Should you, or your guests, require an accommodation based on a disability, please contact the Student Access Office by phone at 516.877.3806 or email at sao@adelphi.edu. When possible, please allow for a reasonable time frame prior to the event with requests for American Sign Language (ASL) interpreters, closed-captioning or Communication Access Real-Time Translation (CART) services; we suggest a minimum of five business days.
2019 Adelphi University Research Conference

Book of Abstracts
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SECTION A: 8:30 A.M.—9:20 A.M.
Session 1: Computer Science and Game Development Exhibition I, undergraduate division, Nexus Building, second floor, lobby

Rhythm Rocket
Emily Gallagher
Sponsoring Faculty: Professor Lee Stemkoski

In this project, I plan to create a rhythm game that requires the player to destroy obstacles to the beat of a song. Through creating this game, I hope to learn about the difficulties of working with audio in games and keeping different events stay in-sync with the audio that is playing. The actual gameplay will be designed in a way that is easy to understand and the game as a whole should be easy to pick-up and play for short periods of time.

Showcase of Videogame Development with libGDX
Michael Pascale, Taylor Casale
Sponsoring Faculty: Lee Stemkoski

LibGDX is a java based video game development library which provides a plethora of features and a wide support of different devices including personal computers and mobile devices. My demonstrations will showcase some of these features through some well known nostalgic video games and interactive demos.

Game Development Presentaion
Emily Kiernan, Sebastian Rosales
Sponsoring Faculty: Professor Lee Stemkoski

An interactive, platform style, game.
3D 3rd Person Unity Game

Omar Soria, Cortes, Brandon, Reynarowich, Michael

Sponsoring Faculty: Professor Saleh Aliyari

Using the Unity engine, a software program mainly used to make games and animations, we will create a 3D roguelike 3rd person game. A roguelike game is in the fantasy/medieval genre where the levels are procedurally generated, and the player must work through dungeons to obtain loot and defeat various enemies. Our goal for this project is to provide a unique experience to the player every time a new world is generated. This project was inspired by and contains aspects of games such as Dark Souls, Spelunky, and SPC: Containment Breach. Multiple programs and services will be used to supplement this project. Blender will be used to create 3D models for our game while the Unity Assets Store and Mixamo will be used to access complex animations and models. Unity is the ideal choice for our game engine because of its incredible ability to efficiently handle 3D models; its community support also provides some of the best documentation, which will supplement any lack of knowledge and assist in troubleshooting. Basic hardware, such as a computer with nominal computational power will also be required. Along with frequently changing level layouts, item placements, and enemy locations will be randomized throughout the environment. Due to the frequent changes in layout, the additional objects added to the game will be tethered to the map by calculating their positions. This will allow us to scale the ever increasing amount of objects within the game and will help us to avoid bugs. An additional feature added to the project will be the ability for the game to support controllers, as it will enhance the experience of the game and follows along with current gaming trends.

Session 2: Art Exhibit, undergraduate division, Nexus Building, first floor, lobby

ageless

Noha alamry

Sponsoring Faculty: Dale Flashier

For my stamp project, I am promoting the idea of age diversity by showing how being youthful can be for all ages and not only for the people who are in their early stages of life. In my stamp, my design is meant to break the stereotype by depicting people in a stage of activity which dispels this myth.
Flavors of America
Nikita Kalra
Sponsoring Faculty: Dale Flashner
The Idea for my Postage Stamp is to display diversity through the foods of different cultures. My idea was to incorporate a star shaped American flag with diverse foods shown around in the spaces of the star to show that all foods and different cultures are united in America. My concept for this project was to promote the idea of unity through foods, which I had achieved through original photography. I have chosen to name my piece Flavors of America. I have chosen this name because I want to show the flavors that America has preserved.

Different, Yet The Same
Genevieve Iglesias
Sponsoring Faculty: Professor Dale Flashner
This project that I worked on is about diversity awareness, in the form of United States postage stamps promoting diversity. How I see diversity is that no matter what, everyone is worth the same, no matter what they look like or where they came from. The idea I had for this was diversity in the workplace, how people can come and work together, no matter who they are. One way workplaces have accomplished this is through communication, learning about the backgrounds of their colleagues, this has lead to increased awareness, understanding, and empathy. Through three stamps, you’ll see people in the workplace, talking, having conversations in a working environment, all getting along, illustrating diversity awareness.

Everyone is Human
Matthew Moran
Sponsoring Faculty: Dale Flashner
I feel like it’s very easy for people to forget that others around them have feelings. I’ve seen multiple occasions where a person mistreated by a stranger for something as small as just making a simple mistake. I think it’s common for us to get so caught up in our own lives that we don’t realize that the people around us are just as much of humans as we are. I hope to take the issue of diversity down to the individual level with my stamp. My title, “Everyone is Human” supports this, in that it reflects this idea that everyone is their own person with their own stories, whether we know them or not. This idea of individuals having their own stories will be illustrated through the visual of different books encasing the stories of several individuals, each with a picture of their respective person on the cover. By focusing on the idea that everyone has their own background and experiences that make us different from the person next to us I hope to leave people with a little more awareness that they don’t know everything about the people around them.
We Are One
Justin Castrogiovanni
Sponsoring Faculty: Dale Flashner
This project is a USA FOREVER postage stamp that promotes diversity awareness in America. My stamp focuses on the changing concept of America from a melting pot to a network of individuals that maintain their own cultural patterns, such as language, lifestyle, and religious practices but still function as one. I have achieved this through a combination of traditional art media and graphic design.

American Collar
Jessica Encalada
Sponsoring Faculty: Dale Flashner
Within many aspects of our country, there is inevitable divide whether we choose to acknowledge it or not. One of the more overlooked aspects of division in America is our socioeconomic division, specifically regarding our jobs. We have categorized specific jobs and backgrounds into “blue collar” jobs and “white collar” jobs. It is generally understood that white collar jobs are more administrative and held by people who have had a thorough education and hold multiple degrees. White collar workers hold titles such as: CEOs, managers, bank tellers, etc. Blue collar jobs are manually based and thought of as physical labor and include positions such as: construction workers, electricians, and farmers.

I am hopeful that my stamp project, titled American Collar, will not only bring awareness to our country’s socioeconomic divide, but will also stress that without both blue and white collared jobs working in unison, this country could not function as a whole. My stamp project will consist of a series of three stamps each depicting different tools used in various different fields in a unifying way.

Blended America
Usman Anwar
Sponsoring Faculty: Dale Flashner
Using the statue of liberty as the center piece of my diversity awareness stamp series I wanted to address immigrants entering the United States through the portal of Ellis Island. The circles in the background symbolize the cycle of time, which represents how the United states of America through decades has welcomed all people from around the world. It is about to become the first country in the history that is literally made up of every part of the world. The human figure in my stamp represent the fusion of different cultures, religions, colors and sex.
Influence from Early Experience

Ruth Ann Militrano

Sponsoring Faculty: Kellyann Monaghan

Often our early personal experiences impact our later experiences. And my own early problematic experiences have impacted my own work, appearing to be a therapeutic experience. I am fixated on questioning the concept of homes and other environments whether it’s in an interior or exterior spaces. I attempt to investigate these spaces through the relationship of light and shadow and how they move through these isolated spaces.

My work consists of small interior and exterior spaces with the removal of any human traces in order to convey a sense of solitude. I use my own photos and pair down the complex information in my paintings giving general forms to the entire composition. I produce work using acrylic paint washes technique that creates a watercolor effect on multimedia paper. I use loose brushstrokes but emphasize certain areas to give a clear form.

While these works come from a deeply rooted personal issue, it is also a universal one. There is a deep disconnect in our world that keeps us from recognizing our own personal experiences in the past or present and embracing them rather than suppressing it. My intended outcome is that these works will resonate with viewers and inspire those who may have felt alone in experiences like these and still have a hard time to overcome them. I hope my viewers can leave with a feeling of being understood and find comfort that solitude may bring.

EPoster, Nexus Building, first floor, lobby

Session 3: College of Nursing and Public Health, graduate division

In adults, what is the effect of clinically-indicated replacement of peripheral venous catheters versus every four days (routine) on intravenous complications?

Joseph Brennan, Neeta Jadonath, Natalya Luchinskaya, and Kim Smith

Sponsoring Faculty: Charles Cal

Peripheral intravenous catheters are a staple in modern medicine, for the use of fluid management and medication administration. Millions of patients in and out of hospitals require the use of this therapy. Routine replacement of peripheral IV catheters has been a standard for many years. Each institution has different standards of what is considered routine. For the purpose of this project, routine is every 96 hours. By changing catheters routinely, patients have been exposed to anxiety, pain, and infection. It was thought that routine peripheral intravenous site changes, prevented infection and phlebitis in adult patients. Majority of institutions have set policies in place for routine site changes every 4 days or less. However, there is concern that regular site changes may not be the best practice for intravenous
therapy, and that clinically indicated replacement is just as effective. Using online databases, a literature review was performed. Studies were searched looking for differences of complications such as phlebitis or infection among adults who have their peripheral intravenous catheters changed when clinically indicated versus routine change. Routine replacement of peripheral intravenous catheters was not found to reduce the incidence of IV catheter complications significantly. Clinically indicated replacement of peripheral IV catheters was not found to increase complications, such as infection and phlebitis; however, clinically indicated replacement of peripheral IV catheters does require frequent monitoring for signs of complications, including erythema, swelling, tenderness, pain, and drainage. Close monitoring and maintenance of peripheral intravenous catheters until clinically indicated for replacement provides cost benefits and improved patient comfort. With only changing intravenous catheters when clinically indicated, a reduction in time spent during catheter insertion can be consumed with other tasks.

A data analytic framework for breast cancer survivability

Alexa Mondello
Sponsoring Faculty: Zahra Sedighi-Maman

Breast Cancer is the most common cancer diagnosed in women worldwide, with an incidence of 12.4% according to the American Cancer Society (2017). In 2018, over 2 million new cases were identified (World Cancer Research Fund). Despite the high prevalence of breast cancer in the population, diagnosis and prognosis challenges remain an issue. With the advent of technology such as machine learning, artificial intelligence, and big data, medical data can be further analyzed in addition to the manual analysis performed by medical professionals, which can lead to a more accurate prognosis. Several machine learning models have been proposed in the literature; however, conflicting evidence exists on the most accurate algorithm and model in terms of survival predictability and reproducibility of results. We propose a viable analytical model using Surveillance, Epidemiology, and End Results (SEER) data from 2004 to 2015 to predict survival in Males affected with breast cancer, a population that has not been studied in the literature. Our model can accurately predict 1, 3, 5, 7, and 10-year breast cancer survival.

The Silent Sufferer: Determining the knowledge and attitudes of college students in regards to Lupus

Natalie Madray
Sponsoring Faculty: Maria Pilar Martin

Systemic Lupus Erythematosus (SLE) is a silently debilitating disease that affects the entire human body. This ailment affects women primarily of childbearing age between 18-60 years and is found more commonly in women of color (Maidhof & Hilas, 2012). The causes of this autoimmune disorder are unknown, although it is believed that there may be a genetic component. “The reported prevalence of SLE in the general population is approximately 20 to 150 cases per 100,000 persons” (Maidhof and Hilas, 2012). Roughly 250,000 people in America suffer from this disease (Bartels & Muller, 2018). Chronic illness in combination with the transitional period of college may have severe outcomes on the lives of
students. It is important to note that many students understand this transitional period into adulthood is challenging but even more so when suffering from Lupus (Agarwala & Kumarb, 2017). College students often are overly stressed due to their course load, recently found independence and the demands of this new social structure. A questionnaire was designed to evaluate the knowledge of students in regards to Lupus, college students' stress management techniques utilized daily, and to help determine how often Lupus interferes with daily activity.

Session 4: College of Nursing and Public Health, undergraduate division

**The Use of Technology in Prevention of Wrong Site Orthopedic Surgeries**

Danielle St. John, Mariana Varchuk, Magdalena Krzyzewska, Taylor Gubitosi

Sponsoring Faculty: Dr. Clarilee Hauser

The purpose of this study is to evaluate if the use of technology during time-out procedures will decrease the number of wrong-site orthopedic surgeries and near miss events reported. This research draws upon the systematic search for peer-reviewed, published studies that focused on the use of technology in preventing wrong-site surgeries. The analysis of research found that the use of technology, along with patient participation and the participation of all OR team members, during timeout, decreased wrong site surgeries up to 100% and increased staff compliance and efficacy of the time out procedure. Therefore, the review of peer-reviewed articles during timeout supports the use of technology during the time-out procedure and ultimately aids in decreasing the incidence of wrong-site surgery. The research specifically leads to the conclusion that an electronically mediated hard stop time-out visible to all OR staff eradicates wrong-site surgeries.

**Violent Events in Healthcare**

Luke Homer, Marie Diamandis, Michael Mayer, Amanda Smook

Sponsoring Faculty: Clarilee Hauser

Violence in healthcare is a major issue that has not been researched enough. A literature review has shown that more than half of healthcare workers around the world have experienced violence. Some ideas to minimize violence and its consequences include compassionate care, self-defense, and support groups for victims. More research must be done to examine these suggested interventions, or to search for new methods to reduce violence.
The Effects of Multi-Modal Education on Medication Error Rates

Julieta Hernandez, Arthur Akperov, Sarah Hull, Shauna Keague, Jeanette Somers

Sponsoring Faculty: Lorraine Baltzer and Janet Raman

Adverse events associated with medication (ADE’s) are a chief contributor to overall patient harm and commonly involve medication administration. About one-third of ADE’s are considered preventable and are attributed to medication errors (ME’s), thus making medication administration an important area for quality and safety improvement.

Nurses provide the majority of care in ICU settings and medication administration is an integral part of patient care. Studies have shown medication errors are chiefly due to dose calculation errors, lack of knowledge, and violations of following rules and procedures.

Best practice suggests barcode administration and two-person checks are the most efficient methods in reducing medication errors. Human error remains a large contributor to ME rates; Targeting human error using education and skill improvement will address this gap in literature regarding interventions for improving ME’s.

Continuing pharmacological education is useful in decreasing the rate of medication errors. An increase in intervention effectiveness when skill-based training was introduced. We propose a continuous pharmacist-led simulation based education training program, as well as the implementation of placement of a pharmacist on the ICU available to serve as a double-check of medication prior to the administration stage and provide feedback.

Initiation Of Early Enteral Nutrition Vs. Delayed Enteral Nutrition In Acute Pancreatitis

Sherry Cohen, Gary Anderson, Jyoti Gupta, Deanna Lupo, Michael Schwartz, Bushra Wardak

Sponsoring Faculty: Ani Jacob

Acute pancreatitis has potential fatal complications due nutritional risks and intestinal starvation. This situation can cause impaired gut integrity resulting in favorable conditions for bacterial translocation, which can lead to multiple organ failure. Standard practice has been to give total parenteral nutrition (TPN); however, research has shown that TPN can result in rapid atrophy of the intestinal tissue allowing for bacterial translocation. The purpose of our research, in regards to newly admitted patients with acute pancreatitis, is if the initiation of enteral nutrition within 48 hours of admission show a decrease in multiple organ failure when compared to patients being provided enteral nutrition after 48 hours of admissions. Using the databases: ProQuest and PubMed, we examined systematic review, a quantitative experiment, or a meta-analysis articles. A consistent conclusion in each article was that initiating enteral feeding within 48 hours of admissions is beneficial for the treatment of severe acute pancreatitis as it helps maintain gut integrity, along with decreased incidences of multiple organ failure.

Implementation should begin with educational seminars to explain the positive evidence that has been found. The success of this intervention can be accomplished by measuring the rates of acute pancreatitis in patients that develop multiple organ failure. If it is successful, researchers and hospitals
should see a decrease in complications and total length of stay. Keywords: Acute pancreatitis, 48 hours after admission, multiple organ failure, enteral nutrition

Session 5: College of Education and Health Sciences, graduate division

**Developing Reading Comprehension Skills in a One-to-One Setting**

Allison Brafman

Sponsoring Faculty: Devin Thornburg

The purpose for conducting this action research is to explore the question: To what extent does the combination of visuals and stopping and jotting aid in developing reading comprehension skills to provide a retelling of a story when working in a 1:1 setting with a third grade student? As an educator it is imperative to have a deep understanding of literacy strategies and interventions to effectively support students. In order to focus this research the following subtopics will be explored: In what way does analysis of Fountas and Pinnell running records and responses to comprehension questions aid in targeting literacy comprehension skills for individual students; How effective is using visual strategies to aid a student to provide a retelling of a story; How does stopping and jotting while reading contribute to a student’s success in providing a retelling of an entire story; How does working with a student in a 1:1 setting impact a student’s use of comprehension skills and ability to provide a retelling of a story; How does a student’s own reflection on retelling strategies affect their self-efficacy with their ability to comprehend stories and provide retellings? The participants in this research will include myself and a student in third grade who is on the cusp of receiving literacy intervention. The results of this research will have a significant impact on my future teaching as I will use the results of how setting, strategy, and self-efficacy relate to reading comprehension to be responsive to my students and to foster a love of reading while simultaneously employing effective strategies.

**Intensive English Intervention and Young Language Learners in a Dual Language Program**

Kourtney Keeley, Cynthia Erazmo

Sponsoring Faculty: Thornburg

The purpose of conducting this action research is to explore the question: How does English proficiency intervention for a duration of 6 weeks impact comprehension lexile level growth in both English and Spanish? As educators in dual language programs, it is essential to support students in both languages they are building proficiency in. In order to focus this research, the following subtopics will be explored Does the one student who is a native Spanish speaker but is not proficient in either language, receiving both English and Spanish intervention for 6 weeks, improve in both languages?; Are the students utilizing the strategies learned in the intervention program and applying them when they are back in the classroom?; What is an English Proficiency Intervention? The participants in this study will include us and 30 first grade dual language students at varying language levels in both Spanish and English, currently enrolled in an English Proficiency Intervention program. These 30 students have varied levels
of English language proficiency from the Emerging level to the Expanding level. The results of this research will have a significant impact on how interventions and extra small group emphasis on reading strategies within the students’ lexile levels improve proficiency in both languages and success in the dual language program overall.

**Literacy Support in Individualized Instruction with a Fifth Grade Student**

Victoria Seropian

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question: To what extent do (targeted interventions) support development of reading comprehension skills to think beyond the text when working in a 1:1 setting with a fifth grade student? As an educator it is imperative to have a deep understanding of literacy strategies and interventions to effectively support students. In order to focus this research the following subtopics will be explored: To what extent does setting goals and reflection aid the reader in (literacy skill); To what extent does analysis of Fountas and Pinnell running records and comprehension aid in targeting literacy skills when working in a one on one setting in 5th grade?; How does Self-assessment and metacognition impact the readers efficient use of strategy? The participants in this research will include me and a student in third grade who is on the cusp of receiving literacy intervention. The results of this research will have a significant impact on my future teaching as I will use the results of how setting, strategy, and self-efficacy relate to reading comprehension to be responsive to my students and to foster a love of reading while simultaneously employing effective strategies.

**Developing Reading Comprehension Skills in a One-to-One Setting**

Lauren Sink

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question: To what extent does analysis of Fountas and Pinnell running records and comprehension aid in targeting literacy skills when working in a one on one setting in sixth grade? As an educator it is essential to have a rich understanding of various literacy strategies and the interventions to effectively support your students. To focus this research the following subtopics will be analyzed: To what extent does targeted intervention aid in developing a reading comprehension skill when working in a one on one setting with a sixth-grade student; How does a students’ own reflection and metacognition regarding specific reading strategies affect students’ self-efficacy for their capacity to comprehend? The participants in this research will include a female student in the sixth grade who is on the verge of receiving literacy intervention. This students’ Fountas and Pinnell from last year was just above the criteria for needing to be pulled out of class to attend a reading program with the reading specialist weekly. The results of this research will have a significant impact on my future teaching as I will use the results from this experience to intervene with students who are struggling with various reading strategies.
Mathematics 1:1 Intervention, Conceptual Knowledge Mastery and Self-Confidence

Jazmin Henriquez

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question: Does 1:1 intervention in math, enhancing math conceptual knowledge mastery lead to greater confidence in math? Are there ways to improve mastery in math concepts to enhance confidence in students? How does 1:1 intervention in math help improve student’s skills in fractions? In order to focus the research, the following will also be explored: How will using manipulatives such as fraction strips, fraction pies, and benchmark strips improve math skills and motivate student?; How effective will drawing pictures to represent fractions and solve fraction problems be? My reason for doing this is because as an educator, my focus is being able to provide motivation and confidence in areas such as math, where many students tend to struggle or not feel confident in. In order to achieve this goal, I will be using a variety of strategies to help this student based on their interests, intelligence, and pre-requisite skills. I will build on skills the student is already confident in and introduce new fraction concepts. The results of this research will impact the way I teach in the future because I will be using the results in this research to find more effective strategies to help motivate students and build student confidence in fractions.

