

2018 Fall Fiat Lux

A Showcase of Florida Southern College
Student Scholarship, Creative Works, and Research

Wednesday, November 28, 2018
6:00pm–8:10pm

Christoverson Humanities Building



Sponsored by the Florida Southern College Chapter of the Honor Society of Phi Kappa Phi

Room	Time	Type	First Name	Last Name	Major	Title
CH 207	6:40-7:00	Oral	Ashley	Berniche	Environmental Studies	The Potential Colonization of Mesic Pine Flatwoods by Non-Native Plant Species
CH 209	6:20-6:40	Oral	Addison	Cantor	Biochemistry and Molecular Biology	Characterizing the Interaction of Annexin-A2 and α -Synuclein at Synaptic Vesicle Membranes Under Conditions that Mimic Parkinson's Disease
CH 208	7:50-8:10	Oral	Sara	Carlton	Psychology	Evaluating Implicit Biases and Hostile Behaviors Against Gender Nonconforming Individuals
CH 208	6:20-6:40	Oral	Julia	Couch	Communication: Advertising and Public Relations	Measuring Creativity: Creating Branded Videos that Work
CH 207	6:00-6:20	Oral	Kylie	DeBoer	Environmental Studies	Assessing the Public Health Concern of Rat Lungworm and the Biodiversity of Parasitic Nematodes in Central Florida
CH 209	6:00-6:20	Oral	Emily	Glidden	Biology	Characterizing the Parkinson's Disease Associated Protein α -Synuclein's Interaction with Synaptic Protein Annexin-A2
CH 208	6:00-6:20	Oral	Rebekah	Green	English	Rejecting the Androcentric: Creating a New Female Character in the Psychological Thriller Genre
CH 209	7:30-7:50	Oral	Jake	Griner	Biochemistry and Molecular Biology	Identifying a Possible Role for Histone Deacetylase Inhibition as a Radiosensitizer in Chordoma
CH 207	6:20-6:40	Poster	Mark	Haver	Environmental Studies	The Effect of Different Plastics on Sea Urchins
CH 112	6:20-6:40	Oral	Nicola	Horwood	Biology	Effect of Concurrent Activation Potentiation on Velocity of the Deadlift
CH 208	6:40-7:00	Oral	Caitlin	James	English	Gender and Genre: Black Women's Historical Fiction
CH 208	7:30-7:50	Oral	Chloe	Kindell	Psychology	Back to the Drawing Board: A Study on Self-Directed Pedagogy and Visual Learning
CH 208	7:10-7:30	Oral	Jessica	Korver	Music: Music Management	Facing the Music: The Current State of Streaming Services in the Music Industry
CH 207	7:30-7:50	Oral	Alyssa	Osborne	Marine Biology	A Study on the Visual Response of the Photoreceptors on the Telson of <i>Limulus polyphemus</i>
CH 207	7:10-7:30	Poster	Katarina	Sperduto	Computer Science	A Monte Carlo Tree Search Player for Birds of a Feather Solitaire
CH 112	6:00-6:20	Oral	Samantha	Stackpole	Exercise Science	The Effects of Proprioception on Being Receptive to Coaching and Cues
CH 207	7:50-8:10	Oral	Samantha	Stein	Marine Biology	Examining the Manipulation and Handling of <i>Coquina</i> Clam <i>Donax variabilis</i> by the Gray Sand Star <i>Luidia clathrata</i>
CH 112	6:40-7:00	Oral	Laura	VanderStarre	Exercise Science	Measuring the Nutrition Knowledge of NCAA Division II Athletes
CH 209	6:40-7:00	Oral	Madison	Walter	Biology	Don't You Know that You're Toxic: The Effects of Allelopathy Within an Aquaponic System
CH 209	7:50-8:10	Oral	Brandon	Williams	Biology	A Mesocosm Study to Determine the Effects of Predation Level on the Eye Size of <i>Daphnia</i>
CH 209	7:10-7:30	Oral	Samantha	Woerle	Biology	Effects of Olfactory Enrichment on the Displacement Behaviors of Owl Monkeys (<i>Aotus nancymaae</i>)

