



# **Research & Creative Activity Day**

## **Abstract Booklet**

### **April 3, 2019**

**Office of Research and Sponsored Programs**



Because West Chester University seeks to be a leader in local, regional, and global sustainability efforts, the Office of Research and Sponsored programs has collaborated with the Office of Sustainability to create a special designation for those Research and Creative Activity Day projects that perpetuate the health and welfare of people, economies, and the environment. Thus, all abstracts identified with *the Brandywine B* reveal the many ways that West Chester University faculty and students are helping to design, implement, evaluate, and improve a variety of environmental, social, and economic sustainability activities.

## POSTER PRESENTATION ABSTRACTS

### **Easel #1 Unlocking the Key to Injury-Free Workouts Using Natural Language Processing**

**Matthew Leinhauser (Computer Science)**

**Faculty Mentor: Dr. Richard Burns**

Instructions should help individuals carry out a task they need help with. In the domain of physical exercise, instructions are very useful in helping an individual execute a biomechanically correct movement and stay injury-free through that movement. If the instructions for that movement are ambiguous and non-descriptive, the risk of suffering injury increases. This research offers a computational approach to improve instructions for bodybuilding exercises that offers correct biomechanical form and minimal chance of injury. We collected “good” and “bad” instructions of thirty different exercises, and used natural language processing techniques to analyze the instruction’s word count, text complexity, text similarity, lexical diversity, parts of speech, and constituency parse tree. Future research includes analyzing transcripts of physical exercise instruction videos and expanding the corpus used. We also will develop a tool to carry out the best practices for writing instructions in the physical exercise domain.

### **Easel #2 Immigrants as Artists: How Immigrants to the United States Define Creativity and Describe Its Role in Their Lives**

**William Pierson (Psychology)**

**Faculty Mentor: Dr. V. Krishna Kumar**



This study was a mixed-method study to determine whether immigrants considered creativity to be a fixed or malleable trait, to find out how they personally defined creativity, and to understand how they perceived the role creativity played in their lives in both their original and adopted homelands.

The study employed two instruments: a self-assessment Nature of Creativity Scale and a semi-structured interview. Results of the Nature of Creativity survey indicate that immigrants appear to subscribe to the belief creativity is a malleable trait. The average malleability score of 4.0 on a scale of 1-5 significantly exceeded the mid average score of 3; a single sample t test calculated value,  $t(49) = 15.39$ ,  $p = .000$  Cohen’s  $d = 2.12$  (large effect size), suggests that participants on average considered creativity as malleable trait. To the extent possible, results based on an analysis of the interviews are reported in the immigrants’ own words. Qualitative analysis of participants’ responses to the open-ended questions concerning the nature of creativity and its impact on their lives indicated that those interviewed believe that creativity is an impetus for bringing about change, bringing something new and positive to their lives and to the world. Maslow’s needs hierarchy was used to understand how the respondents described how they were able to satisfy their needs for food, shelter, safety, finding acceptance within a new community, and a sense of self-worth while also looking for ways to improve their lives by learning new skills and helping others.

### **Easel #3 The Impact of International Student Teaching on Novice Teachers**

**Lindsay Dietz Costello (Special Education)**

**Faculty Mentor: Dr. Claire Verden**



Teacher preparation programs hold a great deal of weight in determining how successful their graduates are as they enter their first year of teaching in their own classroom. It is crucial that preservice teachers are trained and prepared in settings that parallel the realities of the real world (Mahon & Cushner, 2002). Mahon and Cushner suggest that school settings are becoming more diverse while teacher ethnicity and background remains relatively homogenous (2002). Including culturally diverse teaching experiences in teacher preparation programs, particularly through international opportunities, could impact preservice teacher readiness to teach in a culturally diverse classroom post-graduation. The purpose of this study is to determine if an international student teaching experience impacts teachers' perceived ability to teach in a culturally diverse classroom post-graduation.

This study uses participants from a university in the north east United States that completed half of their student teaching placement in Eleuthera, an island in The Bahamas. The study uses mixed methods to analyze these novice teachers' perceived impact of the international student teaching experience on their teaching practices and ability to teach in a culturally diverse classroom. Participants completed an online survey which included demographic questions, quantitative rating scales, and qualitative open-ended questions. Positive trends are analyzed and future research opportunities are discussed.



### **Easel #4 Humanitarian Aid on the Border**

**Emily Rodden (Anthropology & Sociology)**

**Faculty Mentor: Dr. Michael Di Giovine**

This poster presentation explores the humanitarian aid work of various organizations currently operating on the US/Mexico border. It is based on a month of ethnographic research that I completed with Borderlinks directly. This month of research included working with Borderlinks and other non-profits like the Tucson Samaritans, Humane Borders, and No More Deaths. While I was in Tucson I walked the desert, left humanitarian aid in the desert, and interviewed volunteers, aid workers, artists, and non-profit staffers. This poster will address why non-profits providing humanitarian aid is vital to people crossing the border illegally because they provide migrants with vital resources like food, water, and clothing. The poster also examines how the federal government and the current administration address humanitarian aid on the border, as well as the perceptions of government intervention by activists.

## **Easel #5 Addressing Food Insecurity on College Campuses: The Food Pantry and Beyond**

**Alexa Fetter (Nutrition)**

**Faculty Mentor: Dr. Mary Beth Gilboy**



Food insecurity (FI) on college campuses has received more attention recently. Many campuses have reported opening a food pantry, however, few have reported any additional steps taken to address student FI. The purpose of this study was to examine which on-campus programs have been initiated and are most effective in addressing student FI.

A cross sectional research design was used to measure the number of food insecure students served by campus food pantries and other programs. A 17-item online survey was emailed to 314 recipients identified through university food pantry websites. Recipients received an email explaining the survey along with informed consent and the survey link. Descriptive statistics were utilized to examine response data.

Of 314 survey recipients, 99 responded (31.5%). Seventy percent of respondents identified as state universities, while 15.5% and 14.4% were private or community colleges, respectively. Prior to opening food pantries, 48 colleges measured FI with rates ranging from 12.5% to 68%. Additionally, other services offered to address student FI included campus gardens (22.6%), programs providing free meals (18.9%), campus farmers markets (13.2%), and dining center meal donations (11.9%). Respondents rated pantries offering programs with free meals, dining center meal donations and campus farmers' markets as the most effective ways to address student FI.

This survey found that many colleges have opened campus food pantries to address FI. They have offered other services such as campus gardens. Further studies are needed to evaluate pantries and other programs on their effectiveness to decrease FI.

## **Easel #6 Differential Effects of Native and Invasive Allelopathic Shrubs on Plant Germination and Growth**

**Genevieve Pomeroy (Biology)**

**Faculty Mentor: Dr. Gregory Turner**



Invasive plant species are one of the most prominent threats to Eastern deciduous forests. One such species, *Lonicera maackii*, is a shrub that exhibits allelopathic effects in areas immediately surrounding the plant. A native plant, *Lindera benzoin*, similarly employs this competitive inhibition mechanism. Few studies have made comparisons between allelopathic shrubs in this ecosystem. The allelopathic effects of these plants were compared both in the field as well as in greenhouse and laboratory studies. In the field, woody and herbaceous plants were censused beneath both shrubs at three different sites, and a number of key influential abiotic factors were quantified. In the greenhouse, germinating *Quercus stellata* were treated with high and low concentration exudates prepared from *L. benzoin* and *L. maackii*. After a period of growth, the *Q. stellata* specimens were then processed and secondary growth variables, such as first order root numbers, were characterized. A germination study was then conducted for *Ulmus americana* seeds using the same exudates and concentrations from the greenhouse study. Analysis of field, greenhouse, and laboratory data determined that exudates from *L. maackii* and *L. benzoin* have differing effects on native woody plants including decreased herbivory in *L. maackii* field specimens, and decreased first and second order lateral root counts after low concentration exudate application, suggesting that allelopathy from both native and exotic woody plants can influence seed germination and plant growth in the Eastern deciduous forest.

## **Easel #7 Cartilage Deformation and Running Forces in Females with an ACL Injury History: A Pilot Study**

**Danielle Magee (Sports Medicine)**

**Faculty Mentor: Dr. Nicole Cattano**

**OBJECTIVE:** To examine how participants with a unilateral anterior-cruciate ligament (ACL) reconstructed knee respond to a running stimulus in comparison to healthy controls without an ACL history. Secondly, to compare the biomechanical and structural responses between healthy and unaffected limbs within the ACL participant in response to a running stimulus. **DESIGN:** In this cross-sectional pre-test/post-test design, eight females, 4 with an ACL history and 4 healthy controls volunteered for this study. Medial femoral cartilage thickness was assessed before and after a 30-min running bout using ultrasonography (US). Ground reaction forces (GRF) were assessed using the previously validated Two-Mass Model. Patient reported outcomes were assessed using the Knee Osteoarthritis Outcome Score (KOOS) questionnaire. **RESULTS:** Knee cartilage width significantly reduced in all participants,  $p=0.001$ . There were no significant differences for GRF or cartilage width reduction between limbs and groups. No significant correlations were found between cartilage deformation, GRF, cartilage percent change, and most KOOS scores. KOOS Sport/Rec and KOOS Pain were strongly correlated ( $r=0.961$ ),  $p=0.039$  and KOOS Symptoms and KOOS QOL were significantly strongly correlated ( $r=0.977$ ),  $p=0.023$ . **CONCLUSIONS:** The percent of cartilage thickness reduction was higher than previous research, likely due to running intensity, yet there were no group or limb differences. US proved to be a quick and simple tool in obtaining medial femoral cartilage imaging.

## **Easel #8 WCU's Early Alert Program's Impact on Continued Probation Students' Academic Performance**

**Alyssa Saputelli, Amy Gallagher (LARC)**

**Faculty Mentor: Dr. Jocelyn Manigo**



The University's Early Alert Program is a system of communication and collaboration of professors, program staff, academic advisors, and University students. For this research, we will be focusing on the aspect of the program that provides intervention to students on Continued Probation through meetings with a Graduate Consultant. The Graduate Consultants help students with study skills, time management, textbook reading, test taking skills and more. Our goal will be to examine program data from the fall 2018 (2185) semester and establish a link from attending meetings with a Graduate Consultant and academic success, as defined by an increase in GPA. We will also use survey data to identify trends in the causes of students' appearance on Continued Probation.

