## Poster Session 3

1. *Views on Climate Change*
   Olivia Diaz, Henry Castillo, Eric Levy and Monica Escaleras, Florida Atlantic University

   Views on Climate Change Climate change is defined as the change of the global climate patterns which is caused by natural occurrences and human activities facilitated by the increased use of fossil fuels. Climate change is a very prominent issue today, with people having conflicting viewpoints about it. For example, many people feel climate change is simply just a natural occurrence while others feel humans play a larger role in it. Furthermore, government intervention on the subject of climate change is widely debated. To understand the differing perspectives on climate change, we developed an online survey consisting of 12 questions. We gathered five hundred responses from people all over the United States. Overall, our findings showed that people believe in climate change. However, there is a statistically significant difference on the views of climate change based on people's party affiliation and the region where they live in the United States. The majority of Republicans responded no when asked whether climate change should be a concern for the government. They were the highest group of all the political parties surveyed to say that the government should not have a concern for climate change. This survey depicts the conventional view that Republicans continue to hold on the issue of climate change.

2. *A Landmarks-Based Navigation Application using Geographic Coordinates.*
   Yohannes Almaw and Reddivarie Sandeep, University of North Florida

   The primary objective of this study is to design a UNF (University of North Florida) campus navigation application. As part of the designing phase a local GPS (Geographic Positioning System) for our campus containing all the necessary data elements were collected. The most accurate Geographic Coordinates of UNF's major buildings were utilized. Once those coordinates were collected, they were organized in a local database using Microsoft Excel. From the data base, location of each building was exported into Google Maps. Out of 71 major sites on the UNF campus 60 buildings were able to be assigned accurate geographic coordinates of longitudinal and latitudinal positions. The tools used to collect, organize, and process the data were; Excel, Visual Basic Applications and Google Maps. By entering UNF building numbers as primary identifiers the following outputs were obtained; pulling building names, identification of exact locations of each building on Google Maps, and the ability to navigate between and among multiple valid geocoded points on Google Maps inside the campus proper. The final stage of this project has not been completed yet. The end result of this project is to develop a campus navigation application for mobile devices. This will allow users to enter UNF building numbers with the press of a button and navigate easily inside the campus. Ultimately, this project will be a very useful tool hosting significant information about UNF beyond its navigational abilities. This same project can also be applied to any localized areas throughout our planet where there is geographic coordinates of longitude and latitude lines.

3. *Modulation of Fear Memory Extinction by Prelimbic SK Channels*
Ronithe Senatus and Robert Stackman, Florida Atlantic University

Memories, or long-lasting changes in behavior in response to specific experience are dependent upon synaptic plasticity, or strengthening of synaptic connections between neurons. Synaptic plasticity is triggered by patterns of action potentials firing neurons. The rate of memory formation or encoding depends on the strength of these impulses. Small conductance Ca2+ activated K+ (SK) channels play a role in the duration of action potentials by modulating the after hyperpolarization period, through the regulation of K+ efflux. Blocking SK channels has been shown to facilitate encoding of memory by laboratory mice in several different tasks. Here, I will test whether the local administration of an SK channels antagonist (apamin) into the mouse pre-limbic cortex (PLC) will enhance memory formation by blocking the efflux of K+ and lengthening after hyperpolarization period; therefore, decreasing the time for the fear extinction. Fear memory will be first induced in naïve male C57BL/6J mice through fear conditioning; involving the pairing of a tone and a footshock to produce a conditioned freezing response. Next, mice will be exposed to the same tone, presented twenty time to promote a decrease in the expression of freezing. It is expected that a lower percent freezing after each tone for the apamin-infused mice, as compared to the saline-induced mice. These data will provide a deeper understanding of the involvement of the PLC in fear memory. Also, they will set the ground for further research in the pharmaceutical industry, to synthesize efficient drugs to help those affected by memory disorders.

4. *Effects of Cogongrass and Climate Change on Ant Communities*
Sara Alvarez and Andrea Lucky, University of Florida

Cogongrass is an economically important plant invader in Florida and around the world. It was introduced to the USA from Southeast Asia in 1911, but has no value as forage and has substantial negative impacts because of its aggressive invasion of native landscapes. The impact of this invader on native ecosystems is expected to worsen under changing climate scenarios. While the negative impacts of cogongrass on floral communities are clear, the impact on faunal communities is less understood. This study investigates the effect of an experimental cogongrass invasion in long leaf pine savannah on the ant community over three years, and examines how the interaction of invasion and drought impact this important group. Ants are directly and indirectly dependent on plants for food and shelter and can serve as effective indicators of forest health. This study tested the hypothesis that cogongrass invasion reduces both abundance and diversity of ants, and that climate stress exacerbates these effects. Results of the experiment revealed a sharp decrease in ant abundance and richness in both experimental and control plots. After three years, the dark rover ant (*Brachymyrmex patagonicus*) dominated the ant community regardless of treatment. These results reveal the unexpected influence of invasive insects. In this study, the arrival of ant invaders following community disturbance by plant invasion caused a collapse in the ant community within the experimental site. Whether this pattern is present at the landscape scale or is a result of the small size of this experiment remains to be determined.

5. *Aloe Vera as a Bactericide*
Lorraine Bermudez and Flora Chisholm, Valencia College

*Aloe barbadensis,* or Aloe vera, has been shown to have bactericidal and medicinal properties. It contains active ingredients such as anthraquinones and pyrocatechol, both of which are known to interfere in processes such as bacterial protein synthesis and elimination of bacteria. The purpose of this experiment was to analyze the effect of crude Aloe vera extract on eight different species of bacteria: *Alcaligenes faecalis, Enterococcus faecalis, Escherichia coli, Pseudomonas aeruginosa, Proteus vulgaris, Staphylococcus epidermidis, Staphylococcus aureus,* and *Serratia marcescens*. Three tryptic soy agar (TSA) bacterial lawns were prepared for each bacterium. The treatment was applied as sterile discs soaked in crude Aloe vera gel extract. Sterile discs soaked in alcohol acted as the negative control and discs of the antibiotic Ciprofloxacin as the positive control. After 72 hours of incubation at 37˚C, the diameter of the zone of inhibition for each treatment was recorded and the mean calculated. The bacteria with the largest zones of inhibition were *E. coli* with 10.3 mm, *S. epidermidis* with 10 mm, and *E. faecalis* with 9.8 mm. There was no difference between the effect of the Aloe vera and the control on either *A. faecalis or P. aeruginosa*. Previous work demonstrating the antibacterial effect of Aloe vera on Gram-positive bacteria was supported by this experiment. However, the Gram-negative *E. coli,* was also inhibited in this research, suggesting that further work on the effect of Aloe vera on Gram-positive and Gram-negative bacteria is necessary.

6. *The Effects of 17α-ethinyl-estradiol (EE2) on Sexually Selected Banding Patterns of the Sexually Dimorphic Gulf Pipefish, Syngnathus scovelli*
Guadalupe Sepúlveda Rodríguez and Emily Rose, University of Tampa

The Gulf pipefish (*Sygnathus scovelli*), the most abundant pipefish found in Florida, exhibits sexual dimorphism (females have blue iridescent bands along the trunk of their bodies while males do not). The estrogenic compound 17α-ethynyl-estradiol (EE2) is a common synthetic chemical used as an ovulation inhibitor for birth control. EE2 is released in water systems through human wastewater and could potentially harm aquatic life, such as the Gulf pipefish. For this experiment, five male pipefish and five female pipefish, housed independently, were exposed to two different concentrations of EE2 for one week. We observed whether banding patterns in the males would occur and to see if a higher concentration of EE2 would increase the iridescence of the bands in females. After seven days of data, the results showed that three out of the five males displayed banding patterns and the iridescence increased in four out of five females. These findings indicate that exposing Gulf pipefish to EE2 has a morphological effect on the organisms that could have an effect on their behavior and mating strategies. Further research could determine if the appearance of blue bands in males has a physiological effect that could impair their mating methods.

7. *CXL146: A Novel Therapeutic Agent That Selectively Targets Multidrug Resistant Leukemia*

Jordy Botello and Chengguo Xing, University of Florida

Multidrug resistance (MDR), in which administration of chemotherapeutic agents results in cross-resistance of cancer cells to many different therapies, is a major challenge in modern treatments of cancers. There has been an urgent need for new therapies to selectively target MDR malignancies. Recently the research team has developed CXL146, a derivative of the dual inhibitor of Bcl-2 and SERCA proteins sHA 14-1, which shows selective cytotoxicity towards MDR cancer cell lines in vitro. In the work cell-based evidence is presented for its therapeutic potential and offer inside toward its mechanism of action. HL60/MX2 is a MDR cell line derived from HL60. Interestingly, cytotoxicity studies in the HL60 and HL60/MX2 cell lines show an increased sensitivity of HL60/MX2 towards CXL 146. Additionally, the calcium-based assays show that CXL146 exposure to HL60 and HL60/MX2 cell lines causes significant reduction in endoplasmic reticulum (ER) calcium content, where the effect was significantly more pronounced on HL60/MX2 cells. Ongoing research will address the potential of calcium regulation to CXL146's preferential cytotoxicity towards MDR cancer cells. Taken together, this study has led to the discovery of a novel therapeutic agent that selectively targets drug-resistant cancer cells with the potential to treat drug-resistant cancers.

8. *Beatin' into Submission: Trauma Bonding in "The Dark Tower" and "The Walking Dead"*

Michelle Scrogham and Warren Jones, Eastern Florida State College

Patrick Carnes, in his book The Betrayal Bond: Breaking Free of Exploitive Relationships, discusses the term trauma bonding which we can see in such films as The Dark Tower and The Walking Dead. Trauma Bonding describes how one can be ensnared by the manipulation of others. In these abusive situations, the abuser exploits trust or power to achieve his or her goal. The abuser creates a reality where the victim is unable to break the bondage, and at times even feels obligated to the abuser. In The Dark Tower book series, trauma bonding occurs on a wide scale in the town Calla Bryn Sturgis; the Wolves from Thunderclap cull half of the twins to harvest portions of their brains, then return them "roont." The townspeople allow this culling due to the belief that without such abuse the whole town and people would perish. Trauma Bonding occurs in The Walking Dead when Carol stayed with her abusive husband and on a wider scale when the Governor's lieutenants in Woodbury stayed loyal to him, despite knowing he was a sociopath. They felt secure in their position, and that security outweighed any abuse.

9. *Investigating the Resistance and Sensitivity of Rhizopus delemar Strains on Various Drugs and Utilizing the CRISPR/Cas9 Endonuclease to Create Auxotrophic Mutants*
Arianna Broad and Ping Wang, Florida State University

Investigating the Resistance and Sensitivity of *Rhizopus delemar* Strains on Various Drugs and Utilizing the CRISPR/Cas9 Endonuclease to Create Auxotrophic Mutants
Five immunocompromised children at N.O. Children's Hospital contracted fatal, hospital-acquired mucormycosis due to *Rhizopus delemar* contaminated bed linen. *R. delemar* is a multi-nuclear, filamentous fungus which complicates genetic manipulation. Despite the organism's innate, high resistance to conventional drugs and being the leading causative agent of mucormycosis, *R. delemar* is relatively understudied and lacking in molecular techniques. Therefore, the goal of this study was twofold: 1) characterization of the growth of six *R. delemar* strains on antifungals. 2) utilization of the CRISPR/Cas9 endonuclease to generate an auxotrophic ura3 mutant in R. *delemar*. 1) Six different strains of R. *delemar* strains were examined: wild-type FGSC9543 and CDC8219, and 5-flouro-orotic acid (5-FOA) -resistant strains that mutated naturally from the WT strains, not through CRISPR/Cas9 manipulation. Results concluded that all the *R. delemar* strains displayed similar growth, except of the CDC8219 f1 which exhibited a stable ura-auxotrophic phenotype in contrast to the other 5-FOA-resistant strains. 2) gRNA for the CRISPR/Cas9 endonuclease was created by phosphorylating and annealing the complementary sense and antisense primers specific for a given CRISPR target site and ligated into a Cas9-containing plasmid (pmCAS9) utilizing two inverted BsmB1 restriction sites. E. coli harboring plasmid ligation products were screened, and positive DNA plasmids were used as gRNA to simultaneously target two CRISPR sites to create a deletion within the URA3 coding sequence by biolistic transformation and selection on 5-FOA.

10. *The Distribution of Antibiotic Resistant Bacteria in the Indian River Lagoon*
Anthony Cervone and William Stewart, Eastern Florida State College

The Indian River Lagoon is a diverse ecosystem and popular recreation area along Florida's central Atlantic coast. Recently, antibiotic resistant bacteria have been found in numerous species of fish and mammals in the lagoon. This poses a health risk to both animals and humans that enter this habitat, and it is unclear how these antibiotic resistant bacteria are entering the lagoon or which areas of the lagoon harbor the highest density of bacteria. To resolve this, we are identifying the possible inlets for antibiotic resistant bacteria and their distribution throughout the lagoon by sampling the sediment for bacteria from multiple areas and culturing these samples on nutrient agar using standard microbiological techniques. The minimum inhibitory concentration of 7 classes of antibiotics will be evaluated for each sample. These data will provide a detailed map showing the spatial distribution of antibiotic resistant bacteria along a 10-mile stretch of the Indian River Lagoon. Preliminary results show that high concentrations of bacteria are in the smaller residential canals that exhibit little to no flow. Our findings promise to be instrumental in helping to limit the spread of dangerous bacteria in this vital ecosystem

11. *Preservation Project Jacksonville: A History*
    Kaley Crawford and Maria Mark, University of North Florida

    The City of Jacksonville Preservation Parks system has a long and rich history that has yet to be recorded. "Preservation Parks Jacksonville: A History" is a project lead by Kaley Crawford of the University of North Florida Environmental Center, and is designed to capture and preserve that history. The project consists of interviewing individuals who were pertinent to the creation of the preservation parks system, and transcribing the interviews to create MP3 files and documents of the oral histories. The end goal of this ongoing project is to create a free website for the public to access and learn more about the City of Jacksonville Preservation Parks system, with information on the website coming from the oral history recordings and research.