Fiat Lux Presentation Schedule – By Room and Time

Christoverson 112

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6:20-6:40	Nicola	Horwood	Biology	Effect of Concurrent Activation Potentiation on Velocity of the Deadlift
6:00-6:20	Samantha	Stackpole	Exercise Science	The Effects of Proprioception on Being Receptive to Coaching and Cues
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Christoverson 207

Time	First Name	Last Name	Major	Title
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6:20-6:40	Mark	Haver	Environmental Studies	The Effect of Different Plastics on Sea Urchins
6:40-7:00	Ashley	Berniche	Environmental Studies	The Potential Colonization of Mesic Pine Flatwoods by Non-Native Plant Species
BREAK				
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Christoverson 208

Time	First Name	Last Name	Major	Title
6:00-6:20	Rebekah	Green	English	Rejecting the Androcentric: Creating a New Female Character in the Psychological Thriller Genre
6:20-6:40	Julia	Couch	Communication: Advertising and Public Relations	Measuring Creativity: Creating Branded Videos that Work
6:40-7:00	Caitlin	James	English	Gender and Genre: Black Women's Historical Fiction
BREAK				
7:10-7:30	Jessica	Korver	Music: Music Management	Facing the Music: The Current State of Streaming Services in the Music Industry
7:30-7:50	Chloe	Kindell	Psychology	Back to the Drawing Board: A Study on Self-Directed Pedagogy and Visual Learning
7:50-8:10	Sara	Carlton	Psychology	Evaluating Implicit Biases and Hostile Behaviors Against Gender Nonconforming Individuals

Fiat Lux Presentation Schedule – By Room and Time

Christoverson 209

Time	First Name	Last Name	Major	Title
6:00-6:20	Emily	Glidden	Biology	Characterizing the Parkinson's Disease Associated Protein α -Synuclein's Interaction with Synaptic Protein Annexin-A2
6:20-6:40	Addison	Cantor	Biochemistry and Molecular Biology	Characterizing the Interaction of Annexin-A2 and α -Synuclein at Synaptic Vesicle Membranes Under Conditions that Mimic Parkinson's Disease
6:40-7:00	Madison	Walter	Biology	Don't You Know that You're Toxic: The Effects of Allelopathy Within an Aquaponic System
BREAK				
7:10-7:30	Samantha	Woerle	Biology	Effects of Olfactory Enrichment on the Displacement Behaviors of Owl Monkeys (<i>Aotus nancymaae</i>)
7:30-7:50	Jake	Griner	Biochemistry and Molecular Biology	Identifying a Possible Role for Histone Deacetylase Inhibition as a Radiosensitizer in Chordoma
7:50-8:10	Brandon	Williams	Biology	A Mesocosm Study to Determine the Effects of Predation Level on the Eye Size of <i>Daphnia</i>

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Student: Berniche, Ashley

Major: Environmental Studies

Faculty Mentor: Eric Kjellmark

Presentation Type: Oral

Presentation Time: 6:40-7:00

Room: Christoverson 207

Title: The Potential Colonization of Mesic Pine Flatwoods by Non-Native Plant Species

Abstract: Pine flatwoods represent the largest terrestrial ecosystem in Florida, but human disturbance has led to a decrease in intact flatwoods ecosystems due to fire suppression and the introduction of non-native species. This has resulted in a loss of the high biodiversity usually seen in pine flatwoods. Colt Creek State Park in Lakeland, Florida represents a pine flatwood that is relatively untouched by human activity. This study provides a better understanding of how non-native and invasive plant species interact with native plant species in pine flatwoods ecosystems. Understanding how the pine flatwoods are affected by non-native species will give better insight into more effective conservation methods and aid in preventing the spread of invasive species. The objective of this study is to determine whether invasive species are colonizing the intact pine flatwoods ecosystems. It will also be determining whether native species are re-colonizing highly disturbed areas mostly occupied by non-native species.

