining the Relationship between Income sources amongst the Black community

Author(s): Aminah Badmus

Advisor: Ruth Uwaifo Oyelere

Location: Bullock 112W

Abstract: There is evidence from the past literature that skintone correlates with better wage outcomes for Blacks with skin tones closer to white. In this presentation, we investigate this finding indirectly using more recent data. In particular, we explore if there is a wage gap between monoracial blacks and blacks of mixed race in the United States. To accomplish this, data is utilized from the March Annual Social and Economic Supplement of the Current Population Survey from 2013-2022. We will estimate a standard Mincer earning equation using ordinary least squares (OLS), controlling for standard variables and other variables that could affect wages. I then check for evidence of a wage gap between these two groups. Results suggest that self-identifying Multiracial Blacks have higher total family income than monoracial Blacks. However if we simply consider wages, Monoracial Blacks have slightly higher wages. This result suggests that Multiracial Blacks have access to more heterogeneous streams of income compared to monoracial Blacks which could lead to significant wealth differences over time.

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Vipassana: The Prison System Savior

Author(s): Lunden Birago

Advisor: Abraham Zablocki

Location: Bullock 210E

Abstract: This presentation examines the Buddhist practice of Vipassana as a tool for rehabilitation within the prison system. The presentation will give a brief history of the origins of meditation and its benefits to the mind, body, and much more. It will then explain in great depth the ins and outs of what the Buddhist Vipassana meditation is and how is a step up from the everyday meditation one might partake in. After gathering and understanding Vipassana I will give them a video example of how the use of Vipassana has changed the ways and lives of former inmates no matter the extent of their sentence. It will argue using the statistics of returning inmates and their participation in rehabilitation programs to express the importance of the implementation of this program.

Healthy Food is a Human Right: Nutritional Inequality in the United States

Author(s): Lae' Anna Drummond, Sadie Boonin

Advisor: Doug Falen

Location: Bullock 102W

Abstract: Health disparities contribute to the lack of access to nourishing food. Good health, and the resources necessary to maintain it, are considered human rights according to the United Nations (United Nations, 1948). Despite this, and the continued importance of healthy food for wellbeing, nutritional apartheid remains a major issue for predominantly black neighborhoods in America. In the United States, an exclusionary history of racism and other forms of exploitation have caused neighborhoods to be deeply racially and socioeconomically stratified. Nutritional eating in a community is impacted by the food's quality, availability and affordability. Additionally, proximity to grocery stores as well as individuals' time and ability to prepare sufficient meals influences the rate at which people are able to implement healthy eating habits.

Proposed solutions can lack the cultural competency required to best address the needs of marginalized communities. In order to reduce the occurrence of food apartheid, resolutions should aim to confront white saviorism and hegemonic ideologies that often take away the autonomy that choosing and providing food for your home gives you. Using a socioecological understanding of health in our literature review, we recommend interventions that are effective in reducing this human rights violation and promoting health equity. We investigate and compare the efficacy of projects such as implementing community gardens, incentivizing grocery stores to operate in lower income communities, and establishing more accessible food banks.

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Inhabiting the Story: Jewish Storytelling as Pedagogical Practice

Author(s): Molly Edlein

Advisor: Tina Pippin

Abstract: There is a quote which credits the Jewish people with giving storytelling to the world. Though this is incorrect, Jewish stories forms of storytelling often stand out. This presentation uses historical Jewish texts, historical analysis, and literary analysis to understand why Jewish storytelling, with a focus on Holocaust stories, stands out as unique. It is an amalgamation of experience and research collected during my time at the Breman Museum's Weinberg Center for Holocaust Education. Jewish storytelling is one of Judaism's primary pedagogical tools, often used in sacred ritual and everyday life. Jewish methods of telling stories, especially Holocaust and Exodus stories, have often been adapted by other groups in order to describe their own oppression.

