

# 2016 Oral Presentation Abstracts (Alphabetical)



Symbols:

\*\* = Graduate Student

\* = Honors Project

^ = Undergraduate Research Grant Recipient

+ = Georgia Power Scholar

Leena Ali

Mentors: Alison Hatch – CoLA (CJSPS), Jane Rago – CoLA (LLP)

### *Mainstream Pornography is a Major Component of Rape Culture*

With the turn of the century, the implosion of the internet, and globalization, mainstream pornography has become one of the most easily accessible and highly searched aspects within the internet. This presentation will cover research findings that illustrate how patriarchy, capitalism, and white supremacy are oppressive systems that work collectively to exploit and oppress many, if not all, humans. Mainstream porn is a tool of these oppressive systems that contributes to rape culture in many ways. Rape culture is prevalent in the U.S. It is a culture in which the concept of rape is, perpetually, taken lightly with jokes, victim-blaming, and misconceptions of who is the typical rapist. It is a culture that teaches us that girls and women can prevent sexual assault by learning how to act, where to be, and what not to do. I will discuss how mainstream pornography re-establishes the false notion that females should be submissive to males and how this perpetuates violence against women.

In reality, mainstream porn keeps sexist, racist, and homophobic notions alive. It is keeping a globalized culture of violence against women alive. Toni Morrison has stated that race is "both an empty category and one of the most destructive and powerful forms of social categorization". I believe we can say the same about gender and sex. Deconstructing race, sex, and gender will enable us to dismantle ideologies within societies and cultures built on exploiting and abusing certain human groups.

Kerry Anderson

Mentor: Nalanda Roy – CoLA (CJSPS)

### *Cocacolonization*

The focus of my research will be the benefits and consequences associated with the globalization of Coca-Cola. Cocacolonization is a term that combines Coca-Cola and globalization. The multinational corporation is not only violating human rights in third world countries, but also eroding their sovereignty. Coca-Cola is not the only corporation guilty of such wrongdoings; therefore my research will analyze additional companies and their corrupt practices.

\*\*Candace Altomare, \*\*Julia Edwards, \*\*Kristen Godfrey, \*\*Shelby Hines

Mentors: George Davies, Haley Worst, Nancy Henderson - CHP (Physical Therapy)

## *Efficacy of a Computerized Shoulder Simulation Model on Developing Manual Therapy Skills in Physical Therapy Students*

### **Introduction**

Mobilization techniques are an integral part of manual therapy in treating patients with various joint pathologies, and DPT students must develop a competency in performing mobilizations accurately. The purpose of this study was to determine the efficacy of a computerized shoulder model (CSM) in the development of manual therapy skill retention and transference. We hypothesized the CSM would improve selected outcomes as an appropriate adjunct to classroom education methods of manual therapy training and would improve retention on the CSM as well as transference of mobilization techniques to a computerized knee model (CKM).

### **Methods**

First year students with no clinical experience and second year students with clinical experience were stratified into two groups. Each group received the same six-week training on the CSM and performed three sets of a 30-second posterior-anterior (P-A) grade II mobilization at each of the 12 sessions. Participants were provided visual and auditory feedback during training. Post-testing was performed immediately following intervention and at a 6-week follow-up, which included skill retention and transference testing. Wilcoxon nonparametric statistical analysis was conducted due to the lack of normality of the data.

### **Results**

Preliminary results demonstrated using the CSM provided improvement in quality of performance, good retention and transference of manual therapy skills. Further data analysis is being completed and will be presented at the symposium.

### **Discussion**

Practice on a CSM may have implications to improve students' performance of mobilization intervention techniques. Therefore, using a CSM may be an effective adjunct to classroom education when learning manual therapy.

Erika Andres

Mentor: Randall Reese - CoLA (AMT)

### *Arranging an Orchestral Work for Band*

Given the opportunity to perform a flute solo with the Savannah Winds, I took on the task to arrange an orchestral concerto, which is a piece featuring a soloist, for the band. Arranging, or transcribing, an orchestral work for band has many challenges. The essential problem is how to remove strings from the ensemble and replace their parts with wind instruments without changing the character of the piece or the intent of the composer. The composition I chose, the third movement of Aram Khachaturian's Concerto, was an excellent candidate for a band transcription due to a small amount of idiomatic string writing. However, there were still many obstacles to overcome, including how to adapt pizzicato parts for winds and how to notate the parts when the string and wind articulations in the original score were intentionally different. Many choices also had to be made about which instruments were to be assigned the string parts based on the texture, dynamics, and the general role of the strings at any given moment. Because this piece features a flute solo, when the strings are in an accompaniment role I generally gave their parts to woodwinds playing softly and lightly to keep from overpowering the solo line. On the other hand, when the string sections were loud and prominent, the full band was used to create a more homogenous sound and blended timbre. Other factors important in this selection

were the ranges of each of the different instruments and the availability of the instruments that were not already covering other lines. The final challenge was to prepare the score and parts in a way so that the musicians would easily be able to read the music during rehearsals as they prepared for the concert.

^+Evan Ashe, Travis Draud, Jessye Kirkham

Mentor: Michele Guidone - CST (Biology)

*Invasion by the alga Gracilaria vermiculophylla may facilitate predation on mud snail veligers and egg capsules*

The invasive alga *Gracilaria vermiculophylla* is utilized as habitat by numerous invertebrates and a substrate for egg capsule attachment by the native mud snail *Ilyanassa obsoleta*. We examined whether invertebrates that inhabit *G. vermiculophylla* consume mud snail veligers and/or egg capsules, as this may negatively impact snail abundance in areas invaded by *G. vermiculophylla*. Egg capsule predation rates were estimated in the field by placing *G. vermiculophylla* and 16-cm<sup>2</sup> screens with a known number of attached egg capsules into a predator inhabited area for one week, after which the surviving capsules were counted. In the laboratory, we explored potential predator identity by placing a known number of veligers or capsules into one-liter mesocosms with either an amphipod (*Gammarus mucronatus*) or grass shrimp (*Palaemonetes pugio*). Predator free controls monitored natural veliger and capsule mortality. After three days, the remaining veligers or capsules were counted to determine consumption. Our field results indicate that significantly more egg capsules were consumed from *G. vermiculophylla* than the screen substrate. However, our laboratory experiments demonstrate that while both predators consumed a significant number of veligers, they did not consume egg capsules and were likely not responsible for the predation observed in the field.

Ana Beasley

Mentor: Amy Potter - CoLA (History)

*The Making of the American Dust Bowl*

In 1935, America was four years into an epic drought that resulted in the loss of crops and animals across the country. This drought brought dust storms to the Great Plains of the central part of the United States and covered countless farms with many feet of dust. Experts estimated that 850 million tons of topsoil had been turned to dust and blown away. This was not a random occurrence. Prior to ranching and farming settlements, the Great Plains of Oklahoma and Texas was covered with prairie grass and buffalo. Settlers that farmed wheat and grazed cattle began to alter the delicate ecosystem that had previously existed. The effects of these changes were devastating to the environment and caused what journalist and writer Timothy Egan called “The Worst Hard Time.”

The objective of this project is to explain how human activities led to the American Dust Bowl of the 1930’s. Using primary sources that include photographs, voice recordings, and diaries as well as additional scholarly sources, I will establish how ecology, history, and geography can help us to better understand the making of this disaster. I will conclude by considering how the events of the 1930’s have impacted modern-day farming and conservation practices.

\*\*Taylor Benton, \*\*Hawley Emanuele, \*\*Molly Rush, \*\*Stefanie Ortiz

Mentors: Andi Beth Mincer, David Bringman, Haley Worst - CHP (Physical Therapy)

*The Association Between Neck Muscle Endurance and Computer Use in College Students*

Introduction: Neck pain is common during prolonged computer use, and has been associated with impaired endurance of certain neck muscles. Our study was designed to analyze neck muscle endurance as well as posture during a prolonged computer task. Our hypothesis was that there would be a relationship between neck muscle endurance and sitting behaviors.

Methods: 18 male and 35 female college students with or without neck pain performed the Craniocervical Flexion Test (CCFT) adapted from Jull et al. (2008) to measure neck flexor muscle endurance, as well as a videotaped 30-minute desktop computer survey of neck pain and computing habits. Subjects returned within one week to repeat a similar computer task. Videotapes obtained during both computer tasks to allow qualitative assessment of sitting behaviors. Subjects were unaware of video recording, and video analysts were blinded to CCFT scores.

Results: Descriptive statistics were compiled on computing habits and qualitative analysis of sitting behaviors allowed us to categorize trunk and neck postures. Correlations were analyzed between survey results and endurance, as well as sitting behaviors.

Discussion: The results of this study demonstrate that college students exhibit certain patterns of sitting behaviors and postural deviations during desktop computer tasks. Muscle endurance scores confirm usefulness of the clinical CCFT protocol and suggest variable levels of endurance among college students.

Conclusion: The results of this study reinforce clinical applicability of the CCFT for the assessment of patients with postural problems and/or neck pain. Survey results suggest a need to also evaluate posture with laptop computers.