Student: Cantor, Addison

Major: Biochemistry and Molecular Biology

Faculty Mentor: Susan Banks

Presentation Type: Oral

Presentation Time: 6:20-6:40

Room: Christoverson 209

Title: Characterizing the Interaction of Annexin-A2 and α -Synuclein at Synaptic Vesicle Membranes Under Conditions that Mimic Parkinson's Disease

Abstract: Parkinson's Disease (PD) is a neurodegenerative disorder that impairs motor function after significant neuronal loss. The underlying molecular biology of the disorder is poorly understood, and for this reason there is no treatment available that targets the root cause of the disease pathology. Mutations in and overexpression of a small, membrane binding protein called α -synuclein has been linked to neuronal dysfunction and associated with PD. α -Synuclein aggregation has been shown to impair synaptic vesicle trafficking, an essential process for neurotransmission. During neurotransmission, synaptic vesicles fuse with the plasma membrane in a process called exocytosis to release their neurotransmitters and enable communication between neurons. The released neurotransmitters bind with receptors on neighboring neurons to continue to propagate the signal. After neurotransmitter release, synaptic vesicles are formed at the presynaptic membrane in a process called endocytosis and are recycled for use during another signaling event. Preliminary data suggests that α -synuclein might be interacting with Annexin A2, a Calcium dependent membrane binding protein that regulates the endocytic and exocytic processes of synaptic vesicle trafficking. If Calcium and excess α -synuclein are present, then Annexin A2 will show increased interaction with synaptic vesicles. The increased presence of Annexin A2 at synaptic vesicle membranes may compete with α -synuclein for membrane binding. The localization of both proteins could be altered and affect their function in synaptic vesicle trafficking, which could explain how excess α -synuclein leads to PD.

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Student: Carlton, Sara

Major: Psychology

Faculty Mentor: Charlie Law

Presentation Type: Oral

Presentation Time: 7:50-8:10

Room: Christoverson 208

Title: Evaluating Implicit Biases and Hostile Behaviors Against Gender Nonconforming Individuals

Abstract: Gender nonconformity is characterized by individuals who express characteristics outside of the gender binary in which they are expected to conform, such as men expressing feminine traits and women expressing masculine traits. Gender nonconformity is common amongst members of the LGBT community, but transgender individuals are the most subject to hostile treatment for presenting as a gender opposed to the one assigned at birth. Transgender individuals are frequently misidentified as gender nonconforming rather than the gender with which they identify, which leads to them being the targets for a variety of discriminatory behaviors. Most people wish to believe themselves free of discriminatory tendencies, but the fact remains that everyone holds stereotypes about groups to which they do not belong. These stereotypes manifest in the form of implicit biases, or discriminatory behaviors that an individual may be unaware he is displaying. The purpose of the current study is to observe the role of both explicit and implicit biases in regards to discriminatory behaviors directed at a stigmatized target (i.e. gender nonconforming individuals) in a cooperative task setting. We hypothesize that while explicit biases may be a predictor of overt hostility, implicit biases will affect subtle hostility towards the target.

Student: Couch, Julia

Major: Communication: Advertising and Public Relations

Faculty Mentor: Matthew Herbertz

Presentation Type: Oral

Presentation Time: 6:20-6:40

Room: Christoverson 208

Title: Measuring Creativity: Creating Branded Videos that Work

Abstract: This honors proposal reflects and evaluates creative research/activity throughout my sophomore and junior year as an Advertising and Film double major. Inspired by a video project I produced for the School of Education at Florida Southern College, I plan to seek out an external client that needs a branded video produced and distributed. This project will require intake meetings with the client and extensive research conducted on the market to create a targeted concept for a video. After concept approval, the project will be produced, edited, and revised. In the post-production stage, I will be a part of the video distribution process and keep track of back-end analytics to measure reach and impact of the video. This project aims to incorporate planning, research, communication, creativity, and analysis to create a branded video that pleases the client and impacts a large audience.