Developing RAFTing Skills to Aid Writing in a Second Grade Classroom

Margaret Hardiman

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question:

How do mnemonic device writing strategies help second grade students when writing a structured paragraph? Specifically, how do RAFT strategy (Restate, Answer, For example, Tie It Up) /OREO (Opinion, Reason, Evidence, Opinion) strategy help organize writing structure? A related question is How does students' self-assessment affect their understanding of the purpose of the structure and the effectiveness for them as writers? Writing well is challenging for elementary students. They need ongoing support throughout this process. As an educator I am interested in learning how to scaffold student writing using specific writing structures. The participants in this research will include second grade students and myself. Three of the students are ENLs. The results of this research will have a significant impact on my future teaching as I will use the results of how writing structures affect students' writing to influence how I support their writing.
Improving Oral Reading Rate Using Literacy Tools in a One-to-One Setting

Paula Spatz

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question: What effect does utilizing literacy tools have on a student’s ability to read aloud? As an educator, it is imperative to have a deep understanding of literacy tools and interventions to effectively support students. In order to focus this research the following subtopics will be explored: Which literacy tool works best in approving a student’s confidence level?; Which literacy tool is most effective in supporting a students’ oral reading rate?; How does individualized attention for 10 minutes with a student have an effect on their oral reading? The participants in this research include me and a student in third grade who is continuously struggling in taking part of a level G guided reading group. The results of this research will have a noteworthy impact on my future teaching as I will use the results of how a 1:1 setting, proper literacy tools and the link between self-confidence and self-efficacy relate to oral reading. The aim is to be responsive to my students and to foster a love for reading while simultaneously employing effective literacy tools.

Literacy Strategies for 1st Grade Students and Sight Word Recognition

Alyssa Wilhelm

Sponsoring Faculty: Thornburg

The purpose for conducting this action research is to explore the question: To what extent do the strategies “see and say,” “spell reading,” and “air-writing,” aid in the sight word recognition of 2 first grade students? In order to focus this research the following subtopics will be explored: How does a Fountas and Pinnell letter recognition and sight word recognition assessment aid in targeting a students specific learning needs; How does a student’s own reflection on strategies affect their self-efficacy with their ability to recognize sight words; How does sight word recognition affect letter recognition? The participants in this research will include myself and two first grade students who are new to learning the English language. They were both new to an American classroom beginning last October, and if substantial progress is not made, are at serious risk of falling behind. The results of this research will have implications for the supports that are the most effective for language learners in need of literacy support with letter and sight word recognition.
Reading Intervention 1:1 and Impact on Decoding and Fluency Skills

Rachel Molloy

Sponsoring Faculty: Thornburg

Research Question: How does a one-to-one reading intervention with a 2nd grade student impact decoding and fluency skills?

Sub-Questions:

- Is there a discrepancy between the strategies a student feels are most effective versus the strategies that prove to be most effective for improving decoding and fluency skills?

- How does explicit phonics and “word work” instruction impact decoding skills?

- How can listening to reading, including listening to a recording of oneself, listening to an adult read, and listening to a book on CD, impact a 2nd grade student’s decoding and fluency skills?

Participants: One 2nd grade student attending a public school in Queens, NY

Rationale: The purpose of this research project is to work with a 2nd grade student to determine the impact a one-to-one intervention might have on her decoding and fluency skills. I collected baseline data by conducting Fountas and Pinnell running records and collecting writing samples, as well as written observations and anecdotal notes. This particular student is currently reading at a level D, where it is recommended that 2nd graders should currently be reading at a level K or L. This student finds difficulty in breaking down words or “sounding them out”, and lacks the necessary decoding skills to become both a fluent reader and writer. Her inability to decode and lack of phonemic and phonological awareness can also be seen in her writing and her spelling. This student has a desire to learn and become a stronger reader, but is often discouraged because she struggles much more than most of her peers, while also lacking the support outside of the classroom.

Implications of Findings: By implementing a one-to-one intervention with this student, focusing on specific decoding and fluency strategies, hopefully she can become a better reader, but also become more confident in herself as a learner overall. This research project will hopefully allow this 2nd grade student to discover strategies that she feels she can use to help her when she is reading. If these strategies prove to be effective, then she can transfer these skills and strategies to her reading as she progresses through school, and the educators and other adults in her life can use the strategies to assist her in learning academic content and being successful in school and beyond.
Cultivating First Grade Math Skills with a Low Performing Student in a One-to-One Setting

Kerrigan Roth

Sponsoring Faculty: Thornburg

This action research is designed to explore the question: How will one-on-one math intervention, working within a Kindergarten Math Skills book for fifteen minutes, using manipulatives, and building overall confidence, improve the basic math skills of a First grade student identified as low performing? The subject of this study is a first grade female student in Title I Elementary School. The purpose of this intervention is to improve the student’s overall Math performance and skills, in hopes the student will reach grade level expectations. The outcome of this research will impact my future as an educator, as Math often has a bad connotation associated with it, especial when students feel frustrated. Observing and recording the progress of the student along with fostering her confidence with Math, will influence my future educational strategies and students.

Case Studies on Auditory and Communication Outcomes Post Auditory Brainstem Implantation in Children

Sarah Frisina

Sponsoring Faculty: Yula Serpanos

The auditory brainstem implant (ABI) is a device used to elicit auditory stimulation when cochlear implantation is contraindicated. This advancement in technology bypasses the pathology of the inner ear and/or vestibulocochlear nerve and directly stimulates the cochlear nuclei in the brainstem. The ABI has been clinically used since 1984 for adults particularly with the disorder neurofibromatosis type II. It has only been recently implanted in children with pathologies such as cochlear aplasia, auditory nerve aplasia and auditory neuropathy. Past research has suggested only some environmental sound awareness and little to no open-set speech perception abilities with the implant. There is minimal evidence of the long-term success of children with the ABI. Research is also lacking on parental perspectives of children’s abilities with the ABI. When parents are deciding whether or not to implant their children with an ABI, they rely on the audiologist for crucial details. This has been difficult for the audiologist due to the lack of qualitative data on the performance of children with the device. In the current study, the researchers analyzed retrospective audiologic data as well as parent surveys in order to describe the success of children with ABIs. The pure tone and speech detection thresholds of two children were collected. A parent survey surrounding the communication, auditory and balance abilities of the children before and after implantation were distributed. The results suggested marked improvements of all thresholds as well as significant improvements in balance. The parent surveys indicated that total communication is typically required for these children and only one child, out of the two, attempts to use verbal communication. This study adds essential information to the library of ABI research for audiologists as well as parents and guardians.
Comparing thin and extremely thick liquids in the oral stage of swallowing in patients with dementia.

Marissa Guerrero, Genelle Maruca, Deidra Wright

Sponsoring Faculty: Ashwini Namasivayam-MacDonald

Research has suggested that the oral phase of swallowing (i.e. what happens in the mouth) in patients with dementia (PWD) is impaired. One study reported that PWD ate rapidly and took large bites, but these observations were subjective. The present study used a retrospective analysis of x-ray video to score oral phase difficulties for thin and extremely thick liquid swallows in PWD using a standardized scoring system, the Modified Barium Swallow Impairment Protocol (MBSImP). Swallowing difficulties (dysphagia) are common in PWD, which can lead to weight loss and malnutrition. As such, we hoped to better understand oral phase of swallowing impairments in this population. Data from 15 older adults (mean age 82.2) diagnosed with dementia were analyzed to obtain information regarding the oral phase of each patient’s swallow. Four components of the MBSImP were used to analyze the oral stage of swallowing: lip closure, tongue control, lingual motion, and oral residue. Mode and median scores of lip closure suggested that PWD often presented with anterior spillage from the lips but with no progression toward the chin. When tongue control was examined, PWD most often presented with escape of less than half of either stimuli from the back of the mouth into the throat. When lingual motion was assessed, brisk tongue movement for thin liquids and disorganized tongue movements for extremely thick liquids was noted. Analysis of lingual motion indicated delayed initiation and slowed tongue movements for extremely thick liquid, suggesting that PWD had more difficulty using their tongues to move thicker liquids into the back of their throat than thin liquids. Lastly, when oral residue was assessed, patients had trace amounts of thin liquid residue lining the oral cavity, compared to a larger collection of residue for extremely thick liquids. These results confirmed that patients with dementia experienced oral phase swallowing impairments that are more severe with thicker liquids.

Clinical Practicum: Investigation of Growth of Knowledge and Growth

Amanda Moneta

Sponsoring Faculty: Angela Murphy and Reem Khamis-Dakwar

Masters students in speech language pathology (SLP) take several clinical practicum courses as part of their academic preparation in the profession. Investigation of the knowledge and skills attained as part of a series of practicum courses taken at different stages (i.e. 1st, 2nd, 3rd, and 4th semester) in different settings (i.e. in house practicum, student-teaching, and outside practicum) are rare in the field. This may be in large due to the fact that most traditional evaluations of graduate studies in SLP rely on formative evaluation conducted at the time of degree completion and does not monitor data throughout the different levels of study and clinical preparation. Such understanding is necessary for the development of clinical curriculum and clinical teaching models of clinical training. The purpose of this study was to evaluate the clinical knowledge and skills attained in four clinical courses offered as part of the graduate program of SLP at Adelphi University to determine the unique contribution of each learning setting in facilitating clinical knowledge and skills development. 154 students completed a survey designed to assess their reported knowledge and skills at the beginning and at the end of their clinical practicum. Mean of reported knowledge in the nine areas (i.e. articulation, fluency, voice,
language, hearing, swallowing, cognitive and social aspects of communication, and augmentative and alternative communication modalities) and a range of clinical skills, standards of ethics and policies were compared between the reported mastery in the four settings. Results show that different clinical knowledge and skills were reported to be attained at different levels at the different clinical courses. The study highlights the need for expanding the Scholarship of Teaching and Learning (SoTL) in the field of speech pathology to enhance evidence based curricular planning and training that is inclusive of clinical training and practicum selection.

**Does Hyoid Bone Movement During Swallowing Change with a Dementia Diagnosis**

Kathryn Ressa, Caitlin Walshe

Sponsoring Faculty: Ashwini Namasivayam-MacDonald

The hyoid bone plays a role in a safe and efficient swallow. Previous studies have examined how hyoid movement changes based on drink consistency in healthy older adults and individuals with Oculopharyngeal Muscular Dystrophy (OPMD). Hyoid movement has yet to be studied in patients with dementia. Therefore, it is currently unknown if and how hyoid movement changes as a function of a dementia diagnosis. The purpose of this study was to characterize hyoid kinematics in a sample of patients with dementia, explore differences of hyoid movement in relation to bolus consistencies in this population, compare differences in hyoid movement in males and females, and determine if hyoid kinematics change as a function of age. Two raters retrospectively analyzed dynamic x-ray swallowing studies from 46 adults diagnosed with dementia (mean age: 84; range 59-100). Three different measures were collected for thin and extremely thick liquid swallows: (1) peak hyoid position, (2) superior hyoid displacement, and (3) anterior hyoid displacement. Peak hyoid position was measured by locating the hyoid at its most anterior position while also at its superior peak. Anterior and superior displacement were also measured individually. SPSS analysis included descriptive statistics, T-tests, and a linear regression. Statistics revealed that there were no significant differences in hyoid movement in patients with OPMD and in healthy aging adults. Results suggest that bolus consistency modulates superior hyoid movement in patients with dementia, and showed that hyoid kinematics in patients with dementia differ greatly from healthy older adults and individuals with OPMD. This demonstrates that a dementia diagnosis impacts hyoid movement. Future research should examine hyoid displacement in relation to other swallowing kinematics, such as laryngeal vestibule closure and upper esophageal sphincter opening to further understand the hyoid’s role in swallowing.
PreRead: Evidence-Based Curricular Changes

Kathryn Ressa

Sponsoring Faculty: Susan Lederer

PreRead is an emergent literacy program that was established in 2003 at Adelphi’s Hy Weinberg Center and published in 2005. The CSD department runs PreRead groups at the ELC every spring. PreRead contains activities to nurture the simultaneous development of language, print awareness, and phonological awareness skills. Activities in these three domains are incorporated into lessons revolving around shared book reading experiences with related follow-up art/writing activities and phonological awareness games. I was a PreRead student clinician Spring 2018 and during Fall 2018, as an independent study, I conducted a literature review and proposed two major evidence-based changes to the curriculum.

The first is to exclusively use metafictional books rather than other genres of picture books. “Metafiction” means thinking about/talking about the book. For example, characters may talk about literacy concepts such as the title or author (e.g., “We need the author”); phonemic awareness concepts (e.g., “That doesn’t rhyme”), or print awareness (e.g., “word bubble”). They also promote critical thinking.

The second recommendation was to focus on letter-sound correspondences. In the original model, the phonological awareness focus was on segmenting/blending sentences into words, words into syllables, syllables into sounds (including rhyme and alliteration), but no focus on specific letters. Current literature suggests most effective phonemic awareness intervention programs target letter-sound correspondence. I suggested to remove words and syllables from the phonological awareness domain and focus on phonemes. Each week, one pair of phonemes from different categories of sounds (e.g., plosives, fricatives, glides) will be presented in an order suggested by the literature. Finally, I edited the criterion-referenced assessment to reflect the new curricular changes. The purpose of this presentation is to provide literature support for these changes with a sample session plan.

Exploration of the Neural Correlates of Stroop in Central Auditory Processing Disorder: An EEG Research Proposal

Emily Salerno, Lucie Lavelle, Michele Scannell, and Christina Jonas

Sponsoring Faculty: Melissa Randazzo

Central Auditory Processing Disorder (CAPD) refers to deficits in the neural processing of auditory information in the central auditory nervous system not due to higher order language or cognition. Individuals with CAPD present with difficulties utilizing linguistic cues such as grammar, meaning in context, and lexical representations. Most importantly, the client presents as if he or she is not attending to stimuli. Symptoms of ADHD may be misdiagnosed or diagnosed along with CAPD. Moreover, attention-based tasks are used in the diagnostic battery for CAPD, further confounding the diagnostic boundaries between CAPD and ADHD.

Foundational theories of ADHD suggest key impairments in response inhibition. Poor performance on measures that test inhibition may stem from difficulty inhibiting unnecessary information. Response
inhibition is an important cognitive process that may be related to similar processes involved in academic skills. Those with CAPD present similarly to those with ADHD, due to overlapping symptoms; however, there is no existing literature about CAPD and response inhibition.

The Stroop paradigm is an index of response inhibition. This paradigm assesses the ability to inhibit cognitive interference that occurs when the processing of a specific stimulus impedes the simultaneous processing of a second stimulus. Electroencephalography (EEG) allows us to examine brain activity with millisecond temporal precision, yielding neural signatures of brain responses. We will examine the Stroop Effect as a lexical index of response inhibition in individuals with ADHD and CAPD. We predict that children with CAPD may show similar responses during the Stroop task as children with ADHD, indicating that response inhibition is part of the neuropathology of CAPD. Furthermore, weakness in response inhibition could contribute to difficulty in processing linguistic cues or attending to auditory information.

N400 responses to auditory and visual semantic anomalies in ADHD and CAPD

Tiffany Blake, Latey Stevens, Solomon Feldman

Sponsoring Faculty: Melissa Randazzo

Purpose: Central Auditory Processing Disorder (CAPD) refers to difficulties with processing auditory information in the Central Auditory Nervous System (ASHA, 2005). An individual with CAPD may present with listening and communication deficits and are more likely to struggle academically. Children with CAPD perform similarly to children with Language Impairment (LI), Dyslexia, Attention Deficit Hyperactivity Disorder, and children with Learning Disabilities, (de Wit et. al, 2017). At this time, there is no consensus with respect to diagnostic criteria for CAPD. This study aims to investigate the role of semantic processing in the diagnosis of CAPD.

Methods: Electroencephalography (EEG), will be recorded from 10 children with CAPD, 10 with LI, and 10 typically developing children, ages 12-15. They will engage in semantic incongruity tasks. Sentences such as, “The train is sour.”/“The train is crowded” (incongruous/congruous) will be presented visually and auditorily. The N400 is an event-related potential (ERP) that is considered to be a sensitive indicator of semantic processing (Friedrich & Friederici, 2004). N400 responses will be measured and compared for each group in response to both the auditory and visual stimuli. Due to a difference in higher level language processing for these groups, we expect to find that N400 responses differ for the stimuli presented. We expect to find that typically developing children will have N400 responses for both auditory and visual stimuli. For children with language impairment, we expect that both auditory and visual N400 responses will be reduced due to generalized language processing difficulties. For CAPD, we can expect a visual N400 response and no auditory N400 response due to difficulties with auditory processing. In this case, we can assume that CAPD is a different disorder than LI. Alternatively, we may find that LI and CAPD have overlapping characteristics by displaying a similar pattern of N400 response to stimuli.
Neural correlates of attention-modulated responses to auditory stimuli in children with CAPD and ADHD

Danielle Vigliarolo, Lauren Sustad, Michelle Kopec, Jena Marchese
Sponsoring Faculty: Melissa Randazzo

Central Auditory Processing Disorder (CAPD) is a disorder of auditory processing despite normal audiometric thresholds. Auditory deficits make it difficult for individuals to discriminate between subtle differences in sound. CAPD overlaps with Attention-Deficit/Hyperactivity Disorder (ADHD), such that children with CAPD have difficulty attending/following directions. This proposed study will use electroencephalography (EEG) and stimulus-relevant event-related potentials (ERP) to examine brain activity when processing language and attention. Participants will include 10 children with CAPD, 10 children with ADHD, and 10 TD children (ages 8-12). This study will investigate whether the auditory processing difficulties in CAPD are unique to language or are associated with attention difficulties as found in children diagnosed with ADHD.

We will compare the ERPs elicited in passive (e.g. mismatch negativity, MMN) and attending (e.g. P300) conditions. The auditory stimuli utilized will be presented in an oddball paradigm, where an occasional deviant (/pa/) stimulus is presented in a stream of frequent standard stimuli (/ba/). By researching auditory discrimination in passive vs. attending conditions, we can further disambiguate whether CAPD is associated with auditory processing alone, or attention-related auditory processing.

If CAPD is a diagnostic entity specific to auditory processing, we predict that participants diagnosed with CAPD will show reduced responses to auditory stimuli in passive (MMN) and attend (P300) conditions; whereas the ADHD group should show differential responses between the passive and attend conditions, with stronger MMN responses for the passive condition. Both CAPD and ADHD groups will be compared to the typically developing children. Alternatively, if participants with CAPD have a MMN for the passive stimuli but not a P300 for the attended stimuli, then CAPD may not be a unique diagnostic entity and shares considerable overlap with ADHD.

Anterior Tongue Strength and Swallowing Pressure: Is There a Correlation?