The Effect of Diet and Environment on Red Flour Beetles (Part One): The Impact of Nutritional and Population Density Stress on Adult-Egg Cannibalism

Author(s): Wanvimol (Aom) Juneau

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: Red Flour Beetle (*Tribolium castaneum*), which spends its entire life cycle in flour, is an ideal model organism to study the effect of diet and environment on animal behavior. This study observes whether differing flour types and population densities would affect adult beetles' stress levels and therefore influence the adults-egg cannibalizing rates. Two experiments were conducted on beetle colonies in mason jars. The Nutritional Stress Experiment tests the role of different flours (whole wheat, high-gluten, teff, oat) on 20 adult beetles per jar. The Population Density Stress Experiment tests the impact of varying beetle densities (n=20, 40, 80, 100) in jars containing whole wheat flour. Both experiments involved adding 20 eggs per jar and counting eggs every 72 hours. Results showed the lowest egg survivor count in the oat flour trial (Nutritional Stress) and the n=100 density trial (Population Density Stress). These results supported the hypothesis that high stress levels correlates to increased rates of adult-egg cannibalism. With stress factors causing different individual interactions, further questions on behavior can be investigated such as whether there is a difference in beetles' gut microbiome with alternative flour diet, and whether adults are selective in egg cannibalism.

Super Star Cluster Formation in the Merging Antennae Galaxies

Author(s): Grace Krahm, Molly Finn, Remy Indebetouw, Kelsey Johnson

Advisor: Paul Wallace

Location: Bullock 304E

Abstract: As the closest major galaxy merger and home to thousands of super star clusters (SSCs), the Antennae Galaxies (NGC 4038 and NGC 4039) are an important location to study the molecular clouds at sites of vigorous star formation. Using carbon monoxide (CO) emission observations from the Atacama

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Large Millimeter/submillimeter Array (ALMA), we characterized the molecular clouds in the region where the two galaxies overlap. This region is the most active site of star formation in the merger and has already formed thousands of SSCs. We compared the physical properties of molecular clouds in the Antennae overlap to those in 12 other galaxies that were observed with similar methods. Compared to other sources in this sample, the molecular clouds from the Antennae, as well as in other SSC-forming galaxies and in the centers of galaxies, have the highest luminosities, surface densities, turbulent pressures, and turbulent kinetic energies. This is in line with previously-identified requirements of SSC formation.

Navigating Boundaries: Jewish Merchants and Racial Hierarchies in Atlanta, Georgia, 1865-1965

Author(s): Molly Edlein

Advisor: Mary Cain

Abstract: The Jewish community of Atlanta went from focusing on assimilation and being largely disinterested in black liberation in the Reconstruction Era to being involved in the Civil Rights Movement in significant ways. Though much research has been done on the activities of Jewish in Atlanta within the post-war and industrial periods as well as Jewish involvement in movements for Black liberation, less research has been done on how these events are tied together via changing Jewish identity. My research was conducted by analyzing primary sources (court documents, personal communications, diaries, etc.) housed primarily at the Breman Museum as well as the Atlanta History Center and the Digital Library of Georgia in order to explore how the Leo Frank case fits into the racial history of the United States via its impact on the Jewish communities perception of the established racial hierarchy. The Leo Frank case served as a tool in establishing continued racial hierarchy in Atlanta during the industrial period as well as a touchstone for the Jewish community's perception of their position within that hierarchy, leading to Jewish presence within the Civil Rights Movement. The case also acts as an impetus for the second rise of the Ku Klux Klan, and remains a touchstone for extremist groups in the United States today.