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Student: DeBoer, Kylie

Major: Environmental Studies

Faculty Mentor: Gabriel Langford

Presentation Type: Oral

Presentation Time: 6:00-6:20

Room: Christoverson 207

Title: Assessing the Public Health Concern of Rat Lungworm and the Biodiversity of Parasitic Nematodes in Central Florida

Abstract: This research project shall examine the different nematode species parasitizing snails, the geographic distribution of snails infected with rat lungworm, or *Angiostrongylus cantonensis*, and the risk of transmission to people along the Tampa I-4 corridor. When people ingest a snail infected with rat lungworm, the parasite lodges in the host's central nervous system and causes an immune response, often resulting in meningitis. Cases of human infection of rat lungworm have been reported in the Southeastern United States, and several studies indicate the presence of the parasite in snails in Florida. For this study, both native and non-native snails will be collected in large sample sizes from 10-12 locations in Central Florida. The different species of parasites in the snails will be identified through various techniques and the abundance of rat lungworm will be assessed through statistical analysis. The proposed research addresses an under-studied public health concern, and the results from this study shall provide a greater understanding of the risk of transmission of rat lungworm in Central Florida.

Student: Glidden, Emily

Major: Biology

Faculty Mentor: Susan Banks

Presentation Type: Oral

Presentation Time: 6:00-6:20

Room: Christoverson 209

Title: Characterizing the Parkinson's Disease Associated Protein α -Synuclein's Interaction with Synaptic Protein Annexin-A2

Abstract: Parkinson's Disease (PD) is the second most common neurodegenerative disorder in the world. Much of the molecular pathology of the disease is unknown, so current treatments for PD only lessen the severity of symptoms and do not halt the progression of the disease. Determining the underlying molecular and cellular biology of the disease can provide key insight into disease progression and hint at possible targets for novel therapeutics. In neurons, α -synuclein is a synaptic protein that has been linked to PD when it aggregates, due to mutation or overexpression. α -Synuclein aggregation is thought to affect many cellular structures and functions. Several recent studies suggest that α -synuclein aggregation disrupts synaptic vesicle trafficking, which is a process that mediates communication between neurons. One way that aggregated α -synuclein could be altering synaptic function is that it may be binding to other proteins at synapses and preventing them from functioning normally. Studies have shown a possible interaction between α -synuclein and Annexin A2, which is a synaptic protein that also plays a role in the regulation of synaptic vesicle trafficking and may be dysfunctioning when interacting with α -synuclein aggregates. Therefore, the goal of this study is to identify an interaction between Annexin-A2 and α -synuclein. The interaction may be mapped with truncations and PD-linked mutations of α -synuclein to determine which part of the protein is required for the interaction. Studying a possible interaction between α -synuclein and Annexin-A2 may provide more insight regarding how synaptic vesicle trafficking is disrupted under PD-like conditions.

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Student: Green, Rebekah

Major: English

Faculty Mentor: Don Di Leo

Presentation Type: Oral

Presentation Time: 6:00-6:20

Room: Christoverson 208

Title: Rejecting the Androcentric: Creating a New Female Character in the Psychological Thriller Genre

Abstract: Female writers have spent centuries climbing their way out of the trenches in order to have equal footing and the same opportunities as their male counterparts. Over the last decade, the powerful influence of women authors has become more apparent, especially within the historically male-dominant field of crime fiction. The genre of crime fiction is broad in range and encompasses many subgenres underneath its umbrella. One of its many subgenres, psychological thrillers, has come to dominate book stores and library shelves as popularity and demand continually rise. The disparities that are associated with the umbrella genre (i.e., a male-focused group that neglects the female perspective) have created a demand for female representation in both authorship and fictional characters within the subgenre. As a newly revived and still-evolving form of literature, psychological thrillers offer female authors the opportunity to reject the male-centric notions formed in crime fiction and substitute them with more well-rounded and realistic perspectives. This paper will focus on three works from female authors, whose novels all fall under the category of psychological thriller: *Rebecca* (1938) by Daphne du Maurier; *Don't Cry Now* (1995) by Joy Fielding; and *Gone Girl* (2012) by Gillian Flynn. My thesis will analyze the patriarchal tropes that have formed under the crime fiction genre and the ways in which these women respond to and debunk such tropes in their works.