Andrew Bradford

Mentor: Christopher Cartwright – CoLA (LLP)

*Conforming To Patriarchal Superiority In A Feminist Motivated Storyline: Grey's Anatomy*

This literary analysis examines the hit series *Grey's Anatomy* through a feminist lens. The idea that *Grey's Anatomy* reflects patriarchal values, traditional gender norms, and institutionalized assumptions will be supported. I will explain how the hospital hierarchy represents a patriarchal paradigm, as does the influence within the hospital in reference to gender, the influence male characters have on the female characters' plotline and the dialogue about women throughout the show. While acknowledging the feminist ideals *Grey's Anatomy* occasionally conveys, this essay will examine contradiction to those ideals. The analysis will ultimately reaffirm the previously stated idea that the patriarchal values dominate the feminist values in *Grey's Anatomy*.

^Rebecca E. Brown

Mentor: Emily Grundstad-Hall – CoLA (AMT)

*Mezzos in Opera: Witches, Old Woman, and Pants Roles*

“Mezzos in Opera: Witches, old woman, and pants roles” is an analysis of the most common opera characters played by mezzo-sopranos. Mezzos tend to get the short end of the

stick when it comes to amount or quality of roles in operas—they are almost always cast as minor characters and/or as immoral characters. Even operas that feature mezzos as main characters portray them as antagonists or extremely faulty heroines.

^Mary Carpenter

Mentor: Geneva DeMars - CST (Biology)

*Search for Wolbachia in Insects on Armstrong State University*

Specimen collection and classification, DNA extraction and analysis, Polymerase Chain Reaction, Gel Electrophoresis, and DNA sequence analysis are all scientific processes that freshman university students are able to use and understand thoroughly through participation in the *Wolbachia* project at Armstrong State University. *Wolbachia* is an under-researched bacteria; certain strains are currently being used to combat deadly illnesses, such as Dengue Fever, that cripple undeveloped nations. Students in Principles of Biology I are able to help scientists who study *Wolbachia* by screening insects around the university campus for *Wolbachia* and then entering their insects' DNA sequences into the BLAST database to see if they are novel. I will be presenting my *Wolbachia* project at the student symposium in an attempt to demonstrate why science majors should begin research early in their undergraduate career and how their research can be used to benefit humanity.

^\*Catherine Cofield

Mentor: Marilyn O'Mallon - CHP (Nursing)

*Complementary and Alternative Modalities for Lung Cancer that Affect the Quality of Life*

According to many scholars, lung cancer is the leading death causing cancer worldwide for both genders. Unfortunately, detection of the disease process is rarely found until the later stages. Furthermore due to the failure rate of early detection, once found the cancer has spread throughout the body, particularly to the brain, liver, bones, and adrenal glands (Harvard). Computed Tomography (CT) scans, Magnetic Resonant Imagery (MRI), and PET scans are used to discover lung cancer; however, due to the extensive spread of the disease bone scans, bone biopsies, and scans of the head and brain are encouraged. Smoking whether first or second hand is a major preventive yet causative agent in lung cancer and should be avoided when possible. Chemotherapy and radiation are the mainstream treatments for lung cancer, but complementary and alternative modalities are beginning to make an appearance on the market. Sadly, due to the late detection and lack of early prevention for lung cancer in most cases there is a very poor prognosis. Therefore, the quality of life is a crucial piece when caring for patients with lung cancer. In this research, we will look at background knowledge about lung cancer, the interventions used for lung cancer (both conventional and alternative), and the effects on the quality of life for both the patient and the caregiver.

Morgan Connor

Mentor: Carol Jamison - CoLA (LLP)

*A Fool of A Dwarf: A Post-Modern Look at George R. R. Martin's use of the Fool in A Song of Ice and Fire*

The study of medievalism is defined as being the study of a recreation of certain aspects of medieval life, such as literature, dress, and lifestyles, and not medieval life itself, making medievalism a modernist construct. It is by definition, then, that neomedievalism, being one step removed from medievalism, is a post-modern construct, as it is the study of the re-creation of a

re-creation of medieval life. With this understanding of neomedievalism, certain aspects of George R. R. Martin's book series *A Song of Ice and Fire*, specifically his portrayal of key characters, in that they are often re-worked to show their inherent fallacies, are seen as presenting his series as a work of neomedievalism and not medievalism, as it is currently accepted. None of these representations is more accurate than in Martin's portrayal of the trope of the medieval court jester, or fool. In my presentation, I will examine three of the many fools present in *A Song of Ice and Fire*: first, I will look at Patchface, the fool at Stannis Baratheon's court; second, I will examine Ser Dontos Hollard, a former knight-turned-fool at Joffrey Baratheon's court; and lastly, I will examine Tyrion Lannister, and explore how each character both embodies and rejects the role of the fool. I will do so by examining the characteristics of each of these characters and their respective roles within the series as a whole. I intend on pairing my analysis of Martin's fools with the example of Lear's Fool in Shakespeare's *King Lear* in order to fully show Martin's divergence from the traditional fool trope and how that divergence proves that his work is in fact a work of neomedievalism.

\*\*Tamara Cowart, \*\*Sara Morris, \*\*Mary Beth Price, \*\*Rachel Putman, \*\*Laura Thomas,  
Mentors: Nancy Henderson, Bryan Riemann, George Davies - CHP (Physical Therapy)  
*The psychometric properties of the single-arm seated shot put test as an open kinetic chain upper  
extremity functional outcome measure in subjects with healthy and painful shoulders:  
correlation between peak force and distance*

Introduction: Because upper extremity pushing motion is a component of many activities, it is vital clinicians have valid tests to measure these forces. The purpose was to compare peak force (PF) of isokinetic closed kinetic chain (CKC) pushing at three speeds with distance of the single-arm seated shot put test (SSSPT) in both healthy and painful subjects to determine clinical relevance of the SSSPT. Our hypothesis was there would be a correlation between the tests.

Methods: 73 men and 123 women, 18-44 years, with 26 painful and 170 non-painful shoulders, performed 5 maximal effort CKC pushing movements using a Biodex ® Systems isokinetic dynamometer at 3 speeds (0.24m/s, 0.43m/s, 0.61m/s) and 3 maximal effort trials of the SSSPT for distance. Limb and test order were randomized prior to testing. Pearson's r and Spearman rho were used to determine relationships between the tests.

Results: All results met significance at  $p=0.01$ . For subjects with shoulder pain, moderate to good correlations exist between CKC pushing PF at all three speeds and SSSPT distance. For subjects without shoulder pain, a moderate to good correlation exists between CKC pushing PF at 0.24m/s and SSSPT distance; and good to excellent correlations exist between CKC pushing PF at 0.43m/s and 0.61m/s and SSSPT distance.

Discussion: Results demonstrated moderate to excellent correlations between tests in both groups. This is the first study describing correlations between tests for subjects with shoulder pain.

Conclusion: The SSSPT distance is a clinically relevant test in subjects with and without shoulder pain.

^\*Michon Craig

Mentor: Sarah Zingales - CST (Chemistry and Physics)

*The Synthesis of Novel Chalcones via the Aldol Condensation Reaction*

Chalcones are organic compounds that are readily available in nature, particularly in edible plants. Their structures consist of two aromatic rings connected by an alpha-beta unsaturated carbonyl system. Plants typically synthesize these compounds to serve as a defense mechanism against pests and small insects. However, chalcones have also demonstrated significant use outside of plants due to the discovery of their several medical applications, which include anti-inflammatory, anti-bacterial, and anti-tumor properties. Previous research has suggested that chalcones can be extremely helpful anti-cancer drugs because of their ability to specifically target cancer cells. At Armstrong State University, Dr. Zingales has directed research on the creation and biological testing of an extensive chalcone library. This presentation describes the synthesis of various chalcone analogs in a laboratory setting through the use of the aldol condensation reaction between various aromatic aldehydes and ketones. More specifically this presentation will include the derivation of polar chalcone analogs which can be easily tested within biological solvents such as water. The structures of the various products were characterized <sup>1</sup>H NMR, <sup>13</sup>C NMR, and MS

^+Cicely Curtis

Mentors: Geneva DeMars, Melanie Link-Perez - CST (Biology)

*The Verification and Organization of BIOL 1107L Student Insect Samples Infected with Wolbachia*

The Principles of Biology I laboratory course (BIOL1107L) has required ~2,500 students to collect insects of different Orders and to analyze DNA from each sample to discover if the insect harbors the most widespread bacterial endosymbiont, *Wolbachia*. These student-generated data need verification before they are published in local and international databases, and this information needs to be organized so that the patterns of local *Wolbachia* infection can be determined and analyzed. The analysis of these patterns will permit thousands of future students in the lab course and dozens of upper-level Biology students to generate hypotheses relevant to their research projects. Verification first entails that the amplified DNA products are analyzed through gel electrophoresis. Then, the DNA of infected samples (10-20% of all samples) is sequenced for both the insect CO1 and *Wolbachia* 16S rRNA genes. I have processed >250 student samples to verify *Wolbachia* infection, and I am developing a database for others to easily use to identify and investigate any patterns. Additionally, through this verification process, I have determined that BIOL1107L students sometimes misidentify Order Hemiptera as Order Coleoptera. This finding will inform the future instruction of insect identification in the lab course. Therefore, this process of verification and organization is critical for the curricula of many research-based Biology courses: students will be able to form relevant hypotheses based on existing data and then complete undergraduate research projects because of this work.

\*\*Irina Demina

Mentor: Ellen Whitford - CEEd (Adolescent and Adult Education)

*Introduction of a Research Study: Effect of the Smartphone Technology on the Adult Student Academic Achievement*

The purpose of this presentation will be to discuss a research proposal I have developed regarding the use of Smartphones to increase university student learning.