**Easel #9 Diabetes Prevention Program: An Investigation of Lifestyle Coaches' Habits and Motivations**  
**Melanie Sookiasian, Selen Razon, Patricia Davidson, Umit Tokac (Kinesiology)**  
**Faculty Mentor: Dr. Melissa Reed**

The Diabetes Prevention Program (DPP), offered through the Centers for Disease Control (CDC), aims to decrease diabetes risk factors. To that end, DPP lifestyle coaches deliver information to help others adopt healthier lifestyles. **PURPOSE:** The purpose of this study was to investigate the habits and motivations of lifestyle coaches with regards to health behaviors and/or type of motivations for coaching. **METHODS:** A sixteen item electronic survey was emailed to DPP Lifestyle Coaches. Data was analyzed using descriptive and qualitative analyses, as well as chi-square tests. **RESULTS:** Sixty three participants (60 female, 3 male) (Age range = 18-75+) responded to the survey. Analyses indicated that the majority of responding coaches worked in healthcare fields (59.65%) and achieved  $\geq 150$  minutes of physical activity (PA) per week (68.42%). Qualitative analyses indicated two types of motivation for coaching: internal (N=19) and external motivation (N=36). External motivation further included two sub-themes external-others (N=11) and external-self (N=25). Additional chi-square analyses revealed that those with bachelor and master's degrees, and working full time in healthcare occupations reported significantly less incidence of diabetes ( $p < .05$ ) and higher instances of achieving 150 minutes or more PA per week ( $p < .05$ ). **CONCLUSIONS:** These results suggest that lifestyle coaches are employed mainly in health care fields and are motivated to coach by external factors. Further, the results indicate coaches may be serving as appropriate role models in the adoption of at least the PA behaviors. These results could help training, delivery, and recruitment efforts for future coaches.

**Easel #10 Academic Success Workshops: Facilitating Collaborative Learning**  
**Christopher Stancil (LARC)**  
**Faculty Mentor: Dr. Jocelyn Manigo**

Academic Success Workshops (ASW) are hour long sessions offered through the Learning Assistance and Resource Center. ASW's support students by assisting in the development of their academic skills. ASW's are designed to engage students in exploring academic success topics such as Time Management, Note Taking, Essay Writing, Test Taking, Finals Preparation and more. During sessions, students navigate strategies and methods that can be applied to their individual learning experiences.

A Qualtrics survey was constructed and distributed post workshop sessions via email to measure learning outcomes and student satisfaction. The learning measures identified in the survey were adapted from the Learning and Study Strategies Inventory (LASSI) which provides a 10-scale assessment of students' awareness and use of learning and study strategies related to skill, will and self-regulation components of strategic learning (Ohio State University, 2019). The Attitude Scale, Motivation Scale, and Test Strategies Scale (reframed as the Strategies Scale) were the three measures used in this research. The survey also gathered open-ended feedback regarding student workshop satisfaction.

A total of 131 students completed the assessment. The findings report that over 98% of student participants agree or strongly agree that ASW sessions positively impacted their academic development within the three identified scales. Open-ended student responses primarily highlighted the presenter's presentation skills, relatability and enthusiasm, the amount of student participation during sessions, along with the length of the sessions as impactful factors which attributed to their level of workshop satisfaction. The results offer various implications for future ASW engagement and design.

## **Easel #11 The Modern Mariner: Recontextualization in Rebecca Makkai's "Painted Ocean, Painted Ship"**

**Panagiotis-Christoforos Sassaris (English)**

**Faculty Mentor: Dr. Joseph Navitsky**

In her short story "Painted Ocean, Painted Ship," author Rebecca Makkai establishes a firm intertextual relation to Samuel Taylor Coleridge's narrative poem "The Rime of the Ancient Mariner." This essay explores the intertextual connections between the two texts according to the definitions and explanations given by Dr. Charles Bazerman in "Intertextuality: How Texts Rely on Other Texts," the fourth chapter in the book "What writing does and how it does it: an introduction to analyzing texts and textual practices." An intertextual analysis of "Painted Ocean, Painted Ship" reveals that Makkai recontextualizes Coleridge's themes and characters into a contemporary American setting, and in the process imbues the text with the sensibilities of that setting's inhabitants. In translating the classic poem to a modern context, Makkai alters the original text's romantic meaning to a more clear-eyed and even pessimistic one. She also scrutinizes the concept of penance. The short story's protagonist, Alex Moore, serves as the vessel through which the recontextualization occurs. The term "modern mariner" is coined in this essay and is used to describe Makkai's contemporary American equivalent of Coleridge's "ancient mariner." The findings and methodologies of this project will be summarized in a poster that will include illustrations.

## **Easel #12 The Faces of Ageism**

**Joyce Pour-Azar, Lauren Stricker (Psychology)**

**Faculty Mentor: Dr. Jasmin Tahmaseb-McConatha**



Through educating about ageism, the goal of our presentation is to build sustainable work communities for people of all ages. Described as "the third great 'ism' in our society, after racism and sexism" (Palmore, 2001), ageism is the act of stereotyping or discriminating against a person or a group of people based on their age. While not as widely acknowledged, it is the most universal of the isms, as it can be experienced by anyone who lives long enough, and with new technological advancements, people are living and working longer than ever before. According to the Bureau of Labor Statistics, participation of those 55 and older have increased by 5%. In fact, the age group of 65-74 is projected to see the second largest labor force increase between 2017 and 2026 (Bureau of Labor Statistics, 2017). With this growth, an increase in age discrimination is expected. AARP (2014) has reported that 64% of workers have experienced ageism in the workplace. As a consequence, employers are observing a decline in job engagement and job satisfaction. Furthermore, employees are experiencing personal injury as this type of discrimination undermines their confidence, feelings of self-worth, and overall life satisfaction. Our poster will present the many faces of ageism as it relates to the workforce. A specific focus will be on the political and social factors that act as enablers of age discrimination. The poster will also introduce ongoing research on ageism's effect on the well-being and coping tactics of university faculty members.



**Easel #13 Proximity in Captive Bachelor Western Lowland Gorillas at The Philadelphia Zoo**  
**Mackenzie Holm, Samantha Bobst, Joelle Buenaventura, Julianne Duko, Angel Jacabella, Taylor Stuart, Liam Pierson (Psychology)**  
**Faculty Mentor: Dr. Rebecca Chancellor (Anthropology & Sociology)**

Recent research suggests that the formation and maintenance of bachelor groups is a viable strategy for housing captive male gorillas. However, previous studies have found differences between groups regarding male-male proximity. In this study, we analyzed a bachelor group of two silverback western lowland gorillas at the Philadelphia Zoo. We collected data 1-2 times a week for a total of 9 months (1/30/18-9/29/18). We conducted 30-minute focal samples, during which we recorded activity budget and proximity data. The categories we used for activity budget included social play, resting, feeding/foraging, moving/traveling, and other. The four categories of proximity included far (different enclosures), distant (> 5 m), proximate (< 5 m), and in contact. We predicted that the males would spend the majority of their time at distances > 5 meters apart. Overall, we found that the males spent the majority of their time distant (61%), followed by far (22%), proximate (14%), and contact (3%). We also found that one male initiated the majority (77%) of approaches when the males did approach each other. Regarding activity budget, both males spent the majority of their time resting (67%, 68%), followed by feeding/foraging (15%, 20%), moving/traveling (10%, 6%), and social play (6%, 5%). Our results support previous studies that have found that silverbacks in bachelor groups tend to spend the majority of their time at greater distances. In addition, our study contributes to expanding our understanding of captively housed great apes.



**Easel #14 Analysis of Lead Contaminated Soils in the Greater Philadelphia Area**  
**Lukas Berry (Earth and Space Sciences)**  
**Faculty Mentor: Dr. Cynthia Hall**

Although we may not realize it, the effects of the extremely harmful element, lead, are all around us. Currently, Pennsylvania is experiencing some of the highest lead contamination rates within the United States. Even with the production of leaded paint and fuel coming to a halt with the help of the EPA, much of the toxic element has already penetrated and contaminated soils in urban Philadelphia and many of its suburbs, such as West Chester. In this study, soils contaminated by leaded paint, leaded gasoline and lead remains from smelters were collected from the greater Philadelphia area and are being quantified with a scanning electron microscope (SEM). The SEM is being utilized by separately analyzing soil from each source of contamination and the bonding properties of the lead associated. Although research is currently ongoing, the goal is to differentiate different types of lead contamination through characteristic bonding properties. This will not only provide insight into what the lead is bonding to in the soil, but perhaps which soil types are more prone to contamination due to their mineralogical make up. This research will help explore how lead is leached in soil and further help remediation efforts.



## **Easel #15 Patient Reported Outcome Measures and MTSS Over the Course of a Competitive Season in Outdoor Track**

**Leah Balsamo (Sports Medicine)**

**Faculty Mentor: Dr. Nicole Cattano**

**CONTEXT:** Medial tibial stress syndrome (MTSS) is an overuse injury studied in endurance runners (ED) with minimal data on sprint athletes (SP). While gender, arch height and history of injury increase MTSS risk, it is unknown if athletes at risk report increased symptoms. Patient reported outcome measures (PROMs) may provide a way to manage and treat MTSS in track athletes. **OBJECTIVE:** Investigate PROMs as a means to monitor MTSS and general wellness in track athletes during a competitive season. Also, to see if MTSS risk factors are related to athlete reporting. **METHODS:** This was a prospective cohort study at a Division II University. Participants included 28 men's (N=10,ED=5,SP=5,BMI:21.8±2.8kg/m<sup>2</sup>) and women's (N=18,ED=5,SP=13,BMI:20.7±1.7kg/m<sup>2</sup>) track athletes medically cleared to run, between 18 and 25 years old. Independent variables: sprinter vs endurance, gender, MTSS history, and arch height measured via the arch height measurement index (AHI). Dependent variables: the MTSS score and the Global Health score (GH) PROMs. PROMs were emailed weekly via Qualtrics. **RESULTS:** PROMs overall showed few MTSS symptoms and good global health (mean MTSS score:0.35±0.85,mean GH score:33.6±3.5). Sprinters reported poorer (0.54±0.24,P=0.04;32.5±3.34,P=0.028) scores on the MTSS and GH score than endurance runners (0.04±0.01;35.5±3.04). There was a main deteriorating effect over time for the MTSS score (P=0.047). There were no significant differences between genders, MTSS history, or AHI. **CONCLUSIONS:** Sprinters reported more symptoms than endurance runners, and need to be further researched as an independent population. PROMs may be useful in tracking symptoms and modifying practices for individual track athletes.