Student: Griner, Jake

Major: Biochemistry and Molecular Biology

Faculty Mentor: Brittany Gasper

Presentation Type: Oral

Presentation Time: 7:30-7:50

Room: Christoverson 209

Title: Identifying a Possible Role for Histone Deacetylase Inhibition as a Radiosensitizer in Chordoma

Abstract: Chordoma is a rare primary spinal cancer which affects one in one million people and has an average survival time of seven years. Despite advances in surgical techniques and radiation therapy, approximately 30% of chordomas metastasize at some point. Local recurrence is a significant issue for cases where the tumor cannot be completely removed, and this may appear as quickly as only a few months post-surgery. For this reason, there is great clinical interest in finding effective therapies that can prevent or treat recurrence or metastases. This project aims to evaluate the role of HDAC6 (Histone deacetylase 6) in radiation repair in chordoma. HDAC6 is the most prevalently expressed HDAC in chordoma and has been shown in other cancers to mediate response to DNA damage through one of its target proteins, Hsp90. The HDAC6/Hsp90 interaction has been implicated in cellular response to radiation induced damage, and radiation therapy is a standard-of-care treatment commonly used for chordoma patients. Vorinostat is an FDA approved inhibitor of all HDACs, including HDAC6. This project will aim to determine the role that HDAC6 plays in chordoma's response to DNA damage, and to evaluate the possibility of using vorinostat as a radiosensitizer in chordoma treatment.

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Student: Haver, Mark

Major: Environmental Studies

Faculty Mentor: Gabriel Langford

Presentation Type: Poster

Presentation Time: 6:20-6:40

Room: Christoverson 207

Title: The Effect of Different Plastics on Sea Urchins

Abstract: Plastic pollution has caused significant problems globally for marine life. The widespread prevalence of this ubiquitous material does not just pose aesthetic problems for our environment; the global plastic problem has caused the deaths of many different types of marine animals and may lead to even larger implications that affect how we go about our daily lives. Even though we like to think that American coasts are clean, plastic still finds its way into our oceans. Sea urchins are bottom-dwelling echinoderms that are a keystone animal in temperate waters, meaning that their ecological role protects the viability and function of the entire ecosystem. In their search for food, they may intentionally or unintentionally ingest plastics, as visible pieces and as tiny pieces known as microplastics or nanoplastics. This proposal intends to register how susceptible sea urchins are to ingest plastic fragments and the health implications of ingestion. The results of this study could be used to better inform science-based policy and communications surrounding waste management and plastic production.

Student: Horwood, Nicola

Major: Biology

Faculty Mentor: Charles Allen

Presentation Type: Oral

Presentation Time: 6:20-6:40

Room: Christoverson 112

Title: Effect of Concurrent Activation Potentiation on Velocity of the Deadlift

Abstract: Concurrent activation potentiation (CAP) is a method of performance enhancement that involves remote voluntary contractions (RVC). This study tested the effect of CAP on the average and peak velocities of a sub-maximally loaded deadlift. Ten subjects performed singular maximum effort deadlifts at 65% 1RM for three trials under each RVC condition. The three RVC conditions were jaw relaxed (control), jaw maximally clenched, and jaw maximally opened. A tether-based velocity measurement unit was attached to the barbell to measure the average and peak movement velocities. Results revealed a non-significant increase in both average and peak velocity ($p > 0.05$). Despite a large effect size ($\eta^2 = 0.50$), the observed power was less than desired (0.8). Explanations for the lack of statistical significance between conditions include a limited subject number and attention splitting. Further studies should include an increased subject number and a different dynamic movement.

Student: James, Caitlin

Major: English

Faculty Mentor: Catherine Eskin

Presentation Type: Oral

Presentation Time: 6:40-7:00

Room: Christoverson 208

Title: Gender and Genre: Black Women's Historical Fiction

Abstract: Women writers have changed how we view history. Historical fiction was at first a male-dominated genre which told tales of monarchs and wars. Thanks to the work of feminists, who have reimagined the genre, historical fiction has grown in popularity and inclusivity. First and foremost,

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historical fiction has changed how history is presented to and consumed by popular audiences. Readers have demanded and received new approaches to historical topics and fiction writers have jumped in to fill the gaps with the histories the genre has traditionally excluded. Readers who have not seen themselves represented in academic literature (women and minorities) have helped to change the literary culture. Historical fiction has allowed for a more holistic depiction of the often-silenced suffering of civilization's victims, following their quests for emancipation and self-determination. Interrogating three novels written by women about black women, my research will explore popular historical fiction and the genre's role in how our society learns about non-dominant history. As these female writers stake a claim in the genre of historical fiction, their works explore the reclamation of the enslaved female body.