12. *The Influence of Parental Behavior on Children with Anxiety and Comorbid Attention Deficit/Hyperactivity Disorder.*
    Isabella Herrera and Jeremy Pettit, Florida International University

    Children with diagnoses of comorbid anxiety and Attention Deficit/Hyperactivity Disorder (ADHD) may exhibit symptoms and impairments that are exasperated by their parents' behaviors. We expect there to be a parallel between parenting behaviors, like accommodations of child anxiety or different parenting domains, and anxiety-related impairments that are more pronounced for parents of children who meet criteria for ADHD. To test our hypotheses, we will be using institutional review board (IRB) approved data from baseline records of youth, ages 6-17, who have been evaluated at the Child Anxiety and Phobia Program (CAPP) at Florida International University. First, we will determine if ADHD symptoms are associated with any particular anxiety disorder, or class of anxiety disorders. We expect the association between ADHD and Social Anxiety Disorder to be higher than that with other anxiety disorders, due to the well-documented social impairments in this population. We also expect that parents of ADHD patients will exhibit less warmth, more psychological control, and more accommodations. These heightened accommodation levels may be predicted by parent and child characteristics. There is a need for comprehensive and holistic psychological assessment that considers the effects parents may have on the intensity of symptoms, particularly among challenging cases of ADHD comorbidity. This investigation will provide rarely studied correlations between this comorbidity and possibly identifiable targets for intervention, such as parent training. Results may provide new directions to better serve families with complex presentations, which have previously been shown to worsen with traditional interventions.

13. *Framing Ebola: A Textual Analysis of Ebola Coverage in the New York Times between March 2014 and August 2014*
    Alexis Cruz and Jelena Petrovic, Stetson University

    This rhetorical study examines the role of online news media and its relationship to covering the Ebola outbreak. In 2014 the Ebola virus was a nationwide phenomenon in the United States that generated social, cultural, medical, and political issues that caused the public to panic. This study analyzes 30 online news articles from the New York Times referencing the Ebola virus from March 2014 to August 2014. The news articles were

approached through textual analysis, looking for prominent frames that expose the media's representations of the Ebola virus. The analysis of the 30 New York Times articles showed that public health themes, medical risk and social issues were the dominant frames that were reinforced. This study concludes by discussing the possibility of these dominant frames helping shape public opinion, initiate medical practices, and influence socio-political policy making.

14. *Influence of Geometry-Induced Frequency Dispersion on the Impedance of Rectangular Electrodes*

Katherine Davis and Mark Orazem, University of Florida

Three-dimensional finite-element simulations were used to analyze the characteristic frequency associated with the influence of electrode geometry on the impedance response. An expression for the characteristic rectangular-electrode length was found to be satisfactory, where ohmic resistance can be used to calculate the characteristic dimensions of the electrode. The characteristic frequency associated with the influence of the rectangular-electrode geometry affects the electrochemical impedance response. These results may serve to lead the design of rectangular-shaped sensors which employ impedance measurements.

15. *Helicopter Parenting in Emerging Adulthood: Influence of Personal Experience on Perceptions Of Parenting*

Nicole Bouchard, Lovia Feliscar, Wendy Rote and Renee Patrick, University of Tampa

Helicopter parenting in emerging adulthood: Influence of personal experience on perceptions of parenting. Helicopter parenting (HP) has been depicted as parenting that is controlling, inappropriate, and over-involved for the child's age (Cline & Fay, 1990; Padilla-Walker & Nelson, 2012). Research suggests that HP can lead to negative outcomes (e.g., depression, low academic self-efficacy) for emerging adults (Luebbe et al., 2016). However, little attention has been given to emerging adults' beliefs about what constitutes HP and whether their own personal experience may influence these views. This study compared students' perceptions of HP ("Is this helicopter parenting?") to their experience ("Indicate how much your parents do the following behaviors"). Participants included 233 students (84% female) from universities in the southeastern U.S. The sample (Mage = 22.33, SD = 2.94) was somewhat diverse (61% Caucasian). Participants completed a measure of their personal experience with HP behaviors. These behaviors consisted of parents assisting or monitoring children across three domains (academic/job, personal, health). Also, students rated whether they considered these same behaviors to be representative of HP. Results indicated that emerging adults who had experience with HP were less likely to perceive typical HP behaviors as over-involved/age-inappropriate across all three domains. These findings suggest that experience with HP may normalize these types of parental behaviors. Also, further analyses showed that students incorrectly presume that HP is relatively common among their peers. Viewing HP as a normative practice could lead to negative consequences for young adults, who have an increasing need to become independent and self-sufficient.

16. *Chitosan as an Oral Phosphate Binder*
Michele Dill and Christopher Batich, University of Florida

For patients with Chronic Kidney Disease, dietary restrictions and dialysis treatments are often insufficient to prevent hyperphosphatemia. The resulting increased serum phosphate concentration can cause further health problems including cardiovascular disease. To combat hyperphosphatemia, patients can take oral phosphate binders which interfere with the absorption of phosphate in the small intestine. Oral phosphate binders currently on the market have drawbacks such high cost. Chitosan is a polysaccharide that is obtained through the deacetylation of chitin. The structure, biocompatibility, and low cost of chitosan could make it a good alternative to oral phosphate binders currently available. This project investigates the potential of chitosan for treating hyperphosphatemia and the effects of transient acid exposure on binding capacity through in vitro phosphate binding experiments. In these experiments, dialysis membranes containing chitosan or a known phosphate binder (Renagel) were placed in a pH 2 NaCl (or a pH 7 control) solution for before being moved to a pH 7 phosphate solution. These solutions were intended to mimic the environments of the stomach and small intestine. Phosphate binding was quantified over time using a spectrophotometric analysis method for determining phosphate ion concentration. Chitosan was found to have a higher binding capacity after first being dissolved in an acidic solution, and results suggest that it could be an alternative to the more expensive Renagel. Current studies are focused on increasing the phosphate binding potential of chitosan through further deacetylation or functionalization with arginine to increase the reactivity of the amine groups on chitosan.

17. *Mutual Gaze Among Strangers*
Allie Vaknin and Sally Hastings, University of Central Florida

The purpose of this study is to investigate the reactions people experience when engaged in extended eye contact with a stranger. Artist Marina Abramović and an organization entitled The Liberators International have demonstrated a spectrum of reactions, many emotionally-charged, that have occurred from the opportunity to sit across from and gaze into the eyes of a stranger. Current research on eye contact has been predominantly quantitative, with no available research that qualitatively investigates the scenario in focus. The design of this study involved interviewing 35 people who participated in "The World's Biggest Eye Contact Experiment," where individuals paired with a partner and gazed into each other's eyes for one minute. The data has, so far, revealed a significant overlap between positive and negative face, where individuals sought out the experience in order to exceed their comfort zone and to foster connections with other people. Most participants reported feeling a sense of vulnerability, which may stem from the social norms, such as civil inattention, that restrict people from making eye contact.

18. *Social Network Theory and the Developing Aquaculture Industry in Wakulla County*
Maggie Dowd, Jordan Rundle, Allen Byrd and Wen-Chi Shie, Florida State University

This case study looks at the impact of community and economic developments in Wakulla County, Florida, through the emerging oyster farming and aquaculture industry. Using the social network theory, we have modeled a network matrix to better understand the strategic social interconnections that lead to municipal financial advancements. We hope to improve our understanding of individual relationships and how they contribute to thriving communities through data collection, interviews, and surveys. This research will further the ambitions of policy leaders and contribute to their ability to improve the financial and social wellbeing of the Wakulla County community. Furthermore, we expect that our findings can be extrapolated to suit the policy decisions of other developing communities. As this is an ongoing project, we are still in the process of finding additional evidence to support the trends and correlations we believe our study will demonstrate.

19. *Exploring Emotional Processing with fNIRS*
Carly Doyon, Vernon Volante, Sara Fagan, Jesse Macyczko, Rachel Carpenter and Katherine Hooper, University of North Florida

Functional near-infrared spectroscopy (fNIRS) is a safe, inexpensive, and non-invasive method for assessing real-time cortical activity associated with cognitive and affective states in human participants. It uses two wavelengths of near-infrared light to measure the oxygenation and concentration of hemoglobin in the cortex. We used fNIRS to investigate emotional and cognitive processing in the prefrontal cortex of both brain hemispheres while participants viewed images known to elicit positive, neutral, and negative emotional reactions. The amount of sleep obtained the night before, as well as traits such as introversion/extraversion, neuroticism, trait anxiety, and social conservatism were also measured to determine whether they are associated with, and can predict, cortical responses to emotionally-valenced imagery. Understanding how the prefrontal cortex processes such stimuli could provide insight into the neural correlates that underlie individual differences in personality traits. Additionally, the results of this neuroimaging study may help elucidate the effects of sleep deprivation on cortical reactivity to emotional stimuli.

20. *Water Injection with CO2: A Perspective for Carbon Sequestration.*
Kevin Garcia and Myoengsb Kim, Florida Atlantic University

Carbon sequestration into aquifers has been considered a promising technology for mitigating overwhelming atmospheric carbon dioxide (CO2) concentration. When gaseous CO2 is directly injected into deep saline aquifers, resident brine in the reservoir is evaporated while precipitating salt, thereby leading to damage of aquifer media for subsequent CO2 injection. In addition, high salinity contents in brine cause a significant reduction in CO2 dissolution into brine. In this study, we propose a new method of sequential water injection with gaseous CO2 that minimizes salt precipitation and accelerates CO2 dissolution. To understand impacts of periodic injection, a high-speed imaging technique was employed to observe water evaporation phenomena indirectly.

Results show that the evaporation exponentially increases as CO2 inlet pressure increases. While an increase in salinity concentration up to 10% shows a linear decrease in the evaporation rate, this behavior was reversed when salinity was increased from 10 to 30%. We observed that CO2 dissolves into a continuous aqueous phase and thereby decreasing the amount of gaseous CO2 injected under periodic injection. We surmise a decrease in the effects convection and diffusion by gaseous CO2 effectively leads to delaying evaporation rate of brine. In addition, multiple tests at different frequencies of sequential injection and pH levels of water were carried out to find the optimal periodic operation condition. Operation at low frequency with higher basicity proved to be more effective in accelerating CO2 dissolution into injected water for more feasible CO2 storage plans.

21. *Genre, Identity, and Queer Maghrebi Literature*
Ravital Goldgof and Corbin Treacy, Florida State University

Moroccan author Abdellah Taïa is known as the first openly gay author in North Africa and his works are considered groundbreaking. In Denis Provencher's Queer Maghrebi French, Taïa and other authors and artists who have come out in recent years, are credited with creating a public space for queer Maghrebi men to be recognized. With a focus on genre, my project addresses questions of masculinity, adolescence, and hierarchy in romantic relationships in two of Taïa's's texts: An Arab Melancholia (2008), an autobiographical novel, and Infidels (2012), a fictional novel. The similarities between these novels are many—specifically, the presence of an archetypal, independent female character and the toxicity of an unequal relationship. But despite these shared figures, there are important differences that I argue are caused by the limitations of their respective genres. Fiction untethered to biography allows Taïa to push the boundaries further than the reality described in An Arab Melancholia. I also explore how the passing of time changes the author's interactions with similar characters and events. This paper constitutes the first part of my undergraduate thesis. Moving forward, I plan to analyze films like Le Fil (2010), magazines such as Têtu (a French LGBT lifestyle magazine), blogs and other online sources in order to understand how identity, especially in the queer Maghrebi milieu, is shaped by and participates in the shaping of the specific forms, genres, and media through which it is expressed.

22. *Does A Sample of College Football Players with Sickle Cell Trait Differ from a Control Sample in Anthropometric Measures?*
Deandre White and Lorena Madrigal, University of South Florida

There have been multiple deaths and even more injuries of football players with sickle cell trait (SCT), the heterozygous state of sickle cell disease. To explain what factors contribute to their risk levels when playing, a college SCT sample group was compared to a control by anthropometric measurements and position types. Comparisons of genetic factors (single nucleotide polymorphisms -SNPs-), symptomology and team positions were also made within the SCT group to determine if SNPs were associated with symptomology. All SNPs are associated with production of hemoglobin F and G6PD deficiency. Using SAS, several chi square tests for discrete variables including symptoms, position, player size and SNP prevalence were done to compare inter- and intra-

relationships of the SCT and the control player samples. Parametric (one-way ANOVA, two-tailed t test) and non-parametric (Wilcoxon, Kruskal-Wallis) tests were performed to analyze anthropometric measures. Tests showed that the control was significantly heavier than the SCT group and had a significant difference in distribution of position types (most control players were linemen whereas SCT players were mainly non-linemen). Within the SCT sample, all linemen contained the BCL11A SNP for fetal hemoglobin and lacked G6PD mutations. Players with BCL11A had a marginally significantly higher BMI compared to those without it. Results suggest that physiological differences between HbAS and HbAA players may alter their abilities at some stages of performance. SCT linemen players with higher levels of fetal hemoglobin and lack of G6PD may have lower risk of exertional crises.

23. *The Role of Macrophages in Skin Regeneration in African Spiny Mouse (Acomys Spp.)*
Jamarcus Robertson and Malcolm Maden, University of Florida

The role of macrophages in skin regeneration in African spiny mouse (*Acomys spp*.) While most mammals are unable to recover from skin wounds without the generation of scar tissues, African spiny mouse (*Acomys spp*.) has displayed the ability to heal from skin wounds in a scar-free manner and regenerate all the tissues removed. The exact mechanism involved in wound regeneration has yet to be fully understood. It has been hypothesized that macrophages, a phagocytic cell in the immune system, may play a role in the wound regeneration process. To test this hypothesis, we administered clodronate liposomes, a compound which selectively kills phagocytic cells including macrophages. Circular incisions were made on the dorsum of African Spiny mice and Mus mice as controls, and the wounds were injected with clodronate liposomes on day 0, 2, 4, 9. Mice were allowed 14, 21, and 35 days to regenerate and the wounds were fixed, stained and analyzed for macrophage with immunocytochemistry. In spiny mice, we observed a halting of wound closure caused by clodronate, but the controls showed complete wound closure, reepithelization and regeneration. Surprisingly, it was also observed that macrophages were still present in African spiny mice despite treatment with clodronate. We are currently analyzing the results from the Mus wounds treated with clodronate.