## **Easel #16 Perceptions of Digital Storytelling in Pre-Licensure Nursing Education** **Dr. Danielle Yocom (Nursing)**

Digital storytelling is used as an educational tool that enhances learning in many disciplines. The digital platform involves a narrator or storyteller sharing a story that is often deeply personal and emotional, enhanced by images, music, and voice narrations, over the length of three to five minutes. Few nursing programs in the United States take advantage of digital storytelling to learn about complex care measures. Trends in aging necessitate innovative teaching strategies to influence nursing education, practice, and the delivery of high quality nursing care. To learn about the perceptions of digital stories in the nursing classroom, digital stories were featured in sessions related to care of the older adult coping with cerebral vascular accidents and human immunodeficiency virus. The digital stories were followed by a group care planning activity with objectives based on The Quality and Safety Education for Nurses (QSEN) Initiative Patient-Centered Care Competency integrating Watson's Human Caring Theory. Using a descriptive phenomenology research design, the researcher held three focus groups (N=16). The results were compared with a quantitative classroom evaluation, also based on the QSEN Initiative Patient-Centered Care Competency. Five themes were identified using Colaizzi's Method of data analysis promoting the use of digital stories in the nursing classroom as a catalyst to stimulate empathetic practices and enhance learning.

## **Easel #18 Cross-Border M&As: An Examination of Company and Third-Party Portrayals of Organizational Culture**

**Madison Pollino (Communication Studies)**

**Faculty Mentor: Dr. Maxine Gesualdi**

As the number of cross-border mergers and acquisitions (M&As) in the global market continues to increase, an understanding of how culture is communicated in these transactions is paramount. A successful and unified organizational culture is important to the long-term success of organizations. To secure a market advantage, organizations continue to engage in these large-scale cross-border transactions. This industry-behavior is significant because the cultures within these transactions undergo drastic change due to national and organizational differences.

The purpose of this study is to examine discussions of culture from company and third-party perspectives. The cross-border M&As that will be examined in this project include: (1) Daimler-Benz's acquisition of Chrysler, (2) Pfizer's acquisition of Pharmacia, and (3) InBev's acquisition of Anheuser-Busch. Findings indicate important differences between company and third-party discussions of culture. Because companies need to retain the support of stakeholders, the information provided in company materials is specifically chosen to reflect positively on the company. On the other hand, because the role of third-parties is to comprehensively report on companies, their materials include both positive and negative aspects of culture following cross-border transactions.

## **Easel #19 Beliefs About English Language Learners of Teacher Candidates and Recent Teaching Graduates of WCU**

**Kathleen Shultz (Biology)**

**Faculty Mentor: Dr. Margaret Niiler**

The number of students with an L1 (native language) other than English shows increase in schools across America over time. Teacher beliefs impact actions and decisions of teachers and thus the instruction within the classroom. Teachers' misconceptions about ELLs or their instruction may negatively impact the education ELLs receive.

This research examines how teacher beliefs held by two groups specific to West Chester University: current teacher candidates and teacher graduates within the past four years. This research explores these beliefs through seven different constructs of teacher beliefs: relationship between L1 and L2 (second language); optimal age to begin L2 instruction; importance of extent of exposure to L2; relationship between oral communication and academic language skills; teacher self-efficacy with ELLs; preparedness in teaching children from different backgrounds as influenced by WCU courses; and finally, personal experience with ELLs.

On average, teachers and teacher candidates understand how ELLs learn a language; however, some results showed some common misconceptions, such as not recognizing the importance of a ELLs' strength in their L1 to their academic performance in English. The construct teacher self-efficacy with ELLs had several strongly correlated factors, which suggest that this construct really measured two separate constructs: teachers' confidence in their own linguistic abilities and teachers' ability to recognize their students' cultural factors, such as the differences in communication between home and school environments to the willingness of students to participate in group work (0.50) or to the ways in which school culture differs from students' home cultures (0.63).

**Easel #20 Evaluating the Effectiveness of a Grant-Funded Program Supporting Underserved Populations**  
**Sarah Fisher (Counselor Education)**  
**Faculty Mentor: Dr. Cheryl Neale-Mcfall**

Our poster will focus on expanding the number of MS social work and MEd school counseling graduate students working with persons across the lifespan in vulnerable and medically underserved populations, providing evidence-based behavioral health services. In order to prepare the selected students, Interprofessional Education trainings and a 3-credit IPE academic course were administered, and data gathered and analyzed.

The purpose of this research is to evaluate the effectiveness of the trainings and IPE academic course. For the purpose of the IPE Integrated Care Trainings, pre-post test data were collected. In addition, open-ended questions were added to the post-test to ascertain additional feedback to improve the trainings and assess effectiveness. Pre-post test data were also collected for the 3-credit IPE academic course, in addition to a focus group, conducted after the completion of the IPE course to gain feedback. Chi-Square analyses were run for the quantitative data and themes were pulled from the focus group.

This presentation will focus on data outcomes from Year 1 and 2 of the four-year HRSA grant. In year one, data was collected and analyzed from four IPE Integrated Care Trainings and one IPE academic course. In year two, data has been collected and analyzed from three IPE Integrated Care Trainings and two IPE academic courses. Participants for the trainings include HRSA-stipend students, field/faculty supervisors, and community members. It was hypothesized that student pre/post data values are more likely to be significant, as compared to field/faculty supervisors, which has been proven true.

**Easel #21 Inov8 Makerspace: A Collaborative Approach to Creative Problem Solving**  
**Connor Keane (English)**  
**Faculty Mentor: Dr. Jordan Schugar**

Technology is often seen as exclusively advantageous to the college student of 2019. But the sheer abundance of technological resources today presents just as many obstacles as it does opportunities. One way to assist learners in navigating today's digital landscape is by bringing them together into a physical space that is conducive to exploring technologies, while also utilizing fresh, collaborative approaches. With this presentation we will display how WCU's iNOV8 group has succeeded in creating such an environment with the implementation of the iNOV8 Makerspace.

Makerspaces are places in which people with shared interests in technology can gather to work on projects, while sharing ideas, equipment, and knowledge. The iNOV8 Makerspace—located in the FHG Library—is evolving rapidly into a hub capable of channeling creative growth, collaborative research, and creative problem solving. Currently, the space is home to state of the art 3-D printing and laser engraving equipment; In the near future we anticipate the installation of virtual/augmented reality systems. The space also functions as a hub for WCU's Computer Science Club. This presentation will display the goals, processes and current outcomes of WCU's iNOV8 Makerspace, while conveying why participation in the space is not simply appealing, but vital to the progression of exploratory creative spirit that is so abundant throughout the WCU community. Ushering our educational community's inquisitive nature from "how does it work?" (curiosity) to "what can I do with it?" (action) is a process that must be embraced with fervor and innovation in the digital age.

**Easel #22 Low-Load Metal Assisted Catalytic Etching****Joseph Swanson, Teresa Lee, Ben Roe, Konstantin Tamarov (Chemistry)****Faculty Mentor(s): Dr. Kurt Kolasinski, Dr. Shawn Pfeil**

Metal assisted catalytic etching (MACE) is a method of producing nanostructured silicon particles. This study investigates the dependence of the structure of the particles to the amount of silver catalyst. When larger amounts of Ag catalyst (more than 2 mol Ag per gram of Si reactant) are used, Ag particles on the surface of the Si etch linear pores into the surface. Variation of the amount of H<sub>2</sub>O<sub>2</sub> used allows for control of the depth of the resultant etched-track pore, but the pore diameter remains constant. Lowering the amount of Ag from 2 mol Ag per gram Si to 0.025 mmol changes the product morphology. Recent microscopy supports the theory that the deposition and formation of Ag nanoparticles on Si is a dynamic process that involves changes in sizes of the Ag particles as etching begins. It is also been shown that MACE can be performed with metal catalysts other than Ag. Etching with Pd, Pt and Au produces porous silicon particles with markedly different pore size distributions compared to Ag.

**Easel #23 The Influence of The Physical Environment on Inmates' Attitudes and Perceptions of Prison Based TCs****Johnt Carr (Criminal Justice)****Faculty Mentor(s): Dr. Sami Abdel-Salam, Dr. Michael Antonio**

Prison-based therapeutic communities (TCs) are a common modality of treatment for inmates working through problems of substance abuse. A core principle of TCs is the use of the environment as a catalyst of change. TC participants generally live together in isolation from the general inmate population. This provides a physical space where inmates can focus on their treatment needs and receive support from other inmates as well as treatment staff. While separation from the general population is important, it is unclear how inmates perceive the benefits of this separation vis-à-vis the therapeutic process, or if the conditions of this physical space are a more salient source of support. In order to address this issue, the current qualitative study explores inmates' attitudes and perceptions about the design and conditions of the physical space on inmates' treatment experience. TC participants were asked several questions concerning their views on the physical space in relation to the treatment process. Additionally, they were provided the opportunity to make recommendations on how to improve these conditions to assist with the recovery process. This study provides important findings with respect to the use and design of the physical space in enhancing the TC process.

## **Easel #24 Implications of Macronutrient Levels in Various Fertilizers on Soil pH**

**Maria Sariano (Earth and Space Sciences)**

**Faculty Mentor: Dr. Cynthia Hall**



The harmful effects of lead in soils due to the prolonged exposure to leaded gasoline, especially in urban areas, is evident yet there is such little public outreach and education on the matter. Most studies relating to the interaction between acidic soils and lead focus on the absorption of heavy metals in soils, but few focus on lead desorption and re-mobilization. With the push towards urban agriculture and the evidence of high lead concentrations in urban soils, the public would benefit from additional research on the desorption rather than absorption of lead in soils. In this study different fertilizers, both organic and non-organic, with varying concentrations of macronutrients is examined to determine the implications of leftover macronutrients on soil acidification. Furthermore, the capacity of lead to be leached from acidic soils will be examined to determine if concentrations of lead increase after being exposed to nitrogen-rich fertilizers. Two common garden plants for the area surrounding Philadelphia, kale and tomatoes, are potted using a standard compost as the organic fertilizer and Miracle-Gro All-Purpose fertilizer as the non-organic to determine the change of pH with different fertilizers. With the preliminary data describing changes in overall soil pH due to the varying concentrations of macronutrients in organic versus non-organic fertilizers, further studies will address the desorption rates of lead with a decreased soil pH. Understanding the effect of soil pH and the desorption and re-mobilization of lead will characterize the risk of lead contamination in urban environments and may guide the development of policies to ensure the safety of the public coming in contact with lead contaminated soils.