Student: Kindell, Chloe

Major: Psychology

Faculty Mentor: Leilani Goodmon

Presentation Type: Oral

Presentation Time: 7:30-7:50

Room: Christoverson 208

Title: Back to the Drawing Board: A Study on Self-Directed Pedagogy and Visual Learning

Abstract: My oral presentation will outline the research methods being taken to study the use of self-created content as a memory tool. It will also cover the design of my other variable, the use of either visual or verbal content to aid memory. By crossing these two variables, I will have four conditions in my honors research- verbal content that is self-created, visual content that is self-created, verbal content that is given, and visual content that is given. I will measure the memory advantage of each of these variables across two time intervals. During my presentation, I will cover a brief summary of my literature review, highlight what is different about my project when compared to previous research, and discuss the design of the study. This will cover how I created materials and how I plan to measure and collect my results. This project has potential to change the way we view learning and might even change the way we study.

Student: Korver, Jessica

Major: Music: Music Management

Faculty Mentor: Silviana Falcon

Presentation Type: Oral

Presentation Time: 7:10-7:30

Room: Christoverson 208

Title: Facing the Music: The Current State of Streaming Services in the Music Industry

Abstract: As music streaming services like Spotify and Apple Music have increased in popularity among consumers, their potential revenues have become of a great concern to the music industry. Allowing users to pay for unlimited music for as low as five dollars a month, these services on the surface level do not seem to have the artist's interests in mind. It is becoming increasingly important to a variety of people within the music industry, whether one is an artist manager, working at a label, or an artist themselves, to find the true impact of music streaming services. This study examines the data of music streaming services based on the revenue they generate for artists, and how that compares to digital download revenue from early 2000s. It also investigates current industry opinions of music streaming services, and consumer awareness. When this study is conducted, it would greatly help those in the

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music industry plan for the future, as well as provide potential legislative reforms for these music streaming services. Keywords: music streaming services, artist revenue, music, consumer awareness, entertainment law

Student: Osborne, Alyssa

Major: Marine Biology

Faculty Mentor: Kristian Taylor

Presentation Type: Oral

Presentation Time: 7:30-7:50

Room: Christoverson 207

Title: A Study on the Visual Response of the Photoreceptors on the Telson of *Limulus polyphemus*

Abstract: The horseshoe crab (genus *Limulus*) is a model organism for work on visual systems and circadian rhythm. There have been numerous papers investigating the impact of photoreceptors on the circadian rhythm of horseshoe crabs. Preliminary research has been done on the photoreceptors located in the telson, a spine located on the posterior of the organism, but it has not yet been determined if these photoreceptors are used for anything other than the circadian rhythm. To determine whether a light mediated response can originate from the telson, a light was shone over multiple specimens of *Limulus polyphemus* to see if a reaction was elicited. A response was counted as the specimen moving away from the light or the specimen burying itself in the sand. A lux meter was used to determine if a threshold was required to elicit a response. In order to make sure that only the telson was exposed to light, the rest of the visual system was blocked using black felt. The specimens exhibited a variety of light reactions which included fleeing, burying, and no response. This suggests that the telson may also be involved in the light response behavior.