24. *Feasibility of School Gardens to Address Childhood Obesity*
De'Vohn Roman, Norrelle Walker, Thomas Rentz, and Dawn Witherspoon, University of North Florida

Childhood obesity is an epidemic which impacts 17% of American children and disproportionately impacts minorities and the poor (Johnson, 2012). Childhood obesity has many contributing factors including diets low in fresh fruits and vegetables due to lack of access. Community gardens can provide a way for local children and parents to acquire fresh fruits and vegetables (Poulsen et al., 2014). By implementing gardens in schools, an environment can be created that is rich in fresh produce as well as educational opportunities. Objective: To examine the feasibility of a school garden and its influence on child eating habits and obesity. Methods: Location, - Public middle school in Zone 1 of Jacksonville, Florida, with a median household income under $24,000 and approximately 92% of the children in the Free/Reduced Lunch program. Qualitative methods were

utilized for data collection, including interviews with key personnel and environmental survey data. Results/Conclusion: The school garden was organized and developed by community members with student participants actively involved in the growing process. During harvest time, food is first given to students who assist with the garden, then next to community members and finally school staff. Over the first three years, 800 lbs of food (sweet potatoes, chard, carrots, etc.) was produced. Many children were unfamiliar with some of the produce. Cooking lessons and taste tests were implemented to expose children to healthy ways to consume unfamiliar vegetables. An additional ½ acre could be converted to a garden to feed more students, but more funding is necessary.

25. *Psychoactive Medications in Skilled Nursing Facilities*

Kayleigh Graves, Scott Wilkes and LeRee Moody, University of North Florida

In 1987, United States Congress passed Omnibus Budget Reconciliation Act (OBRA) as an attempt to reduce treatment with psychoactive medications. Despite Congresses' act, skilled nursing facilities (SNF) have trended upwards providing more patients with psychoactive medications. The purpose of this literature review was to review current admission tools and effectiveness with mental illness patients. Analysis of legislative data from 2005-2012 indicated the majority of states have diminutive references of mental illness in nursing home regulations, and omitted protocols within nursing homes. Coinciding with Congress's induction of OBRA was the Preadmission Screening and Resident Review (PASSR) assessment to identify psychiatric diagnosis in residents. Research has shown PASSR may not be as effective as intended as literature revealed an increased use of psychoactive medications, specifically antidepressants, within SNFs. Assessing knowledge of staff regarding mental health is an important step to investigating personnel that administers psychoactive medications. Mary Starke Harper Aging Knowledge Exam (MSHAKE) assessment evaluates competencies of caretakers for people with mental illnesses in SNFs. MSHAKE tool evaluates staffs ability to differentiate diagnosis, such as dementia from delirium, and to help identify non-pharmacological methods for managing behavior issues. A review of the literature indicated psychopharmacological treatment continues to be a major strategy used by SNF's to address mental health problems of residents, and concerns arising with a misdiagnosis of mental disorders and broad implications these issues cause. The literature review shows current tools utilized by admission staff are not effective at reducing psychoactive medications for mental illness patients within SNFs.

26. *La Palabra Publicada Para Apoderar y Aterrorizar: The Creative Resistance and Third Practices of tatiana de la tierra*

Sara Gregory and Sonia Labrador-Rodriguez, New College of Florida

This abstract regards my work as a Spanish Literature and Gender Studies undergraduate student at New College of Florida. Entitled, "Creative Resistance and Radical Spaces: The poetics of tatiana de la tierra" my thesis is an exploration of activist, academic, and writer tatiana de la tierra. tatiana was the co-founder, contributor, and editor of the Miami-based writing collectives esto no tiene nombre and conmoción: revista y red revolucionaria de lesbianas latinas, which garnered an international audience as the first creative writing and activist magazines written for and by Latina lesbians. Similarly, tatiana wrote the bilingual

book of poetry For the Hard Ones: A Lesbian Phenomenology. As such, esto, conmoción, and For the Hard Ones offer rich sites for the application of theoretical praxis regarding social transformation, Latina lesbian cultural production, and identity politics. My thesis is based on my own deep readings of the texts, archival work, literary analysis, and theory. Ultimately, I identify the three texts as sites of social change, politicl mobilization, and creative resistance which disrupt white, heteronormative configurations of society. Building from the work of Adela C. Lincona, Gloria Anzaldúa, and de la tierra herself, I construct a historical narrative of the development, labor, and material realization of esto no tiene nombre, conmoción, and Para las duras. I envision my thesis as not only a specific and deep investigation on tatiana de la tierra, but as an elaboration on the enduring significance of lesbian-feminist publishing and activism.

27. *The Nature of Maps in the Digital Age*
Nicholas Hearing and Jesse Klein, Florida State University

Maps, even those dating from centuries ago, influence our daily lives. A map indicates not only the location of places, it can also help us see the world as did the people of its day. Each map is therefore a priceless snapshot in the on-going procession of humankind. Today, we use Google Maps to navigate our travel routes and rarely consider the role of maps in contemporary research, art, or education. Many libraries collect a wide variety of maps, both in print and in digital form. The size and nature of a given map collection depends on the needs of the students and researchers who use it. Academic libraries obtain items relevant to the courses taught on campus and research agendas of the faculty, including geologic, topographic, historical, and political maps as well as maps used for recreational purposes, such as national park maps, hiking maps, and road maps. Florida State University's Strozier Library has always kept a robust maps collection, including sheet maps, nautical maps, ship plans, digital GIS maps, atlases, monographs on cartography, gazetteers, United States Geological Survey documents, and more, that is used by multidisciplinary researchers every year. We are researching the role of maps in our contemporary, digital age and "mapping" our collection with the needs of our university's students and faculty. The goal of this project is to explore the general relevance of maps collections in academic libraries, as well as to assess our collection's strengths and areas for improvement.

28. *How Does Consociational Power Sharing Impact Ethnic Divisions in Northern Ireland?*
Sarah Hollmann, Eugene Huskey and David Hill, Stetson University

Though those in the consociationalist school would claim that the lack of active political violence in Northern Ireland is a powerful argument in favor of consociationalism; I argue that active violence has been replaced by increasing political polarization and ethno-national tensions. Consociationalism, or ethnic power sharing, has designated ethno-national identity as a valid political orientation. Using data gathered from twenty-four semi-structured interviews conducted between June and July, 2017 in Northern Ireland, this project critiques the hypothesis that ethnic divisions lose their salience after the implementation of consociational power-sharing agreements after ethno-nationalist conflict. Despite the growing literature on the long-term effects of consociationalism,

scholars have largely focused on quantitative methods, overlooking qualitative approaches. By presenting an ethnographically based critique of consociationalism, I hope to approach this gap in the literature.

29. *Sanitized Diversity: Disney Channel and White America*
Keaton Hughes and Queen Zabriskie, New College of Florida

Sociological and literary scholarship shows that the Disney Corporation has long played the part of educator and entertainer in US culture. However, Disney films and shorts have historically presented some harmful narratives about race, class, gender, sexuality, and other societal issues. In recent decades, however, the Disney Corporation has distanced itself and its products from this less than savory past. This undergraduate thesis examines narratives surrounding race in four Disney Channel programs from the early 2000s: *Even Stevens*, *Lizzie McGuire*, *The Proud Family*, and *That's So Raven*. This research uses mixed quantitative and qualitative analysis to determine how and if these shows perpetuate, expand upon, and/or challenge the narratives about race that the Disney Corporation has historically espoused. This research is informed by literature on black feminist thought, race critical media analysis, and commercialized diversity. In contrast to Disney's problematic past, the friend groups, families, and communities depicted in this study's four shows are racially diverse; two focus on black families, and the main characters from all four tend to portray racially heterogenous friend groups and schools. It remains to be seen, however, if this embrace of diversity is a complete rejection of Disney's troubling past, or if the shows on Disney Channel continue to perpetuate narratives and themes which support systems of racism.

30. *Notch Signaling is Required for Brittle Star Arm Regeneration*
Maleana Khoury and Vladimir Mashanov, University of North Florida

The Notch signaling pathway plays a key role in metazoan development. While the role of this pathway in development is quite clear, the functional significance of it in regeneration, the process of regrowing lost or damaged body parts, is unknown. Therefore, the focus of this study is to determine the function of the Notch signaling pathway in regeneration. We used as our study system the brittle star *Ophioderma brevispinum* (Echinodermata, Ophiuroidea), which is capable of autotomizing its body appendages called arms and quickly growing them back. To determine the role of Notch signaling in regeneration, we used the pharmacological agent N-[N-(3,5-Difluorophenacetyl)-L-alanyl]-S-phenylglycine t-butyl ester (DAPT, 3 μM, 14 days) to continuously inhibit the pathway in regenerating animals and then examined the effect of the inhibition at the morphological and cellular levels. Our results showed that arm regeneration was significantly impaired in the DAPT-treated animals as compared to the control group, resulting in a 38% reduction in the length of the outgrowth (Student's t-Test, P=0.01). We are currently investigating which cellular processes (cell proliferation, apoptosis, cell differentiation) are regulated by the Notch pathway. In the future, we plan to expand this study by conducting an RNA-Seq analysis to determine the specific genes that are regulated by this pathway in regeneration. Taken together, our data indicate that Notch signaling is required for arm regeneration in the brittle star *O. brevispinum*.

31. *The Development of a Screening Assay for the Detection of Substrate Specificity Among Bacterial Agmatine Deiminases*
Ilma Kovac and Bryan Knuckley, University of North Florida

Agmatine Deiminases (AgDs) are enzymes that are responsible for converting agmatine (a decarboxylated arginine) into N-Carbamoyl Putresciene (NCP). This mechanism is important for the production of ATP (i.e. energy) in a variety of pathogenic bacteria. The objective of this research is to design a new method for detecting substrate specificity among bacterial AgDs. Identifying key differences in the substrate specificity will ultimately lead to more specific inhibitors, therefore producing higher quality antibiotics. To this end, we are characterizing and expressing the AgDs in *Streptococcus mutans* (SmAgD), *Helicobacter pylori* (HpAgD), Campylobacter jejuni (CjAgD), Listeria monocytogenes (LmAgD), and *Porphyromonas gingivalis* (PgAgD). In addition, we are creating a one-bead one compound peptoid library of 100 structures to determine if a specific peptoid sequence reacts with a particular bacterial AgD. The product, a peptoid incorporating NCP, is detected using a chemical probe that turns the beads pink. Comparing the substrate specificity of the various AgDs will provide critical information about the active site, thus leading to a better understanding of inhibitor design.

32. *Growth and Characterization of Titanium Nitride Using Reactive Sputtering Physical Vapor Deposition.*
AnaElisa Linhares and Stephen Stagon, University of North Florida

Titanium nitride (TiN) has recently emerged as a promising candidate for plasmonic applications due to its advantageous optical properties and robust stability. At this time, little is known about the effects of chemical composition and crystal size on the optical response of TiN. This study seeks to understand how the optical properties of TiN thin films change with differences in morphology and composition. TiN films were deposited using reactive sputtering physical vapor deposition. By manipulating the ratio of nitrogen (N) gas to the working gas argon (Ar), the chemical composition and physical structure of the thin films are controlled. These films are then characterized using scanning electron microscopy (SEM), X-ray diffraction (XRD), Fourier Transform Infrared Spectroscopy (FTIR), and ultra-violet visible (UV-Vis) spectroscopy to determine how the optical properties relate to the chemical composition and crystallite size. From this research TiN films can be "tuned" by altering the ratio of deposition constituents to provide the desired optical characteristics depending on the application. This may lead to advances in TiN plasmonic applications, such as biosensors and microelectronics.

33. *Understanding the Dietary Preferences of The Sea Slug Elysia papillosa: A Story of Conflicting Observations*
Michael McKibben and Michael Middlebrooks, University of Tampa

Several species of sacoglossan sea slugs can sequester chloroplasts from their algal food sources and incorporate them into specialized cells in order to undergo photosynthesis. Due to their ability to photosynthesize, sacoglossans have been a frequent target for research in recent years. Despite this, little is known about their feeding preferences.

*Elysia papillosa* is a sacoglossan sea slug native to Florida and the Caribbean known to consume a few closely related species of siphonous algae. The goal of this study was to tease apart the dietary preferences of *E.papillosa* between two main food sources: *Penicillus lamourouxii* and *P. capitatus*. To do so we conducted time-lapse food preference surveys in conjunction with photosynthetic degradation experiments. Initial results suggest that under laboratory conditions slugs do not show a preference for either algal species. This is interesting as *E. papillosa* is significantly more likely to be found on *P. capitatus* in field surveys. To better understand how *E. papillosa* and other sacoglossans shape algal communities and what role they play in ecosystems within the Gulf and Caribbean further research is suggested.

34. *Which came first - the Republican or the Business major?*
Erin Bisesti and JeffriAnne Wilder, University of North Florida

Research suggests a possible relationship between a student's political orientation and their undergraduate field of study (Lottes and Kuriloff 1994; Elchardus and Spruyt 2009; Mariani and Gordon 2008). The causality of this relationship, however, is not well understood. Using a mixed-methods approach, the relationship was investigated between undergraduate field of study and political orientation, exploring the role of self-selection and socialization on the decision-making process of student field/major declaration. Beginning with quantitative analysis of survey data (N= 2480), the findings indicate an association between student's field of study and their political orientation: social science students are more likely to identify as Democrat, whereas business students are more likely to identify as Republican. With these results in mind, qualitative data was used to explore the processes by which students selected their majors and how their majors have influenced their political identities and ideologies, and thus give a more nuanced account of the experiences of college students as they interact with peers, faculty, and the institution as a whole. Together, these findings contribute to the theories surrounding the liberalization of college students by confirming the significant trends of liberal students inhabiting traditionally liberal majors and conservative students inhabiting traditionally conservative majors. Moreover, results shed light on the mechanisms that create the overall trend to the left in higher education in a more detailed way.

35. *Identification of Gamma-glutamyltransferase 6 as a Key Player in the Oncogenic Viral Life Cycle*
Naeem Motlagh, Richard Smindak, Seung Jin Jang, Aria Sharma, Zsolt Toth, and Bernadett Papp, University of Florida

Viruses are involved with 20% of all human cancers. One of the seven known human tumor viruses is Kaposi's sarcoma-associated herpesvirus (KSHV). It is known that KSHV maintains dormancy in the human body, but can regularly reactivate and amplify itself, propelled by a well-known essential viral transcription factor called RTA. We hypothesized that RTA induces the expression of specific human proteins, some of which may be critical for the viral gene expression and replication. A recently performed genome-wide analysis in our laboratory showed that over one hundred human genes are directly and rapidly activated by RTA during KSHV reactivation in B-cell lymphoma

cells, many of which have not been studied for their contribution in the spread of oncogenic viruses. In our follow-up study, we were able to confirm that several of these human genes are also induced by RTA in other infected as well as uninfected cell types, highlighting them as core RTA-inducible human genes. We chose to further investigate one of these RTA-induced human proteins: Gamma-glutamyltransferase 6 (GGT6). GGT6 belongs to the membrane-bound GGT family of proteins by homology, but its key residues are missing which is normally required for enzymatic activity within the GGT family and its function is entirely uncharacterized. Using shRNA gene knock down experimentation, we found that depletion of GGT6 reduced viral gene expression, viral production, and infectivity. Our findings establish a critical role for GGT6 as a key player for oncogenic viral production, thus revealing it as potential target for future clinical studies.