## **Easel #25 Sonochemical Route to Silicon Nanoparticle Formation and Passivation**

**Benjamin Roe (Chemistry)**

**Faculty Mentor: Dr. Kurt W Kolasinski**

Sonication of porous Si microparticles suspended in an organic solvent was used in an attempt to produce porous Si nanoparticles and to simultaneously stimulate a chemical reaction between the solvent and the Si surface. Si microparticles porosified by regenerative electroless etching (ReEtching) luminesce in the visible around ~600 nm when excited by 300-400 nm light. This makes them good candidates for biosensing due to their compatibility with standard biological microscopy and imaging systems if they can be capped with organic molecules and retain this visible luminesce. Proton nuclear magnetic resonance spectroscopy (H-NMR) was performed to characterize the structure of these particles after the passivation reaction. The particle size distribution before and after sonication was characterized with scanning electron microscopy (SEM). The yield of nanoparticles from microparticles, extent of the passivation reaction and luminescence are investigated as a function of the duration of sonication.

### **Easel #26 Cortisol Response to Positive Reinforcement Training in Chimpanzees**

**Amanda Johnston, Justin Gibson, Taylor Potts-Gordon, Sofia Vanderhyde, Ryan Manzo, Nathan Helfrick, Olivia King, Rebecca Burr (Chemistry)**

**Faculty Mentor: Dr. Aaron Rundus**

Positive reinforcement training (PRT) is a tool used by animal caretakers worldwide to provide enrichment for captive animals, and facilitate medical and research procedures. A form of operant conditioning, PRT trains animals towards a desired behavior by breaking it down into smaller steps. Participation by the animal is always voluntary and the benefits are numerous. One of the largest benefits of PRT is reduced stress during standard procedures such as medical exams or cleaning, however training can disrupt normal routines and cause stress in return. Due to their intelligence, and the dangers to both the animals and caretakers during restraint procedures, non-human primates often receive PRT. Analyzing cortisol levels in primates can provide insight into whether training induces a state of arousal. This study measures the cortisol naturally found in chimpanzee saliva to determine if PRT training sessions induce a change in cortisol concentration in individuals at the Maryland Zoo. Samples were taken using cotton swabs before and after training sessions, and enzyme linked immunosorbent assay (ELISA) was used to determine the cortisol concentration. Here we present results on the PRT induced release of cortisol in the chimpanzees and how individuals react differentially to this training regime. Results from this experiment will help to inform captive management plans for zoo animals and guide the refinement of training procedures to minimize their impact on stress.

### **Easel #27 Laser Ablation Pathway to Passivated Porous Silicon Nanoparticles**

**Teresa Lee, Joseph Swanson, Benjamin Roe (Chemistry)**

**Faculty Mentor: Dr. Shawn H. Pfeil**

Laser ablation involves the irradiation of a solid sample by a high powered nanosecond-pulsed Nd<sup>3+</sup>:YAG laser operating at 355 nm. Porous Si is formed by ReEtching (short for regenerative electroless etching) of silicon microparticles, which are visibly photoluminescent because of their quantum confined sub-5-nm-thick pore walls. Laser ablation simultaneously mills the porous microparticles into nanoparticles as well as creating reactive species that cause reaction between the solvent in which the particles are suspended and the Si surface. These passivated particles might prove especially useful in applications such as bio-sensing, in an effort to replace CdSe quantum dots. The process of suspending silicon nanoparticles in an organic solvent with a terminal alkene and laser irradiating them may facilitate the formation of particularly stable Si-C bonds. This will be confirmed with the acquisition of the <sup>1</sup>H-NMR spectrum. Data pertaining to the photoluminescence of the passivated particles as a function of ablation time and amount of Si powder utilized is presented.

## **Easel #28 Is the Right Tree in the Right Place? West Chester Borough Street Tree Geodatabase**

**Kimberly Kutzler, Eric W. Chapman (Geography & Planning)**

**Faculty Mentor: Dr. Joan M. Welch**



During the summer and fall of 2018, students developed and implemented a geodatabase to collect street tree data for the Borough of West Chester, PA. Students used the online program ArcGIS Arc Collector for data collection using smart phones. Two of the variables collected include overhead wire conflict and tree well size. In order to maximize the benefits of the public urban forest, it is important to plant the right tree in the right place. A tree that is large at maturity is well suited to be planted in locations where there are no overhead wire conflicts, and the well size is adequate for a large tree. Trees that are small or medium size at maturity are better for planting in areas where there are overhead wire conflicts and where tree wells are smaller. A Chi-Square analysis of the distribution of tree sizes at maturity planted under overhead wires, and where there are no overhead wire conflicts, and inadequate well size demonstrates that the Borough of West Chester is planting the right tree in the right place, but there is room for improvement.

## **Easel #29 Daily Poverty-Related Stress Predicts Change in Emotion Regulation for Children at Head Start**

**Caroline Guzi, Mallory Garnett, Kenia Valdez, Keriann Mosley, Fatima Bakayoko (Psychology)**

**Faculty Mentor: Dr. Eleanor Brown**



The present study examined contextual poverty risks in relation to child emotion dysregulation and investigated whether an index of daily poverty-related stressors predicted change across a year of Head Start preschool attendance. Within the ecology of poverty, neighborhood adversity and single parent status may increase the likelihood of daily stressors such as overload at home, transportation difficulties, and arguments with neighbors or family members (Attar, Guerra, & Tolan, 1994). These stressors may disrupt the predictability of the proximal processes via which young children interact with their immediate environment, engendering emotion regulation difficulties. The present study included 144 children who attended Head Start preschool as well as their primary caregivers. In the fall, the primary caregivers provided information about demographic variables and also completed Bolger and Schilling's 1991 checklist of daily poverty-related stressors via phone on ten different days, with ratings averaged. Teachers rated child emotion regulation in the fall and spring using the Emotion Regulation Checklist (Shields & Cicchetti, 1997). A hierarchical linear regression analysis indicated that daily poverty-related stressors predicted variance in child emotion dysregulation beyond that accounted for by neighborhood adversity, single parent status, and maternal negative emotionality. Implications concern accounting for links between poverty and child emotion dysregulation, understanding the impact of daily poverty-related stressors, and considering how contextual risks may limit the effectiveness of interventions focusing on child and maternal sources of child emotion regulation difficulties.



### **Easel #30 Arts-Integrated Preschool Relates to Lower Cortisol for Children at Risk Via Poverty**

**Jessa Malatesta, Mallory Garnett, Zachary Weaver, Savina Lawrence, Kelsey Munster, Jean-Philippe Laurenceau (Psychology)**

**Faculty Mentor: Dr. Eleanor Brown**



Income poverty and correlated stressors tax physiological systems that respond to stress, as indexed by the hormone cortisol. This physiological tax relates to cognitive, emotional, and physical health problems for economically disadvantaged children. A recent study by our lab suggested physiological benefits of arts classes for children attending Head Start preschool. The present study examines salivary cortisol across the preschool day and change across the year for children attending an arts-integrated versus typical Head Start.

The arts integrated Head Start included in the daily schedule multiple music, dance, and visual arts classes, whereas the comparison Head Start included more limited integration of arts activities into the regular homeroom or early learning classes. The two preschools were located in nearby neighborhoods, served families with similar demographic characteristics, and matched on key indicators of program quality, including teacher training and teacher-to-child ratio.

A repeated-measures MANCOVA assessed the impact of time of year (start, middle, and end) and preschool type (arts-integrated versus comparison) on child salivary cortisol output across the preschool day, with demographic covariates. Results suggest that child cortisol output across the day was statistically similar for the two preschools at start-of-year but that significant differences emerged midyear and became more pronounced by year's end. Children at the arts preschool ultimately showed lower cortisol production. Arts programming may help to lower stress levels for young children facing economic hardship.

### **Easel #31 Learning with Music: Early Childhood Music Program Associated with Advantage in Self-Regulation**

**Zachary Weaver, Mary Ann Blumenthal, Keriann Mosley, Alyssa Allen, Dominique McQuade, Amelia Oberholtzer, Jacquelyn Redmond (Psychology)**

**Faculty Mentor: Dr. Eleanor Brown**



In recent years, a national spotlight has centered on children's executive functioning abilities as critical for success in formal schooling. Poverty-related stressors pose challenges for the development of executive functioning skills. Emergent evidence suggests the possibility that music and arts programming may facilitate the development of these skills. The present study examines the impact of MacPhail's Learning with Music Program on the development of executive functioning skills for preschool children facing economic hardship. Participants included 119 preschool children from one of two cohorts attending the same two preschools. The first cohort ( $n = 130$ ) who participated in Year 1 of the study received preschool programming as usual, whereas the second cohort ( $n = 104$ ) who participated in Year 2, received the supplemental MacPhail Learning with Music Program delivered in their regular preschool classrooms. For both cohorts, parents completed demographic interviews at the start of the year, and children completed three tasks tapping the inhibitory control aspect of executive functioning at the start, middle, and end of the preschool year. Results of growth curve modeling suggested that those children who received the MacPhail Learning with Music Program showed greater growth across the year in inhibitory control. Implications concern early childhood music programming as a mechanism for alleviating the impact of poverty-related stress and promoting positive outcomes for children facing economic hardship.

### **Easel #32 Investigating the Effects of Mindfulness Meditation on Selection Test Performance**

**Priyatharsini Selvaratinam, Joelle Skacel (Psychology)**

**Faculty Mentor: Dr. Vipanchi Mishra**

The purpose of the current study was to investigate the effects of brief mindfulness meditation exposure on selection test performance. Further, the study investigated the mediating role of interview anxiety on the relationship between mindfulness meditation and overall interview performance. Participants (N=38) included West Chester University students (working 10 hours or more per week) who were randomly assigned to mindfulness and control conditions. The study took place over a span of five days. On the first day, participants participated in a role play related to applying for the job of a customer service associate. Next, they answered interview questions and completed a cognitive ability test and a situational judgement test. Next, based on study condition, participants either participated in a mindfulness meditation exercise for 30 minutes or listened to lectures from nutrition audiobook over the next five days. On the fifth day, participants again answered interview questions and completed a situational judgment test and cognitive ability test. They also answered questions pertaining to interview anxiety on first and last day of the study. Results indicated significant improvement in overall interview performance from day 1 to day 5 for participants in the mindfulness condition. Mindfulness meditation seemed to increase interview performance by lowering interview anxiety for participants in mindfulness condition. However, no significant differences in performance were observed on situational judgment test or the cognitive ability test across the two conditions. An implication is that recruiters and coaches could use mindfulness mediation as a tool to improve interview performance for candidates.