Student: Sperduto, Katarina

Major: Computer Science

Faculty Mentor: Christian Roberson

Presentation Type: Poster

Presentation Time: 7:10-7:30

Room: Christoverson 207

Title: A Monte Carlo Tree Search Player for Birds of a Feather Solitaire

Abstract: Artificial intelligence in games serves as an excellent platform for facilitating collaborative research. This project explores several aspects of a research challenge proposed for a newly developed variant of a solitaire game. We present multiple classes of game states that can be identified as solvable or unsolvable. We present a heuristic for quickly finding goal states in a game state search tree. Finally, we introduce a Monte Carlo Tree Search based player for the solitaire variant that can win almost any solvable starting deal efficiently

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Student: Stackpole, Samantha

Major: Exercise Science

Faculty Mentor: David Rice

Presentation Type: Oral

Presentation Time: 6:00-6:20

Room: Christoverson 112

Title: The Effects of Proprioception on Being Receptive to Coaching and Cues

Abstract: Background: Proprioception is the ability to determine the spatial location of parts of the body. Proprioception can provide information about a current movement in the form of feedback, in addition to collecting and storing information about a past movement for use during the next repetition, or when processing information about the execution of a new movement. Purpose: The purpose of this experiment will be to determine whether proprioception is associated with the ability for a population to be able to execute a new skill given simple cues. Previous work has assessed a number of aspects of the effects of proprioception, but none have found the relevance of proprioception when learning a new skill. Methods: This cross-sectional study will measure proprioception and, during one testing day, the subjects will be given a basic warm-up, then given tests to determine their baseline proprioception. The skill will then be presented to each of them, and execution will be measured based on the accuracy of the skill that is expected to be performed. Conclusions: With this knowledge, advancements in more efficient training for a range of athletes and non-athletes will be made by improving coachability, or the receptiveness and accurate execution of cues.

Student: Stein, Samantha

Major: Marine Biology

Faculty Mentor: Kristian Taylor

Presentation Type: Oral

Presentation Time: 7:50-8:10

Room: Christoverson 207

Title: Examining the Manipulation and Handling of Coquina Clam *Donax variabilis* by the Gray Sand Star *Luidia clathrata*

Abstract: Sea stars (Echinodermata: Asteroidea) have been a common research subject for over one hundred years. Most of the research performed on these organisms has focused on their two feeding methods, but more recently studies have been shifting towards behavior analysis. *Luidia clathrata* is a common species of sea star found throughout the Tampa Bay area. The organism is an active predator of the coquina clam (*Donax variabilis*). Known as the gray sand star, *L. clathrata* feeds intra-orally, in which it ingests a bivalve, opens it internally to manipulate and consume the visceral mass, and then regurgitates the still intact valves. This study examined how the gray sand star would manipulate its prey if the bivalve was locked in different positions. The study of this reaction gives further insight into the possible intelligence of these asteroids by examining their ability to do a cost-benefit analysis of a prey item. Our results have shown that if a bivalve is attached to a foreign object, the sea stars are capable of recognizing the increased energy input necessary to reach the visceral mass, and often decide to not pursue this specimen and rather target prey items that are more easily accessible.

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Student: VanderStarre, Laura

Major: Exercise Science

Faculty Mentor: Sara Terrell

Presentation Type: Oral

Presentation Time: 6:40-7:00

Room: Christoverson 112

Title: Measuring the Nutrition Knowledge of NCAA Division II Athletes

Abstract: Introduction: Previous research has shown inadequate nutrition knowledge among NCAA Division I athletes; however, the nutrition knowledge among Division II athletes is unknown. Purpose: The purpose of this research was to identify the level of general and sports nutrition knowledge of Division II athletes. Methods: The General and Sport Nutrition Knowledge Questionnaire (Callela et al., 2017) was modified and distributed to athletes at Florida Southern College via email. Descriptive statistics and t-tests were used to determine nutrition knowledge and to identify differences between genders; alpha value was 0.05 a priori. Results: Of 436 athletes surveyed, 216 athletes completed the survey (49.54% response rate); 64.35% of respondents were female and 35.65% were male. The mean general nutrition knowledge score was 70.77%, and the sports nutrition knowledge score was 71.30%; both were significantly lower than the 75% threshold (Torres-McGehee et al., 2012) marking adequate knowledge ($p < 0.01$). No significant difference was found between genders for sports nutrition knowledge ($p = 0.42$); however, female athletes scored significantly higher on the general nutrition questions than males ($p = 0.04$). Conclusion: Findings demonstrated inadequate general and sports nutrition knowledge among Division II athletes. Female athletes may have greater understanding of general nutrition concepts compared to males.