36. *Predicting Patients' Trust in Physicians from Personality Variables, Ethnicity, and Gender*

Zoreed Mukhtar and Charles Negy, University of Central Florida

This study examined variables related to the doctor-patient interaction that can predict college students' trust in their physicians. Specifically, I examined if five personality variables, ethnicity, and gender were associated with attitudes toward physicians. A second aim of the study was to determine if there was a difference in the level of trust in physicians between pre-medical and non-pre-medical students. Surveys were administered to UCF students containing a series of questions compiled from the Interpersonal Physician Trust Scale, Interpersonal Trust Scale, Illness Attitude Scale, Big Five Inventory, Martin-Larsen Approval Motivation Scale-Short Form, Almost Perfect Scale-Revised and Marlowe-Crowne Social Desirability Scale-Short Form, as well as 13 original questions that I developed. The sample consisted of 211 UCF students. It was hypothesized that lower levels of mistrust of others, symptoms of hypochondria, introversion, need for approval, and perfectionism would correlate significantly with trust in medical doctors. It was also hypothesized that there would be a difference in the level of trust in physicians between pre-medical and non-premedical students. Results indicated that on average, most participants across ethnicity and gender expressed uncertainty about their level of trust in their physicians. Ethnicity was not associated significantly with trust in physician. Gender was also not associated significantly with trust in physician. For Hispanic participants, only introversion predicted trust in physician. For male participants, only hypochondria predicted trust in physician. Finally, pre-medical status was not associated significantly with a difference in physician trust.

37. *The Molecular Mechanism for Cholera Toxin Disassembly by Protein Disulfide Isomerase*

Morgan O'Donnell and Ken Teter, Unvirsity of Central Florida

The Molecular Mechanism for Cholera Toxin Disassembly by Protein Disulfide Isomerase Cholera is a life threatening diarrheal disease caused by infection with *Vibrio cholerae* bacteria. The disease itself is due to the colonizing of the intestinal lumen by *Vibrio* and its production of an AB type cholera toxin (CT). This toxin is part of the AB5 family of bacterial toxins and is characterized by a catalytic A1 subunit, a short linker A2 subunit

and a pentamer of binding B subunits. After its secretion, CT will bind to GM1 gangliosides on the cell surface of intestinal epithelial cells and is then internalized via endocytosis. Following endocytosis, CT moves to the Golgi apparatus and is then redirected to the endoplasmic reticulum where it is then disassembled. Disassembly of cholera toxin is vital for its toxicity, as the catalytic A subunit must be freed from the B pentamer in order to be rendered toxic to the cell. Protein disulfide isomerase (PDI) is a chaperone with oxidoreductase activity that is present in the endoplasmic reticulum and plays the main role in cholera toxin disassembly by reducing CT's disulfide bridge and separating the A1 subunit from the A2 linker and B pentamer. However, it is unknown the exact mechanism which PDI uses to disassemble CT and whether or not this process is enzymatic. Using techniques such as ELISA assays, protease sensitivity assays, and the use of PDI deletion constructs, this project will explore the mechanism of the "unfoldase" activity of PDI.

38. *Characterizing Giant Exoplanets through Multiwavelength Transit Observations: HAT-P-5 b*
David PeQueen and Daniel Dale, Embry-Riddle Aeronautical University

During the summer of 2017, we observed hot Jupiter-type exoplanet transit events using the Wyoming Infrared Observatory's 2.3 meter telescope. We observed 14 unique exoplanets during transit events; one such target was HAT-P-5 b. In total, we collected 53 usable science images in the Sloan filter set, particularly with the g', r', z', and i' band wavelength filters. This exoplanet transited approximately 40 minutes earlier than the currently published literature suggests. After reducing the data and running a Markov chain Monte Carlo analysis, we present results describing the planetary radius, semi-major axis, and orbital period of HAT-P-5 b. Characteristics of Rayleigh scattering are present in the atmosphere of this exoplanet. This work is supported by the National Science Foundation under REU grant AST 1560461.

39. *Examination of The Magnetic Interactions Between Divacant Fe Dimers In Graphene*
Ronald Putnam and Jason Haraldsen, University of North Florida

In this study, we investigate the isolated magnetic interactions between two identical Fe atoms substituted into graphene. Using density functional theory, we simulated a supercell of graphene with variably-spaced iron atoms in the divacant configuration and determined the electronic and magnetic properties for each system. Overall, we find that the exchange interaction between the two Fe atoms fluctuates between ferromagnetic and antiferromagnetic as the spatial distance in the zig-zag direction increases. Given the induced magnetic moment and increased density of states by the surrounding carbon atoms, it is clear that the exchange interactions undergo an RKKY-like interaction. Furthermore, we examined the same interactions for Fe atoms along the arm chair direction and find no evidence for an RKKY interaction, which indicates a directional dependent interaction within the graphene.

40. *The Exploration of Resveratrol and Its Oligomers*
Michael Richter and Christos Lampropoulos, University of North Florida

The “French paradox” was resolved by the identification and investigation of resveratrol (RV). RV possesses phenolic rings that provide the stability necessary to destroy radicals, which makes it a powerful antioxidant that may prevent the oxidation of low-density lipoprotein. RV is produced naturally in stem and leaf tissue of many different plants. The plants use it to protect themselves from fungal attacks. Experimentally on *Schizosaccharomyces pombe*, RV has been shown to increase cell length through use of imaging flow cytometry. Cell lengthening is often observed when the cells are exposed to toxins. While RV itself does not act as a toxin, some fungi also have an innate ability to transform RV as a detoxification process. This counter-defense mechanism will lead to the creation of RV oligomers that can act as phytoalexins causing damage to the fungal cells. The RV oligomers can also be produced in the presence of biologically available enzymes such as laccases and peroxidases.

41. *Starburst Clusters as the Origin of Cosmic Rays*
Alison Roxburgh and John Hewitt, University of North Florida

Massive star clusters are formed in the heart of giant molecular clouds. Typical stellar clusters are defined as stars that are gravitationally bound, but tight clusters of stars that form around 1000 massive stars are called "starbursts". Strong stellar wind activity in starburst clusters induce effects that could accelerate particles to a high energy and produce gamma rays. Cosmic rays from star clusters are scattered by interstellar magnetic fields, however gamma rays are not scattered, which allows the cosmic rays to be indirectly sourced. It is speculated that starburst clusters are the source of our galaxy's cosmic rays, but this hypothesis has not yet been tested. Here we report on our search for gamma-ray counterparts to starburst cluster detected by NASA’s Fermi Gamma-ray Space Telescope.

42. *Human Immunodeficiency Virus Testing Barriers Among College-Aged Asian American Students*
Lily Sant and Su-I Hou, University of Central Florida

The goal of this study was to analyze the psychosocial barriers to HIV testing among the different racial groups at UCF. This study, specifically geared towards understanding and explaining the noticeable differences in frequencies in barriers between Asian American participants and the other racial groups, utilized an online survey to gather quantitative and qualitative data. The data was then coded into various general barriers and sub-barriers based on syntax and connotations associated with that syntax. After the data was sorted, it was compiled into the frequencies depicted in the charts below. The noticeable differences in the Asian American barriers to HIV testing between the races is perhaps a nod to the shift in reported cases of HIV reported in recent years across several different research studies and is also reflected in literature. Though African Americans were once most often affected by HIV, there has been a shift in recent years showing that Asian American HIV cases have increased and African American cases have decreased. In this

study there was a significant increase in no barriers among African Americans at UCF and a significant increase in various types of barriers among the Asian American population. Asian American frequencies broke from the range established by the other races in the study, clearing showing a deviance of numbers. This research is a significant contribution to previous and future research regarding the prevention of HIV in that it identifies a gap in HIV prevention among the various races.

43. *Culture Through Color Perception in West Side Story*
Marissa Secades and Barbara Mennel, University of Florida

This work will focus on the use of color theory to clearly characterize members of rival ethnic gangs in the 1961 film adaptation of "West Side Story". Originally a 1957 Broadway musical, "West Side Story" captured audiences with its groundbreaking innovation in choreography and music, while earning praise from critics for delving into contemporary issues like immigration and gang-related violence. It won an astonishing ten Academy Awards, including Best Costume Design and Best Art Direction, and still holds the record for the most Academy Awards won by a movie musical. While much of the existing research on "West Side Story" focuses on references of vying cultures made explicitly through song and dance, this research instead focuses on the non-verbal representations of these cultures that are expressed through color in the film. By studying the film's iconic art direction and investigating audiences' subsequent perceptions of characters and settings, one can argue that the colors featured in the costume designs are used to denote a culturally-charged power structure within the Jets and the Sharks. Based on close examination of these various designs, the film's overall color palette, and published scholarship, thus concluding that "West Side Story"'s non-verbal references are uniquely dangerous to its explicit references, as they subliminally promote harmful stereotypes and suggest that gang violence brings life to an otherwise drab city. Studying the connection between color theory and culture ultimately illuminates the historical roots of society's perceptions of colors and their seemingly inherent associations to certain traits.

44. *The American Perception and Ideology Towards Refugees*
Onur Basman, Esteban Cardenas, Eric Levy and Monica Escaleras, Florida Atlantic University

The number of refugees entering the United States has been increasing greatly throughout the years due to unfavorable conditions in different regions of the world. Recently there has been public discussion regarding the large number of refugees immigrating into the United States. About 3 million refugees have resettled into the United States since 1980 and refugees have an impact on the U.S. in various areas: social, political and economic amongst others. A debate arises in regards to how the accepted refugees should be handled within social, political and economic contexts. Additionally the question arises whether or not the Us should continue accepting new refugees and if so, under what circumstances they should be accepted. This study investigated the American views towards refugees and their role in the United States. An online survey on 523 Americans across the United

States was designed and administered. The results showed that the views of Americans on refugees are closely correlated with their education level and party affiliation as well as age. There is statistically significant evidence at the one percent level that education level, age, and party affiliation impact our views on refugees. These findings should be considered by politicians and government officials when making different policy decisions regarding refugees.

45. *How Exposure to Pretrial Publicity Influences Gender Biases in Deliberations, Discussion of Trial Evidence and Judicial Instructions, and Verdicts*
Stephanie Diaz Ortega and Christine Ruva, University of South Florida Sarasota-Manatee

In cases receiving substantial media coverage, citizens' First Amendment rights of free speech/press often conflict with defendants' Sixth Amendment right to a fair trial. Although research has explored the effects of pretrial publicity (PTP) on juries, there is much to study to fully understand the ensuing biases (Ruva & Guenther, 2015). When the defendant is a woman accused of a violent crime and her portrayal in the press violates gender stereotypes (e.g., strong, financially superior to husband, unemotional), gender bias may seep into the jury deliberations and verdicts (Franklin & Fearn, 2008) impacting a defendant's right to a fair trial. We explore how gender bias and PTP (negative-defendant/ND-PTP, negative-victim/NV-PTP, and no-PTP) influence verdicts and deliberations (information discussed and how--gender bias and side). ND-PTP juries were expected to be most likely to vote guilty and NV-PTP juries were expected to be least likely. Regarding trial evidence, relative to other PTP conditions ND-PTP juries were expected to discuss more prosecution facts and NV-PTP juries more defense facts. Juries exposed to PTP will discuss it more than no-PTP controls and most will go uncorrected. NV-PTP and ND-PTP juries will discuss gender related issues more than no-PTP juries. Participants were randomly assigned to PTP conditions and exposed to PTP. After a one-week delay mock-jurors (N=648) viewed the trial (woman accused of murdering husband), deliberated, and rendered verdicts. Testing the above hypotheses, a subsample of mock-jury deliberations (n=18) were content analyzed using a coding scheme that has been piloted, preliminary findings will be discussed.

46. *The Distinction of Plants Using the Barcode of Life*
Nikea Debidin and Nalini Odapalli, Valencia College, West Campus

The Distinction of Plants using the Barcode of Life DNA Barcoding has given rise to a practical method for species identification, which has been revolutionized, and provides a broad spectrum of scientific applications. Plant Taxonomy is an investigative method that scientists have used. This investigation has since led to understanding the morphological characteristics between species which is the blueprint to delineate these relationships. The use of the photosynthetic rbcl gene, found in the chloroplast of photosynthetic organisms used in this experiment, conducted at Valencia College. Attested to be a valuable tool for assessing phylogenetic relations among these plants and can determine genetic similarities and differences. The experiment began with the collection and documentation of plant species, proceeding to extract the rbcl gene by a purification and isolation method of the

plant's DNA. After extracting the sample, it was then incubated in storage, preparing for the PCR step which amplified the sample DNA. The final step was Gel Electrophoresis which yielded the band of about 500-700 base pairs proving the extraction and amplification of the samples were successful. A phylogenic tree is then generated to compare samples amplified to species documented through a plant database.

47. *Vote Choice: The Impact of Ideology Distance and Specific Policy Stance Distance*
Lauren Sharp and Michael Binder, University of North Florida

Partisanship has long been the key driving force in determining vote choice, but what happens when said cognitive cue is removed during primary elections? This paper analyzes the role of general ideology and a key issue (immigration) during a presidential primary election. Data from a March 2016 statewide survey of likely Republican presidential primary voters in Florida is used to test the hypothesis that general ideology outweighs a key issue stance in determining vote choice during a primary election. Our findings indicate that the relationship between ideology and vote choice is stronger than that of issue position and vote choice. Understanding the role of ideology and issue position has implications for presidential elections, but is potentially of even greater importance for understanding legislative elections where elections more often than not are determined during primaries instead of November general elections.

48. *Exploration of the Critical Habitat of Hawaiian Monk Seals*
Madison Dowdy and Bridgette Froeschke, University of Tampa

In 2015, the Department of Commerce teamed up with the National Oceanic and Atmospheric Administration and the National Marine Fisheries Service to create the final critical habitat for Hawaiian monk seals. This habitat was arranged in hopes of allowing the wild population to thrive and grow on its own. In order to see how these designated habitats compared to the known behaviors of this species, a biological hypothesis was examined using Geographic Information System (GIS) tools. A general bathymetric map of the Hawaiian Islands was fabricated and compared back to the critical habitat of the Hawaiian monk seals, showing a direct correlation between the two. The critical habitat never extended past the 1000-meter zone on the map, which supports the seals behavior because they are only known to dive to a max depth of 500 meters. Comparative maps of the benthic habitat surrounding the Hawaiian Islands were constructed in order to see the correlation between the available sandy areas and the critical habitats. Hawaiian monk seals are known to favor sandy substrates when it comes to pupping, hauling-out, and teaching their young to swim and hunt. Almost all of the sandy areas were encompassed within the designated habitats. Most of the seals food source would be found on coral reefs, so to examine the biological hypothesis further, GIS tools were used to show the correspondence between the reefs and critical habitat. It was found that the majority of the reefs on the Hawaiian Islands were part of the appointed habitat.