Gender Mainstreaming in Hungary

Author(s): Sofia Hart

Advisor: Mona Tajali

Location: Bullock 304E

Abstract: Gender mainstreaming is the process of bringing a gendered, feminist conscious to public policy and laws. This is often achieved through national women's machineries, bodies instilled in state governments with the expressed purpose of analyzing issues and policies through a gendered lens. My research scrutinizes the goals and efficacy of Hungary's gender mainstreaming agenda through its Women's Policy Unit under the Ministry for Family Affairs using Shirin Rai's (2003) five critical elements for national machineries (which include location, clarity of mandate, links with civil society, human/financial resources, and accountability). This presentation will also examine the unique context of Hungary and its ongoing tumultuous political and cultural developments under the leadership of Viktor Orban and the right-wing Fidesz party since 2010. The past decade has seen the rise of a conservative Christian movement in Hungary which promotes family values and traditional gender roles, and has notably espoused harsh anti-LGBTQ rhetoric. Through an analysis of its national women's machinery, this research examines the extent that gender mainstreaming and Hungary's conservative Christian movement have converged. Using gender mainstreaming theory scholarship from authors such as Rai, Jaqui True and Michael Mintrom, and Sally Baden and Anne Marie Goetz, this presentation seeks to study how national women's machineries may function in conservative societies, with Hungary serving as a case study, and the potential ineffectiveness or even detrimental effects of such entities in reaction to the global gender mainstreaming agenda.

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Quantitative and Professional Insights Developed During Internship with The Task Force for Global Health

Author(s): Jayla Norman

Advisor: Amy Patterson

Location: Bullock 108E

Abstract: This presentation covers quantitative and professional experiences gained during a Bevier Summer Public Health internship with The Task Force for Global Health in Decatur, Georgia. During the internship, quantitative analyses and visual graphics were produced to reflect findings from the LEDoxy clinical trial. The double-blind, placebo-controlled study was designed with the intent of investigating how effective a six-week treatment of the drug doxycycline is in arresting or reversing the progression of lymphedema that developed as a result of lymphatic filariasis. Work during the internship included data analysis assistance, and the production of visual graphics depicting data from the study sites in India, Sri Lanka, and Mali. In this presentation, contextual information about the study will be provided, as well as examples of visual graphics of results in Mali that were produced using the coding software R. Some explanations of conducted statistical analyses will be presented as well. Additionally, the professional experience and support provided during the internship will be highlighted during this presentation.

The Effect of Diet and Environment on Red Flour Beetles (Part Two): Intergenerational Study on Gut Microbiome and Kin Selection

Author(s): Esther Okamoto

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: In cannibalistic species, the ability to recognize relatedness and avoid eating one's offspring is a crucial aspect of survival for many species. The Red Flour Beetle (*Tribolium castaneum*) is a unique model system that presents adult-egg cannibalism driven by stress and the need for nutrients. The aim of this study is to understand the interplay between environmental and behavioral factors and the microbiome and how this impacts kin recognition and cannibalism. The role of the gut microbial community in adult-egg cannibalism and kin recognition is explored through a series of experiments that focus on the impact of host diet on gut microbiomes and cannibalism rates. The hypothesis is that a flour diet alters the gut microbiome and affects cannibalism rates, and that mothers are selective in which eggs to cannibalize using microbiomes as a kin recognition cue. The results of this study will provide a deeper understanding of the connection between gut microbiomes, kin recognition, and the process of kin selection.

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Don't Touch My Hair: Defining the Politics of Black Hair

Author(s): Francess Pujeh

Advisor: Yvonne Newsome

Location: Bullock 112W

Abstract: Natural hair holds a particular significance to African Americans' identities, making it a topic and target of political interest. The manner in which it is worn determines how the individual is perceived and the type of treatment they are bound to receive by society. This extended an advantage when, for instance, West Africans in the continent before the trans-Atlantic slave trade could convey through hairstyles their social status as either rich, royalty, or simply belonging to the common population. In contrast, attacks on natural hair became a means to the suppression and enslavement of Africans in the diaspora. A third thread of significance of natural hair to the Black community is its symbolism as a weapon to secure true freedom during the civil rights era and in modern society. This study surveys the roots of discrimination against Black hair textures and hairstyles and the historic background of the Natural Hair Movement, which is a contemporary campaign aimed at encouraging positivity and pride in Black hair whatever its texture or appearance might be. Finally, the study includes an in-depth look at the status of Black hair in contemporary America along with a description of The CROWN Act and its significance. This project was based on literature reviews and an analysis of previous research on a similar topic. The results of this study support that the discrimination against natural hair is one of the many faces of institutional racism in America.