### **Easel #33 Developing a Date-Fruit Based Sports Gel**

**Terrence Riley, Kelly O'Donnell, Megan Ray, James Palmer (Nutrition)**

**Faculty Mentor: Dr. Amir Golmohamadi**

Sports gels are used as an energy source for endurance athletes during extended bouts of exercise. Date fruits provide carbohydrates in addition to components of energy metabolism not present in the Commercial Sport Performance Gels (CSPGs). The objective of this project was to develop and compare the nutrient density of a Noor Date Fruit-based Sports Gel (NDSPG) to a maltodextrin-based CSPG.

Date-fruit recipe was developed using a heated bath technique and combined with a coconut-based chocolate sweetener mix. Pitted Noor Dates (105g) were submerged in water at a rolling boil and mixed with 1g, 5g, and 15g of polydextrose and tapioca fiber respectively. The mixture heated at 92°C water bath for 5 minutes followed by cooling down and storing at 40 °C for 24 hours. ESHA Nutrient Analysis Software was used to compare the nutrient and calorie content of the developed gel and the CSPG. Nutrient analysis identified higher caloric (+100g) nutrient content in the NDSPG compared to the CSPG. For a 40 g serving size, the NDSPG contained 16 g of fat, 37 g carbohydrates, 2.61 g protein, 4 g fiber, 4.75 mcg folate, and 164 mg potassium, which were higher than CSPG. The CSPG was higher in sodium (50 mg vs 0.5 mg) and calcium (100 mg vs 9.75 mg). Preliminary production of a date fruit-based sports gel showed adequate gelling properties and greater nutrient content compared to the commercial sample. Further objective and subjective analyses are required to optimize the product.

### **Easel #34 A Comprehensive Approach to Composting on Campus**

**Tiffany Kennedy (Nutrition)**

**Faculty Mentor: Dr. Ashlie Delshad (Political Science)**

Reducing humanity's carbon footprint has been an emerging trend as we face the global issue of climate change. There are many ways to reduce one's personal carbon footprint, one way I have made a large difference in my own footprint is by composting. As a passionate composter, I started two compost initiatives and created a petition calling for more composting on campus. After getting over 250 signatures, I decided to research and put forth a proposal for WCU to begin campus wide composting to help our university reduce its carbon footprint. The information from my study is based on interviews of key stakeholders involved in composting efforts that have occurred on WCU's campus in the past. These interviews focused on what these prior projects accomplished and what groundwork they have provided as we prepare WCU to move forward with campus wide composting. I also examined models from other PASSHE schools and similar universities that have established compost programs.

Overall, my research explains: what composting is, the benefits of composting, why composting is needed to reduce WCU's carbon footprint, how composting can help fulfill both Pennsylvania's Climate Action Plan and WCU's Climate Action Plan, and the next steps WCU should take in moving towards campus wide composting.

### **Easel #35 Finding Room for Inquiry in the Age of I Do, We Do, You Do**

**Dr. Paul Sylvester, JulieAnn Hatala, Hannah Kaptur (Early & Middle Grades Education)**

In this presentation student teachers and their faculty collaborator report on their action research as a Curriculum Inquiry Group to understand the possibilities (and obstacles) to doing inquiry-oriented lessons in contexts where the predominant structure for lessons is the I do, we do, you do (gradual release of responsibility) format. This format is so named because teacher first models the skills (I do); then enlists the students in performing the skill with her/him (we do); and then has the students perform the skill on their own (you do).

The limitation of this format is that, at its essence, it is a request for students to copy what the teacher does. The format leaves students little opportunity for original thought and non-routine problem solving. If creativity and innovation are key attributes of twenty-first century learning then “I do/we do/you do” needs to be supplemented with other teaching modalities.

This question led me (Sylvester) to form a Curriculum Innovation Group with student teachers volunteer interested in planning lessons that fostered inquiry, exploration and non-routine problem solving with the goal of deeper learning.

Research questions:

- 1) How do we plan instruction that asks students to use creativity, flexible thinking and non-routine problem solving for deeper learning?
- 2) How do students implement this instruction and maintain this in their practice given systemic pressures for rapid “coverage” of discrete, decontextualized skills through the I do, we do, you do format?

## ORAL PRESENTATION ABSTRACTS

### **Presentation #1 Upper Extremity Motion & Sprint Acceleration: A Farewell to Arms?**

**Lance Brooks (Kinesiology)**

**Faculty Mentor: Dr. Kenneth P. Clark**

Aristotle believed that individuals run faster by swinging their arms. This belief has held steady for millennia. However, by observing non-human bipeds, it can be noted that they run without upper extremities oscillating during stride. **PURPOSE:** To identify the role of arm swing during sprint running. We hypothesized that the arms would not play an important role in sprint performance because they are not directly involved in ground force application. **METHODS:** Instantaneous velocity from three male subjects was measured using a radar over a 30-meter sprint during two conditions: Normal Arms and Restricted Arms. Data was analyzed using a custom, iterative routine to fit the velocity-time curve using an exponential function, where three outcome variables were quantified ( $v_{max}$ ,  $a_{max}$ , and  $\tau$ ).  $V_{max}$  is the maximum running velocity achieved during the trial, while  $\tau$  represents the time constant.  $A_{max}$  is the ratio of  $v_{max}$  and  $\tau$ . **RESULTS:** No statistically significant differences existed between conditions for  $v_{max}$ ,  $a_{max}$ , and  $\tau$  ( $p=0.10, 0.94$ , and  $0.93$ , respectively). Time-series analysis indicated that there was a high degree of similarity between conditions for the velocity vs. time curves ( $r^2=0.99$ ). **CONCLUSION:** We conclude that the arms do not significantly affect an individual's acceleration and top-speed during maximum effort sprinting. Other reasons for arm swing while running could be related to metabolism, balance, and proprioception.

### **Presentation #2 A Changing Understanding of ADHD: How Current Research Challenges Its Classification Under the IDEA**

**Samantha Walsh (Special Education)**

**Faculty Mentor: Dr. Barbara Reed**

Children and adults with neurodevelopmental disabilities frequently challenge the means in which traditional disability classifications function. Because of the ways in which children who are affected by deficits in neurodevelopment experience challenges with executive functioning, emotional regulation, and cognitive development, their classification under the IDEA and lack of consideration for services under the Americans With Disabilities Act into adulthood must be critically evaluated in terms of the services, and lack thereof, that their classifications provide under these laws. Contemporary research has classified ADHD as a neurodevelopmental disability, contradicting the disability's classification as an "Other Health Impairment" which covers physical illnesses such as asthma and diabetes, under the IDEA. Research conducted in the 1970s that labeled the disorder as a childhood condition reflects the means in which ADHD was classified under the federal law. As a result, the IDEA's current classification for ADHD demonstrates an outdated perception of how ADHD impacts children and how the disability affects their livelihoods as they move into adolescence and adulthood. In addition, the classification fails to recognize the similarities in delayed neurodevelopment, executive functioning, and social deficits that the diagnosis shares with Autism Spectrum Disorder, which currently has its own category under the IDEA.

### **Presentation #3 Validation of A Depression Screening Tool in Collegiate Student-Athletes**

**Branden Green (Sports Medicine)**

**Faculty Mentor: Dr. Lindsey Keenan**

**CONTEXT:** The purpose of this study was to provide the optimal cut-off score for a depression-screening tool in the collegiate student-athlete population, and to determine the prevalence of depression symptoms in the sample. **Methods:** A total of 882 participants at two NCAA Division II universities (mean age  $19.68 \pm 1.41$  years; 48.5% male, 51.5% female) completed a depression-screening tool, the Patient Health Questionnaire-9 (PHQ-9), during their pre-participation exam (PPE). Based on a stratified random sampling technique, 290 student-athletes were selected for a semi-structured neuropsychiatric interview within two weeks of their PPE. The interview served as a reference standard for meeting diagnostic criteria for major depressive disorder (MDD). The receiver operating characteristic (ROC) curve was used to identify the area under the curve (AUC) and sensitivity and specificity of individual cut-off scores. Descriptive statistics were used to determine the prevalence of depressive symptoms. **RESULTS:** The mean PHQ-9 score was  $2.14 \pm 3.14$ . The area under the ROC curve was 0.811 (95% CI = .707, .915). A cut-off score of 6 was found to maximize diagnostic accuracy, with a sensitivity of 0.78 and a specificity of 0.75. Using this cut-off score, the prevalence of clinically relevant depression symptoms in this sample was 13.4% ( $n = 118$ ), compared to 4.0% ( $n = 35$ ) when using the cut-off score of 10, which is the established score for the general population. **CONCLUSIONS:** The results of this study suggest the optimal cut-off score in student-athletes is lower than the recommended cut-off scores in the general population.

### **Presentation #4 The Utilization of Helmet Accelerometer Sensors to Measure Head Impacts in American Football Players**

**Nicole Jennings (Sports Medicine)**

**Faculty Mentor: Dr. Katherine Morrison**

**PURPOSE:** Current literature has substantiated the long-term risks associated with low magnitude head impacts. The purpose of this study was to record head impact exposures (HIEs) in Speed© and SpeedFlex© helmets using InSite© accelerometer sensors in collegiate football players. **Methods:** An observational cohort study was performed at a Division III College with thirty-six subjects [18 lineman (LM), 18 backs (BKs), (age= $19.81 \pm 1.14$  years, mass= $99.90 \pm 17.94$  kg, height= $184.36 \pm 5.20$  cm)]. Data variables included HIEs and thresholds (linear and rotational acceleration, location and duration of impact) over a 74 day period and recorded impacts in five groups: low magnitude (LHIE, 15-28Gs), medium magnitude (MHIE, 29-63Gs), high magnitude (HHIE, >63Gs), 95% and 99% thresholds. **OUTCOMES:** A total of 6986 impacts were sustained. Independent t-tests revealed significantly ( $P < 0.050$ ) more overall, practice, and game HHIEs in BKs ( $2.44 \pm 2.04$ ,  $0.78 \pm 1.21$ ,  $1.67 \pm 1.41$ ) vs. LM ( $0.44 \pm 1.20$ ,  $0.11 \pm 0.32$ ,  $0.33 \pm 1.19$ ). There were significantly (all  $P \leq 0.050$ ) more practice LHIEs, MHIEs, and total HIEs in Speed© ( $158.00 \pm 183.32$ ,  $76.69 \pm 98.89$ ,  $234.85 \pm 262.54$ ) vs. SpeedFlex© ( $45.91 \pm 31.63$ ,  $5.22 \pm 4.62$ ,  $51.74 \pm 34.07$ ) helmets. Dependent t-tests revealed significantly ( $P < 0.005$ ) more LHIEs ( $140.33 \pm 158.75$ ) vs. MHIEs ( $52.28 \pm 88.10$ ) and HIEs ( $1.44 \pm 1.93$ ), and more MHIEs ( $52.28 \pm 88.10$ ) vs. HHIEs ( $1.44 \pm 1.93$ ). Dependent t-tests revealed significantly ( $P < 0.050$ ) more HHIEs in games ( $1.00 \pm 1.45$ ) vs. practices ( $0.44 \pm 0.94$ ), and more 95% ( $10.97 \pm 17.34$ ) vs. 99% ( $0.78 \pm 1.36$ ) thresholds. **IMPLICATIONS:** Player position and helmet type had a significant effect on the number and magnitude of impact exposures throughout a football season. This study is the first to delineate three HIE magnitude levels and the results of this study validate the high frequency of LHIEs in Division III collegiate football players.