49. *Peace and Dissolution of Terrorist Groups: A Comparative Analysis of Euskadi Ta Askatasuna (ETA) and The Revolutionary Armed Forces of Colombia (FARC).*
Galilhea Calderon and Zenel Garcia, Florida International University

The global "War on Terror" has considerably evolved throughout the last decade. However, the ever-increasing number of terrorist groups, and their transnational activities, demonstrates limitations in a state's ability to address these problems through traditional military means. Thus, while it may seem unreasonable to negotiate with terrorists, assuming the "hero vs. villain" narrative, there is a possibility of reaching favorable outcomes, even assured peace, through compromise with said terrorist organizations. This study aims to assess the peace negotiations of the Euskadi Ta Askatasuna (ETA) and Fuerzas Armadas Revolucionarias de Colombia (FARC). In my analysis, I examine the economic, social, and political spheres in which these processes are occurring to find the motivations behind the development of peace negotiations. My study reveals that these motivations include concessions and government programs, which allow former terrorist group members to become reintegrated into society through legal pardons, government protection, and government financial assistance. Moreover, the changing ideologies of group members determine the members' desires to disarm and abandon a terrorist organization. Specifically, when there is a disagreement about the goals which a terrorist group should pursue, or a disagreement regarding further involvement with a revolutionary movement due to the acceptance of the current government in power and the adoption of an alternative political belief.

50. *The Graphic Display of Quantitative Suicidality Data: S-Plots*
Jennifer Giddens and Dr. David Sheehan, University of South Florida

Regulatory agencies, pharmaceutical companies, clinical research organizations, data safety monitoring boards, medical directors of health care organizations, and medical safety officers are challenged with clearly summarizing the suicidality status of their patients. Currently, data collected using a dimensional scale are reduced to categories at study completion and then reviewed in complex tables resulting in sensitivity loss and risking detection errors. To reduce error, speed detection, protect patients, clarify data presentation, there is a need for an efficient, clear, and simple display of suicidality data. Graphic displays of quantitative data in other medical and scientific disciplines were reviewed for suitable models based on clarity, ease of data interpretation, and appropriateness for dimensional suicidality data. We applied a variety of graphic displays to a prospectively collected dataset using the Sheehan-Suicidality Tracking Scale (S-STS) resulting in the final displays. Suicidality-Plots (S-Plots) display data for groups of patients and for individual patients over time. Their interpretation can quickly identify patients at higher risk, provide a method to monitor the status of patients in large samples over time, and quickly identify the overall suicidality status of the study over time in relation to study stopping rules and treatment efficacy. S-Plots are customizable for the needs of different clinical trials and settings. Use of S-Plots may reduce the potential medico-legal hazards from the delayed analysis or delayed detection of suicidality in safety data, and the risk to patients in research trials and clinical settings.

51. *Code-switching Within the Noun Phrase in Spanish-English Bilinguals*
Macarena Gonzalez-Del Riego and Antje Muntendam, Florida State University

We are all familiar with someone who is bilingual, or we could bilinguals ourselves. However, while the use of two languages seems effortless, there is a lot that is being done. In this project, we question what exactly is going in a bilingual speaker's head while they juggle two languages in a conversation, also known as code-switching. Our approach to answering this question is to look at the code-switching of English-Spanish bilingual speakers, as they represent languages with conflicting grammar features. The grammar feature examined is the syntax of code-switching, looking at the nominal domain made up of a determiner, noun, and adjective, such as in "a yellow house". Spanish and English have a few unique differences and the marking of number and gender on nouns, and the placement of adjectives are some of them. For instance, in English the adjective comes before the noun, whereas in Spanish it usually comes after the noun. The question is, what happens when users mixed noun phrases? For instance, do speakers prefer saying a yellow *casa* or a house *amarillo*? The speakers will complete a questionnaire about their age of acquisition, proficiency, and frequency of use of each language since they influence the use and understanding of code-switching, and they will participate in an elicitation task, and acceptability-judgment tasks. The project is unique in that it combines different methods in order to achieve the objective of understanding how bilinguals handle the competing aspects of each language in both production and comprehension.

52. *North Korea: A Linguistic Analysis on Deviation From Standardized Korean*
Kathalia Irizarry and Addie Sayers-China, University of South Florida

This discourse analysis of North Korean written propaganda from Rodong Singmun and political signs will focus on (1) the addition of particles to convey meaning that is specific to ideology, (2) morphology of standardized and adopted hybrid words specific to the Stalinist era that has been added to lexicon, and (3) syntax in relation to grammatical endings that affect meaning. DPRK language variation, in part due to business relations with allies and propagandized ideologies enhanced by Confucian principles, is highly influenced and derived from Marxism, Stalinism, and Maoism. For the purpose of this research paper, data was collected predominantly from Rodong Sinmun, a North Korean newspaper, from historically significant dates. It should be noted that syntactically, Korean is considered to be an SOV language however it is grammatically possible to have SN, SOV, SV, SA, and OSV. While the word order in Korean is fairly free, one consistent aspect is the placement of the verb which must always be at the end of the sentence. Findings indicated that post-positions of adverbs can be found at the end of sentences under the condition that the particle is added to a hybrid word and the sentence lacks an appropriately conjugated verb. These sentence types are usually a command or are in relation to new idioms. In conclusion, there is a variant in DPRK standardized writing that is not found in ROK in addition to deviation in lexicon i.e. adopted words from Chinese versus English respectively.

53. *Integrating Community Knowledge with Citizen Science and Geographic Information Systems to Explore Climate Change Concerns in Hopkins, Belize*
Julia Jeanty and Timothy Hawthorne, University of Florida

Community-based applications of GIS often emphasize geographic approaches that are inclusive of and responsive to knowledge from local communities. Our research In Hopkins Village Belize emphasizes the development of open data collected by participatory mapping in order to examine flooding risks and to combat issues of data scarcity through community involvement. This small fishing village along the coast of Belize is plagued by flooding and natural disasters due to its location between a freshwater lagoon and the Caribbean Sea. Tablets, drones, quantitative and qualitative methods are used in order to provide data to enhance the community's ability to enact flooding and disaster mitigation through GIS using ArcGIS Online and Survey123. Community perceptions of flooding locations, disaster preparation methods, and climate change were incorporated using a mixed methods approach. After conducting 77 interviews, our results, in the form of maps and coded responses, serve to showcase the power of a citizen science GIS mapping partnership whereby local knowledge is critical to the process as community members engage collaboratively by contributing to research design, data interpretation, and problem-solving for future efforts on coastal issues that impact the residents of Hopkins. Our work has implications not only for Hopkins Village Belize, but also for others areas in the developing world where researchers are interested in engaging in community-based mapping research experiences.

54. *The Role of Dgt4 in the Neural Stem Cells*
Wajiha Khalid and Timothy Megraw, Florida State University

It is essential for Drosophila neuroblasts (neural stem cells) to have asymmetric cell divisions (ACD) in order to generate cellular diversity during brain development. The purpose for asymmetric division is to renew the pool of stem cells, and also to produce daughter cells destined to become neurons and glia. During ACD, the larger neuroblast self renews, and the smaller ganglion mother cell (GMC) divides and differentiates into neurons and glia. ACD in neuroblasts requires centrosome asymmetry where the younger "daughter" centrosome is larger in size, retains functional microtubule-organizing center (MTOC) activity during interphase, is localized at the apical pole of the neuroblast, and is inherited at division by the self-renewed neuroblast. Centrosomin (cnn) plays a critical function at the centrosome. Cnn is recruited asymmetrically to the daughter centrosome in the neural stem cell where it is required for the centrosome to organize the microtubule array. Cnn has an important role to control asymmetric division neuroblasts.
Dim Gamma Tubulin 4 (Dgt4) is one of the components of the Augmin complex, an eight-subunit complex that regulates microtubule assembly via recruitment of gamma tubulin. The Augmin complex is a regulator of microtubule assembly within the mitotic spindle and at kinetochores. We isolated a novel mutation in Dgt4 ($Dgt4^{1}$) by ems mutagenesis that is viable but lethal in combination with mutations in cnn. Additional alleles of Dgt4 have been generated using CRISPR-Cas9 engineering. The embryos from $Dgt4^{1}$ mutant mothers die because of defective spindle assembly and chromosome loss in the early

embryo cleavage divisions. Using fluorescent staining, Dgt4[1] mutant Drosophila neuroblasts have lost centrosome asymmetry. Neuroblasts still recruits cnn to the centrosomes, but do so equally rather than asymmetrically. The potential defects that may arise from this involve a loss of asymmetric cell division, affecting the normal attribution of cell fates, and the generation of cellular diversity in the developing brain.

55. *Do Parents Who Smoke Protect Their Children from Secondhand Smoke at Home?*
Selena Leonardo and Julia Soulakova, University of Central Florida

This study assessed the rates of smoke-free homes in single parent households associated with parental smoking status. Children's exposure to secondhand smoke occurs primarily in the home. Moreover, secondhand smoke is more common in single-parent households relative to two-parent households. This study sought to identify those environments where children are at the highest risk of secondhand smoke-exposure. We used the data from the 2010-11 (n=6,459) and 2014-15 (n=6,100) Tobacco Use Supplement of single parent living with underage children. In 2010-11, the overall rate of smoke-free homes was 82% and in 2014-15, the rate increased to 86%. For both survey periods, the overall rate of smoke-free homes differed significantly among parents who were daily smokers, occasional smokers, former smokers, or never smokers (both p's < 0.001). The rates of smoke-free homes in the years 2010-11 and 2014-15 were, respectively, 45% and 54% for daily smokers, 64% and 72% for occasionally smokers, 89% and 91% for former smokers, and 93% and 94% for never smokers. In 2010-11, smoke-free homes were significantly less prevalent in households where parents were daily, occasional, or former smokers, in comparison to never smokers (all p's<0.01). The difference in the rates also carried on for daily and occasional smokers in 2014-15 (all p's <0.01). While the overall prevalence of smoke-free homes has continued to increase in the U.S., smoke-free homes remain uncommon in families where parents smoke.

56. *Individual Differences and Perception of Risk of Personal Care Products*
Cristina Gimenez and Rober Riedel, and Cassandra Korte, Lynn University

Potentially harmful compounds such as phthalates, parabens and phenols are found in a variety of everyday products. Unknown to the general population, many of these harmful chemicals are contained within personal care products like body wash, shampoo, toothpaste, and deodorant/ antiperspirant. There is no prior research pertaining to the perceptions of risk linked to personal care product use. The purpose of the study is to investigate the perception of personal care products in individuals after receiving their possible health effects in a fictitious product report. There were 157 students recruited, where 149 participants that were randomly assigned to low, medium, or high-risk conditions according to a traffic light system. Level of healthiness associated with product use, likelihood of product change, and interpretation of the information given in a product risk report were assessed to determine risk perception. Results indicate that within each level of risk, perception of overall product healthiness or unhealthiness shows significance between all the risk conditions. The high risk group view their products unhealthy compared to low risk group. Participants in the medium and high risk group shows that are more likely to change their product than those in the lowest risk group. These preliminary

results support the need for including warning labels on personal care products to inform individuals about potential hazard.

57. *Controlling Ultrafast Energy Exchanges in Optical Metamaterials*
Devon Loughran, Pedro Spingola, Kaleb Exposito, and Greg Wurtz, University of North Florida

Here we propose the study of the dynamic response of a nanorod-based plasmonic metamaterial operating in the optical regime. We show that heat diffusion within the metamaterial, in concert with the resonant mapping of the electronic energy from the pumping field, establishes an interrelationship between modal properties and ultrafast time response that provides one with the extensive opportunity to use nanostructured systems, and their intricate and tailorable resonant field distributions, to design ultrafast events at the nanoscale by geometrical means.

58. *Functionalized Intrabodies as Novel Therapeutics for Alzheimer's Disease and Other Tauopathies*
Ramapaada Medam and Yona Levites, University of Florida

Functionalized Intrabodies as novel therapeutics for Alzheimer's Disease and other Tauopathies Several neurodegenerative diseases known as tauopathies are characterized by the intracellular accumulation of misfolded tau, including Alzheimer's Disease and Frontotemporal dementia with parkinsonism-17. Although there are currently no cures for these diseases, novel antibody-based therapies targeting disease specific proteins such as the microtubule associated protein tau are under development. However, these therapies may be limited by the ability of extracellular antibodies to enter the cytoplasm and engage intracellular proteins. This potentially limiting factor may be avoided by utilizing intracellular antibody technology to target misfolded proteins directly within the cytoplasm. The intracellular expression of antibody fragments known as intrabodies has been shown to alter the folding, interaction, and degradation of cytoplasmic proteins. Intrabodies specific for intracellular proteins such as huntingtin have shown efficacy in animal models, yet there has been little effort to target intrabodies against pathological tau. Our lab has generated several tau-specific intrabodies which were found to reduce tau pathology both in vitro and in two transgenic mouse models. We hypothesize that this reduction may be improved by fusing intrabodies to functional domains which target tau for increased proteasomal or lysosomal degradation. Our preliminary data from in vitro cell models of tau aggregation shows that expression of a lysosomal targeted intrabody greatly reduced the formation of insoluble tau aggregates as compared to a proteasomal targeted or intrabody alone. We are currently testing these functionalized intrabodies in both primary culture and mouse models to further investigate their therapeutic potential.