Adjusted Focus: Utilizing the Photovoice Participatory Research Approach

Author(s): PH 395 students

Advisor: Keri M. Hill, Ph.D., CHES

Location: Bullock 103W

Abstract: Community Based Participatory Research (CBPR) is a collaborative research process that emphasizes the equitable involvement of all partners. CBPR strives for equitable inclusion, differing from "traditional" research methods where decision making power lies predominantly with researchers.

Photovoice is a commonly used CBPR research method. It is completed by documenting local areas of importance via photography taken by community members. The inclusion of all partners informs accurate intervention development and improves circumstances relevant to the community.

Students were given two weeks to create a PowerPoint presentation of 8 - 12 photographs of our positive experiences at Agnes Scott College (ASC). The photographs had descriptions of what is in the photo, what is happening, and why it was taken. After each student presented their work, the class collaboratively identified similarities across presentations and created twelve categories to sort our photos into. We ensured all voices had equal weight by taking a democratic approach during decision making processes, and during discussions of how to present our findings outside of the classroom and abstract creation.

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Our next steps would be to increase community involvement with a second phase of the project involving other students. The results and data would then be used in a hypothetical plan of action to change some aspect of life at Agnes Scott.

Future implications of this project can address student concerns on campus and create collaboration opportunities with Agnes Scott administration like the office of administration to portray the college experience here.

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The Effect of Colonization on Phenotype Selection

Author(s): Harley Lucas

Advisor: Autumn Cockrell-Abdullah

Location: Bullock 102W

Abstract: Phenotype selection means expressed genes, usually altered by adaptation (darker skin tones in areas with more direct UV rays). Through a colonial lens, the forced displacement of people has altered the expressed phenotype in colonized regions of the world. The theory is that colonization and the mass displacement of peoples altered the way expressed adaptation occurs in humans. The example used is Australia's cases of non-melanoma skin cancer before and after 1788, looking at the change in majority documented skin tone in order to see the change in UV adaptation and how that affects today's population. It shows the trend of phenotypical change before and after colonization.

Racial Microaggressions at a Small Private Liberal-Arts College

Author(s): E. Dawn Redd

Advisor: Yvonne Newsome

Location: Bullock 112W

Abstract: This paper explores racial microaggressions at a small, private liberal-arts college in the Deep South. In the last few years, the student body of Irvine College (a pseudonym) has shifted from being majority-White to majority People of Color. Such a marked, demographic shift has possible implications for inter-racial and inter-ethnic relations within the institution's student population. The current study surveys Irvine's students about their on-campus experiences with racial microaggressions from various segments of the college community. To reach a broad spectrum of the student body's racial-ethnic diversity, I distributed a Likert scale to currently enrolled students via social media sites such as Instagram and Facebook. I also posted flyers with a QR code around campus with the goal of making the survey easily accessible to students who might wish to respond by cellphone. Students were asked whether they had ever experienced racial microaggressions from a particular group on campus, such as from faculty, student peers, and administrators. They then were asked to rank how frequently such experiences happened. A high incidence of microaggressions was reported. In particular, respondents noted a high incidence of student-on-student microaggressions, suggesting that despite the college's success in administratively diversifying the student body, interracial and interethnic interactions are complex, often tense, and have especially adverse effects on students of color. In studying this issue, I hope to both open up a space for acknowledging and discussing the impact of racial microaggressions and to provide some concrete data that may be useful for generating anti-racist, institutional transformation.