The increased ubiquity of mobile computing devices on college campuses has the potential to create new options for instructional strategies for higher education students. Smartphones can provide access to a massive amount of educational and learning resources. Using smartphones for distance and online education is a learning mechanism that liberates students from limitations of time and location, while offering flexible opportunities for education. Distance and online learning enables students to utilize their time such that they can continue their education without impacting their work and family life. The Smartphone, with the capability of being always connected, makes the Smartphone a perfect fit device for distance learning.

Also, mobile learning (M-learning) has become an important educational technology component in higher education. It makes it possible for students to learn, collaborate, and share ideas among each other with the aid of internet and technology.

To investigate the impact of smartphone technology I developed a proposal to conduct a qualitative research study. The qualitative method will help to gain an in-depth understanding of the problem and results on student academic achievement. Therefore, the purpose of this study is to investigate the impact of the smartphone technology on the student academic achievement.

Mary Dillard

Mentor: Nalanda Roy - CoLA (CJSPS)

*The Role of Social Media in the Egyptian Revolution*

The PowerPoint presentation will focus on the critical role played by social media in the Egyptian revolution of 2011. More specifically, it will highlight how social media eroded the power of the state, and Mubarak's regime. The presentation will examine how social media was an organizing principle for dissenters both before, and after the revolution. Additionally, there will be a broader discussion about the importance of social media in international relations.

\*\*Victoria Do

Mentor: Allison Belzer – CoLA (History)

*The Phrenology Cabinet*

Science is often seen through the lens of progress. However, there are examples throughout modern history of the ways in which societies misappropriated science in the name of progress. Especially before the professionalization of “the sciences” as we know them, pseudo-science resembled science in complex and devastating ways. During the early nineteenth century, phrenology was the astonishingly common, now untenable, practice of locating the mind in the brain, and then measuring the brain from the surface of the skull in order proscribe improvements of the self and society. An exhaustive list of influential historical figures who supported phrenology, including Queen Victoria and Prince Albert, Walt Whitman, Elizabeth Cady Stanton, Horace Mann, G.J. Holyoake, Alfred Russell Wallace, and others testifies to the untold influence phrenology had on Victorian culture in America and Europe. Like other pseudo-sciences at the time, phrenology effectively spread new scientific culture throughout a rapidly industrializing Victorian society, but it did so at the cost of perpetuating a worldview of gender and racial inequality. Thus important questions remain about how and why this happened and how it can inform the values and practices of science moving forward. Through an interactive website, this digital history project will exhibit phrenological evidence like



photographs, diagrams, books, journals, and cartoons in the hopes of helping visitors with popular and/or academic interests in history, to discover the peculiarities of the past.

Petra Echaury

Mentor: Ellen Whitford - CEd (Adolescent and Adult Education)

*The Effects of Reader's Theater on Elementary Aged Students Reading Fluency and Comprehension Skills*

Fluency is an imperative component in the reading process and is directly linked to vocabulary and comprehension skills. Fluency strategies are often over looked in reading instruction however much research shows the importance of fluency in reading intervention strategies. At the elementary level reading instruction focuses on decoding, phonetic, and whole word reading skills before focusing on fluency. The skill is a necessary part of an elementary classroom's reading curriculum. As students' progress through elementary school a shift is made from "learning to read to reading to learn" making fluency and comprehension at the forefront of importance. The question arises, which reading fluency strategies are most effective? Reader's Theater is an operative way to implement these strategies in the classroom. Reader's Theater can be used at multiple reading levels. Allowing students to practice a script designed for individual reading levels reaches a broad scope of student abilities. Students perform the script for their peers typically after a week of practice. As reading fluency increases vocabulary and comprehension do as well. Reader's Theater can be derived from most all books containing dialog and poems.. Implementing a Reader's Theater curriculum across grade levels will allow for an engaging activity for students to gain fluency instruction in the classroom. This study seeks to find Reader's Theater as an appropriate and successful intervention and instruction strategy to improve reading fluency across multiple grade levels.

Elly Estrada, Angelo Fernandez, Roxanne Simons, Jasmine Stellers, Gill Watts

Mentors: Becky DaCruz, Chris Tecklenburg - CoLA (CJSPS)

*Moot Court Oral Argument Simulation*

Moot court is an oral argument simulation involving two hypothetical constitutional issues before the U.S. Supreme Court. During the appellate court proceeding, student competitors are judged on knowledge of the subject matter; response to questioning; forensic skills and courtroom demeanor; and organization, logic, and clarity of the argument. This 20 minute oral presentation by two two-person student attorney teams before a student and coach panel of judges will demonstrate this knowledge and skill.

Armstrong's moot court team has competed in invitational and regional tournaments. At the scrimmage hosted by the University of Central Florida, we competed against 50 teams and made it to the semi-finals with 2 students qualifying as top orators. At the South Atlantic Regional Tournament hosted by Stetson Law School, competing against 36 teams, three Armstrong teams qualified for the quarter-finals and two students were ranked in the top 20 orators. Developing the skills needed for these tournaments required long hours of formulating legal arguments from case law, writing the 20-page appellate brief, and practicing countless rounds of oral argumentation. Competition is not just reciting these arguments as seen in debate. Competitors are interrupted by judges, who are appellate attorneys and judges, asking questions about the application of these laws.

The Armstrong Moot Court team is passionate about legal argumentation and showcasing the skills learned in Moot Court. Members of the team presenting in the Student Scholars

Symposium include Marisol Estrada, Angelo Fernandez, Jasmine Sellers, Roxanna Simons, and Gil Watts.

Ishmael Ewing

Mentor: Jane Rago – CoLA (LLP)

*Out of Sight, Out of Mind*

It goes without saying that poverty is real. It goes without saying that poverty is a problem. It goes without saying that those in poverty have no power. But how much longer can the citizens of the world go without saying what needs to be said? And how much longer can the citizens of the world go saying the wrong things? Media representation of poverty has been mishandled and stereotyped, if not skipped over, by America and major countries of the world. The image of poverty has become corrupted by false portrayals and claims that are fueled by racism and misinformation. With little to no help from the media, the general population is unaware of actual issues involving poverty. This has led to misconceptions, and a narrow view among Americans and other countries, about where poverty stems from and how to alleviate the epidemic. The media representation of poverty as it is does little in terms of helping. Even when accurate depictions of poverty surface they are not nearly consistent enough. The gap between accurate news is too great and any attempts to rally are defeated by time, meaning we never truly make progress. The world needs to treat poverty as an epidemic and be proactive to help its victims instead of waiting for the next big riot, tragedy, or excuse to care.

Jeffery Finney

Mentor: Amy Potter - CoLA (History)

*Who Belongs and Who Doesn't: Exploring the Racial Politics of Orange Crush at Tybee Island*

Orange Crush is an annual spring event that began in 1988 on Tybee Island, Georgia attended mostly by students from Historically Black Colleges and Universities. Since its inception, there has been conflict between partygoers and residents of Tybee Island who complain about the impacts of the event and call for its cessation. This study will examine the long-term racial tensions that occur as a result of the beach bash, particularly focusing on media dialogue from Orange Crush 2015. Utilizing online news sources, archives, and other social media outlets, this study will situate Orange Crush within in the larger framework of African-American tourism literature. In addition, we will contextualize Orange Crush within the longer-term racial politics of Tybee Island as Tybee was historically off limits to Savannah's predominantly African-American community until 1964 and also served as a quarantine station for enslaved Africans beginning in 1767.

^Elias Frazier

Mentor: Ho Huynh – CST (Psychology)

*Cumulative Aggression Study*

Prior research has shown that people's aggression can be manipulated by setting their expectations at different levels. In a preliminary study, we examined the level of aggression associated with people's expected wait time and actual wait time. We found through the use of the hot sauce measure of aggression that people were more aggressive when their expectations were met, rather than when their outcome time was longer than told. We then ran a follow up study where we attempted to recreate a "real life" scenario, in which bosses/managers set

expectations for their employees about whether they will retain or be fired from their job. We used a behavioral measure of aggression with use of the Negative Pictures Task and self-report measures of aggression. We found that participants who were told that they had a 90% (i.e. "will be fired") chance of failing showed no more aggression than the participants that were told they had a 50% (i.e. "could be fired") chance of failing. In this study we want to replicate the follow up study, but replace the Negative Picture task with the hot sauce measure of aggression in hope to better measure participants' aggression levels. In line with the previous two studies, we hypothesize that people will be the most aggressive when their expectations are met (i.e., expect to get fired and actually get fired) compared to when outcomes fall short of their expectations (expect to be retained, but get fired).

Daniel Garneau

Mentor: Randall Reese – CoLA (AMT)

*Composing a Piece for Voice and Loop Pedal*

I was tasked with composing a piece incorporating some kind of technology with a live solo instrument. The performing medium I chose to write for was voice, and technology, a loop pedal. Most generic loop pedals are capable of saving and playing back pre-recorded material as well as recording and looping several layers of music live. For this piece, I took advantage of both the pre-recorded and live-recording aspects of the loop pedal. Using a loop pedal for voice adds an extra element of difficulty. Not only do the notes need to match up with each other, but the lyrics do as well. Picking a text is critical, as it greatly steers the mood of the piece. Since I was employing the use of the loop pedal, I needed to find a text that was able to get the point across with as few words as possible. I chose excerpts from the Book of Revelations as the text to this piece. Among other issues faced with when incorporating technology is finding a way to explain to the performer how to perform the piece. It becomes much more than simply reading notes off of a page, and often includes a set of instructions explaining how to navigate through the piece, as well as a separate set of instructions on how to use the accompanying technology.