59. *Effect of pH on Calcium Uptake by Branchiostegite of the American Lobster*
Lilian Nagle and Gregory Ahearn, University of North Florida

Atmospheric CO2 interacts with oceanic waters to lower pH. Decreased water pH results in dissolution of calcium carbonate exoskeletons and shells of many marine invertebrates. The hypothesis of this project is that increasing proton concentrations from reduced pH lead to a decrease in calcium uptake by animal gills due to transport competition between the cations at gill sites of uptake leading to reduced calcium availability at sites of calcification. Lobster branchiostegite epithelia were removed from both gill chambers, homogenized in hypotonic buffers, and underwent differential centrifugation resulting in a semi-purified pellet of plasma membrane vesicles. Vesicles were loaded with a mannitol medium at pH 7.0 and incubated for 10 min in a similar medium containing 1 mM 45CaCl2 at pH 6.0, 6.5, 7.0, 7.5, 8.0 and 8.5. 45Ca uptakes at pH 6.0, 6.5 and 7.0 were low and not significantly different from one another ($p > 0.05$), and likely represented non-specific binding. 45Ca uptake increased significantly ($p < 0.02$) from pH 7.0 to 8.5 with maximum uptake at the highest pH. 45Ca uptake at pH 6.0 was a linear function of calcium concentration, suggesting increased non-specific binding with elevated 45Ca concentration. In contrast, 45Ca uptake at pH 8.0 was a biphasic function of calcium concentrations, suggesting the presence of a putative calcium transporter plus non-specific binding. Results support the hypothesis of at least one gill branchiostegite calcium transport protein that is inhibited by increasing seawater proton concentrations.

60. *Muslim Slaves in Cuba and the Caribbean: Practice, Belief, and Legacy*
Allison Overholt and Adam Gaiser, Florida State University

This project examines the presence of Muslim slaves in Cuba and the Caribbean. The goal is to show that Muslim slave communities, while small in number, were capable of shaping cultures and religious practices in the Caribbean. The slave trade to the Americas existed in the aftermath of the Spanish Inquisition, when anxieties about Muslims still ran high. As a result, legislation was introduced by the crown to limit the population of Muslims. Nevertheless, slaves, particularly men, tended to be captured from Northern regions and during times of war, which significantly increases the likelihood that these slaves were Muslim. Official documents did not record the religious affiliation of slaves. The Yoruba, in particular, as well as other ethnic groups of African Muslim slaves played a role in rebellions and revolution, including a significant role in the leadership of the Haitian revolution. Following the Haitian Revolution, Cuba became the major sugar producing colony in the Caribbean, further necessitating the importation of African laborers. Accounts were kept of slaves who maintained elements of their religious practices, evident in their clothing, jewelry, and dietary requirements. It is also clear that elements of Islam exist in present-day syncretic Caribbean religions, including in Haitian Vodun and Cuban Santeria.

61. *Cooperativity and Competition in the Simultaneous Binding of Intercalating and Groove Binding Agents to DNA*
Paula Pimiento and Stephen Winkle, Florida International University

Restriction enzyme activity assays have probed the binding variety of molecules, both groove bindings and intercalators to DNA. We have analyzed the binding of several molecules, including actinomycin D, an anticarcinogenic intercalator, and DB818, a dicationic minor groove binder to 10 restriction sites on phi X 174 DNA. Both demonstrated sequence and topology specificity. Both molecules have been known to alter the structure of DNA upon binding. We addressed how each could affect the binding of the other using restriction enzyme activity assays with the bacteriophage DNA and restriction enzymes. In some places, Act D and DB818 acted independently. For example, Act D inhibits STU I while DB818 displayed no effect on activity. Combined, Act D and DB818 produced the same effect as Act D alone, suggesting that at this location, DB818 did not affect the binding of Act D. At other locations and sequences, combining these compounds altered effects of each separately. With Nar I [GGCGCC], the combination of Act D and DB818 produced more inhibition than either compound alone, suggesting cooperativity in inhibitory effects. Combining Act D and DB818 reversed the inhibition caused by DB818 alone for the cleavage of DNA by Mlu I [ACGCGT]. Separately, these agents inhibited cleavage by Mlu I suggesting alteration of DNA structure near the Mlu I sites differently. This study demonstrated enhancement of restriction enzyme activity as well as the inhibition of it and further suggests that the binding of a groove-binding agent near an intercalator can alter the activity of each.

62. *Fascinating Built and Natural Environments' Effects on Mood and Impulsivity*
Devin Plant, Drew Brett, George Rocek, Nick Mazza, Marica Grahla and Christina Salnaitis, University of South Florida Saint Petersburg

Decisions are typically made within built environments, which expend precious mental resources. Natural (nature) environments elicit fascination, which restore these mental faculties and improve mood. Exposure to fascinating nature and built environments were used to affect mood and impulsive decision-making. Whether certain built environments could elicit fascination similar to nature was explored. Forty-two undergraduate students viewed 25 pictures in one of three environments: nature, built high fascinating, or built low fascinating. Pictures were rated for fascination and viewed while choices were made between hypothetical smaller immediate and larger but delayed monetary rewards. Mood was reported before and after the environment was experienced. All three conditions resulted in reduced negative affect at posttest. All three conditions resulted in a reduction to positive affect at posttest. There were no significant differences on impulsivity for any of the three conditions. This contrasts other prior research which found that natural environments have a restorative effect on mood and cognition. The non-significant findings are possibly due to the fact that the current analysis is underpowered with an average computer effect size of .25 and 14 individuals in each group, the post hoc power is .27 and desired power is .80. More participants are needed to detect a difference

between groups on impulsivity. More research is needed on the effects of different environments on mood and cognition.

63. *Involvement of Endocannabinoid System in Innate Immune Responses to Salmonella typhimurium Infection*
Larry Reser and Mariola Edelman, University of Florida

Cannabis is most commonly associated with recreational use, though it has played a medicinal role in societies throughout time. In humans, cannabinoids bind two receptors: CB1 and CB2. CB1 receptors are found within the central nervous system, and their activation is primarily responsible for the psychotropic effects associated with cannabinoids. CB2 receptors are present in lymphoid and myeloid cells and have no psychotropic effects when activated. Instead, CB2 receptors are responsible for the physiological effects correlated to cannabis use, some of which may be beneficial to the host. Endogenous cannabinoids (endocannabinoids) are naturally synthesized within the human body; consequently, they produce no psychotropic effects. Agonistic endocannabinoids, like 2-arachidonoylglycerol, activate CB2 receptors and can be used to independently investigate the physiological effects of THC. More specifically, these drugs can give insight to how cannabinoids impact inflammasome regulation and activation. We first analyzed the effects of 2-arachidonoyl glycerol (2-AG) on bacterial clearance and inflammasome activation. We hypothesize that the inflammasome is upregulated by 2-AG, leading to a reduced bacterial load in Salmonella-infected macrophages. We quantified IL-1beta, a pro-inflammatory, to determine the impact of 2-AG on inflammasome regulation. We performed real-time PCR to quantify transcripts of CB1/2 receptors and the enzymes FAAH and DAGLa, which are linked to endocannabinoid degradation. Our preliminary results have shown an upregulation of CB2 and downregulation of endocannabinoid-decomposing enzymes upon Salmonella infection. The implications of this indicate that the endocannabinoid system may play a role in inflammasome activation and enhance pathogen clearance.

64. *VR> IRL ;)?... Nope OMG!: How Ready Player One Forefronts Debord's Spectacle*
Justin Sachariason and Warren Jones, Eastern Florida State College

VR> IRL ;)?... Nope OMG!: How Ready Player One Forefronts Debord's Spectacle Ready Player One and Debord’s idea of the Spectacle of Society takes the spectacle of the virtual world within the film and forgets about the real world the people live in. Virtually created worlds within VR games create a different version of Guy Debord’s spectacle. Guy Debord’s book, Spectacle of Society, refers to an image through which we as a society interpret as a relationship with other people. Virtual reality creates beautiful and immersive worlds that captivate the user to such a degree that when the headset comes off, the user is left with a world (the real world) that does not fulfill the relationship made with the virtual world. The spectacle that virtual reality creates can lead to the destruction of the relationship we have with our own reality. Our reality has been challenged before the advent of virtual reality with the movie Avatar, released in 2009. Viewing Avatar created an effect on some of the audience which made some viewers depressed and, in some

extreme cases, suicidal about our current reality because our world did not seem as beautiful and as full of wonder as the planet Pandora.

65. *Molecular Basis of N-B Transition of Human Serum Albumin, HSA on Ligand Binding Studied by Fluorescence Justice*

Justice Albury, Raenell Dorsey and Vishwa Trivedi, Bethune Cookman University

Albumin represents 52-60% of the total plasma protein and plays an important role in transport and storage of hormones, ions, fatty acids, drugs etc. As key carrier of fatty acids that are otherwise insoluble in circulating plasma, it involves inactivating lipophilic metabolites such as bilirubin. In the neutral pH to basic pH 6 to 9 and higher region, it undergoes N-B transition. The binding of several drugs to HSA was observed to be dependent on state of equilibrium. Several drugs bind with higher affinity at N state. It is interesting to explore binding affinities in state where N-B equilibrium is altered. Due to this fact and because the state of N-B transition is likely to alter in tissues/organs where pH change can occur [e.g. liver], it is clear that N-B transition may play a significant role in pharmacokinetics of drugs. A better understanding of N-B transition will contribute to a deeper insight into this matter. We propose and demonstrate a "molten globule" like state of HSA at over pH 9.0 prior to its denaturation in extreme alkaline medium. The ligand binding study involving common ligand bilirubin, analgesic agent, salicylic acid and antipsychotic agent, chlorpromazine was performed using fluorescence. Binding constant of antipsychotic drug, chlorpromazine yielded higher affinity in 'B" form compared to other ligands, supporting that molten globule could serve critical affinity to some key ligand compared to others. [Supported by BCU-CURE-2018 Program]

66. *Developing a Synthetic Sea Urchin Exoskeleton to Reduce Carbon Dioxide Emissions and form a Calcium Carbonate Precipitate*

Alexis Base, Peng Yi and Mike Kim, Florida Atlantic University

According to NOAA, "the ocean absorbs about a quarter of the CO2 we release into the atmosphere every year." This increase in carbon dioxide (CO2) results in ocean acidification (a decrease in pH). Current research suggests that this increase in CO2 inhibits the development of some corals and harms multiple shell organisms. If the ocean continues to absorb the excess CO2 being released, then severe damage will occur within the next century. Furthermore, absorbing CO2 from one of its sources, flue gas produced by power plants, has numerous beneficial effects. Sea Urchins' exoskeletons use nickel nanoparticles to form their calcium carbonate skeletal structure. Biomimicry would allow the utilization of nickel nanoparticles as a catalyst for forming a calcium carbonate precipitate. The research's focus would be on utilizing these nickel nanoparticles immobilized by silica aerogel to speed the hydration reaction for CO2, therefore, speeding up the process of the mineralization of CO2 into calcium carbonate. The precipitation of calcium carbonate from the catalyst has not been previously studied. A nickel nanoparticle aerogel would be cost effective because of its reusability making it a feasible solution for absorbing CO2 as opposed to carbon anhydrase. The precipitate would then be deposited in the ocean to regulate the pH in areas that are at risk because of ocean acidification by acting as a base. A unique aerogel for absolving CO2 and forming a calcium carbonate

precipitate would be able to regulate ocean acidification and reduce the amount of CO2 from flue gas being emitted.

67. *Investigating SREBP2 as a Potential Zika Virus Host Cofactor*
Alexander Bell and Hengli Tang, Florida State University

Zika virus (ZIKV) is an *Aedes* mosquito transmitted flavivirus that has drawn global concern during the 2015-2016 epidemic in the Americas. The identification of host proteins and pathways may elucidate potential drug targets for antiviral therapy. Cholesterol synthesis has been shown to play an important role in the pathogenesis of several members of the flaviviridae family. Cholesterol biosynthesis is transcriptionally regulated by sterol regulatory-element binding proteins (SREBPs). RNAi mediated expression knockdown of SREBP2 followed by NS1 FRET analysis reveals a 43% decrease in ZIKV infectivity in HEK293t cells. Interestingly, RNAi mediated expression knockdown of any individual genes that are transcriptionally activated by SREBP2 results in an increase of ZIKV infectivity. This research hypothesized that the SREBP2 post-translational processing pathway contains pro-viral elements, and that ZIKV infectivity can be modulated by the activity of the pathway. Consistent with this hypothesis, it was demonstrated that the individual knockdown of any SREBP2 target genes results in compensatory up-regulation in expression of the remaining target genes. Current research is working to confirm whether or not increased SREBP2 processing is responsible for the compensatory up-regulation. The effect of artificial stimulation of the SREBP2 pathway on ZIKV infection will then be elucidated. Further experiments will investigate the specific mechanistic activity of the pro-viral element associated with SREBP2 processing.

68. *The Effects of Hyper-categorization on the Political Efficacy of LGBTQ+ Movements*
Nathalia Carneiro and Maggie Cobb, University of Tampa

Drawing upon in-depth interviews with individuals who identify as LGBTQI+ and/or participate as members, leaders, and/or followers of LGBTQI + organizations, this research examines how the historical and contemporary construction, maintenance, and relevance of typologies within marginalized populations shapes the political efficacy of social movements dedicated to them. While it is well documented that the vast majority of social movements have neglected intersectionality, or those marginalized identities that fall between the cracks of collective efforts, scant research has documented how shared meaning, symbolic boundaries, and social order rely on cognitive, emotional, and moral appraisals that are only feasible when categorized and named; thus, typologies and divisions within social movements have empirical consequences for the politics of identity, the possibilities of sustainable social change, and the political efficacy of organized social action.

69. *Barbie Meets Fiona: Conflicting Discourses of Beauty in Sci-fi Films*
Rabecca Connors and Warren Jones, Eastern Florida State College

Foucauldian discourse analysis allows us to analyze the current changes in a discourse of beauty, from superficial beauty to inner beauty, in Sci-Fi and Fantasy films. Michel Foucault focuses on his concept of how power relationships in society are expressed through language and practices. Foucault states that people use language to express their dominance and request obedience as well as respect. Within movies from the early centuries to now, movies have a distinct difference in how beauty was discussed. Superficial beauty occurs with Ava in Ex Machina and Pris in Blade Runner. In contrast, Drax in Guardian of the Galaxy 2 talks about his deceased wife not having any rhythm and one might assume she was dead in his village, yet he loved her immediately, for this characteristic was inside her. Another inner beauty is seen in The 5th Element; Plavalaguna sings so beautifully, the crowd becomes overly emotional. With over 15 sci-fi films in 2018, we may better see how inner beauty continues to outshine the superficial beauty and how these discourses will still conflict with each other.

70. *Skeletal Muscle's Circadian Rhythm in Health and Disease*
Emilia De Jesus and Karyn Esser, University of Florida

Circadian rhythms are 24 hour oscillations of biological and physiological behavior. The molecular clock is a transcriptional-translational feedback loop that has a positive and negative arm. The positive arm has genes BMAL1 and CLOCK. The negative one has the PERs and CRYs (Schroder). FIGURE 1. The purpose of this experiment was to see whether cancer influenced the circadian rhythms. Transgenic mice Per2:luciferase was used for this study. The mouse lung, liver, and skeletal muscles tissue was collected one week post injection with LCC cancer cells subcutaneous and was incubated in recording medium and was introduced in lumicycle-32, where data would be recorded every 10 minutes for 5 days. After obtaining the results from the lumicycle, the data was analyzed with an algorithm JTK. From there we concluded that cancer cell LCC injection does not affect circadian rhythm’s period, amplitude, or lag time of muscle tissues.