Adrienne Cirelli, Elijah Piker
Sponsoring Faculty: Ashwini Namasivayam-MacDonald

Swallowing is a task that does not require all of our tongue strength. However, some strength is required to generate anterior maximum isometric pressures (MIPs) to manipulate food and drink to swallow. As such, tongue strength training is often implemented as a treatment to improve swallowing safety. In contrast, additional techniques of swallowing rehabilitation include skill training. Skill-based tasks, such as regular-effort saliva swallows (RESS), focus on the ability to modulate an accurate amount of pressure and precise timing of pressure generation, which is required to swallow different types of food and drinks. Research has found that there is a reduction in MIPs in healthy older adults; however, evidence supports that swallowing pressures appear to be preserved, resulting in a decline in functional reserve. This may be due to older adults working harder to produce adequate swallowing pressures. Previous studies indicate that MIPs increase pharyngeal pressure during more effortful swallows. Thus,
this finding proposes that MIPs may impact the overall strength of a swallow. The aim of the current study was to examine the correlation between anterior MIPs and RESS for community-dwelling older adults, in order to analyze the strength and skill of an individual’s swallow. Evidence suggests that age-related changes in swallowing physiology are characterized by loss of strength, reductions in connective tissue elasticity, and muscle mass; therefore, we hypothesized a weak positive correlation between the MIPs and RESS. Results of the analyses indicated a weak negative correlation. These findings demonstrate that the skill required for RESS is not directly associated with the strength of anterior MIPs. The subjects were also instructed to complete a 3-oz water swallow test. A majority of the older adults who exhibited MIPs below normal values passed the water swallow test. These results suggest that low tongue strength is not indicative of a swallowing impairment

**Examination of the N450 event-related potential for rhyme judgments in children with CAPD**

Kathleen Farago, Daniel Yusupov, Jameelat Bakare

Sponsoring Faculty: Melissa Randazzo

Central Auditory Processing Disorder (CAPD) refers to deficits in the neural processing of auditory information in the central auditory nervous system not due to language, cognition, or peripheral hearing loss. This diagnosis is controversial, as the signs of CAPD overlap with other disorders (e.g. reading impairment). Children with CAPD demonstrate cognitive-linguistic deficits which manifest as difficulty in phonological awareness (e.g. rhyming) that negatively impact literacy acquisition. Research reveals that the event-related potential N450 indexes rhyming ability in typically developing children. The current study will examine the N450 in 10 typically developing and 10 children with CAPD ages 8-12. The participants will be auditorily presented with a rhyme judgment task in two conditions: word (e.g., male/nail), which indexes lexical processing, and non-word (e.g., siff/ piff), which is more purely phonological. Due to supposed difficulties in phonological processing exhibited by children with CAPD, we predict they will have a reduced N450 effect in rhyming tasks compared to typically developing children, with the greatest group differences for non-word rhymes. Implications for further research should compare children with CAPD to children with reading impairment to further disambiguate the diagnostic boundaries of disorders with phonological processing difficulties. Keywords: central auditory processing disorder, phonological awareness

**Does Epiglottic Cartilage Prevent Airway Invasion in Patients with Dementia?**

Lauren Attner, Brianna Rider

Sponsoring Faculty: Ashwini Namasivayam-MacDonald

Research currently shows that over 5.7 million people in the United States are living with dementia and approximately 80% also present with dysphagia (i.e. swallowing impairment). A major consequence of dysphagia is aspiration (i.e. food/liquid entering the airway), and inversion of the epiglottic cartilage is thought to help prevent airway invasion by sealing off the larynx during a normal swallow. Through a retrospective analysis of dynamic x-ray swallow studies, thin liquid swallow trials from 44 subjects (mean age: 84; range: 46-100 years) were extracted and analyzed in duplicate by blinded raters. The
raters judged epiglottic movement (no movement, partial movement, full inversion) using the Modified Barium Swallow Impairment Profile, and airway invasion during the swallow using the Penetration-Aspiration Scale (PAS). Both epiglottic inversion and PAS scores were converted to binary variables in order to conduct Chi-square tests. Analyses revealed that the epiglottis did not play a role in protecting the airway during swallowing in this population (p = 0.983). Given the research suggesting epiglottic deflection is linked to hyoid bone movement and pharyngeal muscle constriction, post-hoc analyses were conducted to determine if incomplete epiglottic deflection was the result of reduced hyoid movement, and/or reduced pharyngeal constriction. Analyses showed that epiglottic inversion had no relationship with hyoid displacement (p = 0.229), nor was there a relationship with pharyngeal constriction in this population (p = 0.136). In conclusion, the current study suggests that the epiglottis does not play a vital role in airway protection in patients with dementia, and its deflection is unrelated to hyoid displacement and pharyngeal constriction. Future research should investigate the physiological impairments interfering with mechanisms of airway protection in this population, as well as the kinematics related to epiglottic deflection.

**Graphophonemic Representation in Auditory Rhyme Judgment in Apraxia of Speech**

Amanda Nagler, Tihomira Todorova

Sponsoring Faculty: Melissa Randazzo

Aphasia is a chronic language impairment caused by damage to the left hemisphere of the brain, primarily due to stroke. Apraxia of Speech (AOS), a motor speech disorder that disrupts the pronunciation and fluency of speech, often accompanies aphasia. Although patients with AOS experience halting, disrupted, and labored speech, a body of research suggests that the ability to recognize written rhyme is an index of preserved phonological ability (access to the sound system of language required for speech production), which can be used as a strength in planning treatment (Geva, Bennett, Warburton, & Patterson, 2010). To date, no studies of have examined the role of orthography in rhyme judgment in patients with AOS. In English, our orthographic system has incongruent representations such that words like flight and bite rhyme but do not share a spelling pattern. Graphophonemic (sound:letter) constructs are inherently audiovisual, and therefore examination of visual rhyming alone may not index preserved phonological ability, but recognition of visual word form.

In order to test this hypothesis, we utilized the same rhyming stimuli that have both congruent and incongruent spellings. We presented 84 word pairs in the auditory modality rather than the written modality to test whether the written form is accessed as part of the phonological representation. Using EEG, we are able to examine responses to pairs of rhyming words that differ in congruency (cat/mat-congruent; shoe/drew-incongruent) within a matter of milliseconds of stimulus presentation. Preliminary neural signatures from our pilot study of two patients with AOS demonstrate an orthographic congruency effect for auditory rhyming, indicating that preserved graphophonemic representations may not be a pure index of phonological ability, but rather the integration of sound and spelling.
Neural correlates of lexical and numerical Stroop: a paradigm of conflict processing in adults who stutter

Kathryn Ressa

Sponsoring Faculty: Melissa Randazzo

Stuttering is a communication disorder affecting the fluency of speech, characterized by disruptions that interrupt the flow of speech. The exact etiology of stuttering is unknown. Some theories hypothesize that linguistic processing plays an integral role in the etiology of stuttering. The Covert-Repair Hypothesis suggests that phonological encoding is slower in people who stutter (PWS) compared to fluent speakers. Current research has found that phonological processing is susceptible to increasing cognitive load, supporting the idea that linguistic processing lacks modularity in PWS and is more vulnerable to distributing cognitive resources. The Stroop task is used to examine conflict processing of conflicting stimuli. The linguistic Stroop paradigm examines suppression of conflicting information related to lexical representation of color words (e.g. the word “blue” presented in red font). The non-linguistic Stroop paradigm examines numerical values and physical size. During this task the participants determine whether font size is congruent with numerical magnitude (e.g. large 7, small 1= congruent, small 7, large 1 = incongruent). We examined whether event related potentials index conflict processing for linguistic and non-linguistic Stroop stimuli differentially in PWS and AWNS. Preliminary data for PWS indicate differences between linguistic and nonlinguistic conditions in 250-400ms time window; however, with a different response pattern compared to AWNS. Electrophysiological responses in AWNS demonstrate polarity differences between conditions, N200 possibly indexing computation in the numerical condition and P200 indexing perceptual analysis in the lexical condition. This study highlights the importance of understanding the recruitment of neural resources for cognitive and linguistic processing, which may help us design new and better treatments.

4th and 5th Grade Students’ Attitudes Toward Physical Activity

Brenna Martini

Sponsoring Faculty: Kevin Mercier

It is recommended by SHAPE America and the Centers for Disease Control and Prevention that schools implement a Comprehensive School Physical Activity Program (CSPAP) as physical education class alone will not help children meet the recommended 60 minutes of physical activity per day. CSPAPs promote adding physical activity opportunities before, during, and after school to help students reach the recommended activity goal. It is important to assess how these addition physical activity opportunities affect attitudes as student’s attitudes impact their decisions to be active.

Through research, much has been learned about students’ attitudes toward physical education, but little is known about their attitudes toward the broader concept of physical activity. Recently, an instrument grounded in attitude theory was developed and shown to be valid and reliable for measuring attitudes toward the construct of physical activity. The attitudes of students toward physical activity have not been previously reported. The purpose of this study is to present 4th and 5th grade students’ attitudes toward physical activity and to compare these attitudes by gender and grade.
Data were collected from students in grades 4 (n = 375) and 5 (n = 365) in four elementary schools in January 2019. Descriptive statistics and independent samples T-tests will be run to identify attitudes as well as significant differences by gender and grade. Results will also be compared to attitudes toward physical education to see how attitudes compare by gender and grade. These results can impact which groups of students (grade and/or gender specific) should receive CSPAP programming in their school.

Session 6: College of Education and Health Sciences, undergraduate division

Does Cultural Identity Bear Influence on Modern Foreign Language Learning?

Melanie Rosa-Chaves

Sponsoring Faculty: Reem Khamis-Dakwar

As social beings, communication is a vital part of human development. However, simple means of social interaction are not limited to vocalizations, signs, and written word when expression is limitless, and language is borderless. Our modern-day world is constructed upon an array of culture, yet in spite of this diversity, we see specified selection. Western ideals glorify the notion of the cultural “melting-pot” ideal in the United States. It is within this array of nationalities in our multi-denominational country that proves variance in language acquisition to be evident. With pressure for accommodation and cultural assimilation, the loss of encouragement for first and second-generation Americans to remain heritage speakers proves demanding as the social climate continues to elevate. The reinforcement of multilingualism in our rising economy questions the implication of the integration of foreign language courses in schools and institutions. It is this societal construction that allows us to compare and contrast the average second language learner to the common heritage speaker.

Education is impacted by linguistic diversity. In compliance with the developing critical view of the “melting pot” ideology, heritage learners’ enrollment at university-level foreign language courses is on the rise. This can be attributed to their attempts to reclaim the link between their heritage identity and community. Hence, a need for developing language courses geared to their specific linguistic profile is called for (Beuudrie, Ducar, & Potowski, 2014). In this study, we will review the demographics of Long Island (LI) and the various foreign language courses offered in L.I. universities with significance on how universities address the social needs of the L.I. minority population. In addition, we will survey students enrolled in foreign language courses at Adelphi and examine the percentage of heritage learners in heritage language courses and their reported experiences.
Nonword Repetition in Young Adults with Autism Spectrum Disorders

Samantha Irace

Sponsoring Faculty: Dana Battaglia

Echolalia, a repetition of speech, is a characteristic commonly displayed in individuals with autism spectrum disorders (ASD). Scholars continue to question the function of echolalia in the linguistic development of individuals with ASD (Schuler, 1979; Stiegler, 2015). If there is no implicit semantic underpinning motivating repetitive speech, and individuals with ASD are simply echoing words, then individuals with ASD should demonstrate superior performance on nonword repetition (NWR) tasks, relative to their neurotypical counterparts. Conflicting evidence on this topic prompts further investigation (Prizant, 1983; Blanc, 2012). A total of 2 young adults (aged 18 to 22 years old) including 1 individual with ASD and 1 neurotypical (NT) individual were evaluated in this study. Participants were presented with 30 nonwords (nonsense words) from the Nonword Repetition subtest of the Comprehensive Test of Phonological Processing (CTOPP-2; Wagner, Torgesen, Rashotte, & Pearson, 2013) and asked to repeat the words back exactly as heard. Participant productions were scored according to the number of syllable and phoneme errors. There was a significant difference in the number of syllable errors found in the responses of the ASD participant and the control. More specifically, there were significantly more phoneme errors in the NWR responses of the ASD participant than the NT participant. The decreased performance on NWR by the participant with ASD suggests a semantic foundation to echolalia. This information reinforces ASHA’s position on the potential role of echolalia in fostering the development of independent utterances by this population (ASHA, 2006). Speech-language pathologists should be critical of protocols calling to extinguish echolalia in individuals with ASD.

Screening for Input Dependency in Children With Language Delay

Izabelle Pinzon, Amanda Nagler

Sponsoring Faculty: Reem Khamis-Dakwar and Deborah Friedman

In the course of typical child development, children rely on input within their environment to produce utterances, a phenomenon referred to as input dependency. Even though the importance of input is widely recognized in the process of language development and referred to in speech language therapeutic plans, assessment of the level of input dependency is not incorporated in the assessment of children with communication disorders in early intervention. We present on the development of a screening tool used to determine the level of input dependency exhibited by a child, which is expected to correlate with responsiveness to speech pathology therapy in early intervention. The screening is composed of play-based, clinician-child interactions geared to measure the level of children’s production overlap with the production of the clinician’s, otherwise known as input dependency. The screening tool is designed to prompt children’s verbal productions of ten nouns and ten verbs within ten minutes at different levels of input dependencies: spontaneous, prompted, delayed imitation and immediate imitation. This will be used to calculate a score of overlap based on these different type of words productions. In this study, we will present pilot data from the administration of the screening tool for three children with language delay attending group therapy at a university clinic. The results from
the study will be compared with progress over the semester of therapy as well as results from a standardized language survey. This will allow a better understanding of the child’s communicative profile and effective therapy planning based on the value of their input dependency. We will discuss the importance of incorporating input dependency measures in early intervention in light of the reported “greater input dependency” exhibited in children with specific language impairment (Conti-Ramsden & Jones, 1997, 1311) and the nature of speech therapy intervention.

**Voice-Related Quality of Life of Female College Athletes**

Stephanie Milillo

Sponsoring Faculty: Steven Cox

Verbal communication is critical for success in team sports (Ishak, 2017; Lausic et al., 2009). For example, it can influence a team’s ability to work cohesively, set goals, make decisions, and act as a source of social support and motivation (Ishak, 2017). Verbal communication during athletic events often requires athletes to use their voices at greater vocal intensities for greater durations with competing background noises and increased communication distances. These vocal behaviors can potentially lead to vocal fold trauma with subsequent changes to voice quality (American Speech-Language-Hearing Association, 2019; Hillman et al., 1998; Jiang & Titze, 1994). Unfortunately, there is a dearth of literature investigating voice characteristics in female college athletes. The Voice-Related Quality of Life (V-RQOL) is a questionnaire that provides a means to understand how an individual’s voice (and/or voice disorder) impacts their quality of life (Hogikyan & Sethuraman, 1999). The purpose of this study, then, was to understand if NCAA Division II female volleyball athletes’ V-RQOL scores will change during a regular season. Ten female athletes completed the V-RQOL preseason, midseason, and postseason. Results and clinical implications will be discussed.

**The correlation between speech intelligibility/comprehensibility and self rated comfort and confidence in use of English in speakers of Spanish as a first language from Central America**

Jacqueline Canales

Sponsoring Faculty: Reem Khamis-Dakwar and Laura Koenig

Studies of accented speech are mainly focused on the intelligibility and comprehensibility of the communicated information. Similarly, accent modification therapy; a developing field in speech language pathology is focused on improving speech accuracy using different accent modification techniques. There is sparse knowledge on the interrelationship between the accented speaker confidence, self-rated articulateness and objective measures of comprehensibility/intelligibility. Such knowledge may inform future evidence based practice in working with adults seeking accent modification and indicate a need to expand the strategies used to include work on attitudes and self-reports. This is a work in progress of which we plan to examine the correlation between self-reported speech accuracy and external measures of the same constructs. We are working on developing a questionnaire to examine self-reports and attitudes towards the use of accented English in 12 Central American Spanish-English bilingual adults between the ages 21-80 that live in the United States.
addition, each participant will be recorded while describing the cookie theft picture in their accented English. Then, twenty college students dominant users of English divided in two groups (monolingual English speakers and Spanish-English bilingual speakers) will be recruited to participate in rating the comprehensibility/intelligibility level of each of the 10 recordings to determine any interrelationship between the speaker’s reports, self assessment and the external comprehensibility values provided by the participating students. Furthermore, the effect of the rater’s bilingual vs. monolingual status on the reported judgments will be examined. This study will add to the much needed evidence in this field of study given the emerging field of accent modification therapy, the increased multilingual population in the United States and the globe.

Oral Presentations, Nexus Building, classrooms

Session 7: Department of Biology, graduate division, Nexus Building, Room 154

Role of Temperature on morphology and muscular composition in Brook Trout

Sahid Adejumo

Sponsoring Faculty: Andrea Ward

The temperature at which fishes undergo embryonic development is very important to the outcome of their morphological features. Specifically, temperature has been pointed at as the essential determinant in the composition of muscle and the number of vertebral in fishes. The muscular compositions and vertebral numbers are essential to fishes’ swimming performances and are consequential to their ability to survive in the wild. In this study, I looked at what the morphological differences would be in Brook trout raised under two differential temperatures of 10°C and 14°C. I examined these differences by focusing on aerobic and anaerobic abilities of the Brook-trout. I found that the fish raised in the lower developmental temperature were able to outperform their peers raised under the higher developmental temperature. Aerobic activities were evaluated by observing the critical swim speed of these fishes by making them swim in a flume against a generated current that is increased at 10 minutes interval until they became exhausted. This work is part of a larger study investigating whether there are morphological differences caused by developmental temperature that underlie the differences in performance.
LSH3 and its Interaction with ARR1
Sarah Elkayam
Sponsoring Faculty: Lawrence Hobbie

Cytokinins are hormones found in a variety of plants. Their function can range from coordinating differentiation to managing leaf senescence. ARABIDOPSIS RESPONSE REGULATOR 1, or ARR1, is a protein known to be involved in cytokinin signaling pathways, while LIGHT-SENSITIVE HYPOCOTYL 3, or LSH3, is a protein initially identified in the borders of shoot organs that is believed to be involved in the same pathways. This is due to supporting evidence from the lab of Dr. Alexander Heyl. To test the hypothesis that LSH3 interacts with ARR1 and thus is involved in the cytokinin signaling pathway, we are attempting to clarify potential interaction between ARR1 and LSH3 by transiently expressing these proteins in tobacco leaves, followed by co-immunoprecipitation. Latest results will be presented.

Growth and individual variation in the Early Cretaceous theropod dinosaur Deinonychus antirrhopus
Thomas Rocco Pascucci
Sponsoring Faculty: Michael D. D’Emic

The Early Cretaceous dinosaur Deinonychus antirrhopus represents a historically important taxon in the evolution of birds. Fossil material attributed to D. antirrhopus is found within Early Cretaceous strata from the Cloverly Formation in Montana and Wyoming and the Antlers Formation in Oklahoma. Although generally considered to be contemporaneously deposited at the Aptian–Albian boundary (ca. 112 Ma), neither formation has well-constrained upper or lower ages; the Cloverly Formation has recently been shown to span at least 124–104 Ma (D’Emic et al., 2017). Additionally, specimens of D. antirrhopus exhibit substantial, unexplained morphological variation. Despite these issues, Deinonychus remains relatively unstudied. The broad anatomical differences between specimens plus the ambiguous spatiotemporal distribution suggest that hidden taxonomic diversity might be present within the genus. This research aims to characterize the differences in individual Deinonychus through a combination of comparative anatomy, bone histology, and radiometric dating. Firsthand anatomical observations are being made by visiting the fossil collections at the American Museum of Natural History, the Museum of the Rockies, the Sam Noble Oklahoma Museum of Natural History, the Yale Peabody Museum, and the Museum of Comparative Zoology at Harvard University. Histological analysis of bone thin sections from four individuals at various stages of ontogeny will be used to construct the first growth models of D. antirrhopus. Detrital zircon geochronology from the rock surrounding Deinonychus fossils will be analyzed for absolute dating to constrain the age of each specimen. Observed differences in growth curves that correspond to morphological or stratigraphic variation will be used as evidence for or against the presence of multiple genera or species within the current concept of Deinonychus.
Impact of Modifiable Behavior Risk Factors in Ethnicity and Gender

Naifu Jin

Sponsoring Faculty: Juan R. Jaramillo

What are the crucial factors which cause people die that could be modified? Are any differences in mortality associated to age, gender, and ethnicity? The purpose of this study is to answer these questions. This study analyzes three dimensions: age, gender and race/ethnicity (African American, White, American Indian or Alaska Native, Asian or Pacific Islander, and Hispanic or Latino). Additionally, according to previous research, seven Modifiable Behavior Risk Factors (MBRF) leading to death have been identified (Keeney, 2008). These MBRF are smoking, obesity, illegal drugs, alcohol, Sexual Transmitted Deceases (STD), accidents, and suicide. Moreover, this study focuses on mortality in America for the year 2017. Mortality data was obtained from the Center of Decease and Control. Deaths caused by MBRF are obtained using the methodology presented in Keeney (2008). This work study the impact of MBRF for each ethnicity by age group and gender. Preliminary results show that out of 2,804,482 deaths, 1,123,708 deaths (40.07%) are caused by MBRF. Moreover, MBRF have a larger impact in men than women across all ethnicities and age categories except for American Indian or Alaska Native in the age group 5-14 years old. Also, in general MBRF have a largest impact in the African American and American Indian or Alaska Natives followed by the White ethnicity. Interestingly, Hispanics and Asian or Pacific Islanders are less affected by MBRF. Among MBRF, obesity has the highest impact followed by smoking. Illegal drugs are the most important MBRF for the group age 15-24. A possible limitation of this study assumes that the methodology used to calculate MBRF mortality works across all genders and group ages. Finally, this is the first study that analyzed MBRF at ethnicity and gender levels, and the results of this work are useful to review and define policies and approaches that reduce the impact of MBRF in America.

Do people with different income levels have different consumption choices? Online shopping or Offline?

Yao Wu

Sponsoring Faculty: Johann Lloyd

Do people with different incomes have different consumption choices? Online shopping or Offline?

Because a number of people these days prefer to buy things online, shopping malls like Lord & Taylor’s which is located on 5th. Ave and opened over 100 years ago closed in January 2019. This kind of situation is not unique to Lord & Taylor’s, many department stores like Sears and Kmart closed a lot of stores in the past. However, Apple does not have this kind of challenge, and still has a lot of customers waiting in store. These companies have similar position in that the online shopping is changing the shopping behavior of customers, but some companies still gain a lot of profit from retail stores. This research will enquire about people’s different consumption choices, and try to find the relationship
between purchase behavior and income level. It will use the surveys from different groups of people as samples, the survey will have 12 questions about purchase behavior, and include both quantitative and qualitative questions. This research will use the statistic method to analyze the data. I predict that people with high incomes will pay more attention to the service provided by the retailer, while people with lower incomes will be more concerned about price. The result of this research can help companies to think about the type of customers they want to target, and then they would make informed decisions about how to face the new trends.