Mari Glover

Mentor: Jane Rago - CoLA (LLP)

*Remind Me Again, Who Am I?: Exploring Identity through Literature, Social Discourse, and Narrative*

This paper analyzes the impact of popular social discourse on the self-identification of black women in the U.S.A. By examining the discursive creation of black women in literature over the past 200 years, as authors, characters, and rhetorical selves, I seek to relate seemingly isolated experiences into one collective identity, potentially existing outside of social roles relegated to black women in popular culture. In this paper I examine the works of African American female authors, including (but not limited to) Phyllis Wheatley and Sojourner Truth, who wrote in the wake of slavery and the abolition movement, to contemporary author Jesmyn Ward, who writes about the experience of her fictional teenage character, Esch, in rural Mississippi pre/post Hurricane Katrina. Drawing from narrative theory, cultural studies, and intersectional feminism, I challenge the rhetoric of institutions like the #BlackLivesMatter movement and Feminism on their inclusion and recognition of black women. This work serves to shed light to the powerful impact that popularized social narratives have had not only on myself, but collectively on black women's identity in the U.S. While most narratives try to rhetorically strip black women of an autonomous identity, I contend that these narratives can offer a

collective fluidity and strength that actually affirms and reinforces our ability to write ourselves, and claim independence as autonomous beings.

^Andrew Goetz

Mentor: Clifford Padgett – CST (Chemistry and Physics)

*Intermolecular Interactions Between Iodine and Oxygen on the Solid State*

Our research involves the study of intermolecular forces between iodine and oxygen in the solid state. In an attempt to study these interactions, we are growing crystals that exhibit these interactions. The crystals we are studying are produced by combining two different chemicals that will form a complex containing the desired interaction in a solvent and grown by slow evaporation. These interactions are studied via crystallography. Crystallography gains information on a crystal by passing X-rays through it and analyzing how the X-rays interact with the atomic arrangement of the crystal. Crystallography allows us to know the distances between atoms in the crystal, as well as the strength of certain atomic interactions. One of the primary questions we are trying to answer is how does oxygen-iodine interaction compare to the nitrogen-iodine interaction that is well known and used as a tool in the engineering of novel materials. The data we have collected indicates the oxygen-iodine interaction is stronger than the nitrogen-iodine interaction.

\*Mikelyn Green

Mentor: Nancy Tille-Victorica - CoLA (LLP)

*Higher Education and the Gender Wage Gap in Latin America*

The title of the paper is: Inequality between higher education attainment and education in Latin American countries. This presentation of the paper will examine the influence that higher education for women plays on the gender wage gap in several Latin American countries today. It will also analyze various important factors, including stereotypes, class, age, traditional gender roles and ethnicity, that hinder Latin American women not only to pursue degrees in higher education, but also to achieve equality in the workforce. The purpose of this paper is to educate people on the gender equalities that affected Latin American women in the workforce.

^Sebastian Hernandez

Mentor: Michael Toma - CoLA (Economics)

*The Effects of Remittances on Female Secondary School Enrollment in Developing Countries*

This paper studies the effects remittances have on female secondary school enrollment in developing countries. Using data obtained from The World Bank, an unbalanced panel analysis is conducted for four regions of developing countries from 1991 to 2013. Remittances were found to be statistically significant in South & East Asia. The results suggest female secondary school enrollment in South & East Asia increase as remittance inflows increase. Furthermore, policymakers could improve female secondary school enrollment, among other things, through remittance-related policies intent on reducing transaction costs and improving exchange rates.

\*\*Brittney Hill, \*\*Timothy Mettenburg, \*\*Charles Jones, \*\*Evan McGuire

Mentors: Kari Mans, Haley Worst, George Davies – CHP (Physical Therapy)

## *The Effects of Multi Joint Vs Isolated Joint Training on the Shoulder*

### Intro

Multi-joint (MJ) and isolated joint (IJ) training are two strengthening techniques commonly used in rehabilitation as well as performance enhancement. The literature comparing IJ and MJ exercises is divided on which method is superior, and is focused more on the lower extremity than upper. The purpose of this study was to determine if there were any significant differences between these two forms of performance enhancement training in the upper extremity. We hypothesized that multiple joint training will have greater effects on the outcome measures compared to the isolated joint training.

### Methods

This was a prospective experimental, pretest-posttest controlled study comparing the effectiveness between two forms of training in the upper extremity: MJ and IJ training. Fifty-two volunteers ages between 18-40 with no previous history of shoulder surgery and no current shoulder pain were recruited as a sample of convenience. Following initial pretesting across six outcome measures (push up test, seated shot put, CCKUEST, HHD: triceps, serratus anterior, horizontal abduction), subjects were randomized without replacement into three groups: MJ training, IJ training, or control. Subjects in the training groups participated in six weeks of training sessions. Following the training period, all groups were post-tested using the same outcome measures.

### Results

Testing and data collection are complete, and the results will be presented at the research symposium.

### Discussion

The final results and discussion of clinical relevance will be presented at the research symposium.

### Conclusion

Results of the study should have implications to rehabilitation and performance enhancement training studies for the future.

Kyle Hinton

Mentor: Robert Mans – CST (Biology)

*Detecting a Homologue of Human Arc Protein in the Brains of Adult Zebrafish*

Matthew Hunt

Mentor: Nalanda Roy - CoLA (CJSPS)

*The Sino-Russian Energy Relationship: It's Impact on International Politics*

This paper examines the historical significance that energy has had on the Sino-Russian relationship since its beginning in the early 17<sup>th</sup> century up to the significant shift in energy relations between China and Russia that occurred after the year 2000. The paper also explores the magnitude of the energy partnership between the two countries and its impact on international politics. Both countries are premier military powers and have robust economic sectors that grant them significant sway in altering and determining the course of global affairs. The energy sectors are major focal points of each of the countries' political and economic plans for the future; and both countries have shown and continue to give clear signs that they intend to work together to improve the future development/growth prospects of their individual energy sectors by mutually investing in each other's. One of the greatest examples of their evolving

energy relationship is the record-breaking \$400 billion gas deal signed between the two countries in 2014. According to that deal China agreed to invest in many of Russia's biggest oil fields through the construction of a gas pipeline that would stretch hundreds of miles from Siberia to northeast China.

Sean Jackewicz

Mentor: Edward Perkins – CST (Undeclared)

*The Construction of NexusPrime: A Recyclable Vector for Mammalian Cell Engineering*

As the practice of genetic engineering, gene therapy, and biopharmaceutical protein production grows at a rapid rate each year, the need to develop vectors that can deliver and carry genetic information efficiently also is of greater demand. To date, mammalian cell engineering has required the use of relatively few drug selectable markers. Because, relatively few antibiotic selectable markers are available, this hinders next generation engineering applications with multiple genetic fragments. Thus, there is a need to be able to recycle drug resistance markers to allow for multiple engineering events. Initially the plasmid ploxPGFP-E2CK-BSR was digested with *EcoRI* and *BamHI* and cloned into a standard *E. coli* high-copy cloning vector. This resulting plasmid was dubbed pNexusLoxP, which contained expressible genes for ampicillin resistance, followed by a loxP site, green fluorescent protein gene (GFP), blasticidin resistance and ending with another loxP site. The plasmid was transformed into an *E. coli* culture and selected in blasticidin containing LB broth. After growth, the DNA was purified using the MiniPrep Purification System (Qiagen) and measured for DNA concentration and purity using the NanoDrop 2000 (ThermoScientific). The plasmid pNexusLoxP, digested with *EcoRI* and *BamHI* was then used as an insert in a ligation with the plasmid pLITattB. The result was purified using the same methods as pNexusLoxP and was named pNexusPrime. pNexusPrime incorporates an attB site followed by the same genes as pNexusLoxP. The new vector is now selectable using both ampicillin (for selection in bacteria) and blasticidin (for selection in both bacteria and mammalian cells) screening, as well as flow cytometry analysis (utilizing GFP fluorescence) and may be used to deliver multiple genetic payloads to mammalian cells with the intention to express therapeutic proteins.

\*\*Laura Jansky, \*\*Elizabeth Higdon, \*\*Rebecca Hampton, \*\*Tyler Meets

Mentors: George Davies, Haley Worst, Anne Thompson - CHP (Physical Therapy)

*The Effects of Different Exercise Interventions on Shoulder Performance in Subjects with Shoulder Pain*

Introduction

Shoulder pain is one of the most common musculoskeletal pathologies treated in physical therapy. There is currently limited evidence supporting the effectiveness of one specific intervention. The purpose of this study was to investigate the effects of various interventions in subjects with shoulder pain over an eight week training period. We hypothesized subjects receiving combined interventions would have significant improvements over the resistance exercise and perturbation training groups alone.