71. *Aviation Weather Conditions Prior to Tropical Cyclone Landfalls*
Alexander Donato and Randell Barry, Embry-Riddle Aeronautical University

When a tropical cyclone threatens a location, the focus is typically on issues such as “When will tropical storm force winds begin to affect that location?” and “What will the maximum winds be and when will those winds be experienced at that location?” These questions are important when considering the evacuation of general aviation aircraft. Another important question is “What will the weather conditions be just prior to the time a tropical cyclone affects a location (i.e., during the time an evacuation is carried out)?” The weather conditions experienced during the time when evacuations are being executed may differ from storm to storm. For example, many locations affected by Hurricane Matthew in 2016 had poor conditions for several days leading up to the storm’s arrival, while many locations affected by Hurricane Katrina in 2005 had good conditions up until 12 hours before the storm’s arrival. The ability to quantify the amount of time remaining before

conditions deteriorate will help in understanding the evolution of tropical cyclones, and in preparation for evacuations, especially of general aviation aircraft. To accomplish this, storm tracks and reports from the National Hurricane Center and hourly surface wind data from the National Climatic Data Center were used to create analyses of aviation weather conditions for the 120 hours leading up to the first tropical storm force winds experienced at a site. Analyses were created based on strength, location of impact, and time of impact. Analyses were created for individual storms and storm aggregates.

72. *Current Distribution in a Segmented Bi-material Cathode with Battery and Capacitor Material*

Christain Gaya and Annadanesh Shelikeri, Florida State University

In the a world were battery technology is becoming extremely relevant, there is a great push towards making the technology more powerful and efficient. In our power science laboratory, our current project is to analyze the characteristics of a segmented bi-material cathode in a four electrode pouch cell. Our pouch cell uses both supercapacitor material, activated carbon (AC), and battery material, Lithium Iron Phosphate (LFP). AC is known to have good power density while LFP is known to have good energy density. Combining these two materials, the resulting effects of both materials is having both a decent power and energy density. However, the individual materials will inhibit certain behaviors at different voltage ratings when they are segmented and the goal is to study the behavior as the electrons flow in and out of the cathodes. These behaviors are measured through a set-up we made using an Arbin system as a Galvanostat, a high precision multimeter, two shunt resistors, and LabView to record the data. The experiment resulted in readings of individual currents coming out of both cathodes in which we could study the behaviors through the charge/discharge states. The research method done for this particular experiment can be applied to any other type of segmented bi-material electrodes to study their behaviors and advancing the research in battery systems.

73. *Individual Differences as Antecedents of Performance on Cognitive Tasks*

David Hall, Eilidh Watson, Jasmine Gonzalez, Mark Hodae, Kelly Hall, and Randall Croom, Stetson University

Organizations and managers remain concerned about individual performance. In a sample of 33 young adults, we measured performance on a series of cognitive tasks related to reading comprehension, working memory, and creativity. We demonstrate the relationship between several variables, including ADHD, need for cognition, achievement striving, and conscientiousness predict performance. As a follow up to previous work presented at FURC, we also perform preliminary analyses of whether exposure to binaural beats influence performance on these tasks. Binaural beats are an auditory illusion created by two sine waves at differing frequency heard simultaneously through separate, isolated channels. Exposure to binaural beats, particularly alpha waves as used in this study, has been theorized to improve focus and concentration. Although interpretation of any results related to binaural beats are restricted by sample size, results of the study inform the direction of future work.

74. *Direct and Indirect Contributions of Immune Cells in Xenograph Rejection*
Haley Katz and Mahyar Nouri-Shirazi, Florida Atlantic University

The increasing demand for organs, tissues, and cells for purposes of clinical transplantation combined with the relative lack of improvement in the number of human organs that become available each year have increased interest in xenografts1-3. Most of the research in this area has focused on xenograft rejection mediated by anti-gal and anti-nongal antibody host response and the following complement system activation4. While this research has allowed the utilization of heart valves from bovine and porcine sources, more studies are needed to better understand the recognition of xenoantigens by the recipient immune cells, as this has been a contributing factor to allograft transplant rejection. Objective: In this study, we explored the direct and indirect contribution of immune cells in xenoantigen recognition using murine and human in vitro co-culture systems. Results: Our data indicates that the mouse CD4+ T cells can recognize xenoantigens through an indirect pathway while the human CD8+ T cells can recognize xenoantigens by direct pathway as evidenced by their proliferation and cytokine production, namely INF-γ and IL-2. Conclusion: Our study suggests that host immune cell contribution to recognition of xenoantigens depends on the species of the recipient.

75. *Modeling Cholera Immunity Dynamics: The Role of Memory B-Lymphocytes*
Henry Chang and Zhisheng Shuai, University of Central Florida

Cholera is a waterborne disease caused by the bacteria *Vibrio cholerae* that can cause severe diarrhea, dehydration, and death if not treated promptly. Cholera outbreaks have been known to occur periodically and can persist in a population manifesting itself as repeated epidemics due, largely, to a short immunity period following recovery from the disease. Post-infection derived immunity, mediated by a host's adaptive immune response, has been traditionally suggested to be long-lasting if not lifelong. The adaptive immune system includes both T and B lymphocytes (T and B cells) that generate a variety of immune responses that are generally protective. Additionally, B cells have the ability to differentiate into memory B cells, which allow enhanced responses in any subsequent exposure to *V. cholerae*, providing the previously mentioned ``immunity". However, epidemiological data has shown that cholera immunity decays after only three years. I propose two modified SIRB models, incorporating B cell and *V. cholerae* interactions, to theoretically explore immunity dynamics on epidemic outbreaks and the persistence of endemic equilibriums. The immunity decay pattern will be analyzed and compared with epidemiological data to define natural disease oscillations in terms of memory B cell levels and their relationship with environmental *V. cholerae*. These results will hopefully provide optimal timing for vaccination strategies to prevent further cholera epidemic outbreaks.

76. *Testing a Deviance Regulation Theory Intervention in College Freshman*
Angelina Leary and Robert Dvorak, University of Central Florida

An alcohol culture exists among college freshmen. About 50% of college freshmen reported consuming at least one drink of alcohol on Sundays through Thursdays, and this increases to about 70% on Fridays and Saturdays. With more alcohol use, the likelihood of experiencing alcohol-related consequences increases. The current study investigates the use of the Deviance Regulation Theory (DRT), presented in a web-based manner, to increase alcohol Protective Behavioral Strategies (PBS), such as monitoring drinks, using a designated driver, and drinking water in between alcoholic beverages. College freshmen (N = 140) at the University of Central Florida (UCF) completed a brief online intervention, followed by weekly web-based surveys examining alcohol behaviors for six weeks. Participants were randomly assigned to one of three conditions: a positive message about individuals who use PBS, a negative message about individuals who do not use PBS, or a control condition. Results indicated that a positive message was associated with higher PBS use (B = 0.40, p = .005). The negative message was moderated by perceived PBS norms (B = -0.02, p = .006). The negative message resulted in the most PBS use when PBS use was perceived to be more frequent among close peers, relative to the general population (B = 0.76, p = .006). PBS use was in turn inversely associated with alcohol use (B = -0.10, p = .043) and indirectly to alcohol problems via lower alcohol use. The current study suggests DRT may effectively reduce alcohol use and problems among college freshman.

77. *Self-Assembly of Guanosine Derivatives as Building Blocks for Chemical and Material Research*
Julia Monasterio, David Thai and Ying He, University of South Florida

The G-quartet is a supramolecule formed by the cation assisted self-assembly of guanosine by hydrogen bonding. The structure of GQ is formed by the self-assembly of four subunits to into a planar tetramer that stack on each other by binding with a metal cation. One general approach to achieve structurally rigid G-monomer is the modification of C-8 position by fixing the sugar syn/anti conformation. The only crystal structure of C-8-modified G-quartet reported so far was formed in the absence of alkali metal cations adopting a syn conformation. We design the synthesis of lipophilic 8-phenyl guanosine derivatives that can precisely form the C4 symmetrical octamer in both solution and solid state. Our design is based on three aspects: 1) By introducing the TBS group, the solubility of substrate in organic solution is greatly enhanced, making it easy to extract metal cations into organic phase in self-assembly process. 2) The rigid two ring structure and the steric hindrance between phenyl substitution and ribose help to control the formation of simplified conformation with high fidelity and stability compared with guanosine without C-8 substitution. 3) The monomer is likely to exhibit different binding ability with various metals which can demonstrate the potential application as lipophilic ionophores. We report the new synthesis of 8-pheyl Guanosine derivatives. Its cation-templated self-assembly with different cations was studied. Each case was fully compared with the reported 8H-Guanosine by NMR. The crystal structure of 8-phenyl-G-quadruplex reveals a formation of octamer compared to the hexadecamer formed by 8H-G.

78. *Financial Systems and Assimilation of Chinese Diaspora in the American South*
James Novello and Aaron Lan, Florida State University

The study's purpose is to see how financial mechanisms correlate with assimilation within Chinese economies within the American South. These economies, "enclave economies," provide financial shelter for new immigrants and refugees who may not easily mesh with their new culture, but little information has been recorded as to whether they truly assimilate individuals into the wider American fold. They perform the task of integrating individuals into the economy as an entity, by operating businesses that use American currency, but there is little interest in whether Chinese diaspora find themselves accepted in the United States. Research will allow us to view how financial involvement in a sheltered economy influences personal involvement in a wider cultural sense, beginning with a group that is believed to be the most successful in terms of becoming accustomed to life in the United States.

79. *Hydrofunctionalization of Alkenes and Alkynes with Iron Catalysts.*
Gisselle Pombar and Paul Chirik, University of Central Florida

Catalytic asymmetric hydrofunctionalization of olefins is a powerful method in organic synthesis but often relies on precious metal catalysts and expensive chiral ligands. New methods using catalysts based on earth abundant metals, specifically iron, and easily-synthesized ligands are desirable but underdeveloped. We have synthesized and characterized a set of chiral C1 symmetric bis(imino)pyridine iron dichloride and methyl complexes as well as diimine iron dichloride complexes. The electronic structure and catalytic activity of these complexes in enantioselective hydrogenation and hydroboration reactions of olefins are currently being studied with the aim of elucidating fundamental principles for catalyst design.

80. *Effect of the Expression of the Lupus Associated Pbx1-d Isoform on Mesenchymal Stem Cells (MSCs) in a Mouse Model of Lupus*
Brian Robusto and Laurence Morel, University of Florida

Systemic Lupus Erythematosus (SLE) is an autoimmune disease that causes chronic inflammation. It is mostly found in women and can manifest itself in many ways. In previous experiments, it has been discovered that Mesenchymal stem cells (MSCs) from a lupus-prone mouse strain (Sle1a1) express a defective allele of Pbx1 (Pbx1-d), a gene that controls stemness in MSCs. Sle1a1 MSCs grow faster, differentiate quicker into osteoblasts than the B6 control, and have impaired immunosuppressive function. This data together with a significant decrease in the expression of genes associated with stemness and an increase in expression of genes associated with differentiation suggests that the Pbx1-d allele disrupts the immunoregulatory functions of MSCs. This could lead to lupus pathogenesis. We aimed to see if Pbx1-d expression in Sle1a1MSCs increased the expression of genes promoting inflammation and activated the innate immune system. 26 genes were selected that showed an expression fold change greater than 2 in RNA sequencing as compared to B6 control MSCs. We also investigated the metabolism of the MSCs, as cells with increased inflammatory functions display an enhanced metabolism.

We compared the glucose metabolism and mitochondrial respiration between B6 and Sle1a1 MSC.

81. *Safety of Chronic Intranasal Oxytocin Administration and Functional Benefits in Aging*
Dinia Salmeron, Jessie Somerville and Natalie Ebner, University of Florida

As the older adult population continues to grow, an increased interest is placed on finding ways to improve their ability to live independently and function well physically, cognitively, and socioemotionally. A potential candidate for improving functioning in these domains is the hormone oxytocin (OT). Older compared to younger adults are at a greater risk of developing chronic pain and experience greater pain intensity at more bodily sites. In humans, low plasma OT levels are associated with increased prevalence of chronic pain; single-dose intranasal OT administration decreases experimental pain sensitivity, increases pain inhibition, and improves mood and positive affect in younger individuals. To address effects of chronic OT administration, we conducted a randomized, placebo-controlled, double-blind experiment to examine the effects of 24 international units (IUs) of OT or placebo (P) among generally healthy participants (> 55 years) twice a day for four weeks. Participants underwent thermal testing procedures and conditioned pain modulation to assess pain-inhibitory functions and a neuroimaging assessment was performed to measure OT's effects on executive function, attention, episodic memory, language, processing speed, and working memory. Participants randomized into the OT vs. the placebo group do not differ in the adverse conditions or side effects reported, suggesting that long-term intranasal OT administration is tolerated well in older population. These findings provide promising support in pursuit of research on OT's beneficial effects in aging in larger clinical trials. The proposed research constitutes the first step for developing clinical applications to improve pain in aging using safe, practical, and cost-efficient strategies.

82. *Quantity vs Quality*
Kyle Ziegler, Derream Auguste, Monica Escaleras and Eric Levy, Florida Atlantic University

Food is a fundamental physiological need for all humans. As the demand for food increases, food makers must increase production; however, there comes a point when one must consider what is sacrificed for such an increase in mass production of food. Food is now evolving, preferences are varying from natural tastes to unnatural alterations due to chemical additives. Food producers may sway peoples' opinions on what is truly healthy, especially when it comes to consumption of foods with high GMO usage. Numerous studies have researched what our food contains and how it is produced. While these studies educate a large percentage of once-uninformed consumers, more research is needed to understand what motivates consumers to purchase varying types of foods, some healthier than others. Also, more studies must be conducted to understand what types of regulations the public desires for increasing the quality of food. To understand consumers' views on food preferences, we developed an online survey with fifteen questions and collected responses from 498 people. Our findings show a statistically significant difference between people of different gender, age, and regions regarding motivations to

purchase food and food labeling. With this knowledge, we may better understand what people of different demographics feel regarding the current state of food wellness, and why they might prefer certain actions over others due to their diverse backgrounds.