The Effects of Technology on Sleep

Nguyen Thao Nhu Phan

Sponsoring Faculty: Johann Lloyd

This research is an evaluation of the impact of technology on sleep deprivation. In today's society, the population is greatly affected by not getting enough rest each night. The combined effects of using technology at certain times of the day can be a leading factor in sleep deprivation.

The topic of sleep deprivation was chosen because of the constant struggle of people all over the world to get good night of sleep. Interestingly enough, sleep deprivation affects largely the new generation: students. Studies have shown that more than half of students today overuse technology, which can greatly affect their sleeping abilities. Sleep deprivation is a large topic, and many forms of research have branched from it. To decide how the research will proceed, many topics were researched, and eventually most were eliminated. The research question was chosen because so many people suffer from being sleep deprived because of technology, it was most fitting since so many could relate to it.

The data will be collected by a survey with 11 questions. The survey will collect 20 results. The finalization of the results will become the main material for a research paper. The interview would be with someone who has experienced sleep deprivation and its effects by technology on them. They would answer questions about how it personally affected them and if any damage remains. What I hope to learn is how much technology affects sleep deprivation in an individual? Can the effects "build up" over time or do the short term effects remain? Out of all of the individuals, how many of them suffer from overwhelming effects? Is there a certain age that technology affects more strongly in term of sleep deprivation?

Session 9: Multidisciplinary I, undergraduate, Nexus Building, Room 155
Visual Anthropology and Visual Language
Lynne Hundhammer
Sponsoring Faculty: Argie Agelarakis

Art is the creative means by which humans express themselves and may include music, the visual arts (painting, sculpture, film), storytelling, theater, games, food, and more. Art from prehistoric times through to the present will be discussed. What is art and what is not, fine art versus popular art, and aesthetics between cultures will be analyzed. How and why do anthropologists study art, and what can be learned about a culture through the process and study of visual anthropology? Furthermore, how does art connect with language, particularly the use of visual language? This aspect will focus on the art of sign language, and address the misconception that sign language, perhaps like art, is universal.

Austism and the effects of Communication
Vanely Chavez
Sponsoring Faculty: Laura Messano

Autism is a disorder where one has difficulties properly communicating and expressing their thoughts. Processing information and understanding social situations takes some time to fully comprehend and adapt. It is important to be informed and aware about what Autism is, and how it can affect communication in and outside of the business area. We need to learn how to effectively communicate with people of disabilities to create or maintain our relationships. Furthermore, certain situations may arise that can put the person with a disability in an uncomfortable position and we should be able to efficiently handle those types of situations with previous knowledge of said disability.

The Controversial Role of Social Media In The Lives of Adolescent Females.
Juliana Stagliano
Sponsoring Faculty: Salvatore J. Fallica

The powerful presence of social media in the everyday lives of young people has been the concern of parents, educators and communication scholars. My research project documents through a modified ethnography to what extent social media has impacted the psychological wellbeing of teen-age girls with respect to body image and idealized female presentation. The role of social media – whether it’s twitter, Instagram, facebook, or snapchat – is a complicated entity in the lives of all of us, and I describe and explain some of those complications in the lives of these young people as they navigate everyday life with its demands and expectations. While the scholarly literature is conflicted, the stories these young women tell us provide insight into the contemporary world of social media and girls.
Session 10: Multidisciplinary II, undergraduate division, Nexus Building, Room 158

Mass Incarceration: Consequences for Racial Inequality

Celine Gonzalez

Sponsoring Faculty: Jacqueline Johnson

Is racial disproportionality in mass incarceration in the United States the result of racial discrimination or disparities in offending? In this paper, I examine research that traces the racialization of mass incarceration. I review the empirical data on rates of offending, arrests, and incarceration, along with the theoretical views and policies on crime and punishment. Overall, I find that it is highly inaccurate to discuss racial discrimination and disparity in offending as if they are independent factors. Michele Alexander, as well as other legal scholars, historians, and sociologists, have traced the history of racial inequality in the criminal justice system to the origins of the United States. When documenting patterns of race within the contemporary criminal justice system, Alexander refers to it the criminal justice system as a form of modern enslavement for African-American men. I use the data on arrest and incarceration rates for drug-related offenses as empirical evidence to support this view. In sum, when we look much deeper into law enforcement and criminal justice system, we see significant disparities in arrest rates and convictions between black and white men that both illustrate and eventually lead to even more significant racial disadvantages for African Americans in the United States today.

Race to the Top

Tony Romero

Sponsoring Faculty: Regina Axelrod

As the country continues to grow in population, we look to our school systems to educate a growing population of diverse learners. Race to the Top (RTT) is an initiative that is part of the American Recovery and Reinvestment Act of 2009 with the intention of improving student growth, student achievement, and teacher performance within public schools. The implementation of the program revealed several faults, all of which students have paid the price for. An analysis of the initiative will highlight several variables and discuss opportunities for them to work better.

What does Feminism mean to you?

Jenna Szabo

Sponsoring Faculty: Devin Thornburg

My project will look into why so many people (male and female, of all age ranges) have a negative connotation with the term feminist and why they do not consider themselves one. Through a number of qualitative interviews and one on one conversations, I hope to discover why there is this negative reaction when someone says they are a feminist, and what that specific term means to our society.
Session 11: Psychology I, graduate division, Nexus Building, Room 157

What are the Rewards? What are the Threats? How Personality Affects Online Dating Behaviors

Jennifer Ryan

Sponsoring Faculty: M. Joy McClure

The use of online dating apps and sites is increasing because many people are turning to them as their main form of dating. The purpose of this research is to see if individuals that score relatively higher in insecure attachment act in ways that are characteristic of their insecurity on online dating apps and sites. We are also interested in perceived social reward (e.g. acceptance, connection) and social threats (e.g. rejection, hurt) of using dating sites and apps and how individuals decide to use them based on their anticipated reward or threat. Individuals with higher avoidant attachment are insensitive to social rewards; they seek to maintain comfortable distance in their relationships and prefer to be self reliant. By contrast, individuals with higher anxious attachment are sensitive to both social rewards and especially social threats; they seek dependence and closeness but fear that they will be abandoned. Some individuals also feel it is easier to show their true selves online due to the ease of rejection online. Depending on if an individual is higher in the anxious or avoidant forms of insecurity, we expect that there will be characteristic preferences in their use of online dating sites and apps, with higher avoidance predicting strategies to minimize closeness and intimacy (e.g. low engagement, focus on superficial features) and higher anxiety predicting strategies to maximize dependence and intimacy (e.g. hyper engagement, potentially unsafe dates) but also reactivity to potential rejection (e.g. anxiety about potential partners). Online dating apps and sites are preferred by some to traditional, face-to-face, dating because there is less stress in the situations. Conducting more research on how attachment styles and perceptions of social threats/rewards affect behavior on online dating sites and apps will help individuals understand how to manage their personal tendencies to maximize the benefits and minimize the risks of using online dating.

Caught in a Bad Romance: Insecurity and Surveillance Behavior

Julia Persaud

Sponsoring Faculty: M. Joy McClure

What is the association between insecurity in romantic relationships and problematic use of social media sites such as Instagram, Twitter, Snapchat, etc? Research suggests that there is a significant association between time spent on Facebook and jealousy-related feelings that can disrupt romantic relationships (Muise, Christofides, & Desmarais, 2009). However, less is known about how relationship-relevant personality variables, such as attachment anxiety and avoidance, affect problematic social media use. Anxiously attached people, who are high in sensitivity to social threats, are more likely to be clingy in a relationship, need constant communication with their partner, and feel undervalued. Therefore, we expect higher attachment anxiety to predict more problematic, hyper-engaged use of
social media in romantic relationships. By contrast, avoidantly attached people, who are relatively insensitive to social rewards, are more likely to stonewall their partner, keep their distance, and not have constant communication. Therefore, we expect higher attachment avoidance will predict less problematic social media use in romantic relationships, but also less positive social media engagement in the relationship as well, due to disengagement. Participants who are in a romantic relationship for at least 3 months will take an online survey that will measure surveillance behavior, attachment anxiety and avoidance, and sensitivity to social threat and reward. The results will be analyzed using a linear regression that also adjusts for relationship satisfaction and gender. Exploratory analyses examining the interaction of sensitivity to social threat and reward will also be conducted to see how being ambivalent—that is, high in sensitivity to both threat and reward—may be especially predictive of questionable use of social media.

Session 12: Department of English, undergraduate division, Nexus Building, Room 156

Why Narrative Matters: Empathy and Death in Modern Medicine
Omar Hameed
Sponsoring Faculty: Craig Carson

In her 1991 book, Doctors' Stories: The Narrative Structure of Medical Knowledge, Kathryn Montgomery Hunter managed to capture the framework for a proper medical education; one that supplements clinical training with empathy. The equivalent of “examined and reflective care of patients” is empathetic understanding of the patient, not merely as a subject with a medical problem that needs fixing, but an individual undergoing dire pain who is in search of an understanding of this pain that fits into his or her overall life narrative. Throughout the twentieth century, empathy, as defined by leading physician educators, has been nothing less than a form of detached cognition on the physician’s part (Halpern, 2003, p. 670).

In an effort to improve modern healthcare, Dr. Rita Charon of Columbia University formalized the academic discipline, Narrative Medicine; the process of applying an active-listening approach within a clinical situation, ultimately through empathetic recognition. Her implication that narrative medicine is a skill that develops empathetic understanding is foregrounded in a concept that can potentially revolutionize the current state of medicine: storytelling brings out empathy as it is, and narrative training is an effective means through which the cognitive skill of empathetic understanding can be developed.

The ultimate goal of this talk is to present narrative medicine as a cognitive training discipline that is capable of deconstructing a medical culture (anchored by twentieth century views on medicine) by encouraging a dialogue centered around what the function of medicine truly is. Furthermore, the subsequent arguments and descriptions will explain how narrative medicine helps to establish a more realistic view on and a more clinically effective treatment of the phenomenon of death.
Prejudice & The Power of Poetry: The Blind and Visually Impaired

Brooke White

Sponsoring Faculty: Devin Thornburg

How does writing provide a creative outlet for the those who have been affected by prejudice? Discrimination against the blind and visually impaired are often unrecognized. However, they face everyday obstacles, making them victims of unreasonable and unequal treatment. Creative writing, specifically poetry, is often used as a reflective expression of self; it offers these individuals an escape from reality and opportunity to design their own world.

My project will focus on the perspectives of the visually impaired: how they deal with discrimination against them, and how they use their imagination to escape such traumas. The participatory involvement will take place during meditation classes taught at Third Eye Insight - Fitness for the Blind in West Islip, NY. My research will consist of the psychological needs of those with sensory loss, and I expect the results of this research to show improvement of self-esteem & empower this community.

SECTION B: 9:30 A.M.–10:20 A.M.

Session 1: Computer Science and Game Development Exhibition II, undergraduate division, Nexus Building, second floor, lobby

Starfish Awakening

Thomas Kohut

Sponsoring Faculty: Lee Stemkoski

Construct 2 is a game engine that is designed to be user friendly for both experienced and inexperienced programmers. Starfish Awakening will be composed of three parts and different play styles for each part. Each part will transition to the next game style in an organic way that does not confuse the player.

Pong on low density display

Brandon Cortes

Sponsoring Faculty: Lee Stemkoski

Pong recreated on a low density led display with 2 player controls.
Valley - Instant Messaging Service
Michael Posada, Geraldine Granobles, Scott Shannon
Sponsoring Faculty: Saleh Aliyari

A comprehensive chat system allowing for instant one-to-one chat rooms as well as group chats. The goal for the chat system is to allow participants to easily send secure messages to each other. Utilizing a file system to store messages that can be retrieved and referenced to. The group chat room will have an owner that can add or remove participants. Owners will be allowed to give other participants permissions to add or remove other participants. But no one can remove the owner of the group chat. The chat system will be on a website, this will be running on an Adelphi server.

Shattered Elements (an Original RPG game)
Michael Castillo, James Vanrossem
Sponsoring Faculty: Saleh Aliyari

What our group will be making is a 2D RPG video game on the computer, and we will be using the RPG maker MV engine to make our game. RPG stands for Role Playing Game and RPG Maker MV is an engine that will help make this single player experience easier than any other engine out there currently. What a Engine is in terms of video games is an application/tool that will help us, the developers, create the game we are proposing. Our game will be a story game with the idea of going threw 4 different temples where the hero, who is being controlled by the player, will have to go and collect 4 different gems. It will not be as easy as walking into the temple and just taking the gems! They will have to fight the evil that is in those temples and also surrounding the main city. You, the hero, will be the summoned by the king and must help him in collecting those 4 gems because he fears that there world might come to an end. He needs you to collect the 4 gems to bring them together to save the world and his city. In there adventures they will need to grow stronger and they will need to get better gear because each temple will be harder then the last temple they would have encountered, The temples are not completely thought out yet but we have a plan to make the temples have enemies and also puzzles that the player will have to solve so they can proceed even further into the temple to get there gem.

Lightvale
Ryan Barrett, Cahlen Dixon, Kyle Roach, Jason Siegfried
Sponsoring Faculty: Saleh Aliyari

The objective of this project is to develop a two-dimensional, game in the style of a metroidvania (subgenre of action-adventure games that have the gameplay style of Metroid and Castlevania games), with stages, each consisting of different rooms, connected by a central hub room or stage. Each room will have different enemies and obstacles the player must deal with as they walk through using ranged or melee attacks; the stats of the player and their ability to fight these enemies will increase over time. Furthermore, the game will have a built in save feature to save how far the player has gone in the game.
and what abilities and items they possessed, which will allow them to return to the game after quitting or retry the same section with a different style of play. Each stage will also have a boss the player can fight for the chance to make a choice, which will affect what ability the player gets and possibly the story of the game. The game will be developed in the Java programming language, using the capabilities of the LibGDX engine, which includes rendering the game’s graphics (all those nice things you’ll be seeing), handling input, streaming audio (all that nice sound you’ll be hearing), and implementing physics into a game, and can also be used to render a game on multiple platforms (i.e., it has cross-platform capabilities), which includes Windows, Linux, Mac OS, iOS, and Android.

Session 2: Art Exhibit, undergraduate division, Nexus Building, first floor, lobby
See Section A, Session 2

EPosters: Nexus Building, first floor, lobby

Session 3: Department of Biology, graduate division

Morphological defense mechanism in oyster drills and dogwhelks to Asian shore crab predation
Prachi Saxena
Sponsoring Faculty: Aaren Freeman

Predator-prey interaction can play crucial roles in managing pest species. An invasive Hemigrapsus sanguineus, which is commonly known as Asian shore crab, was introduced to the Atlantic coast of the United States of America prior to 1988 in Rye, NY. In many locations increased populations of Asian shore crabs have replaced the native marine crabs, increasing the survival rate of the oyster drill/whelk, Urosalpinx cinerea, which locally has negative impacts on American oysters. We conjectured that predation by Asian shore crabs on the oyster drill may be related to the latter’s morphological defenses to crab predation. Analyzing morphological defenses and susceptibility can rationalize the failure of Asian shore crab predation on oyster drills. In addition, the Asian shore crab is spreading northward and now overlaps with another whelk, Nucella lapillus. In our lab experiments, we have executed three preliminary studies to address the following hypotheses: (i) Does the predatory technique of aperture entry (“winkling”) on Nucella lapillus and Urosalpinx cinerea, differ in efficiency between male and a female Asian shore crabs (male crabs have claws >3x larger than female claws)? (ii) Is Urosalpinx cinerea tissue palatable/edible to Asian shore crabs, once the whelk’s shell is removed? (iii) Does the presence of an operculum on Urosalpinx cinerea affect the ability of Asian shore crabs to consume the whelk? Collectively these experiments will help us better understand the structural defense mechanism that may mediate the predator-prey interactions between this invasive crab and these important intermediate consumers.
Role of Microsomal Triglyceride Transfer Protein in The Pancreas

Wafa Alsantli

Sponsoring Faculty: Aran Stump

Microsomal triglyceride transfer protein (MTP) facilitate the assembly of very low density lipoprotein (VLDL) including ApoB by the liver and chylomicrons (CM) by the intestines. Apart from triglyceride (TG), MTP can also transfer phospholipids, sphingolipids and cholesteryl esters (CE). Pancreas is composed of exocrine and endocrine glands that are involved in metabolism and digestion. Pancreas specific MTP knockout mice (p-Mttp -/-) were generated by breeding Cela-cre mice that are expressing cre recombinase under the control of elastase promoter with Mttp flowed mice. After comparing triglyceride levels in the plasma between Pancreas specific MTP knockout mice (PKO) and flox mice, it was found that triglyceride levels were less in the PKO mice. Therefore, in this study we further investigate the function of MTP in the pancreas. We hypothesize that MTP has an effect on the pancreatic lipase activity. To test this hypothesis, we will be culturing human pancreatic acinar cells (MIA PaCa-2 and Panc1) and study their phenotype including lipid accumulation, MTTP activity, lipase activity, metabolic activity and oxygen consumption rate (OCR). Furthermore, PKO mice will be used to investigate our hypothesis in vivo by studying the mice metabolic using Comprehensive Lab Animal Monitoring System (CLAMS), Measuring MTTP activity and mRNA expression in the pancreas, liver, intestine, white adipose and brown adipose tissue.

The Effects of Amino Acid Supplementation on the Metabolism of Drosophila melanogaster treated with Rapamycin

Nandy Brijlal

Sponsoring Faculty: Eugenia Villa-Cuesta

Rapamycin is an immunosuppressant that inhibits the mTOR pathway via mTOR C1. The mTOR pathway is directly linked to aging, protein synthesis, and apoptosis. Past studies using Drosophila melanogaster indicated that inhibition of the mTOR pathway via rapamycin increases longevity. However, little is known about how exactly rapamycin is able to do this. It has been found through metabolomic studies and dietary modifications that rapamycin plays a key role in protein metabolism. From this, experiments were performed focusing on glutamate dehydrogenase complex due to its involvement with transaminases in the deamination of amino acids. In this experiment non essential amino acids, glutamine and glutamate, were incorporated into the diet of D. melanogaster and stop flow respirometry was tested using a field metabolic system. Preliminary tests show that when fruit flies are supplemented with glutamine and rapamycin there is no difference in oxygen consumption when compared to control flies. Further studies will look at the implementation of glutamine and alpha-ketoglutarate into the diets of Drosophila melanogaster to further analyze the target of rapamycin.
Crassostrea virginica, eastern oyster, settlement in Long Island

Laura Fallon

Sponsoring Faculty: Dr. Aaren Freeman

Most shellfish populations on the east coast of the United States have declined dramatically. Although still economically important the eastern oyster, Crassostrea virginica, has been thoroughly depleted in several regions due to overharvesting and disease. Healthy populations of eastern oysters offer many ecosystem services such as improved water quality, coastal buffering, food supply, and habitat. Restoration of oysters to New York coastal areas requires substantial effort and an understanding of local oyster population dynamics. Sustainable populations of oysters require natural set of juvenile oysters, or “spat. In this experiment we followed oyster settlement at eight locations on the north and south shores of Long Island, New York, by sampling with bags of oyster shell every 1-3 months for a year and looking for spat. Oyster settlement was found in two locations, Lloyd Harbor and Laurel Hollow. Further research should be done to determine the viability of restoring oysters in these areas. We suggest that areas with oyster settlement may be viable for restoration, even without hatchery-derived spat-on-shell.

Type-B Response Regulators in Physcomitrella patens

Amber Morey

Sponsoring Faculty: Alexander Heyl

Hormones are chemical signals that are found in almost all multicellular organisms; these molecular signals are used by cells for almost all developmental processes. Plants are no exception to the use of these chemical signals; cytokinin, a phytohormone, mediates a commonly well-conserved signaling pathway found in aquatic, non-vascular and vascular land plants. Currently, the majority that is known about this pathway comes from research that has been done on Arabidopsis, a model organism for vascular plants. The goal of this study is to examine the function of one member of the cytokinin signaling pathway, the type-B response regulators, in Physcomitrella patens to further our understanding of the evolution of the cytokinin signaling pathway. Examining this pathway in P. patens may provide insight for what mechanisms were necessary for the transition from an aquatic environment to land.
Session 4: Department of Biology, undergraduate division

Functional Morphology and Terrestrial Locomotion in Lepidosiren

Erica Redmann

Sponsoring Faculty: Andrea Ward

The lepidosiren family are the closest relatives of ancient tetrapods and therefore, our closest link in exploring the transition of life onto land. While many have studied the physiological changes necessary to make this transition, functional requirements also changed when life moved onto land. This research seeks to understand the how lepidosiren movement on land differs on different substrates.