Methods

Fourteen participants with shoulder pain were randomly assigned to one of the intervention groups: isolated resistance exercises, perturbation training, or a combination of the two. The isolated exercise group performed six exercises with a self selected resistance. The perturbation

group performed six rhythmic stabilization exercises based on a predetermined intensity. Both groups used the OMNI scale of perceived exertion of 3/10 to determine their intensity. The combination group completed various exercises from both groups to maintain the same volume dosage. Each intervention group progressed at a set interval throughout the training period that increased by either time or repetitions. Pre-post outcome measures included shoulder performance, pain intensity ratings, and isometric muscle strength.

## Results

All training and testing has been completed. Data analysis is ongoing and results will be presented at the Symposium.

## Discussion

The results may indicate the most effective manner to best address shoulder pain and dysfunction.

## Conclusion

A conclusion will be determined after data analysis regarding the most appropriate intervention to alleviate this common musculoskeletal problem.

\*Christian Jarboe

Mentor: Aaron Schrey - CST (Biology)

### *Epigenetic Variation in *Aspidoscelis Sexlineata* Across Different Fire-Dependent Habitats*

Over the course of this study, we examine the variation in epigenetic diversity in the teiid species *Aspidoscelis sexlineata* – commonly known as the Six-lined racerunner – across multiple sites of fire-dependent scrubland. We screened for genetic variation in *A. sexlineata* using an Ion Torrent PGM. We compared individuals taken from five disconnected sites in Florida. Each of these sites have undergone different periods of time since their last wildfire, and epigenetic variation is expected to differ between sites in correlation with differing periods of time following the most recent burns. The information obtained here could have significant implications in regards to the conservation of fragmented and disconnected fire-dependent ecosystems.

^\*Mario Johnson

Mentor: Aaron Schrey - CST (Biology)

### *Variation in DNA Methylation Among Florida Scrub Lizards in Response to Fire*

The objective of my project is to assess DNA methylation patterns of Florida Scrub Lizard (*Sceloporus woodi*) based off of time-since-last-fire. DNA methylation is an epigenetic mechanism that can alter gene expression in response to environmental stressors. Interestingly, epigenetic mechanisms do not require changes in DNA sequence to affect phenotypes; therefore, these mechanisms can change quickly in response to environmental disturbances. Natural fires are disruptive to habitats and may be stressful to the Florida Scrub Lizard. It is possible that the Florida Scrub Lizard uses DNA methylation to manage this stress. I will use next-generation sequencing to identify genes that are differently methylated among individuals from locations with alternate fire histories (ranging from 5 to 60 years before collection).

Lucy Jones

Mentor: Nalanda Roy – CoLA (CJSPS)

*The Right to Flourish – The Water Crisis*

In my presentation at the Armstrong symposium I will be addressing the water crisis presenting itself in countries that the U.S has contact with all over the world. The presentation will recognize the startling numbers of people walking miles to get water for themselves every day, as well as the people getting none at all. It will also address that fact that many of these numbers have done nothing but grow despite the best efforts of organizations that will be mentioned in the presentation. Possible solutions will be covered as well as past failed attempts to aid these situations. The world we live in today experiences worldwide communication with the help of technology. It is alarming that with all of information streaming from country to country about differentiating living environments, that more people are not informed on the topic. This presentation will not only inform the audience about the water crisis taking place all over the world, but it will also inform them about different actions they can take toward aiding the crisis. Nonprofit organizations will be brought back into the spot light with all of their information included. The water crisis in countries separate from the U.S.A is not an abstract issue. The United States itself also faces potential and current issues. Everyone abiding in the U.s. Should remain aware and empathetic to the issues regarding clean water all over the world because issues should not be ignored solely because it exists thousands of miles away. The presentation given is for informative information and should will be regarded as a persuasive effort to encourage people to donate, act, etc., although the need to do so may be felt by the audience by the time they learn the facts.

Michelle Kanke

Mentor: Teresa Winterhalter – CoLA (LLP)

*"It's Toasted": Mad Men Takes on "The Feminine Mystique, the Mad Women of the 1960's, and the Burn of Social Conformity"*

The Emmy Award winning television show, *Mad Men* created by Matthew Weiner received much attention by feminists and historical scholars during its seven season run from 2007-2015 on the AMC network. The show's main focus is on Donald Draper, the creative director of a large-scale advertising firm in New York City, and his personal and professional relationships. But *Mad Men* is not only an exceptionally produced television show about an intriguing male protagonist, more interestingly, it is also an authentic portrayal of life for women in the United States during the 1960s. By analyzing three of the main female characters: Betty Draper, Joan Holloway and Peggy Olson, during the first three seasons of *Mad Men* and by exploring feminist ideologies at work during the time, periods of those episodes, particularly the work of Betty Friedan, I will demonstrate that the television show reveals itself to offer an historically accurate account of the 1960s women's movement and therefore becomes a significant educational tool for understanding the roles and treatment of women in the 1960s.

^Thomas Kavoori

Mentor: Michael Toma - CoLA (Economics)

*The Relationship between Religious Indifference and Young Marriage in the U.S.*

This study attempts to assess the relationship between religious apathy and the marital decisions of young adults. It uses data from all 50 states within the U.S. across four years (2011-2014). The results indicate that, while religious apathy has no significant relationship with such decisions, the preference for liberal ideologies does, as follows, 1) positive relationship with



divorce rate & median age at first marriage; 2) negative relationship with marriage rate. Additionally, models that include different religious groups, find the religiously unaffiliated (the most liberal group of all) to have similar relationships with marital decisions as the preference for liberal ideologies.

^Grace Klein

Mentor: Felicity Turner – CoLA (History)

*White, Affluent, and Happy:*

*Print Media's Representation of Post World War II American Families*

During the 1950s, American print media focused on successful American citizens, filling its pages with white, affluent families, a small segment of the American population at the time. The booming American economy post-World War II led to a rise in the upper classes, while the lower class fell further into poverty; affluent fifties citizens were white. The increased wealth of upper and middle class families created a consumer culture, which also supported the rise of magazines and print advertisements. This argument is supported by an examination of articles and advertisements from *Life* and *Time* magazines from 1948 to 1962. The two magazines both presented a whitewashed, middle and upper class America. Magazines suggested a uniform reality for all American families during the 1950s, which was a dishonest approach that marginalized the impoverished and minorities.

^Lane Knight, ^Sara Kuehn, ^Bethany Panhorst, ^Kaley Powers

Mentor: Jonathan Roberts - CST (Psychology)

*Using in Class Debates to Enhance an Honor's Introduction to Psychology Course*

We will be giving a research panel presentation on honors pedagogy at our university. In our Honors Psychology course, we performed a series of debates over popular controversial topics in the field of psychology. Throughout the semester, we had to gather information for both the “pro” and “con” sides of each topic because our professor, Dr. Jonathan Roberts, would flip a coin right before each debate to determine which teams would argue which side. In our presentation, we intend to explain, demonstrate, and discuss a mock debate for the Southern Regional Honors Conference in order to depict the pedagogy we have utilized in our honors course. First Dr. Roberts will explain his reasoning behind assigning the debates and how we implemented his idea. Following Dr. Roberts' speech, our group will perform a debate about media violence and whether or not it promotes aggressive behavior. The “pro” side for the debate will give their argument, followed by the “con” side giving their argument, and concluding with the “pro” side having an opportunity for a rebuttal. After this, we will discuss our individual methods of preparing for the debates and why we feel they have been beneficial to our learning process in our psychology class, as well as to the development of other skills, including our public speaking abilities, overall preparedness, and time management.

Jasmin Laney, Adrienne Moore, Lucy Simkins

Mentors: Anne Katz – CEEd (Childhood/Exceptional Student Education), Lynn Roberts - CEEd (Physical Education)

*Mentoring and Teaching through 'I am Malala': A Collaboration between the Armstrong College of Education Living-Learning Community and the East Broad Street School 'Teens for Literacy' Program*

The collaboration described in this presentation provided freshmen pre-service teacher education candidates enrolled in Professor Lynn Roberts course (Education 2110: Critical and Contemporary Issues in Education) in Fall 2015 with knowledge and practice directly related to authentic community-based literacy learning. Dr. Katz serves as faculty advisor for the “Teens for Literacy” program at a local urban K-8 school and welcomes opportunities to involve Armstrong students in her work. The purpose of this collaboration was to provide first-semester teacher candidates with a meaningful opportunity to interact with local public school students in conjunction with Armstrong’s Common Read text, *I am Malala: The Girl Who Stood Up for Education and was Shot by the Taliban* (Yousafzai, 2013). Specifically, we wrote letters, met, dialogued, and exchanged journals around *I am Malala: Young Reader’s Edition* (2014) with middle school students involved in the “Teens for Literacy” program at a high-needs school in the Savannah-Chatham County Public School System. Middle school students subsequently visited Armstrong’s college campus, where university students designed a significant learning experience and led the class session.

Sophie Longwater

Mentor: Karla Jennings – CoLA (LLP)

*Public Relations in the Event Industry*

A public relations practitioner is the person who handles anything involving communication for the company that they represent. One particularly exciting job a public relations practitioner has is when a company decides to host an event, the public relations practitioner is the one who informs the public about the event, and helps to make sure everything during the event runs smoothly. I spoke about a woman who was the communications director for the Academy Awards, Leslie Unger, and the areas that she is in charge of shows just how big the job of a public relations practitioner can be. She is in charge of everything from making sure the press has their designated area on the red carpet to balancing over fourteen different budgets for the Academy. Being a public relations practitioner for special events is my dream job. I love the idea of getting the public excited for an event and helping a company accomplish their goals and even exceed expectations for them. When I read about the interview with Leslie Unger, I knew that this is the right field for me to be involved in. Although she made her job seem very basic to the naked eye, I know the amount of stress that is involved in this career and I am ready to take on the challenge.