**Presentation #5 “I Am No Longer Useful Because I Have a Child”: Perceptions of Adolescent Motherhood in Zimbabwe**  
**Shannon Fyalkowski, Ashley Cifarelli (Health)**  
**Faculty Mentor: Dr. Chiwoneso Tinago**



Africa has a predominantly young population and the importance of addressing the health and social needs of this unique population is a strategic priority for governmental and non-governmental agencies. In Zimbabwe, almost a quarter of the female adolescent population aged 15-19 years have begun childbearing. Many of these adolescent mothers face social isolation with a lack of educational and income-generating opportunities. In order to structure and implement successful programs and interventions that prevent adolescent motherhood and improve the health of adolescent mothers, we need to have a fundamental understanding of the perceptions and conceptualizations of adolescent motherhood particularly from the perspectives of adolescent mothers themselves. Transcripts from 10 focus groups conducted with adolescent mothers (N=85) aged 14-18 years from a high-density community in Harare, Zimbabwe were analyzed thematically using NVivo 12 qualitative data analysis software between October and December 2018. Participants conceptualized adolescent motherhood across 4 main themes: marriage, responsibilities of motherhood, family issues, and abuse. Findings emphasize the need for strong community support for adolescent mothers and programs and interventions that address social networks and other important social issues that impact adolescent mothers' health and well-being. Integral to these efforts is a focus on empowering adolescent mothers to inform the development of programs and interventions that address their unique health and social needs.

**Presentation #6 Student Perceptions and The Reality of Community Colleges and Elite Universities**  
**Karon Hicks (Social Work Graduate)**  
**Faculty Mentor: Dr. Mia Ocean**



This qualitative study involves interviewing participants (n=13) who attended community college then went on to attend an elite university (ranked 25th or higher for graduate social work). This study seeks to examine students' journeys, experiences, and perceptions as they attended the spectrum of institutions in higher education. The interviews were thematically analyzed using two critical theories: Empowerment Theory (Gutiérrez & Lewis, 1999) and Democratic and Diversion Theory (Brint and Karabel, 1989). The results of the study will dispel some of the rumors and false narratives associated with community colleges as well as explore the differences and similarities between elite universities and community colleges. Additionally, a key finding were the benefits of attending community college for the first two years. Finally, the findings can inform both institutions on how they can learn from each other and work towards their mutual goal of providing access to education.

**Presentation #7 The Appropriation of Native American Signification in Fashion**  
**Alexandria Hatchett (Communication Studies)**  
**Faculty Mentor: Dr. Matthew R. Meier**



This presentation discusses the social implications for the appropriation and commodification of Native American headdresses in American popular culture and fashion. As popular retailers in the fashion industry have commodified indigenous designs, several celebrities have donned and appropriated traditional tribal looks, displaying them through various media forms that include social media, fashion shows, performances, and more. Celebrities appropriate this artifact based on their positions of power and their conceptions of Native American stereotypes and significations. In the act of appropriation, the original signification is removed and reassigned for fashion, entertainment, and recreational purposes. This study applies Saussure's concept of signification and Foucault's theory of power to discuss cultural appropriation and stereotyping. In addition, the method of textual analysis is used to reveal Pharrell Williams and Vanessa Hudgens' exploitation of the Native American headdress. Since the headdress is seen as a commodified piece of art in American culture, some people believe it gives them license to comment on and appropriate. As a result of this common practice, Americans have become blind to the cultural significance of tribal fashion and perceive "dressing up" as a harmless form of flattery and entertainment. Due to the painful history associated with indigenous fashion, some Native Americans regard appropriation as highly offensive to their culture, traditions, and ancestors. Once incorporated into mainstream society, it becomes difficult to correct false ideas and communicate its offense. Through these instances of appropriation, Native American people are able to educate other Americans about the meaning of fashion in their subculture.

**Presentation #8 Infectious Mononucleosis Diagnosis Following a Skin Rash in a Collegiate Athlete: A Case Report**  
**Drew Nelson (Sports Medicine Department)**  
**Faculty Mentor: Dr. Matthew R. Meier**

**BACKGROUND:** A 19 year-old male soccer player presents with an abdominal rash while otherwise asymptomatic. Laboratory testing revealed via IgM antibodies the diagnosis of infectious mononucleosis (IM). Most rashes associated with IM are the result of concurrent antibiotic therapy. The athlete's history showed no current use of medications. This case was a novel presentation of a rash leading to the diagnosis of IM. **Intervention:** The physician recommendations were to cease sport-related activity for three weeks due to possible splenomegaly. Adequate fluid intake, rest, and analgesics as needed were directed. Laboratory testing was performed to rule out a concomitant streptococcus infection. The athlete presented one week after diagnosis with symptoms consistent with IM that were treated with over the counter non-steroidal anti-inflammatory drugs. A follow-up three weeks post-diagnosis showed reduction in rash and no symptoms. The athlete was cleared to participate in a return to play (RTP) program. **OUTCOME:** Upon successful completion of the RTP program the athlete returned to full participation four weeks after the initial diagnosis. The rash completely withdrew shortly after RTP. **UNIQUENESS:** This case is unique because the athlete initially presented with no symptoms other than the rash and had not taken any medications prior to evaluation. The high incidence of IM in the adolescent population requires allied health professionals to readily identify the wide array of its presentations.



## **Presentation #9 The Camel, The Nazi and the Child: Revisiting Nazi Philosophy to Understand Modern Fascism**

**Alexander Paparella (Philosophy)**

**Faculty Mentor: Dr. Rob Main**

Without question National Socialists regarded the work of Nietzsche highly. While the full corpus of Nietzsche's writings make clear his abhorrence of totalitarian rule, cultural hegemony and anti-semitism, leading Nazi's and their contemporary German scholars so successfully subsumed the works of Nietzsche into their broader ideology that they actively promoted its distribution to the German people. It is only with the unfiltered availability of Nietzsche's works that philosophers have become aware of the origins of this misguided view. Allied philosophers condemned the work of Nietzsche due to Nazi ideologues' public adoption of his work. Philosopher Walter Kaufman completely dismissed the Nazi adoption of Nietzsche as the result of the meddling of Nietzsche's estate, but I believe they were too quick to dismiss the work of German philosophers who saw in Nietzsche ideals matching their own. Philosophers, like Alfred Baeumler and even Martin Heidegger, adopted the view that Nietzsche's theory of self-determination can be applied to the state. It is my view that the rise of Fascism in Europe in the mid-twentieth century, while not embraced by Nietzsche, was foreseen by him as a consequence of the moral evolution in Europe. It is because of specific flaws with the Nazi application of a Nietzschean theory of the state that still today contributes to the misguided attempts at political Fascism. In the interest of confronting the contemporary resurgence of Fascism, those who value an open-society must engage with Nazi philosophers, if only to better combat such intolerance in the future.

## **Presentation #10 Social Class-Based Norms and Social Support Among First-Generation College Students**

**Colin Mancini, Erin Walsh, Ali Donohue, Ashley Nielsen, Adam Vanluvanee (Psychology)**

**Faculty Mentor: Dr. Janet Chang**



Limited research has examined cultural influences on diverse first-generation college students' use of social support. Utilizing data from 25 interviews (24% Racial/Ethnic Minorities, 76% Whites), we investigated the influence of cultural values and salient relational concerns that inhibit the use of social support. While the majority of students reported notable relational concerns (e.g., burdening others and being judged) that lessened the use of social support, minority students reported greater self-reliance due to relational concerns. Concerns related to social class survival and being resilient were shared among both groups of students. Understanding cultural influences on first-generation college students' help-seeking behaviors is critical in overcoming achievement gaps.

## **Presentation #11 Hidden Symmetries of de Sitter Space**

**Garrett Compton (Physics)**

**Faculty Mentor: Dr. Ian Morrison**

Free quantum fields propagating on odd-dimensional de Sitter space have an unusual property known as “transparency”: the in- and out- asymptotic vacuum states are equivalent. A previous work by Lagogiannis, Maloney, and Wang explained this phenomenon by relating the time evolution of quantum fields to the family of Poschl-Teller theories from supersymmetric quantum mechanics. In this description, the transparency enjoyed in de Sitter space is a vestigial result of supersymmetry in the quantum mechanical analog. In this work we provide an explanation for the transparency of de Sitter space which is “native” to de Sitter space and does not rely on an analog system. We show that transparency is a consequence of the existence of “hidden”, higher-spin symmetries which are present in any free field theory on odd-dimensional de Sitter space. Our results give insight into how transparency may be extended to interacting quantum fields.

## **Presentation #12 Mindless Eating Gendered**

**Alissa Grady (Philosophy)**

**Faculty Mentor: Dr. Jea Sophia Oh**



According to the United Nations, by 2050, it is projected that meat production will increase from 259 tons to 455 million tons each year to satiate the surplus need. As the world population and economy are increasing, so is the meat industry. This being said, the superfluous amount equates to 70% of global water consumption, 30% of land usage, and 19% of the world’s greenhouse gas emissions. Greenhouse gases such as carbon and methane are causing rapid global climate change, biodiversity loss, and environmental degradation. It is important to consider the harmful attributes contributed to our cosmos from the Buddhist ecofeminism perspective. It offers a different way of thinking about food consumption, with the aim of giving thought to the future of sustainability.

From the Buddhist ecofeminism perspective, National dietary patterns are practiced mindfully and actively living in unity with human and human as well as human and nature. This non-violent mindset gives respect for all living things and avoidance of violence towards others, which is practicing Ahimsa. Ahimsa is one of the cardinal virtues and important tenet of Buddhism. Buddhist eco-feminist practices this Yama through the belief and study of nature-based religion. Alternative and marginalized perspectives are especially valuable in this context, because the realization of taking care of ourselves and our animals offers a strong contribution to the healing of environmental loss and degradation, which affect our interconnected whole. It evaluates Buddhist Eco feminist’s contribution to the building of a more sustainable and just food system for all.