Understanding the evolution of a key protein in plant hormone signaling

Sandra Pinto

Sponsoring Faculty: Alexander Heyl

The phytohormone cytokinin promotes development and plays an important role in the response of biotic and abiotic stress in plants. Its signal transduction is mediated by a two-component His-Asp phosphorelay transduction system, in which histidine phosphotransfer (HPT) proteins are key players in transferring a signal from membrane bound receptors to the nucleus. In order to understand the evolution of the cytokinin signaling pathway and its members, the two HPT proteins of Physcomitrella patens, a moss that is the most basal plant for which components of the cytokinin signaling pathway is described, will be characterized. We will investigate protein-protein interaction with its upstream and downstream components using the yeast two-hybrid assay. Furthermore, functionality will be tested by genetic complement of a mutant. Results from this data will provide a greater understanding of the mechanism of cytokinin in this model moss.

Role of substrate during terrestrial locomotion in Asian swamp eels (Monopterus albus)

Rebecca Ortega

Sponsoring Faculty: Andrea Ward

Elongate fish rely on the axial skeleton to travel across aquatic and terrestrial environments. Monopterus albus, or the Asian swamp eel, is one species that is found in shallow, stagnant waters. They are known to survive out of water when burrowing and traveling across terrestrial environments. Environmental changes such as the drying season and starvation influence these eels to move out of swamps and ponds and travel across terrestrial environments before finding water again. Previous studies have shown that elongate fish use resistance points in both aquatic and terrestrial environments. They make forward propulsions by flexing their bodies at several points and exerting force to their surroundings. In this study, we examined how substrate (sand, fixed pebbles, and loose pebbles) impacted kinematics during undulatory locomotion in Monopterus. Kinematic measurements
included distance ratio, velocity, wave amplitude, and wave frequency. We found that substrate had an impact on kinematics during locomotion.

Blood Cell Counts During Inflammation

Anhad Brar

Sponsoring Faculty: Benjamin Weeks

Abstract not available.

A Medieval Fort Site As Seen Through Forensic Dentistry

Esther Yakubova, Simranjit Kaur

Sponsoring Faculty: Anagnostis Agelarakis

This paper presents dental anthropological data concerning a random sample of a Medieval (11-13th centuries) human population recovered archaeologically from the site of Polystylon fort, a provincial stronghold of the Byzantine Empire, in the Thracian shores of Greece.

A representative sample of mandibular components with dentitions preserved in situ were selected for bioarchaeological laboratory analyses with a focus on dental forensic pathology. Research was carried out, based on the methodological approaches of forensic odontology, on alveolar bone components, clinical and anatomical dental surfaces with emphasis on morphometric variability, non-metric epigenetic traits, dental functional modification patterns, as well as the range of conditions which commensurate to aging processes afford oral pathological changes of degenerative nature.

Results of our study illuminate matters of biological growth and dental maturation processes reflective of the overall health status of the individuals involved, and a roster of palaeopathological manifestations inclusive of non-masticatory dental modifications which had been caused by the use of incisal and occlusal crown surfaces in third hand” functions. Furthermore, it was plausible to derive assessments on the variable conditions of oral hygiene between genders based not only on the range of infectious pathological manifestations and the prevalence of dental crown micro-traumatisms which mainly related to aspects of the quality and preparation of foods consumed, but also on the variability of behavioral and/or habitual tendencies which traced in the odontological record reflected on ante mortem efforts implemented towards a better oral cavity hygiene.
Characterization of Degu Estrus Cycles
Danielle Mark
Sponsoring Faculty: Carolyn Bauer

Few studies have examined estrus cycle length and variability in Octodon degus, a rodent native to central Chile. Before they were housed with males, we examined the estrus cycles of eight female degus by examining the duration of vaginal patency and vaginal discharge cell types. Additionally, we began taking weekly blood samples to measure progesterone levels. After allowing females to breed, we continued monitoring vaginal patency and taking weekly blood samples. By determining the progesterone profiles of degus prior to and across gestation, we hope that in the future we may use progesterone levels as a quick metric to determine whether degus are in the early stages of their 90-day pregnancy. Our data expands our knowledge of female degu reproductive cycles.

The effect of rapamycin upon the inhibition of glutaminase in Drosophila melanogaster
George Economou
Sponsoring Faculty: Eugenia Villa-Cuesta

Rapamycin is an immunosuppressant drug which is known to inhibit the mammalian target of rapamycin (mTOR) pathway. The mTOR pathway is responsible for numerous cell processes including protein translation and cellular aging. Rapamycin is an inhibitor of the mTOR pathway and causes increased longevity at the cost of a diminished metabolic rate in many species including Drosophila melanogaster. Although the functions of rapamycin are widely studied, the specific target of rapamycin is still unknown. Previous research in the laboratory has shown that rapamycin plays a role in protein processing and that when rapamycin is tested on Drosophila melanogaster with mutations encoding for the enzyme, glutamate dehydrogenase, the effects of rapamycin are not seen. Glutaminase is an enzyme directly upstream of glutamate dehydrogenase. The laboratory wanted to determined whether rapamycin would still work upon the inhibition of glutaminase. It was believed that upon the inhibition of glutaminase, the effects of rapamycin would be be observed in Drosophila melanogaster, allowing for the determination of whether rapamycin targets glutaminase. In order to do this, BPTES, a drug used to inhibit glutaminase, was administered to the flies in conjunction with rapamycin and a technique called Stop-Flow Respirometry was used to observe the metabolism of these flies. It is expected that upon the completion of this experiment, it was concluded that the effects of rapamycin did not have an effect on the flies when the enzyme glutaminase was inhibited. This allows for the conclusion that glutaminase could potentially be a target of rapamycin however, more enzymes upstream of it must to be experimented with in order to confirm whether rapamycin’s target truly is glutaminase.
Terrestrial Locomotion of Anguilla Rostrata on Wet Sand at 0°, 5°, 10° and 15° Inclines

Alina Sheikh

Sponsoring Faculty: Andrea Ward

Anguilla rostrata, the American eel, is a facultative catadromous species and undergoes migrations that are crucial events in its life cycle. There has been a significant decline in the number of American eels and this can be attributed to a number of factors, including habitat loss and fragmentation. Habitat loss and fragmentation is caused by anthropogenic interference such as dams, weirs, barrages, sluices, and culverts, which can serve as obstacles to upstream and downstream migration. The installation of eel passages can alleviate the detrimental effects these obstacles impose on eels, but these passages must be engineered in a way that eels can use them efficiently; the degree of incline of these passageways is a critical component of their design. This study focuses on the effect of the degree of incline on the terrestrial locomotion of American eels. Eels will be recorded climbing up 0, 5, 10, and 15° inclines on wet sand. Current trials indicate that eels are having difficulty climbing up inclines at and above 10°. Kinematic analysis of the videos of the eels will include quantitative measures such as wave amplitude, wave frequency, velocity, and distance ratio for 20 points along the body. There is little research done on this factor and experimental results can provide insight on better eel passage design and conservation efforts.

Impact of Incline on Sand on the Locomotion of Lepidosiren Paradoxa

Areej Moghni

Sponsoring Faculty: Andrea Ward

Lepidosiren paradoxa is a lungfish found in the waters of South America. It uses fully developed lungs to breathe and because of this, it is believed that it can spend time outside of an aquatic environment. This fish may be a link between the aquatic and terrestrial environments and may exhibit adaptations to move on to land and subsequently on inclines. Many aquatic animals who spend time on land encounter a variety of terrains and/or may have to climb for various reasons, including accessibility to food, shelter and protection from predation. It was on this basis that this present study was performed. The purpose of this study was to determine the impact of inclines at 0°, 5°, 10° and 15° on the locomotion of L.paradoxa. The goal was to film 5 different L.paradoxa individuals at each incline and analyze various components of locomotion using Adobe Premiere and MATLAB. The implications of the results, if L. paradoxa is seen moving up at the various inclines can be important for understanding the evolution and functional morphology of this fish and other related species, as well as potentially aiding in conservation efforts and other biological endeavors.
Application of Hypervalent Iodine for sp3-sp3 Cross-Coupling by Electrophilic Substitution

Hassan Eldib

Sponsoring Faculty: Ivan Hyatt

Transition-metal-catalyzed cross-coupling reactions have revolutionized the way carbon-carbon bonds are prepared in synthetic chemistry. Although these reactions have become a powerful method for the synthesis of carbon-carbon bonds, they have various drawbacks such as expensive and toxic reaction conditions. Hypervalent iodine compounds offer a potential alternative to the traditional metal-catalyzed cross-coupling reactions due to their strongly electrophilic nature, ability to undergo reductive elimination, and excellent leaving group capacity. The goal of the project presented herein is to produce a hypervalent iodine reagent that can efficiently couple two sp3 hybridized carbons. Current efforts include the synthesis of a hypervalent iodine compound that utilizes dipicolinic acid as a pincer-type ligand on the iodine atom.

Paleontology Illustration

Sae Bom Ra

Sponsoring Faculty: Michael D'Emic

An important part of scientific communication is visualization of data and results. Scientific illustration provides a means to communicate ideas to both other scientists and the public. For this project, scientific data were used to create illustrations using various traditional and digital media for N projects. First, a paleoenvironmental illustration was rendered in Adobe Photoshop based on a study of 90 million year old plant and animal fossils found in North America. The illustration accompanied a press release that was covered in several news outlets including Yahoo and LiveScience. Second, an illustration was created using computed tomography (CT) scans of the jaws of the carnivorous dinosaurs Majungasaurus and Allosaurus. Teeth were traced on X-ray slices of skulls using the program Dragonfly to create 3D models, which were then superimposed on watercolor life restorations of the dinosaurs’ heads using Adobe Photoshop. Third, muscle reconstructions through development were prepared using fossils of the famous carnivorous dinosaur Deinonychus. Muscle origin and attachment sites were determined through comparative anatomy using extant animals so that differences in muscle function between juveniles and adults could be interpreted.
Effect of Rapamycin on Glutamate Dehydrogenase activity in Drosophila melanogaster

Seo Yeon Joo

Sponsoring Faculty: Eugenia Villa-Cuesta

Rapamycin is an immunosuppressant that mimics the effects of dietary restriction by inhibiting the Mammalian Target of Rapamycin (mTOR) pathway. The mTOR pathway is a nutrient sensing pathway which plays a vital role in the cell cycle. This pathway is sensitive to the intake of nutrients and correspondingly regulates cell growth and aging. One instance of how diet affects the mTOR pathway is through the intake of amino acids. The glutamate dehydrogenase enzyme is involved in amino acid metabolism specifically through its catalysis of glutamate into α-ketoglutarate. While previous research studied the effect of rapamycin on the metabolic rate of Drosophila melanogaster with a mutation in glutamate dehydrogenase, there was no focus on its effect on the enzyme’s activity. This study therefore focused on discerning whether or not GDH activity is significantly different when wildtype D. melanogaster is administered 200 μM rapamycin treatment food. In addition, the study also focused on characterizing the GDH activity of the strains of flies with a GDH mutation: GdhMI08092/GdhEY07150; GdhMI09904/GdhEY07150; and GdhEY07150/GdhEY07150, GdhMI09904/TM3, GdhMI08092/TM3. It was found that there was no significant difference between the wildtype flies given either the rapamycin-infused food or the control food. The strain that had the highest GDH activity was GdhEY07150/GdhEY07150, the homozygous viable strain. GdhMI08092/GdhEY07150 and GdhMI09904/GdhEY07150 were found to be significantly lower than the homozygous viable strain. GdhMI09904/TM3 and GdhMI08092/TM3 had low GDH activity.

GABA Receptor Biology in Drosophila melanogaster and Fitness Tradeoffs

Selena Sankar

Sponsoring Faculty: Aram Stump

The evolution of resistance is a simple example of Darwinian evolution by natural selection: individuals carrying alleles that reduce susceptibility to a chemical control method are more likely to survive and reproduce, leading to an increase in the frequency of those alleles in the population. The evolution of resistance-associated alleles is predicted to involve fitness tradeoffs and can be associated with compromised aspects of phenotypes. An example of insecticide resistance is Drosophila melanogaster produced by RdIMD-RR, an allele of a gene that encodes a subunit of the GABA gated chloride channel. To test the hypothesis of fitness trade-offs a population combined with RdIMD-RR and the wild type allele will be maintained for several generations. A Polymerase Chain Reaction (PCR) will be used to amplify a region of the Rdl gene to directly determine the DNA sequence between the three genotypes. A difference in an allele of the Drosophila melanogaster Rdl gene and the wild-type allele is predicted to decrease the experimental population in an artificial complex environment.
Exploring Problem Solving Though a Polya Lens

Julie Weissman

Sponsoring Faculty: Salvatore Giunta

There are constantly challenges students face throughout their entire career in mathematics. My research will explore historical mathematical problems through a unique method of problem solving. These problems will be from such fields of graph theory, algebra, geometry and problem solving. The research will focus on the four steps of Polya’s methods of problem-solving, as well as an over view of who George Polya was. I will outline a how-to guide on solving these classical mathematics problems using the Polya method.

Maternal stress is related with decreased play behavior in Octodon degus pups

Stephanie Malcangi

Sponsoring Faculty: Carolyn Bauer

For an activity to be considered play behavior it must meet specific criteria- in that the action is not required for the animals survival, but rather is repeated, spontaneous, voluntary, and rewarding. The behavior must also be initiated under conditions where the individual is adequately fed and is under little to no stress. Play behavior has been observed in a variety of organisms including fish, marsupials, birds, reptiles and most notably, mammals. In this study, we observed whether maternal stress was related with the play behavior of a precocial and diurnal rodent known as the degus (Octodon degus). From a set of videos containing pairs of mothers that were either unstressed (of Captive origin) or stressed (of Wild origin), the frequencies of both social and locomotor play behaviors, as well as other general behaviors and time of rest, were scored every 2 days from 2–20 days after parturition. Degus pups increased the frequency of all scored behaviors over time, indicating that degus pups became more active and playful as they matured. Additionally, we also found that pups from Captive (unstressed) mothers had a higher frequency of both run/frisky hops (p = 0.03) and nose-to-nose contact (p = 0.04) compared to pups from Wild (stressed) mothers. These results suggest that certain social and locomotor play behaviors are affected by maternal stress, likely via maternal care, although with a greater sample size and/or more data points, significant differences between additional play behaviors may be observed between pups of captive and wild mothers.

Osteocyte Morphology and Local Biomechanical Loading Regimes

Michael Miskiewicz

Sponsoring Faculty: Michael D'Emic

Bones varying in biological function and design experience distinct loading patterns which influence the morphology of their mechanosensory cells, osteocytes. Through measurements of osteocyte lacunar axes and spatial orientation, studies have suggested that bones subjected to compressive or tensional loading result in a more elongated osteocyte shape, whereas bones undergoing less mechanical loading
gives rise to more spherical or oblate osteocytes. The current study hypothesizes that due to differences in localized loading patterns in the femur of several avian species, where the anterior region experiences more compressive loading and the posterior surface experiences more tensional loading, osteocyte lacunar morphology and shape in these opposite surfaces will be significantly distinct. Femora from 25 extant avian species varying in body mass were resected and processed to 400 µm thin section slides. Three dimensional images of the osteocytes were produced using a Zeiss Axiocam 503 micro-CT scanner and Weka Trainable Auto-Segmentation software. So far, 4 out of the 25 femora were scanned and preliminary measurements of osteocyte lacunar volume, density and angular orientation within the anterior and posterior surfaces were collected using Dragonfly software. Total osteocyte volume in one of the specimens (MDD_Aves_160) was found to be 9.07x10^5 (2.44%) in the anterior surface, and 8.19x10^5 (1.79%) in the posterior surface. Similar measurements will be taken for the remaining 19 femora samples, and a One-Way Anova test will be implemented to determine if a statistically significant relationship exists between the osteocytes found in these opposite surfaces.

**Characterizing the Growth Kinetics of a Single Bacterium to Predict Antibiotic Resistance**

Areeba Khalid  
Sponsoring Faculty: Matthew Wright

Microscopy has advanced through the generations. Time-lapse microscopy now creates detailed images of generations and allows the monitorization of cellular processes at single cell levels. Many studies have shown that time-lapse microscopy allows the investigation and analysis of gene regulation, cell growth, and cell morphology. Antibiotic resistance has become a growing health crisis. Doctors have to prescribe antibiotics just to be safe because the tests take 24-48 hours to determine if it is a bacterial infection. When infections become drug resistant, alternatives are used, which have serious side effects. About two million people obtain serious infections from resistant bacteria and 23,000 people die each year as a result of this. This causes illnesses to last longer and lead to more complicated conditions. Doctor visits increase and drugs become more expensive for patients to afford. Till date, most of the data generated to predict antibiotic resistance using bacterial morphology is after a few generations. However, in the current project, I hypothesize that the single bacterium growth characteristics can estimate antibiotic resistance in a dramatically reduced timescale (i.e., less than 20 min). An optimum concentration of poly-l-lysine coating with bacteria was created to have the desired amount of bacterial adhesion. This led to the time-lapse imaging protocol to detect the morphology of Escherichia coli. By studying growth kinetics before replication, phenotypic changes can be analyzed to predict antibiotic resistance. This new method can allow doctors to test 96 patient’s urine samples at once and get results within 20 minutes. Antibiotic resistance can be minimized, and doctors would not have to prescribe any antibiotics to people who do not need them.
Session 5: Department of Chemistry, undergraduate division

A Cross-Coupling Approach for the Synthesis of Malondialdehydes

Temurjon Ismailov, Alberto Bonilla-Susano

Sponsoring Faculty: Daniel Silverio

Malondialdehydes are a class of functional groups often encountered in the building blocks scientists use when making and testing new pharmaceutical drugs. The methods to synthesize them currently are limited since they are inflexible in their starting materials. Our research explores various methods to synthesize 2-phenylmalonaldehyde via a Suzuki cross-coupling reaction using nickel and palladium catalysts. Cross coupling reactions are a simple way to form carbon-carbon bonds and the advantage of using the Suzuki method is its mild reaction conditions, and the availability of boronic acids. We have explored a variety of conditions for the reaction and are currently synthesizing additional nickel catalysts in the hope that one will allow us to accomplish our targeted transformation to afford high yields of the desired product in an efficient manner.

Synthesis and characterization of CdSe and CdS thin films deposited on Platinum electrodes

Samantha Wynter

Sponsoring Faculty: Justyna Widera-Kalinowska

As the need for renewable energy increases scientists have looked to solar cells as the world’s next source. Cadmium selenide (CdSe) and Cadmium sulfide (CdS) are inorganic, binary n-type semiconductors belonging to the II-IV semiconductor compound group. Compounds within this group are commonly used in the field of electrochemistry, photovoltaics especially, because of their direct band gaps and high absorption coefficients. Current interest in these compounds are focused on the development and testing of nanoparticles, quantum dots and thin films. The aim for this research will be to utilize electrochemical techniques in order to analyze CdSe and CdS thin films that are deposited onto a platinum electrode. Chronoamperometry will measure the faradaic process that is occurring on the electrode surface, and OCP (Open Circuit Potential) will measure the potential. Aqueous solutions of each compound were separately made and electrochemically deposited individually onto the surface of a platinum disk electrode. A potential was then applied and the system was exposed to light. The data obtained from the experiments show that the system decays, that as time increases both the current and potential of the films decrease, and after an infinite number of time the films are no longer functional. The data collected will determine the longevity of solar cells, biosensors and other applications. Future work will involve combining the thin films with conductive polymers like PANI in order increase its effectiveness.
Evaluation of AGNH and UNH inhibitors using Enzyme Kinetics
Nicholas Reynarowych
Sponsoring Faculty: David Parkin and Brian Stockman

In an effort to find a treatment for trichomoniasis, an infectious disease caused by the sexually transmitted protozoan parasite Trichomonas vaginalis, a variety of treatment pathways are being explored. As an obligate parasite, it relies on its host in order to synthesize certain nucleotides, and it obtains these nucleotides through a series of salvage pathways using the UNH and AGNH enzymes. In order to treat trichomoniasis, a number of UNH and AGNH inhibitors are being tested. Kinetic characterization of these inhibitors will allow for verification and further exploration of NMR results. NMR assays only test for inhibition, while kinetic evaluation provides an orthogonal assay that can determine the type of inhibition (competitive, noncompetitive, uncompetitive) as well as providing a Ki value.