^+Thomas Ludwig, ^Ashley Catron

Mentor: Melanie Link-Perez – CST (Biology)

*Ascertaining the ploidy and hybrid origins of *Adiantopsis* species by way of molecular cloning*

*Adiantopsis* Fée is a small genus (30-40 species) of ferns in Pteridaceae. Within this genus are several species, such as *Adiantopsis lindigii* and *A. pentagona*, that are hypothesized to have hybrid origins; ~~other species are suspected of or a contributor contributing to the formation of~~ hybrid ~~species~~. The basis of these hypotheses comes from previously collected morphological ~~data, such as spore size compared to known diploids~~, and phylogenetic data ~~that places some species in positions that are suggestive of reticulate evolution (i.e., hybridization).~~ ~~such as spore size compared to known diploids and phylogenetic placement. In order to~~ ~~determine~~ ~~investigate~~ the ~~possible~~ hybrid origins of ~~the~~ species ~~in~~ *Adiantopsis*, we have utilized molecular cloning. There are ~~3~~ ~~three~~ nuclear genes of focus for the cloning: ~~gapCp~~, *CRY*, and *SQD*. We have collected ~~DNA sequence moleeular~~ data for both *gapCp* and *CRY*, and initial

~~analysis-analyses~~ supports several hypothesized hybrids and hybrid parents. The data ~~has~~have also revealed some unexpected results, especially with *A. hickeyii*. We are still collecting molecular data, with *SQD* data ~~due-anticipated~~ shortlysoon.

Luke Lyman-Barner, Michelle Kanke  
Mentor: Elissa Zellinger – CoLA (LLP)

*Kubric, Porn, and the Importance of Literary Analysis in Education*

Film is a facet of culture that promotes dominant traits in males, defines masculinity in a physically aggressive sense, and reinforces the status quo. By examining the close relationship of the porn and film industries, we have recognized an established existence of a mutually reinforcing relationship between the two industries. The competitive nature of the porn and film industries reflects the normalization of male dominance and violence in sexual context and its escalation over time. In our research of violence and masculinity in film, we focused on the 1971 cult classic, *A Clockwork Orange* directed by Stanley Kubric. The film features Alex and his roving gang of delinquents who kill, rape, maim and steal. The film depicts graphic scenes of violence, particularly of a sexual nature. To the uncritical eye, these scenes could be construed as comical because of the absurd elements: costuming, classical music, and antics of Alex's gang. Although the film is intended to be satirical, without proper analytical skills and an understanding of the correlation between the film and porn industry, movies like *A Clockwork Orange* can be harmful to society particularly young people. Therefore, we argue that the ubiquity of these elements in mainstream film make education and training in literary analytical skills at a young age essential in order to develop healthy attitudes regarding sex and gender roles.

^+Kimberly Mandigo, ^Amy Neely, ^Rebekah Robinson  
Mentor: Mitch Weiland – CST (Chemistry and Physics)

*Understanding the Molecular Details Behind Human Perforin's Function*

Human immunity can broadly be classified as either innate or adaptive. Innate immunity is comprised of numerous enzymes, receptors, and regulatory proteins that function as the body's first line of defense against a foreign pathogen. Additionally, innate immunity directs the activation of adaptive immunity, which is responsible for "remembering" a specific pathogen to mount a stronger response upon their invasion by creating antibodies. Perforin (PRF) is a protein that participates in both innate and adaptive immunity. PRF functions to form a pore, a circular protein channel, which facilitates the delivery of other proteins into a targeted cell, ultimately signaling for cell death. While perforin is known to interact with target cells, the exact molecular details of this activity are unknown. To further understand perforin's pore-forming mechanism, we have created hybrid proteins composed of a well characterized bacterial protein and putative functional regions of human PRF. Our results show strong evidence that we have identified a region of PRF that directly interacts with a target cell. Analysis of results will be orally presented at Armstrong Student Scholars Symposium.

James Marye  
Mentor: Jose da Cruz - CoLA (CJSPS)

*Transnational Organized Crime in Latin America: An Insidious National Security Threat*

The focus of our research is on the generational evolution of gangs and their threat to Latin American and North America. First, we will analyze the inherent qualifications and

capabilities each generational evolution possesses. Secondly, the threats posed by these evolved gangs is assessed and regional and international implications for Latin and North America are analyzed. Lastly, imperative steps to increase cohesiveness between North and Latin America are presented and analyzed to reduce the threat that these gangs pose to the established institutions of each region respectively.

Camella McBrayer

Mentor: Anne Katz - CEd (Childhood/Exceptional Student Education)

*A Multimodal Writing Project: Middle School Students Collaborate with a Local Author*

This presentation will document a multimodal writing workshop facilitated by a local middle grades author who appeared as part of the Savannah Children's Book Festival. The project combines writing (based on visualization) and audio digital recording (with sound effects) in order to bring the mystery genre to life. The middle school students are part of a student literacy leadership group from an urban K-8 school. After reading the author's book, the students had the opportunity to meet the author, pose questions about her creative process, and receive feedback on their own writing from the character's perspective. Students were then asked to compose visualizations to extend portion of the text. They read their writing with a sense of fluency and expression through Audacity in order to perform their own version of a book trailer, enticing potential readers to pick up and read the book. This writing initiative helped participating students develop valuable literary skills and hone their creative abilities. The middle school students branched out to draft descriptive writing assignments that cultivated advanced comprehension skills, connected them together as a community of readers, and inspired their peers to participate in literacy endeavors as well.

^Ashley McCurley, ^Claire Edwards

Mentor: Anne Katz - CEd (Childhood/Exceptional Student Education)

*Facilitating Language and Literacy Skills through Home, School, and Community Connections*

This project focused on helping young children strengthen their reading and writing skills through research-based strategies. These skills can be supported through literacy projects that promote family involvement. Armstrong College of Education candidates in a Language Acquisition course created a family literacy project based upon popular children's books to donate to Wesley Community Center in Savannah for low-income families. This project included a letter to the parent(s)/caregiver(s) explaining the family literacy activity; specific instructions for the activity (materials, procedures, prompting questions, ideas for differentiation, and extensions); and a research paper to explain aspects of language/literacy development that the activity supports. Questions that cover each of the six levels of Bloom's Taxonomy (remembering, understanding, applying, analyzing, evaluating, and creating) were also included. The project worked to link theory to practice.

^KC McGuire

Mentor: Christopher Baker - CoLA (LLP)

*Lost in Adaptation: Presence of Illusion and Reality in the 1966 Film Adaptation of Who's Afraid of Virginia Woolf?*

In many ways, drama is the most similar medium to film. Both use actors in dramatic situations and take advantage of visual and verbal composition to portray themes and meaning. In *Who's Afraid of Virginia Woolf?* there are very few stage directions. In terms of setting, there

are stairs, a bar, and a front door but all of the action takes place in one room, while Mike Nichols' 1966 film adaptation moves in and around the house. My argument is that through the changes in setting and character in an attempt to make it more realistic, the film loses the play's absurdist qualities that exist to enhance the conflict of reality and illusion. Reality being what is verifiable fact and illusion being false creation of the mind.

\*\*Sara Morris, \*\*Mary Beth Pierce, \*\*Rachel Putman, \*\*Laura Thomas, \*\*Tamara Cowart  
Mentors: Nancy Henderson, Bryan Riemann, George Davies – CHP (Physical Therapy)

*The Psychometric Properties of the Single-Arm Seated Shot Put Test as an Open Kinematic Chain Upper Extremity Functional Outcome Measure in Subjects with Healthy and Painful Shoulders: Correlation between Peak Force and Angle of Release*

Introduction: Because upper extremity pushing motions are a component of many activities, it is vital to have valid tests to measure these movements. The purpose was to compare peak force (PF) of isokinetic closed kinetic chain (CKC) pushing at three speeds with single-arm seated shot put test (SSSPT) angle of release (AoR) in both healthy and painful subjects to determine clinical relevance of AoR. Our hypothesis was there would be a correlation between tests.

Methods: 73 men and 123 women, 18-44 years, with 26 painful and 170 non-painful shoulders, performed 5 maximal effort CKC pushing movements using a Biodex ® Systems isokinetic dynamometer at 3 speeds (0.24m/s, 0.43m/s, 0.61m/s) and 3 maximal effort trials of the SSSPT. Limb and test order were randomized prior to testing. AoR was measured using Apple's ® iPhone 6 and Agile Sports Technologies, Inc. ® Hudl Technique app to record the SSSPT at 240 frames per second and Vernier's ® Video Physics app to extract data. Pearson's r and Spearman rho were used.

Results: For subjects with shoulder pain, significant results revealed a fair relationship between CKC pushing PF at 0.24m/s and AoR. For subjects without shoulder pain, significant results revealed moderate to good correlations between CKC pushing PF at all speeds and AoR.

Discussion: Results demonstrated fair to good correlations between tests at selected speeds. This is the first study describing correlations between AoR and PF in subjects with shoulder pain.

Conclusion: SSSPT AoR may be a clinically relevant outcome to measure shoulder performance.