## **Presentation #13 Association Between Textural Properties of Vegetables and Acceptance of Vegetables by Young Children**

**Allison Kolankiewicz (Nutrition)**

**Faculty Mentor: Dr. Amir Golmohamadi**

Children in America do not consume the daily recommended servings of Fruits and Vegetables. The lower consumption (in particular in vegetables) might have an association with the preparation methods and form of presentation of foods that are offered by caregivers. The objective of this pilot study was to identify types and forms of vegetables (raw or cooked) that are commonly offered by parents and subsequently accepted and preferred by young children (3-8 years old) in Chester and Delaware counties, PA.

Parents (60 participants recruited through the Nextdoor app) were electronically administered (Qualtrics-based) a 28-item questionnaire. Descriptive and inferential statistics were used to record the reported raw or cooked vegetable consumption, and more preferred vegetables.

The majority of participants were white (70%), 50% of them had no formal nutrition education, and 75% were “confident” in preparing foods (in general) for their children, however, the details of this confidence were not captured. Parents reported most frequently that corn, carrots, broccoli, cucumber, and lettuce were the vegetables most preferred by their children. Zucchini, eggplant, and cabbage ranked least preferred. Out of the total sample of children approximately 27% reported a preference for raw vegetables, 45% of them preferred cooked vegetables, and the rest (28%) liked both types. Crunchy, soft, and tender were the top three preferred textural choices.

The results of this study revealed that the low consumption of vegetables in children can be compensated by offering vegetables in cooked and child-palate friendly recipes.

## **Presentation #14 A Comparison of the Sex Differences in the Physiological Effects of Drinking to Thirst VS Scheduled**

**Michelle Stehman (Sports Medicine Department)**

**Faculty Mentor: Dr. Sandra Fowkes Godek**

**CONTEXT:** Both male and female endurance athletes tend to follow hydration strategies instead of their thirst mechanism to minimize dehydration or improve performance. The purpose was to examine sex differences in the physiological effects of drinking to thirst (Thirst) versus a generic schedule (Scheduled) during running. **METHODS:** In a randomized crossover study, eleven male (age=39.4±13.3yr, ht=176.4±7.7cm, wt=77.1±10.2kg, body fat=16.6±7.4%, VO<sub>2</sub>max=60.4± 7.7ml/kg/min) and eleven female (age=36±9.3yr, ht=162.1±14.7cm, wt=60.2±9.8kg, body fat=21.1±8.4%, VO<sub>2</sub>max= 51.8±8.5ml/kg/min) trained endurance runners completed two experimental trials running for 2 hours at 60% VO<sub>2</sub>max in a climate-controlled chamber (21°C and 40% RH). In Thirst, participants drank when they felt a deep-desire to drink and stopped when satisfied. The Scheduled trial, based on the 2000 NATA fluid replacement guidelines, required water consumption as follows: 600mL 2 hours pre-trial, 300mL 20min pre-trial, and 300mL every 10min during running. Blood samples were taken at pre-trial, mid-trial, post-trial, and 20min post-trial. Data was analyzed by two-way ANOVA and P<0.05. **RESULTS:** A 2-factor ANOVA for Sex x Trial x Time for blood sodium showed a significant difference between sex, trial, and over time with a significant interaction (F<sub>3,30</sub>=23.3, P<0.0001). In the scheduled trial, female was different from male (F<sub>1,20</sub>=4.69, P<0.04). There was also differences over time with both groups (F<sub>3,60</sub>=56.2, P<0.0001). **CONCLUSION:** In Scheduled, both sex groups experienced dilution of blood sodium. All participant's blood sodium remained within normal limits when following their thirst mechanism, indicating drinking to thirst is the safest hydration strategy, mentioned by the 2017 NATA fluid replacement guidelines.

## **Presentation #15 Clinical Use of the Eat-26: Prevalence of Eating Disorder Risk in Collegiate Student-Athletes**

**Jordan Crills (Sports Medicine Department)**

**Faculty Mentor: Dr. Lindsey Keenan**

**CONTEXT:** As the culture surrounding mental health in student-athletes is evolving, it is imperative athletic trainers (ATs) screen student-athletes for eating disorders (ED) with screening tools such as The Eating Attitudes Test (EAT-26). To appropriately screen, ATs must be able to identify the student-athletes to provide follow-up referrals. Despite this, most studies examining ED screening in this population were conducted anonymously. The purpose of this study was to examine prevalence of ED risk in collegiate student-athletes using the EAT-26, during non-anonymous screening. **METHODS:** Participants included 885 collegiate student-athletes from two NCAA Division II universities, including 456 (51.4%) females and 429 (48.4%) males. An EAT-26 score of 20 or higher was used to classify ED risk. Descriptive statistics were used to examine mean scores and prevalence of ED risk. Independent t-tests were used to examine differences in EAT-26 mean scores between sexes. **RESULTS:** The Cronbach's alpha for internal consistency was 0.792. An overall prevalence of 1.93% (n = 17), with 0.70% (n = 3) in males and 3.07% (n = 14) in females, and a mean score of 3.93±5.29 was reported. Female athletes had significantly higher EAT-26 total scores (M=4.20±5.45) compared to male athletes (M=3.45±3.73), t(875)=-2.36, p=0.019. **CONCLUSION:** The prevalence of ED risk in our study was inconsistent with other literature, with reports around 10% (Johnson & Dick, 1999). It is possible athletes underreported negative eating attitudes due to the nature of non-anonymous screening. ATs should encourage honest reporting on screening measures and create safe environments for addressing mental health.

## **Presentation #16 Evidence of Electrical Charge on Gunshot Residue During the Firing of a Weapon**

**Ella Choban (Chemistry)**

**Faculty Mentor: Dr. Timothy Starn**

A long-sued composition of ammunition primer has been a mixture of lead styphnate, barium nitrate, and antimony (III) sulfide which, upon detonation, lead to the formation of inorganic gunshot residue (GSR). The metals are all cations in their pre-detonation form and undergo reduction reactions during firing to form the classic spheroidal, micron-sized particles indicative of gunshot residue. However, the rapidly changing pressure and temperature of the reaction zone almost surely guarantees that the reactions cannot go to completion. In this study, we will show evidence that firing a weapon produces an electrical discharge which corroborates the redox chemistry. We will also suggest evidence that the GSR is not electronically neutral during its formation, and its production is akin to the process of droplet formation in an electrospray ionization source. Lastly, we will comment on the influence these findings could have on interpretation of GSR in a crime scene.

# WORKS OF ART PRESENTATION ABSTRACT

**Presentation #1 Science is Art: Needle Point Designs to Connect with A General Audience and to Communicate the Beauty of Change During Therapy**  
**Dr. Stevie N. Grassetti, Rebecca Spackman, Jenna Cummings (Psychology)**



Psychological scientists have developed effective treatments for mental illness that are supported by empirical research. Unfortunately, this research is not widely read which prevents research-supported interventions from being understood by the general public and disseminated in psychological practice. Improving the general public's understanding of psychological research may help to promote a stronger push for evidence-based psychological health care. The current work of art exemplifies an effort from a psychological research team to communicate their research findings in a way that is creative and appealing to a general audience. Presenters have dramatically improved the typically dull research graphs by creating them into handmade works of art using textiles and embroidery as mediums. Students involved in this project have not only created the art works, but have also contributed to the research projects that the works display. Specifically, the pieces artfully display 1) mean-level pre post change in post traumatic stress (PTS) symptom reduction that occurred during the course of implementing an evidence-based intervention in a school setting and 2) the symptom change that occurred for each child participating in the intervention. Displaying these research findings through visually appealing creative works allows researchers to demonstrate both that 1) significant change has occurred over the course of treatment and 2) that the process of change may look different for different people participating in the same program.

## PERFORMANCES PRESENTATION ABSTRACTS

### **Presentation #1 I'm With You**

**Amber Kowal (Music Theory, History and Composition)**

**Faculty Mentor: Dr. Jacob Cooper**

The work, I'm With You, is composed in three short movements and written for solo unaccompanied contrabass. The composer wrote I'm With You after being recommended to read Allen Ginsberg's famous poem, Howl. The piece uses various programmatic musical elements to represent sections of the poem. Insistent thematic material occurs throughout the piece, mimicking the manner in which Ginsberg's poetry utilizes the technique of anaphora in each of the three sections of his poem. In I'm With You, the composer means to demonstrate how musical and literary material can be both influential upon each other, while still existing on separate planes. The piece is not meant to follow the poetry or be performed in the manner of a vocal work, but rather to exist in its own musical realm.

I'm With You begins with a slow, lyrical melody, which embraces the rumbling lower register of the bass. The piece then begins to build in intensity through each section. The middle section is a quasi-scherzo section that expands the register of the instrument whilst still remaining grounded in tonality. The piece concludes with a closing fanfare, alluding to the raucous shouting in Ginsberg's Footnote to Howl, an addendum to the poem. I'm With You explores literature in music and expands the contemporary repertoire for solo contrabass

### **Presentation #2 A Creative Approach to Explaining Evidence-Based Therapeutic Processes to A General Audience**

**Emily Feldman, Brady Barley, Cassidy Tennity (Psychology)**

**Faculty Mentor: Dr. Stevie Grasseti**

A wealth of empirical research has identified exposure therapy as a highly efficacious treatment for a variety of fear-related disorders including anxiety disorders, phobias, and Post Traumatic Stress Disorder (Taylor, 2003; Rauch, 2012; Lazarus, 1961), however the public at large remains relatively unaware of the importance of evidence-based treatment in the domain of behavioral health (Jorm, 2000). In order to promote evidence-based mental health care, clinical scientists must learn how to communicate with the general public about the therapeutic strategies that are supported by scientific evidence. Communicating scientific findings to a general audience requires creative, innovative approaches. As such, the current submission creatively and concisely explains exposure therapy to a lay audience through an entertaining video-recorded skit. This video was directed and produced by two West Chester University students. The video depicts the clinical process of graduated exposure treatment as administered by a professional to a patient suffering from a phobia, based on the existing clinical literature. West Chester's fearsome mascot, Rammy, also makes a cameo in the video.