Fast protein liquid chromatography based purification of uridine nucleoside ribohydrolase from E. coli cells for X-Ray crystallography
Mattias Nyitray
Sponsoring Faculty: Brian Stockman

The most prevalent, non-viral sexually transmitted infection in the world, Trichomoniasis, is caused by Trichomonas vaginalis, a parasitic protozoan. The current treatments for Trichomoniasis have progressively become ineffective in an increasing number of cases as the parasite is gaining an increased resistance to the current available treatments. Uridine nucleoside ribohydrolase, UNH, is a salvage pathway enzyme that the parasite uses to obtain pyrimidines from the host. UNH, a tetramer with an approximate molecular weight of 150 kDa, has become a druggable target of interest for new antitrichomonal therapies. However, upon isolation and purification of UNH, a small residual band at about 22 kDa has been observed on SDS PAGE gels. This impurity precludes using the protein for X-ray crystallography. Two modifications to the purification protocol were made in an attempt to eliminate the low molecular weight impurity. First, a more robust protease inhibitor cocktail was used during the initial stages of cell breakage. Second, a gel filtration column was run using higher resolution. Results will be presented and discussed.

Development of Hypervalent Iodonium Compounds for Organic Synthesis
Kirandeep Kaur, Navindra David
Sponsoring Faculty: Ivan F. Hyatt

The work presented herein consists of two projects tied together with the theme of using hypervalent iodine compounds to envision new synthetic routes and possible solutions to novel chemistries that have recently piqued interest in the synthetic community. The first project involves solving the problem of aggregation caused quenching (ACQ). ACQ is a phenomenon inherent with most fluorescent
molecules in which at high concentrations the luminescence is prevented by excitons of one molecule being absorbed by a neighboring molecule of similar structure. While most fluorescent molecules exhibit the ACQ process, it was recently discovered that just the opposite can happen for other molecules; thus dilute solutions do not fluoresce yet upon concentration the molecules undergo a process called aggregation induced emission (AIE). Current theories suggest AIE molecules avoid the loss of fluorescence caused by π-π stacking of aromatic ring systems by restricting intramolecular rotation. The synthesis of a model molecular system known to exhibit AIE was carried out through the use of fluorene and cycloheptatrienyl tetrafluoroborate to produce cycloheptatrienylidene (CHT) while other attempts used a novel hypervalent iodine carbon-carbon bond forming reaction to obtain the desired product. It is predicted that when CHT interacts with a metal, the aromatization of it will cause aggregation and turn on the light emitting fluorescence.

To further the goal of developing novel reactions for carbon-carbon bond formation, the synthesis of new hypervalent iodine reagents is ongoing. Current efforts include the synthesis of a hypervalent iodine pincer complex using dipicolinic acid. In the process of synthesizing the target moiety, an unusual compound was crystallized and preliminary results identify the structure to be a metal-organic framework (MOF). Future work will involve the evaluation of the structure of the MOF and continuance of the synthesis of the pincer complex.

**Molecular modeling and NMR-based counter screens of fragment inhibitors of Trichomonas vaginalis adenosine/guanosine nucleoside ribohydrolase**

Abinash Kaur, Juliana A. Gonzalez

Sponsoring Faculty: Brian J. Stockman

Trichomoniasis is the most prevalent, non-viral sexually transmitted disease in the world. It is caused by the parasitic protozoan, Trichomonas vaginalis, which is incapable of de novo synthesis of purine and pyrimidine rings. Current 5-nitroimidazole drug treatments show repeat infections due to increased resistance by the parasite. A distinct, druggable target is the key nucleoside salvage pathway enzyme adenosine/guanosine nucleoside ribohydrolase (AGNH). A 1H-NMR-based activity assay was previously used to screen the enzyme against a fragment diversity library, resulting in the identification of nine inhibitor classes. Representative fragments from each structural class were subjected to two independent counter screens, jump dilution assays and detergent assays, in order to confirm reversible, target-specific inhibition, respectively. In the absence of a crystal structure, molecular modeling is also being used to map the binding orientation of fragment inhibitors in the active site. A predicted apoenzyme model was built based on structurally similar nucleoside ribohydrolase enzymes within the Protein Data Bank. Molecular docking was utilized to project predicted orientations of the adenosine ligand onto the predicted model and determine the residues predicted to interact with the conserved calcium cation. Molecular modeling in combination with structure-activity relationships continue to guide ongoing medicinal chemistry efforts to discover nM inhibitors of the enzyme for in vitro target validation.
Translation of 1H and 19F NMR-based activity assays to in vitro characterization of nucleoside hydrolase activity in cell extracts and whole cells

Maham Mahmood, Madison Canestrari

Sponsoring Faculty: Brian Stockman

Trichomoniasis, the most prevalent non-viral sexually transmitted infection in the world, is caused by the parasitic protozoan Trichomonas vaginalis. Studies have indicated an association between T. vaginalis and a higher susceptibility to various other infections including chlamydia, HIV, and syphilis. The parasite has shown increasing resistance to the current treatment of 5-nitroimidazole drugs such as metronidazole. T. vaginalis is incapable of de novo synthesis of purine and pyrimidine rings, so it must rely on salvage pathway enzymes such as adenosine/guanosine preferring nucleoside ribohydrolase (AGNH) and uridine nucleoside ribohydrolase (UNH) to scavenge nucleobases. Both enzymes have been screened to identify fragment inhibitors with high ligand efficiencies to use as starting points for drug design. AGNH and UNH can be validated as antitrichomonal targets by demonstrating a correlation between enzyme inhibition and antitrichomonal activity. Escherichia coli cells with endogenous nucleoside ribohydrolase gene expression of rihA (ybeK), rihB (yieK) and rihC (yaaF) were used as a surrogate to develop protocols for observing in vitro enzyme activity. A 1H NMR-based activity assay for AGNH using adenosine as the substrate and an 19F NMR-based activity assay for UNH using 5-fluorouridine as the substrate were previously developed for compound screening. These assays proved remarkably robust for observing nucleoside hydrolase activity in cell extracts and whole cells. Signals for substrate and product are clearly distinguishable from background signals arising from the cell contents. Reactions have been shown to be cell-dependent, indicating that both enzymes are intracellular and that substrate can rapidly enter the cells.

Structure-activity relationships of fragment-based inhibitors of Trichomonas vaginalis adenosine/guanosine preferring nucleoside ribohydrolase

Melissa Emilcar, Angelica Leonardo, Tian Li, Zaafir Dulloo, Nafeesathul Hanan Kabir, Ari Gil

Sponsoring Faculty: Brian Stockman and Melissa VanAlstine-Parris

Trichomoniasis is a sexually transmitted infection caused by the parasite, Trichomonas vaginalis. Infections are currently treated with 5-nitroimidazole drugs, such as metronidazole and tinidazole. However, strains of the parasite with resistance to these drugs have emerged, indicating the need for new treatments with novel mechanisms. Since the parasite is unable to perform de novo synthesis of nucleobases, it must obtain them from its host using salvage pathway enzymes including adenosine/guanosine preferring nucleoside ribohydrolase (AGNH), an essential enzyme involved in the pyrimidine salvage pathway. We previously used fragment screening to identify ligand-efficient fragment inhibitors of AGNH. Medicinal chemistry efforts were then focused on several fragment scaffolds including benzimidazoles and phenyl pyridines. IC50 values were determined using the same 1H NMR-based activity assays as the fragment screens. The resulting structure-activity relationships suggest that the fragment scaffolds interact primarily with the nucleobase regions of the active site rather than the ribose pocket. Collectively, the data define emerging structure-activity relationships that suggest likely vectors and chemical modifications for improving inhibition potency while
maintaining ligand efficiency. The data establishes a platform for ongoing medicinal chemistry development of compounds with nM potency that will provide the tools for in vitro target validation against both 5-nitroimidazole-sensitive and 5-nitroimidazole-resistant T. vaginalis strains.

**Computational Studies of αβ-Tubulin and its Role in Human Breast Cancer Metastasis**

Vinay Maddula
Sponsoring Faculty: Professor Ivan Fabe Dempsey Hyatt

Microtubules are formed from the polymerization of a heterodimer protein known as αβ-tubulin and are responsible for many cellular functions, such as motility, growth, and division. In vivo studies of breast cancer cells have suggested that αβ-tubulin is activated by phosphorylation, resulting in more stable microtubules and possible cancer metastasis.

Molecular dynamics simulations of wild-type αβ-tubulin and two mutants were performed to better understand the reason for differential GTP-activated polymerization. Computational analysis of S165 revealed a key interaction between Ser165 and Gln256 that is not present in the S165D mutant. The lack of this interaction is responsible for the lack of binding between Gln451 and the α-phosphate of GTP in S165D.

**Synthesis of Nitrogen Heterocycle Hypervalent Iodine Compounds and Its Reactivity on Hypervalent Iodine Guided Electrophilic Substitution (HIGES).**

Haram Im
Sponsoring Faculty: Ivan Dempsey Hyatt

Previous research on Hypervalent Iodine guided Electrophilic Substitution (HIGES) reaction with benzyl metalloids, and phenyliodine diacetate (PIDA) showed a successful formation of carbon-carbon coupling on the para-position on the benzene ring to the iodine. The HIGES reaction utilizes the “metallic” properties of hypervalent iodine which are predicted to go through the transmetalation mechanism similar to the Reductive Iodonio-Claisen Rearrangement. To extend the HIGES reaction into a more profound methodology, PIDA was replaced with N-heterocyclic hypervalent iodine (N-HVI) and the product distribution and yield was evaluated. The variations of N-HVI molecules were tested in the HIGES reaction to determine whether N-HVI are also able to perform para-selective carbon-carbon bonds.
Synthesis of Phenyl Pyridine Analogs via Suzuki Coupling to Inhibit Uridine Nucleoside Ribohydrolase

Ari Gil, Melissa Emilcar, Abinash Kaur, Julia Persaud, Samantha Thuilot

Sponsoring Faculty: Melissa VanAlstine-Parris

Trichomoniasis is a sexually transmitted disease that affects 153 million adults worldwide and 3.1 million in the United States. Trichomoniasis is an infection by the protozoan Trichomonas vaginalis. In recent years the resistance of T. vaginalis to current treatments, such as 5-nitroimidazole class of antitrichomonal drugs, has drastically increased. This accentuates the need for a novel treatment of trichomoniasis. One strategy is the inhibition of uridine nucleoside ribo-hydrolase (UNH), as T. vaginalis cannot produce its own purine or pyrimidine, and acquires these bases from their host. Previous studies showed 3-(3-methylpyridin-2-yl) benzonitrile displayed promising inhibition of UNH. Therefore, this compound’s motif was used as a starting point to create an array of analogs to test for UNH inhibition. Methylpyridin-2-yl-3-benzonitriles were synthesized under palladium catalyzed Suzuki coupling conditions using readily available cyanophenylboronic acids and 3-methyl-2-bromopyridine. Basic transformations such as hydrolysis were carried out at the cyano group to produce the amide and carboxylic acid moieties. In addition, the 3-methyl-2-bromopyridine was coupled with o- and p-phenolboronic acids. Similarly, 3-(4-methylpyridin-2-yl)benzonitrile was synthesized under Suzuki coupling conditions. Future work will include the hydrolysis the cyano group of 3-(4-methylpyridin-2-yl)benzonitrile to the amide and carboxylic acid moieties as well as the synthesis of 4-(4-methylpyridin-2-yl)phenol and 3-(4-methylpyridin-2-yl)phenol. The synthesis and UNH inhibitions of these compounds will be presented.

Addition to Cyclohexenone by the Cyanoalkylcopper Derivative of Acetonitrile

Colleen Williamsen

Sponsoring Faculty: Daniel Silverio

Nitriles offer a versatile intermediate in organic reactions, readily synthesized into new functional groups like carboxylic acids, esters, and ketones. One method of adding nitrile groups to a compound is through carbon-carbon bonding. We are trying to add a nitrile group to enones in a 1-4 addition, using the cyanoalkylcopper derivative of acetonitrile. The derivative itself was reported on in the 1960s, and called efficient in carbon-carbon bond formation. Our experimentation aims to find the most efficient method of using it for 1-4 additions to cyclohexenones, testing with different solvents, copper salts, and/or proportions in reactants.
Synthesis of Aza-flavone derivatives and Testing of Inhibition on adenine-guanine nucleoside ribohydrolase

Sean Rahman

Sponsoring Faculty: Melissa A. Van Alstine-Parris

Trichomonas vaginalis is a protozoan parasite that notably causes the transmission of trichomoniasis. Current treatment for this sexually transmitted disease involves the use of a class of antibiotic drugs known as 5-nitroimidazole. Recent studies have concluded that this parasite had developed specific strains that are growing in resistance to the current treatment methods and so a new drug target is imperative for development of future treatments. The adenine-guanine nucleoside salvage pathway is a novel pathway of interest with regard to trichomonas vaginalis. The parasite utilizes an enzyme known as adenine-guanine nucleoside ribohydrolase (AGNH) in cleaving the desired nucleobases from compounds found in the infected host as it cannot produce these nucleobases de novo. The objective of this research was to produce compounds that can inhibit the enzymes ability to function. Of particular interest is in the aza-flavone backbone which has previously been shown to have an inhibitory effect on the growth of bacterial and fungal organisms in culture. 2-(3,4-dimethoxyphenyl)-2,3-dihydroquinolin-4(1H)-one and 2-aryl-4-quinolones were developed and purified before being test on AGNH for ligand binding efficiency and inhibitory effect.

Cyanoalkylcopper Species in Bond-Forming Reactions

Victoria Loucks, Colleen Williamson

Sponsoring Faculty: Daniel Silverio

Nitriles are common intermediates in reactions because of their versatility. Functional groups such as carboxylic acids, esters, and ketones can be formed from nitriles. One method to introduce nitriles to a molecule is through carbon-carbon bond formation. We are investigating the bond formation between allylic bromides and nitriles using cyanoalkylcopper species, an underutilized nucleophile. The cyanomethylcopper derived from acetonitrile was reported in the 1960s to be efficient in carbon-carbon bond formation, but the method was never expanded to use nitriles other than acetonitrile. Results confirm that we have synthesized the desired nitriles derived from allylic substitutions with new cyanocopper species. This supports the hypothesis that the methods used can be applied to a wider scope of nitriles and allylic electrophile, which will be explored in future work. We will also investigate the additions of new cyanocopper species to other classes of electrophiles.
Photocatalytic degradation of hazardous wastes using tungsten trioxide based hybrids

Marisa McLeod

Sponsoring Faculty: Justyna Widera-Kalinowska

Phenolic compounds such as, 4-chlorophenol and other compounds such as, rhodamine B, are products from industrial production mostly found in wastewater and are toxic. These compounds necessitate a cost and environmentally effective method of removal from wastewater. Photocatalysis is a productive method to degrade hazardous compounds and turns them into simple products such as: water and carbon dioxide. Using a semiconductor for photocatalysis produces highly reactive oxygen species, generated as water is split by the electrons produced by the light illuminated semiconductor. These species aid in the reduction of organic compounds.

The focus of this research was to develop a successful system involving tungsten trioxide (WO3) semiconductor to use as a photocatalyst for the degradation of 4-chlorophenol and rhodamine B. Electrochemical deposition of WO3 was used as the main method on which to base this research. Many modifications were made to the method to improve the system for photocatalysis. To optimize the sample, semiconductor hybrids were created with combinations of WO3, TiO2, and CdS. Combining semiconductors on a single sample generates a photoresponse extended beyond that of an individual semiconductor, making hybrid systems more ideal to run using solar power. The best system for photocatalysis was found to be the sample of WO3 electrochemically deposited onto TiO2 seeded FTO glass. The hybrid system had a bandgap of 3.03 eV and degraded 4-chlorophenol and rhodamine B in solution monitored by an UV-Vis spectrometer, seen as a decrease of their absorbance over time. The created photocatalytic hybrid was also ideal since it was simple, reproducible, and reusable as evident by the morphology of the sample remaining the same both before and after photocatalysis.

Oral Sessions: Nexus Building, classrooms

Session 6: Business II, undergraduate division, Nexus Building, Room 159

Have We Reached Full Employment?

Hifza Haider, Iffat Naveed

Sponsoring Faculty: Laura Messano

Full employment, by definition, is the lowest level of unemployment compatible with non- accelerating inflation in a given economy. Lower unemployment rates are associated with accelerated inflation rates. Full employment is achieved when unemployment is at its lowest, but inflation is also at its weakest non- accelerating point. We will examine the decisions made by the Federal Reserve during its December 2018, January 2019, and March 2019 meetings, along with America’s monetary, fiscal, and foreign policies to analyze the reasoning governing the Federal Reserve’s recent decisions. Dual
mandate and previous unemployment and inflation rates are considered in our research in determining the answer for our overarching question, “have we reached full employment?”

**Epidermolysis Bullosa Awareness**

Antonino Rodriguez, Ahmad Butt

Sponsoring Faculty: Laura Messano

Epidermolysis Bullosa is a group of genetic conditions that results in easy blistering of the skin and mucous membranes. Blisters occur with minor trauma or friction and extreme pain. Its severity can range from mild to fatal. Those with mild cases may not develop symptoms until they start to crawl or walk. Complications may include esophageal narrowing, squamous cell skin cancer, and the need for amputations. The disease affects 1 in 30,000 to 50,000 people. It is rare enough that raising awareness to the old is a key factor. Sharing information about this disease can open up individuals’ minds understanding that they are in fact lucky and privileged to have such a blessed life. Unfortunately, people with Epidermolysis Bullosa, don’t live for long and they are in pain for every second of their lives. It is very easy not to care about people with diseases like this because we don’t have to endure the pain they do. And as sad as it is, it is reality and the world need to be informed.

**Demanding Perfection from the Perspective of Transformational Leadership: The Management Practices, Leadership Principles, and Core Values of Hyman G. Rickover**

Sarah Ferraro

Sponsoring Faculty: James Hazy

Transformational Leadership Theory is one of the many models of leadership that has emerged since initial research on the subject was conducted in the 1940s. It can be defined as a method of leadership that prioritizes the intrinsic motivation and development of individuals and institutions. However, there are four key issues that appear with the application of this theory. The first issue is that the concept of leadership itself is hard to define. The second issue is that real-life human beings do not fit into any one mold. The third is that there is much crossover between this theory and others. Finally, the fourth issue is that there are certain nuances to leadership that this theory does not touch upon. These issues are highlighted through an analysis of the life of Hyman G. Rickover, “The Father of the Nuclear Navy”. He was a U.S. Navy Admiral who was credited with the construction of the world’s first nuclear submarine. The construction of this boat, the Nautilus, was an innovative feat of engineering and could have only happened under the stewardship of an exceptional leader. Rickover was a man who demanded a considerable amount of performance, productivity, intelligence, and efficiency from his subordinates. Rickover’s actions, drive, technical prowess, expectations, and vision of the future suggest that, whether he intended to or not, he mainly adhered to the theory of Transformational Leadership. Nevertheless, he still displayed signs of Team Leadership, Visionary Leadership, Strategic Leadership, Achievement-oriented Leadership, and Authentic Leadership. Although he did not strictly comply with one model of leadership, he was still undeniably successful in his accomplishments. His management practices, leadership principles, and core values all converged into a blueprint for effective leadership.
Transformational Leadership Theory has the potential to be improved based on the information obtained from Rickover’s life, actions, beliefs and choices.

Session 7: College of Nursing and Public Health, undergraduate and graduate divisions, Nexus Building, Room 157

Association Between Domestic Violence During Pregnancy and Pregnancy outcomes in Afghanistan

Sahra Ibrahimi

Sponsoring Faculty: Korede K. Yusuf and Amirhossein Alamdar Yazdi

Background: A patriarchal culture and four decades of conflict have placed Afghan women at a significant risk of domestic violence. About 53% of ever-married women age 15-49 have experienced domestic violence. Violence can have detrimental effects on both mother and child. In Afghanistan, there are limited data on this subject. The aim of this paper is to examine the relationship between domestic violence and early child loss, perinatal mortality, and neonatal mortality in Afghan women.

Method: Data from the domestic violence module of the 2015 Afghanistan Demographic and Health Survey were used. The study sample was restricted to 19,676 women who had complete data on the main variables of interest. Multiple logistic regression models were conducted to evaluate the association between domestic violence and low early child loss, perinatal and neonatal mortality with adjustments for potential confounders including age, parity, education level, wealth status, marital status, and place of residence.

Results: Approximately 16.67% (n=3,278) of Afghan women experienced domestic violence during pregnancy. 92.01% (n=3,016) of them had no education. In the adjusted models, we found that domestic violence in pregnancy was positively associated with early pregnancy loss [AOR (adjusted odds ratio) = 1.58, 95% CI (confidence interval) = 1.41-1.77] and perinatal mortality [AOR = 1.22, 95% CI = 1.08-1.38] but not with neonatal mortality [AOR =1.08, 95% CI = 0.90-1.30].