^Raveen Smith Mowbry, Kellen Krajewski

Mentors: George Davies, Bryan Riemann - CHP (Health Sciences)

*Reliability of Upper Extremity Isokinetic Push and Pull Work Testing*

While multisegment isokinetic testing more closely resembles functional movement patterns than isolated joint testing, little is known regarding the reliability of upper extremity push-pull testing (UE PPT). Quantifying total isokinetic work provides insight regarding sustainment of muscle force through a range of motion; before examining whether UE PPT work could be a useful injury risk and restoration marker, establishing reliability and limb/velocity/direction effects in healthy individuals is needed. The purpose of the study is to

determine isokinetic UE PPT total work reliability and compare differences between limb (dominant/ nondominant), direction (push/pull), and velocity (24.4 cm/s , 42.7 cm/s, 61.0 cm/s). The study has been completed and valuable results were provided from the study.

\*\*Samantha Pearsall, \*\*Lauren Coleman, \*\*Teresa Hupka, \*\*Megan Balcom, \*\*Jeremy Dean  
Mentors: Nancy Henderson, George Davies - CHP (Physical Therapy)

*A New Model of Predicting Musculoskeletal Injury in Military Personnel*

**TITLE:**

A new model of predicting musculoskeletal injury in military personnel.

**Purpose/hypothesis:** The study's aim is to assess the association of pain provocation tests and asymmetrical ankle dorsiflexion with current injury.

**Methods:** A prospective cohort study was performed using 337 subjects from the 3<sup>rd</sup> Combat Aviation Brigade at Hunter Army Airfield. Subjects performed the following pain provocation tests: shoulder impingement, prone press up, prayer stretch, triple cross-over hop, and 6-meter hop. For each test, the subject reported their pain, using the NPRS scale, pain location. Additionally, closed chained dorsiflexion asymmetry was assessed with an inclinometer. For the purpose of this research, current injury was determined as being on a temporary, musculoskeletal profile, or work restriction. A binary logistic regression analysis was performed to assess the association of pain provocation tests and asymmetry in dorsiflexion with current injury. Alpha level was set at .05.

**Results:** At the time of testing, 8 out of 337 subjects were on a temporary profile and 329 subjects were not on profile. The model  $R^2$  value for the logistic regression was 0.14. When assessed individually, none of the variables, shoulder impingement, prone press-up, prayer stretch, triple cross-over hop, 6-meter hop, and bilateral dorsiflexion measurements, had a significant association with current injury.

**Conclusion:** The pain provocation tests and asymmetrical dorsiflexion, in combination, are weakly associated with current injury. The results of this study, while not clinically significant, are the first to assess an association between the pain provocation tests and current injury.

Andrew Percival

Mentor: Duc Huynh - CST (Mathematics)

*Solving Diophantine Equation Using Class Number*

A Diophantine equation is a polynomial of the form  $ax^n+by^m=c$ , with integer coefficients. One example of a Diophantine equation is the Pythagorean Identity:  $a^2+b^2=c^2$ . We will solve a few low-degree Diophantine equations over unique factorization domains and Dedekind domains with small class number.

^Christine Powell

Mentor: Deborah Jamieson - CoLA (Art Education)

*Noah Purifoy's Inner Self Surfaced in the Mojave*

\*Christian Pye

Mentor: James Todesca - CoLA (History)

*Ibn Khaldun and the Berber Empires: The Creation and Triumph of Maghribi-Andalusi Civilization*

The Maghrib, the portion of North Africa stretching from the west of Egypt to the Atlantic coast of Morocco, was often viewed, in the medieval era, as the lesser sibling of Andalusia in the Islamic West. Andalusia in the time of the Umayyad caliphate was the domain of high-culture Arabs who looked down upon the Berbers of the Maghrib who were treated as lesser Muslims ever since the advent of Islam in that region. This trend continued until the rise of the Berber empires in the eleventh through thirteenth centuries. The Almoravids and the Almohads revolutionized the entire culture of Andalusia and the Maghrib in ways that would not have been possible without first unifying the culture of the Arabs and Berbers of the Islamic West. The fourteenth-century historian Ibn Khaldun was inspired by the civilization that the Almoravids and the Almohads created, and, realizing their role in creating the Andalusian-Maghribi spirit, he wrote on the rise and fall of dynasties within the context of the Maghrib they transformed. This paper examines the Almoravids and Almohads as the creators and unifiers of a Maghribi-Andalusi civilization in which Berbers and Andalusian Arabs functioned together for the benefit of society.

^+Alexandria Ragsdale

Mentor: Aaron Schrey - CST (Biology)

*Using MS-AFLP to Investigate Ecological Epigenetics of Bluegill Sunfish*

Ecological epigenetics studies the changes in gene expression that are not caused by changes in DNA sequences that have relevance to ecologically relevant traits. Bluegill Sunfish (*Lepomis macrochirus*) is a common sportfish. In Illinois, there are several power-cooled lakes with artificially raised temperature acting to vent excess energy from power plants. These cause the water temperature to be artificially higher than non-power-cooled lakes. The different water temperature is known to affect fish's phenotypes. Our objective is to determine if epigenetic mechanisms are responsible for the change in phenotypes. We collected 48 fish, 12 from two sites in a non-power-cooled lake and 12 from two sites in a power-cooled lake. We extracted DNA and used MS-AFLP to screen variation in DNA methylation from sites throughout the genome. DNA methylation was different between the two lakes, which may indicate epigenetic mechanisms may be responsible for the change in phenotype. We will discuss data obtained from next generation sequencing used to compare our individuals to a reference genome determining what is being differentially methylated specifically within the Bluegill genome and how this may be impacting the observed phenotypic changes.

^Michelle Ramos

Mentor: Jason Tatlock - CoLA (History)

*The Independent Spirit Tunisia*

Tunisia fought against French colonialism for decades before finally falling under French rule. Unlike Algeria, Tunisia successfully combated French control. Although European influence was extensive, the local governments maintained power and after less than fifty years rebellious organizations formed to take the nation back. This was possible because of the existing relationship with the Ottoman Empire and power structures, as well as French methods of colonization. These organizations and their leaders fought for democracy and left a lasting impact on the nation, which can be seen in modern times through Tunisia's participation in the

Arab Spring. This presentation explores exploitive treaties, the role of the Ottoman Empire, French intervention in Tunisian affairs, the progression of rebellious groups and the formation of the early independent government of Tunisia.

Melina Raymundo

Mentors: Will Lynch, Clifford Padgett - CST (Chemistry and Physics)

*Studies on Selenium-Iodine Halogen Bonding*

Halogen bonding interactions are formally donor / acceptor interactions that involve a halogen atom. We have chosen to examine the factors that impact the selenium / iodine halogen bond since very little literature data is known. Standard convention in our study implies that our electron acceptor is the iodine whereas the donor atom is the selenide. Our compounds are adducts that are generated by the reaction between 1,4-diiodotetrafluorobenzene and derivatives of triphenylphosphine selenide. Further, complicating the issue is the exact nature of phosphine selenide bond order is unsettled as it is often designated as either a single or double bond. In this presentation we will present preliminary data that indicates electronic and structure factors that give information about the status of the phosphorus selenium bond. Further, we will examine the strength of the corresponding halogen bond formed when 1,4-diiodotetrafluorobenzene is reacted in 1:1 stoichiometry with derivatives of triphenylphosphine selenide.

^Elizabeth Rhaney

Mentor: Jane Rago – CoLA (LLP)

*No Picture can Capture This*

Before going on the Study Abroad to the Navajo Nation, I set out to capture the essence of the Diné people and culture through photographs. I planned on using my photographs to observe how Diné activists were preserving their culture and countering government encroachment. I expected to see the same type of activism that I read about in class- an aggressive type of activism similar to the American Indian Movement (AIM). While there, however, I saw a different type of activism. Resilience was a form of resistance. The Diné people were preserving their culture by living their lives according to traditional teachings.

Most of the Diné teachings and experiences were difficult to capture on camera. It was difficult to portray things like enormity of the Grand Canyon or the impact of working in silence on the reservation in a picture. These were some of the aspects of the trip that could not be fully reproduced in photographs. The best way to share these experiences would be through encouraging other people to seek these experiences for themselves.

^\*Dixie Richards

Mentor: Jonathan Roberts – CoLA (Psychology)

*The Supreme Court and Student's Rights*

While the Supreme Court has not always had the same amount of power it possesses today, the court has always played a key role in reviewing legislation involving students. From the passing of Plessy v. Ferguson in 1896, to the Fisher v. University of Texas at Austin case of today, it is important to recognize how the Supreme Court has affected students of every generation.

Joshua Ricks

Mentor: Nalanda Roy – CoLA (CJSPS)



### *Syrian Refugee Crisis in Europe*

For my presentation, I am going to talk about how the Syrian Refugee Crisis is affecting various countries in Europe. I am going to explain the economic problems they are facing as well as the moral problems they are facing if they do not help or fund the refugees. This is an important and modern topic that is causing countries such as Sweden to undergo economic issues when they are trying to help ones in need.

Justin Roberts

Mentor: Nalanda Roy – CoLA (CJSPS)

#### *How Non-State Actors Impact Our Environment*

I will be presenting stats/facts about environmental recycling and how some big non-state actors participate in pollution, along with how some non-state actors are trying to help the environment.