## **SCHOLARLY RESEARCH & CREATIVE ACTIVITY (SRCA) AWARD ABSTRACTS**

*(Listed in Alphabetical Order of Awardee)*

### **Presentation #1 The Effect of Trauma Exposure on Externalizing Behaviors in Youth**

**Cassidy Tennity (Psychology)**

**Faculty Mentor: Dr. Stevie Grassetti**

Children who experience trauma are at an elevated risk for psychiatric symptoms including externalizing behaviors (Heleniak, C., Jenness, J. L., Stoep, A. V., Mccauley, E., & Mclaughlin, K. A. 2015), yet not all children who experience trauma exhibit these behaviors. It may be that the type of trauma experienced differentially predicts outcomes. The purpose of this study was to examine whether having experienced Interpersonal trauma (IPT) would predict externalizing problems above and beyond the number of traumas experienced. We hypothesized that IPT would moderate the link between trauma exposure and externalizing problems such that, the link would be stronger for those with IPT.

Participants were 121 racially and ethnically diverse youth (grades KN-5). Children reported their exposure to various types of traumatic events. Teachers reported on the youth's externalizing behaviors in the classroom.

Youth who endorsed a greater number of traumatic events exhibited more externalizing behaviors in school than children who had experienced fewer traumatic events. The presence of IPT did not predict variance in externalizing problems above and beyond the number of traumas experienced.

### **Presentation #2 The Beach Lifeguards and Wages in the United States**

**Elizabeth Miller (Economics and Finance)**

**Faculty Mentor: Dr. Simon Condliffe**

This study compares the hourly pay of beach patrols with tasks, costs, organizational size and drownings to determine how beach lifeguards are being compensated. This study is composed of two data sets ranging from 2014 to 2017. The first data set is composed of 15 seasonal beach patrols in New Jersey (N= 36). The second data set is composed of 38 seasonal beach patrols along the US East Coast (N= 101). The dependent variable is the hourly pay of seasonal beach lifeguards [wage]. The independent variables are rescues, attendance, prevents, lost/found individuals, total employees, miles guarded, on-duty drownings, cost, major injuries and minor injuries. The results show little significance between wages and rescues or beach attendance. Interestingly, as a given beach patrol takes more preventative measures, the pay per hour is decreasing. Another note-worthy result is that on-duty drownings occur where beach lifeguards are getting paid less. Overall, more research into beach lifeguards' wages can help determine how to make beaches safer.

**Presentation #3 Exploring Undergraduate Students' Perceptions of Consent and Sexual Assault**  
**Julia Hopkins and Maura Quigley (Graduate Social Work)**  
**Faculty Mentor: Dr. Cynthia Hall**

The researchers conducted a mixed-methods study to better understand how undergraduate students perceive consent and sexual assault, with the hope of informing on-campus sexual assault response and prevention services. Data collection included semi-structured interviews with undergraduate students (N=13), consisting of 25 open- and closed-ended questions, as well as a brief questionnaire. The researchers conducted qualitative analyses to identify themes and patterns in students' responses. Results indicate that, if assaulted, students would be least likely to tell the university compared to no one, the police, and a friend or family member. With regards to disclosing a sexual assault, students reported fears of not being believed and low confidence in official reporting processes. More than half of participants reported having experienced non-consensual sex or were unsure whether they had or not. Most students easily articulated components of consent, but self-reported behaviors around consent frequently differed from what they perceived as preferred methods for giving and receiving consent. These findings demonstrate the need for: (a) practice-oriented education around consent, (b) improved university response services for sexual assault survivors, (c) additional research on survivors' experiences with university response services and reporting processes, and (d) additional research on the dissonance between students' perceptions and behaviors around consent. The hope is that these findings will inspire a sex-positive discussion around consent and sexual assault that encourages students to feel more comfortable discussing these topics.

**Presentation #4 Tuning in to an Unheard Population: Improving Research Methods to Assess LGBTQ Needs in Chester Co.**  
**Kateri Sloat (Psychology)**  
**Faculty Mentor: Dr. Michael Gawrysiak**

Current literature routinely reports disproportionately poor health outcomes within lesbian, gay, bisexual, transgender, queer/questioning (LGBTQ) communities, compared to their counterparts, indicating a great need for health services. However, widely-used methods of data collection lack the sensitivity and precision to detect this 'hidden' population within the public context, or represent a diversity of LGBTQ experiences. LGBTQ folks and their voices are thus obscured—yet their input is vital in understanding how to address their underserved status. In Chester County, no data on LGBTQ residents exists, leaving their community needs unidentified and unattended to. First, this project is developing and using new, sensitive measures more appropriate for studying these groups, that could have impact across the field. Second, partnering with the LGBT Equality Alliance of Chester County, this project will distribute a targeted survey to LGBTQ-A (LGBTQ and allies) youth and adults for needs assessment, which may inform public policymaking going forward.

**Presentation #5 (Mis)Representations of Sexual Violence: The Brett Kavanaugh and Christine Blasey Ford Testimonies**  
**Madison Pollino (Communications & Media)**  
**Faculty Mentor: Dr. Matthew Meier**

In this research, I treat sexual violence as a systemic issue tied to broader relations of power. I examine media representations of sexual violence surrounding the Senate Judiciary Committee hearing to confirm Brett Kavanaugh's appointment to the Supreme Court. I focus specifically on how media represented the allegations prior to the hearing, as well as Christine Blasey Ford's testimony and the counter-testimony of Brett Kavanaugh. Media representations of sexual violence relative to Ford's allegations of sexual assault against Kavanaugh prove a contemporary site worthy of consideration because they present a hegemonic narrative that reinforces false perceptions of sexual violence, as well as a counter-hegemonic narrative that reveals the limitations of the dominant position.

**Presentation #6 Misinformation: When Movement Exceeds the Weight of the Nation**  
**Matthew Benner (Computer Science)**  
**Faculty Mentor: Dr. Si Chen**

The goal of this project will: (1) create a network through which we stream our own set of information; (2) gain an understanding, on a grand scale, the dissemination of misinformation, from conception to mass consumption; and (3) develop a system for identifying misinformation based on data patterns. The final report will summarize the procedure for controlling national discourse; an extra (bonus) goal would be to code an incisive defense more apt than the general C.R.A.P. method of source evidence that automates a warning over misinformation.

**Presentation #7 "I asked for a yes or no": Resisting Transformative Answers in U.S. Senate Hearings**  
**Melissa Caldwell (English)**  
**Faculty Mentor: Dr. Joshua Raclaw**

Using conversation analysis, a method of examining the structure of talk-in-interaction, this original research project offers a linguistic analysis of the questioning tactics used by U.S. Senators during Senate confirmation and judiciary hearings. There is significant conversation analytic research into broadcast news interviews, and, to a lesser degree, research on political debates and political panel interviews. However, there is no existing conversation analytic research that focuses on Senate hearings. In my analysis of U.S. Senate hearings, I specifically examine the tactics Senators employ to resist transformative answers (Stivers & Hayashi, 2010), answers that shift the agenda of the original question, from the question recipient. The data comprises videotaped recordings of U.S. Senate hearings, focusing on democratic senators questioning conservative candidates. The analysis demonstrates patterns in the way that these Senators respond to transformative answers during Senate hearings, illustrating techniques that Senators use to resist transformative answers.

## **Presentation #8 Geomorphic Characterization of Salt Ponds in Slaughter Beach Salt Marsh**

**Michael Powers (Earth & Space Sciences)**

**Faculty Mentor: Dr. Daria Nikitina**

The purpose of this study is to analyze salt pond geomorphic characteristics in order to assess salt marsh vulnerability and its resilience to disturbances (e.g. storms surges, sea level rise, anthropogenic factors). We documented that the surface of the Slaughter Beach salt marsh has been decreased due to salt pond development and identified the areas of most recent changes due to salt marsh degradation, channel in-fill, and conversion of mosquito ditches to ponds.

We propose that Delaware Bay salt marsh is impacted by rising sea level causing salt marsh degradation and ponds merging, severe storms (e.g. Irene and Sandy), and alteration of tidal flow and sediment supply due to human activities (jetty removal and channel dredging). The purpose of this study is to determine if salt pond characteristics at Slaughter Beach can be used as an indicator that the salt marsh platform is resilient to the aforementioned disturbances.

## **Presentation #9 The Stylistics of Masculinity: Hornung, Snyder, and the Role of Short Crime Fiction in the Construction and Evolution of the Masculine Ideal**

**Christoforos-Panagiotis Sassaris (English)**

**Faculty Mentor: Dr. Maria-Eirini Panagiotidou**

This on-going project pursues vital questions about how readers' cognitive processes are affected by a certain type of literary style, the role of popular short fiction of the crime genre in shaping and reflecting societal norms, and the changes regarding gender representation in short crime fiction over time. The first part of the study is a stylistic analysis of E.W. Hornung's "A.J. Raffles" stories of the late-Victorian period and details how the popular author's literary style represents and endorses a shift in the English masculine ideal that occurred during Hornung's time—the shift from the archetype of the physically courageous gentleman of Christian virtues to an Oscar-Wilde-esque, aestheticized identity that celebrates anarchy and charisma. The second part examines Scott Snyder's contemporary prose through numerous linguistic tools such as the transitivity model, modality, and spatial deixis, compares the results to those that arise from Hornung's text, and interprets the comparisons through several theoretical frameworks, like feminist literary criticism and reader response. The study concludes that Snyder's style and narrative illustrate yet another shift in the masculine ideal: His prose reflects and endorses a consciously vulnerable type of masculinity, which opens itself up willingly to the intersubjective realm. The masculinity present in Snyder's text maintains some of the problematic elements of traditional masculinity, but seems less oppressive than previous constructed ideals, like those of Victorian England.

## **Presentation #10 Do Children's Externalizing Problems Predict Treatment Outcomes in Group Trauma Therapy?**

**Rosa Boniface (Psychology)**

**Faculty Mentor: Dr. Stevie Grassetti**

The purpose of this study was to 1) replicate studies that show that the Bounce Back (BB) Program (Langley et al., 2015) is helpful in reducing youth's post traumatic stress (PTS) and internalizing symptoms and 2) to assess whether children's baseline levels of externalizing problems predicted their response to group trauma treatment. 22 elementary school children participated in the Bounce Back program for 10 weeks at school. Children's externalizing problems, internalizing problems, and PTSD severity were evaluated before and after treatment. Response to treatment was assessed by subtracting post-therapy internalizing and PTS scores from the baseline scores. Results suggested significant reductions in PTS and internalizing symptoms, and baseline externalizing problems were not related to these changes.

## Office of Research and Sponsored Programs

West Chester University of Pennsylvania

125 West Rosedale Avenue

Wayne Hall 611

West Chester, PA 19383

610-436-3557

[studentresearch@wcupa.edu](mailto:studentresearch@wcupa.edu)