Conclusion: Our results suggest that domestic violence in pregnancy is related to adverse pregnancy outcomes in Afghanistan. Interventions to reduce exposure to violence during pregnancy may improve maternal and child health outcomes in Afghanistan and move the nation closer to achieving the Sustainable Development Goals 3 of ensuring healthy lives and promoting well-being for all at all ages.

Keywords: Domestic violence, Adverse pregnancy outcome, Early pregnancy loss, Neonatal mortality, and Perinatal mortality
The Effects of a Barbell Strength Training Program on Reducing the Fall Risk and Fall Related Injuries in the Frail Elderly

Monica Rosenberg, Shivanie Ramsanie, Emily Power, Marjon Karimzada, Freshta Karimzada, Guy Backlund

Sponsoring Faculty: Janet Raman and John Petrizzo

As a result of disease and the aging process, people become susceptible to falls. The frail and elderly are a vulnerable population in regards to this issue. We cannot stop the aging process but we can use the body's natural mechanism of adaptation to preserve what physical capacity our patients can achieve. Muscle and bone work together to create movement and are markers of overall health. If muscle and bone is not stressed or utilized enough, they are broken down by the body to save energy—effectively wasting away our patients as they age.

A patient who is a fall risk in the hospital will still be a fall risk when they are discharged. The key is to intervene so that they will have an intrinsically lower chance of falling altogether. The answer may lie in a physiological treatment. This will reduce falls in (and outside of) the hospital, which will reduce the amount of hospital stays by patients recovering from a fall.

Research has shown that sarcopenia and osteoporosis have been linked to attributing to falls. Studies have shown that resistance training increases lean muscle mass and bone mineral density, which reduces the risk of falls in the elderly. The intervention would be a supervised barbell strength training program, composed of exercises that utilizes the most muscle mass, the most weight, and utilizes the longest, effective range of motion. These factors are important in exercise selection as they significantly drive adaptation.

Barbell strength training will increase an individual’s lean muscle mass and bone mineral density. This increase in muscle mass and bone mineral density will reduce fall risk and fall related injury due to an improved ability to move independently, carrying out activities of daily living under less perceived physiological stress, better balance, and being able to withstand greater forces if one did fall. Stronger bones are harder to break.

Patient Engagement and Team Collaboration: A Recipe Health Coaches use in Managing and Preventing Chronic Diseases

Talene Kerbeykian

Sponsoring Faculty: Bernadine Waller

In 2014, 60% of Americans had at least one chronic condition, and 42% had multiple chronic conditions (Bauman, 2017). To combat this problem, Visiting Nurse Services of New York (VNSNY) partnered with Community Care of Brooklyn (CCB) to implement the Health Home at Risk Program, which provides free health coaching services to patients with Medicaid. As a result, health coaches have been incorporated into clinics and practices to encourage positive behavioral change in patients who have chronic conditions and are at risk of developing more. This analysis will demonstrate the efficacy of a care team approach where health coaches serve as an integral part in the prevention and management of at-risk
populations by utilizing patient engagement. The information presented in this study may be useful in the continuous development of health care systems, highlighting the importance of collaboration between patients, healthcare teams, and social services to benefit patients on a more holistic level.

**What's in your makeup?**

Zeona Walker-Latney, Mimi Ozoadibe, Ida Vasili, Sierra Lyerly

Sponsoring Faculty: Laura Messano

Makeup is a beauty cosmetic that people use to accentuate their features. It can consist of lipstick, eyeshadow, mascara, face powder or liquid. However, few know that the ingredients can be composed of harmful toxins that can affect their health. The purpose of our project is to inform our audience about the toxins in makeup and give them healthy alternatives.

**Session 8: College of Education and Health Sciences, undergraduate and graduate divisions, Nexus Building, Room 158**

**EXAMINATION OF RESPONSE INHIBITION IN ADHD & CAPD USING THE FLANKER TASK: A RESEARCH PROPOSAL AND PILOT STUDY**

Ayanna Mays

Sponsoring Faculty: Melissa Randazzo

Central Auditory Processing Disorder (CAPD) is a disorder impacting processing of sound in spite of normal hearing. Children with CAPD present similarly to children with Attention Deficit Hyperactivity Disorder (ADHD; e.g. attending behavior, following directions). One explanation for the attention deficits observed in children with ADHD is difficulty with response inhibition, or inhibiting unnecessary information. It is unknown whether children with CAPD also demonstrate differences in response inhibition, which could explain the overlap in signs of both disorders. In this pilot study we developed a child-friendly Eriksen Flanker task to elicit event-related potentials (ERP), the N200, associated with response inhibition. One healthy adult subject participated in the pilot Flanker experiment. We observed Conflict Adaption, a phenomenon researched by Bugg (2008), in which the participant adapted to the conflicts (flanker slides) presented. With Conflict Adaptation, response times declined for each stimulus condition upon repeated trials. A corresponding N200 ERP was elicited in response to the conflicting trials. Future directions of this research will evaluate if conflict adaption is present in children with CAPD compared to those with ADHD. To further understand response inhibition and conflict adaptation in CAPD we will also add auditory conditions to the experiment to see if CAPD is associated with generalized difficulty with response inhibition or difficulty specific to auditory information.
African parents involvement in their preschoolers education

Cheick Kante

Sponsoring Faculty: Wu

A rigorous preschool program exposes children to various learning opportunities that impact all stages of children development. Parents, as the first teachers of their children, know their children more than anybody else. Therefore, their involvement in their children pre-school education has positive academic outcomes. The purpose of this study was not only to explore the impact of African parents’ involvement in their preschoolers’ education which was hindered by: the parents’ socio-economic status, cultural beliefs, level of education, the school staff perception of parents’ involvement, but also to analyze the school to encourage parents’ involvement in their preschoolers’ education. This study was inspired by Epstein’s Model of parents’ involvement which describes six types of parents’ involvement as followed: parenting communication, volunteering, learning at home, decision making and collaboration. The study used the survey method and the descriptive research method. The sample population constituted of: 2 (20%) teachers out of 5, 5 (25%) preschoolers out of 20, and 5 (25%) parents out of 20. Data were collected by using questionnaires for parents and the preschoolers; an interview was scheduled for teachers. An observation was used to capture the interaction between school staff and parents. Data were analyzed by using quantitative method. Findings indicated that African parents’ participation rate in educational activities was negligible because of their daily occupations which limited their desires to be fully involved in their preschoolers’ education. The study provided alternative ways to increase the African parents’ awareness on the importance of getting involved in their preschoolers’ education. It was also recommended that local leaders also increase African parents’ awareness by organizing many socio-economic platforms for the parents.

Vocal Aging Over the Lifespan

Moriah Rastegar

Sponsoring Faculty: Laura L. Koenig

Over the course of a lifespan, one’s voice will change due to chronological and physiological aging. As one ages, the vocal fold musculature weakens and the surface tissues may become drier. Thus, the vocal folds prevent normal vibration. Additionally, the larynx may lower, lengthening the vocal tract. Past work suggests that such changes may affect numerous vocal characteristics, including vowel-related frequencies (formants), the pitch of the voice (fundamental frequency), and the quality of the voice (e.g., the degree of breathiness or roughness, which can be measured in terms of spectral balance and the amount of noise in the signal). However, most past studies have been cross-sectional rather than longitudinal. Thus, in the field of speech-language pathology there is still a lack of knowledge in regards to what exactly changes in vocal quality as an individual ages. This study will analyze recordings of French speakers recorded twice separated by a span of twenty years. From this data, several measures of speech sound production will be extracted. This presentation looks to examine (a) how do people’s voices change over the course of twenty years? and (b) which measures are most sensitive to the the ways that an individual’s voice changes?
Promoting Holistic Tutoring Practices to Develop Student Efficacy

Meagan DeMaria, Danielle McDougall

Sponsoring Faculty: Matthew Lavery

Based on our collective experiences as student tutors, we will discuss the techniques we utilize in sessions in order to cultivate self-efficacy, professional skill development, and a collaborative mindset in students. By focusing on the specific areas: working with special populations, establishing personal and professional goals, and managing boundaries and expectations of the students, we will demonstrate the unconventional roles the tutor can assume. We will use specific examples and scenarios in order to illustrate the dynamics between the tutor and the student that parallel the relationship between mentor and mentee in an informal setting. Establishing boundaries and mediating expectations between tutor and student creates an environment that emphasizes collaborative work as a means of achieving goals and developing academic, professional, and personal skills. As tutors, it is necessary to accommodate different learning styles and needs, with special emphasis on student populations, such as: international students, adult learners, and students on the spectrum. By varying tutor style and approach, tutors not only improve their capacity for providing academic support, but also help students build the necessary skills for achieving personal and academic goals on their own in the form of self-efficacy. Thus, by assuming non-traditional roles and exercising these techniques, the tutor can provide a holistic approach to the traditional goals of learning and writing centers while effectively promoting collaborative working spaces, resulting in the cultivation and development of students academically, professionally, and personally.

Session 9: Departments of Math and Computer Science and Physics, undergraduate division, Nexus Building, Room 155

Preventing hackers from hacking into our systems

Ahmed Saddaruddin

Sponsoring Faculty: Kimberly Kim

My research topic is on cyber security and my research question is whether industries can prevent hackers from breaking into their systems or not. The evolving and growing network architecture and increased automation on interconnected networks have given birth to many security threats (Raltson, Graham & Hieb, 2007), and no matter how big the organization and how strong its security infrastructure is, they can get hacked and lose their precious data. For example, the safety of personal information managed by Equifax, one of the companies that holds the most crucial information of US citizens including their social security information, was breached, risking the data of millions of people (Bernard, Hsu & Lieber, 2017). This is the main reason for pursuing this research, to determine whether organizations can keep themselves safe or they are in the mercy of hackers. The current literature on the topic strongly agrees that security breaches have increased, no matter how strong the security
infrastructure is. My angle into the research will be that no one can prevent hackers from breaking into our systems. The data will be collected using primary collection methods, using surveys and interviews of participants who are experienced IT/Network security professionals. The outcome of my research is hypothesized to be that no matter how many steps are taken to secure our security infrastructure, these hackers will always be one step ahead of us.

Refining Mathematical Curriculum

Lara Klein, Christina Ferrante
Sponsoring Faculty: Salvatore Giunta

In this research project, we will survey the topics typically covered in liberal arts colleges for the undergraduate mathematics curriculum. We will determine the most important concepts and write detailed proofs, including every logical step required. We will directly focus on informing undergraduate math majors on successful procedures in Calculus 1, Calculus 2, Methods of Proofs, and Geometry. The goal is to create a freely-available online resource for mathematics students to use as a guide as well as a reference in their courses.

Investigating Social- versus Nonsocial- learning with behavioral modeling and electroencephalography (EEG)

Daniel Lee
Sponsoring Faculty: Damian Stanley

The social brain hypothesis suggests that we may have brain regions that specialize in social processing, however, the existence of such regions is still debated. Our lab previously used fMRI to show that, in addition to general learning signals for both social and non-social stimuli, there are socially-specific learning signals in the precuneus, despite no evidence for behavioral differences in social vs non-social learning. This suggests that socially-specific learning signals in the precuneus may occur after the general learning signals seen elsewhere. fMRI is not temporally sensitive enough to test this hypothesis. Here we combine high-temporal resolution electroencephalography (EEG) with modeling of learning behavior to investigate this question.

Participants (n=20; age = 20.7yrs±2.13sd; 11F, 8M, 1 gender non-binary) learned about 16 ‘Gifters’ and 16 ‘Lotteries’ across 4 runs while EEG data were collected on a 128-channel Electrical Geodesics Incorporated sensor net. On each trial participants viewed a picture of a face representing a Gifter (fractals for Lotteries) and predicted how likely they were to share some money with a third-party partner. They then received feedback about what the Gifter (or Lottery) did on that trial, from which they could learn. Each Gifter and Lottery within a run shared/kept at a different rate. Learning rates for both social and nonsocial conditions were estimated using a classical reinforcement-learning model.

Social and non-social learning rates were highly correlated (Pearson’s r(18)=0.54, p=0.015). However, learning rates in the social condition (mean=0.20, stderr=0.03) were significantly higher than in the nonsocial condition (mean=0.14, stderr=0.02). Subsequent analyses will investigate whether these
learning rate differences correlate with measures of social ability and use model-based EEG to determine if there is a temporal difference between social and non-social learning signals.

Adelphi Physics Innovation Center (A-PIC)
Sally Lau
Sponsoring Faculty: Matthew J. Wright

We have developed a space in the physics department specifically designed for student research projects. We will discuss the design of the facility. The planned operation and grand opening. We will also discuss on going projects including the construction of an EKG device.

Session 10: Psychology II, undergraduate division, Nexus Building, Room 156

The Declining Importance of College
Gabriela Bernabe
Sponsoring Faculty: Devin Thornburg

The number of college graduates has steadily been decreasing because educational institutions are losing their students to union and city jobs. Through numerous interviews of both high school students and college students, they believe that college is no longer important. Getting a city or union job is a better investment than spending thousands of dollars in college when finding a job in their field is not even guaranteed. Approximately 25-30% of college students find a job in their field after graduation. Unions are appealing more to the youth simply because you do not need a college degree, they look for work for you, and they pay well with good benefits. Colleges are simply too expensive and are losing importance when it comes to being successful in the future.

Stigma on Mental Illness
Jayden Skeete
Sponsoring Faculty: Devin Thornburg

This action research project will examine the stigma on mental illness in our community which ultimately can be explained as a global stigma. The aim of my research is to provide evidence showing the community outlook on individuals with mental illness as well as a closer look at the mental illness community itself, so to speak. I have several journal pieces that will be analyzed and reviewed for research purposes. While being a general overview about mental illness there will be some specific focuses on certain disorders especially from personal interviews. Having personal connections with disorders such as Major Depression disorder or Bi Polar disorder and even the milder but long term form of depression (dysthymia), you as the readers of this project and I as the writer have a responsibility to
enact some form of social change throughout this discussion. Looking at what statistics show about the percentages of adults with diagnosable mental disorders, we compare that with the percentage of adults that make up the work force and all corresponding items. It can be theorized that the composition of adults that have been diagnosed with a disorder and still function as a normal adult can change the current stigma and see for themselves that adults with these mental disorders can function as the typical person.

How do people regulate important goals? Exploring construal level and goal hierarchies

Victoria Ouzounian
Sponsoring Faculty: M. Joy. McClure

Daily, people attempt to accomplish goals. Goal regulation is necessary due to limited resources available for goal pursuit. People must prioritize among their goals. How do people choose which goals get prioritized over others? According to Goal Systems Theory (Kruglanski, Shah, Fishbach, Friedman, Chun & Sleeth-Keppler, 2002), goals are organized hierarchically. Upper level goals are fulfilled by subgoals, down to the level of goal-relevant activities or means. Primary goals are abstract and ongoing, making it difficult to assess progress and motivation. Lower level goals give the individual a sense of accomplishment through intermediary tasks. Furthermore, goals and subgoals interact as they compete for resources. Low level goals are more concrete and achievable. Higher-level goals are more abstract. Further, lower-level goals represent multiple pathways to fulfilling upper-level goals, but as one moves up a goal hierarchy there are fewer options for goal fulfilment. We hypothesize that higher-level goals will be given priority over lower-level goals. The present study explores how people regulate goals at different levels using an archival dataset (McClure & Lydon, 2018). 202 participants provided between 3 and 9 goals. For each goal, participants reported on a variety of goal regulation variables. In order to operationalize whether a goal is lower- or higher-level, research assistants rate each goal for its level of abstraction (Trope & Liberman, 2011). Goals will also be coded as abstract or concrete using the Linguistic Category Model (Coenen, Hedeouw, & Semin, 2006). We expect that more abstract, higher-level goals will be prioritized and have higher commitment than concrete, lower-level goals. We will explore differences in motivation and progress, which may instead favor more concrete goals over abstract goals. Analyses will be conducted using regressions in SPSS. The implications of the findings for individuals’ daily goal regulation will be discussed.

Session 11: Multidisciplinary III, undergraduate division, Nexus Building, Room 154

Let’s Manage Our Classrooms with Movement

Mark Edelstein
Sponsoring Faculty: Dr. Heather Waters
There are a variety of approaches that music educators utilize to facilitate comprehension of musical growth in their students. An approach called Dalcroze Eurythmics, established by Emile Jacques-Dalcroze (1865 – 1950), with the purpose of innovating adults’ movement and musical development. Eurythmics is an approach that integrates expressive movement and inspires improvisation and creativity while incorporating essential skills such as singing with solfège syllables and keeping a steady beat. Through a literature review, this project will highlight the successful use of Eurythmics in music classrooms and in our everyday lives with the goal to discuss potential outcomes of combining techniques of classroom management with the approaches of Dalcroze Eurythmics.

**Brand loyalty of Adelphi students about their college**

Luqman Talpur

Sponsoring Faculty: Johann Lloyd

The purpose of this research study was to investigate the factors which make undergraduate or graduate students more loyal to Adelphi. The data for the research will be collected through questionnaires. A sample size of 20 students is expected to be consulted by using a simple random sampling technique. Moreover, three main factors i.e. student clubs, time and on-campus jobs were selected and surveyed. The results are projected to show that of all these factors have a significant effect on individuals’ attitude towards and love for their college. The findings of this research is limited by the number of students and the differences between their individual opinions, areas of study and location. This study will help Adelphi and its faculty to understand the factors that make students more loyal towards their college. I predict that this study will show that undergraduates have more loyalty and school spirit than graduates because they spend more of their time in college and have more student clubs to join. They create more memories in the college which have a significant effect on their loyalty.
SESSION C: 9:30 A.M.—10:20 A.M.

Session 1: Computer Science and Game Development Exhibition III, undergraduate division, Nexus Building, second floor, lobby

JumpStudio: A Family Friendly Streaming Service
Nicole Cunha, George Sandu, Zeona Walker-Latney
Sponsoring Faculty: Xiaoxing Liu

Nowadays, the use of video streaming services is at an all time high. Service providers like Netflix and Hulu have shown to be in demand to many families. However, most of the providers fail to implement an efficient child control mechanism. Children spending too much screen time unmonitored has contributed to an increase in obesity and developmental problems in young children. To address this issue, we present JumpStudio, a streaming service aimed at families with children. With JumpStudio, parents will be able to create a customized profile for their children and monitor and limit their children’s watching activities. By enforcing a flexible yet more strict strategy than current service providers, our system makes the child control mechanism more efficient.

Email Tracking Analytics Web
Christopher Thai, John Zaino, Jiahao Ye
Sponsoring Faculty: Xiaoxing Liu

How a user responds to an email message provides key information and is one of the most interesting research topics in many fields like security, marketing, and user studies. In this project, we will develop an email analytics web application that allows users to send emails, then track and analyze the recipient’s behavior. The system will utilize tracking pixel, a technique that tracks and monitors several user behaviors including reading, clicking, and forwarding. It will provide the user key statistics and visualizations like an email’s read rates, a user’s read time and so on. With the system the senders would know its recipients better thus make the email communication more efficient.

Eternita
Ryan Deisler
Sponsoring Faculty: Lee Stemkoski

This research project is a computer game I have called Eternita, inspired by Gauntlet (2014). It is a two-dimensional, top-down, dungeon-crawler. The main topic of research for this game is implementing procedurally generated levels. The goal of the game is to make it through as many floors as possible, while defeating enemies, before losing all of your health points (HP).
Super Duper Fighting Game

Paul Maurantonio

Sponsoring Faculty: Lee Stemkoski

I have been working on a 2D retro style fighting game inspired by Street Fighter 2. I intend on having it playable by 2 players with at least 3 characters. All visuals will most likely be placeholders given the time it takes to make individual frames in fighting games.

Original Video Game Project

April Leong, Michael Castillo

Sponsoring Faculty: Lee Stemkoski

The game we plan on making is a game that my team and I would like to create for fun, it will possibly still be a work in progress but we would like to have it finished by research day.

Session 2: Art Exhibit, undergraduate division, Nexus Building, first floor, lobby

America the Beautiful

Kristen Dulovic

Sponsoring Faculty: Dale Flashner

I designed a USA Forever postage stamp that celebrates and promotes diversity awareness in America. My stamp, “America the Beautiful,” focuses on the diversity of language in the United States. I created a series of four stamps, each one celebrating a different language. I decided to focus on the four most spoken languages in our country: English, Spanish, French and Chinese. This series is unified through imagery of the US flag, and when placed together they form one image. I incorporated original photography and illustration to achieve this final product. This series is meant to highlight the diversity of language, especially since the United States does not have an official language.
Ageless
Thomas Meyers
Sponsoring Faculty: Dale Flashner

My stamp, titled “Ageless” addresses the topic of diversity awareness in terms of age discrimination. Using original photography, I made a postage stamp featuring a collection of elderly people who are going against the stereotype of inactivity. This is a misconception that is prevalent in modern society and can be very harmful for this often overlooked demographic. Most people can name many types of prejudices, but Ageism as a subject is often neglected by a large amount of the population. I wanted to use this stamp to help dispel the myths behind Ageism and inactivity.