Amanda Seabolt

Mentor: Allison Belzer, CoLA (History)

#### *The Pathology of the Powerless: The Effects of the Masculine and Class Ideals of Edwardian England on World War One Shell-Shock Patients*

During World War One, there was an outbreak of mental illness. Originally called “shell-shock,” soldiers in the trenches suffered from symptoms of paralysis, mutism, blindness, insomnia, nervous collapse, and heart conditions. It was a phenomenon among the troops of both sides, with cases first appearing early in 1915. By 1916, some 80,000 British troops were diagnosed with shell-shock. There was a tradition of mental illness in Britain, but the stigma attached to it was not favorable. Edwardian ideas of masculinity excluded the possibility that men could be susceptible to mental weakness. Masculine ideals dictated repression of emotion, the so-called “stiff upper lip,” and unerring loyalty to your country. The fact that the illness affected men of all classes was a stumping point for doctors as well. The idea that a well-raised, middle class young man could be suffering from a mental illness was unthinkable. The Edwardian ideas of masculinity and class affected how doctors diagnosed and treated shell-shock, as well as how the soldiers experienced it.

Martin Smith

Mentor: Regina Rahimi - CEd (Adolescent and Adult Education)

#### *Obesity and Academic Achievement*

Obesity in the United States is growing at epidemic proportions. Within the past thirty years, the prevalence of obesity in the United States has tripled (Kamijo, Kahn, Pontifex, Scudder, Drollette, Raine, Evans, Castelli, Hillman, 2012). The lifelong ramifications of childhood obesity affect not only the physical and psychological wellbeing of children, but also impact academic achievement. The purpose of this research assignment was to determine how obesity impacts the academic proficiency of students. Studies indicate that students who have been diagnosed as obese may have lower academic attainment than their non-obese classmates in reading, and mathematics which impacts the academic achievement gap (Datar, Sturm, & Magnabosco, 2004). There are several factors that must be considered when correlating obesity to academic attainment. A large number of influences have been linked to obesity, many of which have a greater impact on children from minority and low socioeconomic backgrounds (Li & O’Connell, 2012). Some of these include socioeconomic status, ethnicity, and physical well-

being. Scientific research has also linked obesity to brain growth development irregularities in children (Hillman, 2014). The results of this research paper to be discussed in this presentation indicate cultural changes are necessary in order to change the prevalence of obesity and decrease the academic achievement gap.

Cynthia Stevenson

Mentor: Julia Cochran - CoLA (Psychology)

*Carl Jung and the God of Job*

This presentation will examine Carl Jung's critical assessment of God as portrayed in the Book of Job from the Judeo-Christian Bible. The first part of the presentation will consist of an introduction to Jung and his spiritual beliefs. The second part will be a dramatic presentation by the author as Carl Jung, leading a seminar with accompanying PowerPoint slides. The following is an excerpt from that presentation:

The common belief of many a religious person is that God is all loving, faithful and just. However, there exists a seriously contradictory image of Yahweh – the picture of a God who knows no moderation in his emotions and suffers precisely from this lack of moderation. We can find biblical references to God admitting that he was “eaten up” with rage and jealousy, and these feelings are painful to him. What shall we make of this? As I stated, I believe there are many who feel the same as I do, with emotions shattered by the spectacle of such divine savagery and ruthlessness. To some, the God of wrath invokes resentment. For Yahweh is no friend of critical thoughts which in any way diminish the tribute of recognition he demands. By expanding our perceptions of Yahweh, we are given the opportunity to grow in our spiritual perspectives.

John Trainor

Mentor: Christopher Curtis – CoLA (History)

*The Rise and Fall of the Women's Battalion of Death and the Undoing of Russian Feminism*

The rise and fall of the Women's Battalion of Death during the Great War and the Russian Civil War epitomizes the escalation of Russian feminism and its disintegration. Many Russian women took patriotic roles in the war effort, as did their Western counterparts, but the roles of Russian women involved one distinct difference: the desire to give their lives in battle. With the majority of the male population occupying the front lines from the onset of the Great War, women began to fill the many positions that were left vacant by men during this era. This vacuum was filled not just with the physical arenas of work and labor, but encapsulated in philosophical and political thought. Through the demise of Tsar Nicholas II's regime and the institution of the Provisional Government, progressive women were continuously making steps towards independence and self-determination. The unfortunate circumstance of the Bolsheviks acquiring the power of governance in Russia brought these strides of women's liberation to a dramatic halt. Where the equality of women once had promise, the destruction during the Great War and Civil War within Russia's borders left these ideals in ruin.

Michael Tran

Mentor: Will Lynch - CST (Chemistry and Physics)

*Examining the construction of potential coordination polymers with mercury(II) and aromatic N-oxides.*

Coordination polymers is an emerging field in the area of supramolecular chemistry. They have interesting structural topologies and have shown to have potential applications in the fields of gas storage, ion exchange, and catalysis. N-oxide compounds are of interest because they can be derivatized with various binding modes such as monodentate, bis bridging, or as a simple oxide bridge between two metals. This coupled with the bridging potential of halide counter ions creates the potential for a variety of potential polymeric configurations. In this study, we will report on the solid state structures and various bridging modes of a series of mercury(II) halide complexes with aromatic n-oxides. We have found that the versatility of the ligand along with the halide ions gives interesting monomeric and polymeric structures.

Edna Trujillo

Mentor: Jane Rago - CoLA (LLP)

*The American Delusion*

The American Dream is an idea that tells people that they can succeed in this country as long as they work hard enough. Nothing else matters except how hard you work. Many people have come to believe and accept this dream as being the truth. Anyone who does not have a job, money, or education must have not worked hard enough. However, in her novel, *Salvage the Bones*, Jesmyn Ward presents Esch's family, a fifteen-year-old girl, living in rural Louisiana days before and after Hurricane Katrina. This family lives in circumstances that make the American Dream almost impossible to reach. With lack of resources and accessibility, Esch's family must learn to survive everyday. The essay explains how Ward's novel applies pressure to the American dream as well as it shows how the dream is not attainable to everyone. The essay also questions the very existence or reality of this dream. With external resources and quotes from the novel, there are examples of the ways many people are oppressed in this country. However, it also serves to show those with disadvantages that the only way to succeed is to know and fight the struggles that different people in society have to live with. Accepting the inequalities and oppressions is the only true way to begin solving problems and making a country that can reach the top again.

Jack Wagner

Mentor: Sabrina Hessinger - CST (Mathematics)

*Matrix Group Representation of Music Compositions*

The connection between mathematics and music has been apparent and studied as far back as Ancient Greece with plenty of overlap between great and mathematicians and great musicians. In this talk we will generate a representation of the tools of musical composition as a transformation group. Several group theoretic properties will be illustrated in the context of musical thematic development. It will be shown that element order, cyclic subgroups, orbits, and eigenspaces each have a meaningful interpretation in the field of musical composition.

Ted Welsh'Lupica

Mentor: Nalanda Roy – CoLA (CJSPS)

*U.S. Relations with Cuba: Why it Matters*

For the last 55 years the United States has forced an embargo on Cuba restricting trade. Year after year the embargo has continued to be enforced and with each year the United States slowly lost support from Latin America. The research at hand will explain the history of the embargo illustrating what caused the U.S. to impose it. The past, present, and future effects of the embargo will be illustrated leading to the current lift on the embargo. I shall determine if the

lift on the embargo will be permanent and if it will have any effect on our relations with Latin America.

\*^Darby Wiggins

Mentor: Keri Mans - CHP (Rehabilitation Sciences)

*The Phantom of the Limbs: An in depth look at PLP*

Phantom Limb Pain until recently has been surrounded by a veil of mystery. This Honors Project aims to provide in depth look into the history, prevalence, symptoms, mechanisms, and treatment of phantom limb pain. The information was gathered from case studies, random controlled trials, literature reviews, and informational websites. A collection of pertinent material was formatted into a research paper to establish a solid understanding of the concepts. Findings were then assembled into an interactive website entitled “The Phantom Limb” that organizes the vast amount of information available into a clean and coherent format targeted to students and amputees alike. It is not only informative to those studying psychology and biology, but also serves as a foundation for those struggling to understand their phantom symptoms. The motivation behind this project, its purpose, the target audience, examples from case studies and random controlled trials, and the information researched will be orally presented via PowerPoint and then seamlessly blended into a demonstration of the website “The Phantom Limb.” The project will be presented at the Southern Regional Honors Conference in Orlando, Florida held March 31<sup>st</sup> through April 2<sup>nd</sup> of 2016. *The Phantom of the Limb: An in depth look at PLP* will also be presented at Armstrong’s Student Scholars Symposium in the format previously described.

Bobby Williamson

Mentor: Beth Childress - CEEd (Early Childhood Education)

*Approaching Language Barriers in the Classroom*

It is a basic common sense of sorts to understand that if someone speaks a different language than you and cannot understand what it is you are saying you won’t really be able to get your point across. This is the case in all walks of life, and a very massive issue in education which can have a snowball effect if a student can’t learn properly and may end up falling behind in ascribed curricula which will place them further behind in successive classes if they don’t know the material that led up to what they will next be learning. Going in to the research, I began with a class textbook “Teaching and You,” and it states that there are countless ways to approach this dilemma such as immersion, bilingual maintenance, and transition programs (p. 83). My initial view on how to best approach this highly controversial issue was quickly changed to the point where what I thought would be the best way was thrust to the end of what I’d feel the best and most effective option.