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Assessing the Effect of Bull Thistle on Plant Biodiversity in the Sierra National Forest

Author(s): Megan Selecky, Dr. Jennifer Kovacs

Advisor: Jennifer Kovacs

Location: Bullock 209W-A

Abstract: Bull Thistle (*Cirsium vulgare*) is an invasive plant that was introduced to North America from Europe during the 1800's. There is a debate among plant ecologists as to whether this plant is truly a threat to the native ecosystems. Many invasive plants have an ability to influence the distribution of plants in an ecosystem. Some invasive plants have the ability to release a chemical toxin (i.e. grayanotoxins) that can change the behavior of the animals around them, including the pollinators (Stewart et al. 2021). Is the distribution of Bull Thistle affecting the biodiversity of the native plants in an ecosystem? In this analysis, I use iNaturalist (an online community of naturalists who share observations) to map out the Sierra National Forest Area in California and use 5 km diameter circle plots to get data. By using R studio and the vegan package these plots will be assessed for their plant biodiversity. Plant biodiversity will be measured by comparing each plot's species richness. The purpose of this is to determine if Bull Thistle is truly a threat to ecosystems and native plants. I predict that with more Bull Thistle in an area, there'll be less plant biodiversity due to its invasiveness. If there's a difference in plant biodiversity because of this Bull Thistle, further research would need to be done to see how the Bull Thistle could be influencing/affecting the pollinators.

Do social networks play a role in women's experience of domestic violence in Nepal?

Author(s): Sweksha Sharma

Advisor: Ruth Uwaifo Oyelere

Location: Bullock 304E

Abstract: Previous research on domestic violence against women in Nepal has focused on the role of a woman's education, employment status, ethnicity, norms, and alcohol use by her partner to explain the extent of violence faced. Understanding the complex nature of domestic violence and existing correlations with various societal factors, this paper explores the relationship between a woman's access to her social network, such as her relationship with friends and family, and her experience with domestic violence using data from Nepal Demographic and Health Survey 2011 and 2016. Specifically, this paper uses Linear Probability Model to identify correlations between the extent of physical and sexual abuse women face and the extent of isolation which is defined as the limitations placed on a woman's access to her social network. Furthermore, the probit model is used to examine the relationship between instances of emotional abuse and isolation. This study finds strong evidence that women who are isolated from their network experience higher levels of domestic violence across all three types of violence. Furthermore, restrictions on a woman's relationship with her family have the strongest correlation with physical and sexual violence, and the husband's jealousy when talking to other male friends is strongly correlated with emotional violence. Given the important role of social networks in women's experience of domestic violence, this study suggests the integration of community members in violence prevention programs.

3:20-3:40: ORAL PRESENTATIONS, Bullock Science Center, Presser Hall
PARTICIPANTS, LISTED IN ORDER OF FIRST AUTHOR'S LAST NAME

Artificial Intelligence in Art Museums: Technology, Accessibility, and Ethics

Author(s): Asher Tures

Advisor: Katherine Smith

Location: Bullock 210E

Abstract: As artificial intelligence grows in popularity, the urge to implement AI in a wide range of settings can be tempting, albeit dangerous to fields working to diversify limited worldviews. A recent practice within the field of curatorial activism has been prioritizing the viewpoints of minority groups, destabilizing the long-accepted white, western, male canon historically present in the museum. The largely positive impact of this movement in art historical scholarship and on curatorial choices should become a more established and widespread practice before artificial intelligence is introduced. The AI proposed would specifically analyze visual aspects of the work to create a narrative for visually-impaired visitors. An analysis of the historical demographics of museum staff and AI programmers indicates a strong possibility that such descriptions would not reflect curatorial activism's diversity and respect towards various cultures at this point. AI description is generic, and could be operating primarily on a dataset of pieces within the canon, opposing the current movements in the field and ignoring or misreading references and nuances in certain works, which a skilled and experienced curator can provide.

3:40-4:30: SOPHOMORE CLASS ATLANTA LEADERSHIP EXPERIENCE (SCALE) POSTER SESSION & CLOSING RECEPTION (with refreshments) *Bullock Science Center, 1st floor atrium*

This session will feature selected poster presentations from students that participated in SCALE (Sophomore Class Atlanta Leadership Experience) during this year's Peak Week. This year 39 teams conducted externships at 32 different Atlanta-based sites. This session will highlight the experiences of 7 of these teams. Each poster will discuss their understanding of leadership, organizational cultures, and an overview of their experiences at the sites.

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