83. *Salmonella Meningitis in an Infant*
Brittany Garrett and Silvana Carr, University of South Florida

Salmonella is a gram-negative bacilli that generally causes gastrointestinal illness. Children under 5 years are susceptible for serious illnesses with Salmonella, like bacteremia and meningitis. Salmonella is spread by fecal-oral contamination. Major food vehicles include foods of animal origin, such as poultry, eggs, and dairy products. A 5 month-old infant was admitted to the hospital with fever and loose, bloody stool for 2 weeks. On PE, the child had a bulging AF, otherwise PE was WNL. The infant was otherwise healthy before admission with normal development. The father worked on several farms and often brought home fresh eggs. Blood and urine cultures were negative, but the stool culture and CSF broth were positive for Salmonella species Group B. The infant was treated with intra-venous Ceftriaxone on meningitic doses for 4 weeks. Fever and gastrointestinal symptoms were resolved. Follow-up CSF study and brain MRI at 4 weeks of therapy were WNL with negative culture. Infection transmission in this case was thought to be through the parent's hands contaminated with Salmonella, as child was exclusively breastfed. Salmonella is a facultative intracellular organism, and prolonged antibiotic therapy is required to prevent infection recurrence. This case illustrates an uncommon etiological agent of meningitis in infancy. Risk of Salmonella infections in infants can be decreased with proper hand washing and personal hygiene habits.

84. *Selective Detection of M. tuberculosis Utilizing Split Peroxidase-like Deoxyribozymes*
Anna Balenko and Yulia Gerasimova, University of Central Florida

Selective Detection of M. tuberculosis Utilizing Split Peroxidase-like Deoxyribozymes *Mycobacterium tuberculosis* (MTB) is one of the main reasons of disabilities and death worldwide, hence, it is of a critical need to be selectively detected in its early stages. Comparison of the bacterial 16S rRNA gene sequences is frequently used for the identification of MTB and other species of nontuberculous mycobacteria (NTM), as well as recognition of new pathogens. We designed highly selective split sensors (sPDz) utilizing a catalytic activity of G-quadruplex peroxidase deoxyribozyme to detect the presence of the MTB strands. In the presence of a specific nucleic acid, the two DNA strands of sPDz assemble to form a catalytic core and in the presence of a hemin cofactor catalyze peroxidation of a colorless organic substrate, ABTS, to create a visible colored product. A series of NTM species, as well as MTB, were tested using the designed MTB-specific sPDz. The results revealed a visible color change in the presence of the MTB analyte and no color change in the presence of NTM analytes. The MTB analytes were selectively detected at the lowest concentration of 0.05 μM.

85. *Focus on My Brains, Not My Booty: Perceptions and Experiences of Women Building Careers in Media*

Brooke Dann and William Berry, Bethune-Cookman University

Female graduates of Mass Communication programs leave college with the expectation that their knowledge and abilities will take them as high as they want to soar in the different media fields. This study examined the media career roadblocks women encounter. Using mixed methods of surveys and interviews it was found that the presumptions of students are more optimistic and hopeful than the experiences and realities of women working in the media. The results showed that students had an expectation of experiencing bias-free self-realization in the workplace. Interviews with women already established in media found that they initially encountered and continue to face workplace differentiation (though not necessarily discrimination) because of their gender. This analysis found that despite the existence of laws prohibiting discrimination, women working in media continue to receive less pay and fewer advancement opportunities than men. Particularly illuminating was the finding that although women comprise over two-thirds of the public relations workforce, they occupy less than one-third of senior leadership positions. As one interviewee working in radio in northeast Florida characterized it: “I'm talked to differently, way different than any men in the office, and at times my manager would ask me to do more secretarial work." The study confirmed that women in media are treated differently than men, consistent with a review of feminist theory, social learning theory, and glass-ceiling labor theory.

86. *Infaunal Communities on Restored Oyster Reefs and Stabilized Shorelines*

Katherine Harris, Aiesha Stevens, Melinda Donnelly and Linda Walters, University of Central Florida

Infaunal organisms are critical to aquatic food webs and are consumed by many species including, threatened/endangered wading birds and commercially important fishes and crabs. Oyster reefs and living shorelines are important estuarine ecosystems that provide habitat to many organisms, including infauna. This is why restoring these habitats is crucial. We predicted that infauna was a good indicator taxa to document the transition from dead to living (restored) intertidal oyster reefs and highly eroded to stable shorelines after deploying oyster shell, marshgrass and mangroves. Research was conducted in Mosquito Lagoon, of the northern Indian River Lagoon system. Six replicate samples were collected from 12 intertidal oyster reefs (4 dead, 4 live, 4 restored), and 7 shoreline sites (3 control, 4 restored). Samples were collected 1-week pre-restoration and 1 week, 1 month, and quarterly post-restoration. Infauna was sorted out from the sediment in the samples and identified to the lowest possible taxonomic level. Species density, biomass, and species diversity data were collected. Results on oyster reefs show that live reefs had the highest species density and diversity, followed by the restored reefs. Dead reefs had the lowest species density. Live reefs also contained larger infauna than restored and dead reefs. Living shoreline locations showed a similar trend; stabilized shorelines had higher species density and larger infauna than the unstabilized sites. In summary, our data

documents that oyster reef restoration and shoreline stabilization projects positively impact numerous infaunal species and their associated food webs.

87. *Software Development*
Erika Cardenas, Connor Shorten, Eric Levy, and Monica Escaleras, Florida Atlantic University

New software technologies are rapidly changing the economy, requiring many industries to integrate them into their businesses. Current technologies changing businesses include social media, smartphone capabilities, and cheaper high-volume data storage. Future software technologies such as artificial intelligence have the potential to further transform the economy. These changes have presented problems such as job displacement, high barrier to entry, and a gender gap in the engineering communities. These are bound to grow exponentially if not solved. The problem of job displacement has been evidenced by platform software such as Uber and Lyft. However, self-driving cars are likely to displace driving jobs altogether. In order to see the views of Americans regarding the challenges of software technologies, we conducted an online survey, gathering 500 responses. In recent news stories, it has been shown that there is a gender gap in the tech industry, but the women that participated in our survey are interested in learning software engineering as much as men. Additionally, our research found that younger people are not only required to use software tools more frequently, but are the most interested in learning how to build them. Finally, we found that a large majority of people do not have any experience developing software. Our survey highlights some of the challenges and proposed solutions of new, unpredictable software technologies in the economy.

88. *Initial Results of Eps15 Homology Domain Proteins Structural Analysis*
Connor Colby and Scott Stagg, Florida State University

Cell endocytic transport is highly-regulated process mediated by a vast array of proteins, many of which have well-understood roles within specific intracellular trafficking steps. During these steps, many important membrane receptors are internalized, and either undergo degradation or are returned to the membrane in a process known as endocytic receptor recycling. One of the less understood protein groups involved in receptor recycling is the four Eps15 homology domain (EHD) proteins found in mammalian cells. It is proposed that the dynamin-like proteins have a distinct role in membrane receptor recycling involving tubular structures. It is important to understand their structures and functions to uncover possible links to human diseases. We will be presenting our initial results in cloning and purification of EHD, toward analysis of the formation of the EHD tubules through a combination of structural and biophysical techniques, focusing on cryo-electron microscopy. Through this process, we hope to generate 3-D reconstructed atomic models of each of the four EHD proteins in both monomeric and oligomeric states.

89. *Healthy Eating and Physical Activity Interventions Based on Florida Department of Health-Volusia County Hospitalization/Emergency Department Data and Sociodemographic Profiles by Zip Code*
Edward Curry, Elena Finver and Laura Gunn, Stetson University

The 2016 Volusia County Community Health Needs Assessment (CHNA) identified physical activity and healthy eating among its five priority health areas on which to focus for the coming three to five years. Effective intervention outcomes for this health priority for both adults and children should target weight loss, BMI reduction, an increase in consumption of fruits and vegetables, and increase in physical activity which in turn lead to reductions in overweight and obesity, as well as the associated chronic diseases. Through a review of effective interventions, data analysis from Volusia County Hospitalization and Emergency Department data, and analysis of sociodemographic census data, we created a multifaceted intervention map. We used this mapping to match interventions to appropriate populations based on prevalence of obesity and overweight by zip code. We suggest implementation of interventions in zip codes with the highest frequency of health incidence: 32725, 32738, 32114, 32174, 32720, and 32763. Within these, 32725 and 32738 are neighboring zip codes in the Deltona area. In addition to high rates of obesity and overweight, they contain a low median age, a high Hispanic population and a high poverty level, therefore we recommend that most attention should be directed toward targeting these areas.

90. *The Study of Moringa oleifera Under Mars Lighting Conditions*
Deanna DeMattio and Peter Merkle, Embry-Riddle Aeronautical University

Agriculture in enclosed and buried structures on Mars will enable astronauts to conduct extended surface exploration missions. We evaluated a deep-water culture indoor hydroponics system to grow *Moringa oleifera*, a nutrient- and antioxidant-rich plant with leaves containing the complete set of amino acids necessary for human nutrition. The lighting intensity was decreased to 590 W/m2 in a twelve hour on/off cycle, in normal atmosphere. This simulates an ambient light collection and reflection system on Mars illuminating an insulated pressurizes underground chamber for agriculture. All plants (N = 32) were harvested over a 9 month period at regular intervals when plant heights reached an average of .9 m. A dry consumable leaf yield of .131 kg/month averaged 7.58g per plant per day. Data suggest *Moringa oleifera* as a perennial hydroponic crop is possible under reduced illumination, serving as a food source for Mars explorers.

91. *Furries Now!: Situating Modern Art Communities*
Jay Dotson and Dillon Mahoney, University of South Florida

The furry fandom can be classified as an art community centered around anthropomorphic creatures and zoomorphic humans. The contemporary cultural movement of furries in the United States is situated within the politics of technological development and the re-thinking of folk culture. Research on furries has mostly centered on the psychological and demographic aspects of community members or has strongly emphasized empowerment through membership in the community through costuming and identity formation. But

little academic literature has been done on how mainstream culture has informed socialization in the community and media perception of the identity of the community. By conducting in-depth interviews, questionnaires, and participant observation with community members, I investigated how the community both resists and reflects (or reproduces) larger cultural movements. In this thesis, I will demonstrate how neoliberal and postmodern cultural assemblages can be found throughout the furry community, but the community's existence as visual counterculture creates an ambiguous relationship to these larger movements. Research on the furry community, a mostly online Western community founded on openness and tolerance, reveals how people across generations are engaging in hobbies and developing new identities within the context of a continued accumulation of capital in the Global North.

92. *Population Structure and Genetic Variation Associated with Morphological Differences of Eastern Mosquitofish, Gambusia holbrooki, in Florida Waterways*
Grayce Dyer and Natalia Belfiore, University of Tampa

Eastern Mosquitofish, *Gambusia holbrooki*, are small freshwater fish native to the southeastern United States. Mosquitofish thrive in slow moving warm waters and are often introduced to ponds and streams to control mosquito populations. Although they are widespread within their native range, the habitats in which they reside are often isolated, and sometimes seasonal, limiting gene flow between populations. In previous research, we noted variation in morphology in relation to the absence or presence of predatory pressure. One hypothesis to explain the variation between populations is that the genes determining morphology are plastic, enabling the fish's body form to change throughout its lifetime. Another hypothesis is that over time, isolated populations lacking predators no longer require a body shape conducive to predator avoidance. To better understand the relationships among local mosquitofish populations and a possible explanation for the morphological variance, we are using multiple microsatellite markers to compare populations with predators to those without. We sampled six different populations of *Gambusia holbrooki* in the Tampa Bay area, four with predators, and two without. Using allele number, identity, Fst, and a diversity index, we are able to use these microsatellite markers to draw conclusions about the relationships among these populations.

93. *Circumvolve: Narratives and Responses to Life*
Rachel Huff Smith and Sheila Goloborotko, University of North Florida

The work of 2017 UNF Museum of Contemporary Art (MOCA) Jacksonville student artist-in-residence Rachel Huff Smith recognizes the pain and joy of life cycles in familial relationships. As a parent, wife, and daughter, her life and work circumvolve, reflecting a seasonal cycle. Birth, growth, and death are universal realities. This painting series portrays the narrative of her simultaneous experiences of new motherhood and grieving the death of her mother and grandmother. Sharing both realistic and abstract elements, the figures reflect distorted memory, grief, longing, and joy. The exhibit contains twelve paintings which are each 35" X 23 ¾" painted in acrylic and/or oil on wood panel. She completed the wood work, prepared the surfaces with gesso, then drew and painted the

figures with abstract backgrounds. In addition to her studio work, she also completed a community painting, measuring 32" X 80." Museum visitors were invited to paint a mark in acrylic paint as they responded to the theme of the series. The work is on display at the MOCA from December 9, 2018 - March 18, 2019. Circumvolve investigates questions, such as: Does a connection remain regardless of a person's presence or ability to reciprocate? What happens to love when the beloved is gone? Smith's paintings grapple with such questions as they are dictated by her personal experiences. Her hope is that by addressing our personal responses to the life cycle, we find shared truth even in disparate circumstances.

94. *The Socio-Ecological Politics of Charcoal Production in the Ya'bad Region of the West Bank*

Jonathan Valentine, Tareq Abu Hamed, Lavi-Neeman and Robert Sullins, University of South Florida

Charcoal production has been a source of livelihood for many communities in the West Bank of Palestine since the 1800's. However, the traditional method of producing charcoal still employed in the West Bank is incredibly polluting and inefficient, with documented health effects on workers and children within Ya'bad. Over the past five years, instigated by complaints from outlying Israeli towns and settlements, the Israeli Ministry of Environmental Protection (MoEP) and Civil Administration (CA) have extinguished charcoal production within Ya'bad. The justification for this action is branded as environmental; however, the actions taken by the MoEP and CA are more political than environmental and do not represent the interests of those communities most affected. Furthermore, these actions have displaced the livelihoods of community members in Ya'bad without providing for them sustainable alternatives. Put simply, Ya'bad cannot afford the form of environmentalism pushed by the MoEP and CA, which may further distance many Palestinians from environmental action they already see as associated with a "hostile Zionist establishment" (Benstein, 2015;1). This study places charcoal production within its broad social and political context through interviews and surveys conducted with individuals directly involved in charcoal production while also considering the rationale behind the agendas of those stakeholders involved. Furthermore, it argues that the current Israeli-Palestinian conflict has limited the implementation of sustainable alternatives to traditional charcoal production within Ya'bad while detailing how changing market factors have only shifted the source of pollution from Ya'bad to Egypt which is not nearly as environmental as framed.