Student: Walter, Madison

Major: Biology

Faculty Mentor: Jamie Daugherty

Presentation Type: Oral

Presentation Time: 6:40-7:00

Room: Christoverson 209

Title: Don't You Know that You're Toxic: The Effects of Allelopathy Within an Aquaponic System

Abstract: Aquaponics systems are sustainable, closed systems that utilize fish waste as a mode of fertilization for various crops. Historically, aquaponics systems have mostly used fish such as tilapia, cod, and catfish rather than other aquatic life; however, an increasing number of aquaponics farmers have been successfully using crayfish, shrimp and prawns. A wide variety of plants have been grown in aquaponic systems. Allelopathic plants, or plants that are able to inhibit or enhance growth of other plants by releasing certain chemicals from their roots to interact with nearby plant roots, have not been studied in aquaponic systems. The following presentation provides a proposal for a study to observe the effects of garlic allelopathy on tomato plants within a Florida crayfish aquaponic system. This study has the potential to optimize crop growth and yield in personal and commercial aquaponics systems, as well as broaden the understanding of how environment plays a role in the efficacy of allelopathic chemicals.

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Student: Williams, Brandon

Major: Biology

Faculty Mentor: Christopher Brandon

Presentation Type: Oral

Presentation Time: 7:50-8:10

Room: Christoverson 209

Title: A Mesocosm Study to Determine the Effects of Predation Level on the Eye Size of Daphnia

Abstract: As the eye is a vastly complex organ controversy has always surrounded how a natural process like natural selection could have produced it which has led to much research being directed towards how it evolved and the factors that influence its evolution. Recent evidence has suggested that the level of predation in an animal's environment can influence the eye size's morphology. While some studies have looked at other factors that are involved in the evolution of an organism's eyes the literature is heavily dominated by articles solely looking at the effects of environmental light levels. Therefore, this research will aim to add to the literature regarding predation and eye size by looking at how varying degrees of predation affect eye morphology in a population of a small freshwater crustacean, Daphnia. Based on previous research I predict that the eye size of a Daphnia population under heavy predation will be significantly smaller than the populations exposed to little or no predation. To test this hypothesis three mesocosm environments will be set up in identical conditions each containing a population of a single species of Daphnia with one exposed to no predation, one to mild predation, and the final to heavy predation. Eye size measurements will be taken before the predators are added to the environments as well as at the end after multiple generation. The results will then be prepared which will provide evidence as to whether or not predation level is a successful predictor of eye morphology.

Student: Woerle, Samantha

Major: Biology

Faculty Mentor: Christy Wolovich

Presentation Type: Oral

Presentation Time: 7:10-7:30

Room: Christoverson 209

Title: Effects of Olfactory Enrichment on the Displacement Behaviors of Owl Monkeys (*Aotus nancymaae*)

Abstract: The purpose of environmental enrichment is to improve the behavior and health of captive animals and can include the introduction of music, toys, different forms of food, and scents. Animals given such enrichment exhibit a reduction in displacement behavior (stereotypies such as pacing and self-scratching, which are linked to elevated stress levels). Owl monkeys (*Aotus nancymaae*) are nocturnal, monogamous primates that have been widely used in medical research. Captive owl monkeys exhibit the following displacement behaviors: flipping, pacing and scratching. Despite their reliance on chemical communication and use of olfactory cues in foraging and social interactions, their responses to olfactory enrichment have not been investigated. I aim to examine the effects of olfactory enrichment on the behavior of captive owl monkeys housed at the DuMond Conservancy for Primates and Tropical Forests (Miami, FL). I will present ten groups of monkeys with a several types of spices (cinnamon, nutmeg, rosemary, and sage). I expect that the olfactory enrichment will decrease displacement behaviors and increase prosocial behaviors (e.g., allogrooming and scent marking). This research will provide insight in owl monkey enrichment and offer management recommendations for improving their care.