Independently Together
Brittany Costa
Sponsoring Faculty: Dale Flashner

When it comes to raising awareness in diversity my focus doesn’t go towards one specific group, but raising awareness as one whole entity. Due to my research, I have decided to present a way to show that everyone should be accepted no matter what their race, gender, sexuality, physical abilities, so on and so forth. I am doing this through my stamp series, consisting of original photography, titled “Independently Together”. This will consist of 3 stamps, heads, torsos, legs and feet and will represent people of all different races, genders, sexualities, abilities, weights, and more. When the stamps are placed on top of one another, and or slid from left to right, they will form a multiplicity of different people, which at the end of the day goes to show, no matter what your bottom, middle or top look like, anybody can be interchanged and fulfill any category to be equal to one another.

United in our Diversity
Jessica Colonna
Sponsoring Faculty: Dale Flashner

The purpose of this project is to design a postage stamp which celebrates and promotes “diversity awareness” in America. Diversity Awareness refers to one’s ability to embrace the uniqueness of all individuals, including their race, religious beliefs, ethnicity, age, gender, physical abilities, political beliefs, and socio-economic status. When thinking of diversity awareness, the words that come to my mind include “unity”, “support”, and “human connection”. Through my design, I aimed to tie these ideas of diversity with American culture and community. When the United States was first founded, it was thought to be the “melting pot” of cultural adaptation and assimilation, but this was not what occurred. Instead of the cultural differences of Americans “melting” or blending together, their diversity was maintained. Today, American society is less of a “melting pot” and more of a “mosaic” of diversity, in which our differences support and unite us. The design of this stamp is meant to depict the mosaic of human connection that is formed by the diversity of the American people.
Homophobia

McKenna Collier

Sponsoring Faculty: Dale Flashner

My project, entitled “Homophobia” reinforces and promotes Diversity Awareness in the form of two United States Forever Postage Stamps, which are government issued graphic design. I have decided on my final design, which speaks to the normality of bisexuality in the community through original photography. Being associated with the bisexual community, I have witnessed how poorly people are treated once they have publicly come out; this type of treatment is enhanced if you are a bisexual male. Female bisexuality is sexualized and glorified while male bisexuals are labeled as only being gay. Because of this, many bisexual men stay closeted. I have decided to use this opportunity to highlight the regularity of men being bisexual, as almost half of the bisexual community consider themselves male. The stamps depicts a homosexual relationship on one side and a heterosexual relationship on the other, showing the same man acting lovingly to both gendered partners.

All the same, All different, All Life

Savannah Taylor

Sponsoring Faculty: Dale Flashner

Earth’s sixth mass extinction, and perhaps the fastest in history, is currently underway. This time, it wasn’t caused by an asteroid or some other cataclysmic event; it’s all thanks to humans. Human activities such as pollution, land clearing, and overfishing may completely kill off more than half of the planet’s marine and land species by 2100 if the people of today don’t make drastic alterations. It is my goal to celebrate and promote diversity in America through a United States postage stamp through the unique perspective of biodiversity. It is the term used to describe “the dynamic, continually evolving and interconnected nature of people and place, and the notion that social and biological dimensions are interrelated.” Essentially, I want to engrain in the mind of every person that see’s my postage stamp the notion of the delicate and intertwined nature of all facets of life, and nothing is more or less important than what is next to it. The way I intend on creating this stamp is by making a graphic illustration through the combination of a printmaking technique and computer (Adobe) applications.
A Self Reflection

Monifa Mayo

Sponsoring Faculty: Jenifer Maloney

I have been drawing and painting since the age of 10. During the past few years and my time at Adelphi I found incredible teachers and mentors. With all that said my drive has been nurtured by self-determination.

It is with great pleasure to not just express myself. But to share ideas and concepts in hope that it adds value to view points that are from the core and common. Finally my objective was to show the dimensions of myself and women of color in general. Thank you for taking time out and viewing my work.

Session 3: Music Composition, Nexus Building, Room 241

Walt Whitman Bicentennial Music Compositions

Dori-Jo Gutierrez, Kevin Lubin

Sponsoring Faculty: Paul Moravec

In June, the Walt Whitman Birthplace Association will be holding a celebration for the bicentennial anniversary of Walt Whitman's birth. The celebration will be focused on home, birth, and rebirth. The event will be held at Walt Whitman's birthplace and childhood home in Huntington. For this event, my fellow student Kevin Lubin and I have been asked to write songs using text from or inspired by Whitman's poetry. In this presentation, we will be discussing the nuances of composing inspired musical works, and how we can begin to pay homage to Whitman's expansive career. As a lover of American folk music, I plan to include folk instruments both from Whitman's lifetime and mine, with influences from contemporary and traditional Americana music. My goal is to create a work that blends modern and traditional musical styles to highlight the timeless quality of Whitman's poetry and his American optimism that resounds in all of us to this day.

Walt Whitman Birthplace Association Project

Kevin Lubin, Dori-Jo Gutierrez

Sponsoring Faculty: Sidney Boquiren

Walt Whitman, the great American poet, will be celebrated this coming June as it will be the 200th anniversary of his birth. He was born in Huntington and the Whitman Birthplace Association will be hosting a weekend-long event and Adelphi will be presenting all kinds of performance and visual art to be featured at the site of Whitman's childhood home. As a composition student and member of the Adelphi music department, I along with fellow student Dori-Jo Gutierrez will be writing a piece inspired
by or using the lyrics of one of Whitman’s poems. I write in a contemporary classical style but I will certainly input elements of the historical aspect of the celebration in the piece, referencing the American music of the 1800s. At the current time the piece will be written for soprano singer and double-bass. It will be scored in such a way that both musicians can separately perform their part as a stand-alone piece, yet the true work appears when they play their respective parts together. At the bicentennial event itself, there are a few performance spaces available and I plan on utilizing each of them. While the visitors walk around, they may hear the soprano sing their bit in one building and then the double-bass part in another on the property. The final performance will consist of the two coming together so that the piece is finally realized, and other kinds of performance art will be featured. My goal is to write in such a way that Whitman’s prose is truly emphasized, so that one can feel his poetry and perhaps understand where it came from, being in his childhood home. Outside of this, my music is open to interpretation and anyone can feel free to take away whatever they connected to most in my piece.

Representing a Culture through Choral Music

Christopher Quintana

Sponsoring Faculty: Heather Waters

Contemporary choral music enriches and illuminates lives, including my own. Although choral music is frequently performed in languages other than English, there continues to be a lack of representation of culture and poetry from Spanish-speaking countries. This presentation will include the premiere of selections from a collection of choral songs featuring poets from Spanish-speaking countries. This project will include a discussion of the poetry, including struggles related to war, attitudes towards religion, love and affection, and family. In addition, I will connect to creative processes of music composition by describing how the harmonic structure and instrumentation contribute to a contemporary yet honest approach to reflecting the nature of the text.

Understanding the Teacher-Student Power Dynamic

Deborah Yanez

Sponsoring Faculty: Heather Waters

Children are often taught to respect their elders, but the traditional dynamic of older, experienced teacher and younger, inexperienced student is rapidly changing, both inside and outside formal classroom settings. The role of the teacher as older and wiser can be negated when considering private tutoring and college classrooms, as well as how advancements in technology have affected younger and older generations. Based on a review of the literature and personal experiences, this presentation will explore this shift in power dynamics from the perspective of a university student majoring in music education, and how age may affect pedagogical practices in both a university setting and in private tutoring of students of varied ages.
Let's Manage Our Classrooms with Movement

Mark Edelstein
Sponsoring Faculty: Heather Waters

There are a variety of approaches that music educators utilize to facilitate comprehension of musical growth in their students. An approach called Dalcroze Eurythmics, established by Emile Jacques-Dalcroze (1865 – 1950), with the purpose of innovating adults’ movement and musical development. Eurythmics is an approach that integrates expressive movement and inspires improvisation and creativity while incorporating essential skills such as singing with solfège syllables and keeping a steady beat. Through a literature review, this project will highlight the successful use of Eurythmics in music classrooms and in our everyday lives with the goal to discuss potential outcomes of combining techniques of classroom management with the approaches of Dalcroze Eurythmics.

E Posters: Nexus Building, first floor, lobby

Session 4: Derner School of Psychology, graduate division

Family Caregivers Across the Lifespan from Emerging Adulthood Through Mid-Life

Katrina Florio
Sponsoring Faculty: Katherine Fiori

The purpose of the present study is to shed light on an understudied population; namely, emerging adults acting as caregivers for sick, aging, disabled or incapacitated parents, grandparents, guardians or siblings. Given that the caregiving role for those adults between the ages of 18 and 29 is ‘off-time,’ we hypothesized: (1) that they would report higher levels of stress and mental and physical health problems than emerging adult non-caregivers; and (2) that the stress associated with caregiving would be more strongly negatively associated with mental and physical health outcomes than for those in more ‘normative’ caregiving roles (i.e., middle-aged adults caring for aging parents). In addition, we hypothesized that social support would buffer against some of the negative effects of caregiving stress among the emerging adult caregivers. We will use a sample of approximately 150 individuals (50 emerging adult caregivers, 50 emerging adult non-caregivers, and 50 middle-aged caregivers) to address these hypotheses. This research serves as one of the first studies on this growing population and as a basis for future studies in the field of caregiving.
Sleep Disturbance Increases Symptoms of Depression in Postpartum Women

Ling Zhang

Sponsoring Faculty: Kirkland Vaughans

Postpartum depression (PPD) is regarded as a severe mental health issue. Postpartum depression is a prevalent and disabling problem that may affect women’s psychological, mental and physical health, and their babies are more likely to have disturbance in development. Poor sleep quality is one of the major risk factors of postpartum depression. In this study, the association between sleep quality and postpartum depression symptoms during pregnancy and postpartum will be evaluated. Certain women in pregnancy or/and postpartum will be interviewed, and scores of the measures about depressive symptoms and sleep quality at postpartum will be assessed. The results can be expected that sleep quality is considered as a risk factor for depression during the postnatal period.

The impact of digital life on the emotional well-being of college students.

Haleema Sadia

Sponsoring Faculty: Errol Rodriguez

There is a growing concern that people spend a large portion of their time on social media. Research suggests that students spend a substantial amount of day, i.e. up to 4 hours a day on different social media sites, including Instagram, Facebook, Twitter, and WhatsApp, etc.

This study investigates the impact of digital media on the emotional well-being of college students. More specifically, it examines the frequency of use of social media sites such as Facebook, Instagram, and Twitter, etc. and its impact on college students’ levels of happiness, generalized anxiety, depression and self-consciousness.

The hypothesis of the study believes there is a relationship between time spent on social media and levels of happiness, self-consciousness, anxiety, and depression, and such a relationship may provide insight into the impact of social media usage in college students' daily life.

From the preliminary data, it is seen that people who use social media less than an average amount on a daily basis scored higher on happiness and lower on anxiety and depression scales. The practical application of this study is to understand and explore if social media usage has any impact on your daily life.
Effects of Language Use on Bilinguals’ Attention to Events

Zixia Li

Sponsoring Faculty: Nathan R. George

When describing events, people classify them in language-specific ways. Chinese speakers pay more attention to the result of an event (e.g., goal/no goal in soccer), while English speakers focus more on process (e.g., kick/header; Tai, 2002). Little is known, however, about how these different patterns converge in bilinguals. Research suggests that the patterns of one language influence bilingual speakers’ use of their other language (Aveledo & Athanasopoulos, 2016). We ask how the language of use affects bilinguals’ attention to processes and results in events, and how this influence may differ from native English speakers.

Monolingual English speakers and Chinese-English bilinguals will match pictures based on similarity. For each trial, they will see three pictures presenting the initial state (e.g., piece of paper), process (e.g., scissors cutting paper), and result (e.g., paper in two pieces) of an event. They will be asked to describe the event aloud with participants divided into three conditions: 1) Monolinguals in English, 2) Bilinguals in English, and 3) Bilinguals in Chinese. After their description, they will see two new image sequences, one with different process but same result (e.g., ripping paper in two), and another with a different result but the same process (e.g., cutting paper in three pieces). They will be asked to choose which image best matches the original story.

We expect to see an influence of language on similarity judgments. While bilinguals speaking in Chinese are expected to favor matches based on results, both English monolinguals and bilinguals using English are expected to favor process matches. Furthermore, we expect bilinguals in the English condition to select process matches less frequently than English monolinguals, showing cross-linguistic influence of their native Chinese. These results will better inform us as to the relation between the language bilinguals use and its influence on their attention to events.

Depression among Asian adolescents and young adults

Kangyi Liu

Sponsoring Faculty: Kirkland Vaughans

This article is concerned with the causes, symptoms, and treatment of depression among Asian adolescents and young adults. Adolescent depression has become a very serious social problem that is not researched enough. Depression not only affects the psychological and physiological growth of adolescents and young adults, but also influences their lives in the future. This article aims to summarize and discuss the depression of Asian youth, and hopes that it will have guiding significance for future research in related fields.
Parental Conflict and Communication Patterns

Michael Mennella

Sponsoring Faculty: Lawrence Josephs

Parental conflict is associated with negative effects on children. In a sample of adults, correlations indicated that regardless of parental marital status, observations of parental conflict during childhood were important predictors of personality variables such as authenticity, Machiavellianism, narcissism, and psychopathy. In turn, these factors predicted communication patterns such as constructive communication and total demand withdraw. It is important to minimize parental conflict in children as high observations of parental conflict in childhood can lead to negative personality variables which in turn lead to negative communication patterns in romantic relationships in adulthood. A path analysis will be done to show the direction of these results.

Intergenerational transmission of role-confusion: Links with maternal internalizing problems and child adjustment

Nicholette Lewis, Joanna Hurley, Naa-Adjeley Ama Kuma

Sponsoring Faculty: Laura Brumariu

Few studies evaluate whether role-confusion carries from one generation to the next and little is known about potential maternal characteristics explaining intergenerational transmission or the impact of maternal role-confusion on children’s adjustment in middle childhood. This study evaluated links between maternal role-confusion with the mother’s parents, role-confusion with her child, maternal internalizing problems, and her child’s adjustment in middle childhood. We expected that: 1) Maternal emotional role-confusion with her parents would relate to maternal anxiety & depression, and to emotional role-confusion in the mother-child relationship; 2) Maternal anxiety & depression would explain the links between maternal role-confusion with her parents and role-confusion in the mother-child relationship; 3) Maternal emotional role-confusion with her parents and role-confusion in the mother-child dyad would be associated with her child's adjustment. Mothers (n=112) completed CECA: Role-Confusion (a semi-structured interview coded for role-confusion with her parents) and reported on aspects of role-confusion in the relationships with their children. Children reported their anxiety & depression and mothers rated children’s externalizing problems. A path analysis indicated greater maternal emotional role-confusion with her parents was significantly related to greater maternal anxiety and depression. Mediation analyses showed that maternal anxiety explains the relations between maternal emotional role-confusion with her parents and maternal helplessness with her child; maternal depression explains the relations between maternal emotional role-confusion with her parents and the child acting as a caregiver towards the mother. Further, mothers experiencing greater emotional role-confusion with their parents had children showing greater anxiety and depression. Though greater maternal helplessness with her child was associated with children’s greater externalizing problems.
Does culture and ethnicity influence women’s leadership?

Wenli Chen

Sponsoring Faculty: Jean Lau Chin

Leadership is less about our needs, and more about the needs of the people around us and the organization we are leading. There are differences because of culture, gender, environment. However, most leadership theories do not address this. Attention to diversity is about valuing differences and inclusion of all groups. There’s evidence to suggest different cultural environments will demand different types of leadership styles. Current theories are more masculinized, they describe those who are already in leadership roles which are men. Between the different country, women are facing different environment, to see how culture and ethnicity influence women’s leadership became more and more important.

Do You Practice What You Preach? Effects of Personality and Spirituality/Religiosity on Sex

Ryan Cleary

Sponsoring Faculty: Lawrence Josephs

The purpose of the current study is to examine how spirituality, religiosity, and authenticity are related to sexual outcome variables. It is hypothesized that those who have higher levels of authenticity may demonstrate higher levels of sexual satisfaction. Further, authenticity may operate as a mediating variable between spirituality and religiosity, and sexual satisfaction. Participants consisted of 198 individuals sampled using Amazon Mechanical Turk, an online service that was used to give small monetary compensation to participants. Preliminary results suggest moderate, significant correlations between authenticity, beliefs about togetherness in relationships, and sexual satisfaction.

Examining Recidivism Outcomes for Psychopathy and ASPD: A Meta-Analytic Review

Ria Kalyan

Sponsoring Faculty: Robert Bornstein

Studies show that both Antisocial Personality Disorder (ASPD) and Psychopathy are overrepresented in the forensic system, and both disorders have been shown to predict subsequent recidivism (Forth, Hart, & Hare, 1990; Kruh, Frick, & Clements, 2005; Gretton, Hare, & Catchpole, 2013). Although prior studies focused on actuarial risk assessment or subscale and structural factors that predict recidivism for each disorder (e.g., Douglas, Epstein, & Poythress 2007; Wormith, Olver, Stevenson, & Girard 2007; Hyde, Burt, Shaw, & Donnellan, 2015), no studies have compared the two disorders directly to see which is a stronger predictor of recidivism. This study used meta-analytic techniques to synthesize the available research in this area and address that question.

An extensive literature search in mid-2018 located 37 non-overlapping studies which yielded a total of 82 effect sizes (overall N = 33,597) to examine the relation between psychopathy and ASPD as predictors of violent or sexual recidivism. We found a small effect size for ASPD and recidivism (N of studies = 8,
overall $d = 0.1492$, Combined $Z = 5.78$), and a large effect size for psychopathy and recidivism (N of studies = 74, overall $d = 0.5168$, Combined $Z = 18.93$). Because of the small number of studies examining ASPD, subsequent moderator analyses included only those that assessed psychopathy.

Effect sizes were virtually identical for studies that included men only and those that included both women and men ($d = 0.5168$ for men only and $d = 0.5208$ for mixed-sex samples). Stronger effects were obtained for studies assessing ASPD as a predictor of violent recidivism ($d = 1.1390$, Combined $Z = 9.68$) than as a predictor of other forms of recidivism, where $d$’s ranged from 0.33 to 0.73 (Combined $Z$’s ranged from 3.89 to 8.76).

In line with extant literature, this meta-analysis confirms that psychopathy is a strong predictor of violent and to a lesser extent, sexual recidivism.

An ethnographic inquiry into trauma experiences by Puerto Rican survivors of Hurricane Maria

Ruthie Jaramillo

Sponsoring Faculty: Michael O’Loughlin

The goal of this study was to explore the lingering traumatic effects that Hurricane Maria, left on Puerto Ricans. A year and four months after Maria made landfall, Puerto Ricans are still reeling from the devastation inflicted by the storm. For this research, I developed a qualitative interview and interviewed four residents of Puerto Rico. In the interview I explored four areas of participants’ experiences: (1) Life before Hurricane Maria, (2) memories of Hurricane Maria, (3) the aftermath of the hurricane, including loss of a sense of communality, any traumatic sequelae, and perceptions of the effectiveness of the local and federal response to the event. All participants live in Puerto Rico and were on the island during the hurricane. Through open-ended interviews and by listening to and analyzing first-person survivor narratives my goal is to gain insight into the short- and long-term consequences of this cataclysmic event.

Validating the DSM-5’s Level of Personality Functioning Scale: Why don’t we use multimethod research designs?

Adam Natoli

Sponsoring Faculty: Robert F. Bornstein

The over-abundance of mono-method approaches in research is an issue that inhibits further scientific discoveries and compromises increases to measurement validity, confining the utility of our instruments. Multimethod approaches (i.e., the use of two or more methods, such as self-report and implicit tests, are used to measure analogous constructs), however, often yield more comprehensive and precise data. Accordingly, multimethod research designs must be utilized when developing and refining measures of personality to make certain that these instruments are truly psychometrically sound. The Level of Personality Functioning Scale (LPFS) was introduced in the Diagnostic and Statistical Manual of Mental Disorders – 5th Edition (APA, 2013) as a tool to help clinicians determine whether a patient meets criteria for a personality disorder diagnosis. Given the potential issues associated with an
overreliance on single-method research designs, this study performed a systematic review of the methodology used in research contributing to, or documenting, the construct and/or criterion-related validity of the LPFS. From this systematic search, 15 published studies reporting empirical data for measuring personality functioning using the LPFS and one or more outcome measures were found. Of these 15 studies, only two of these studies (13%) used a multimethod research design to support their claims (i.e., outcome variable(s) were measured using more than one type of methodology to measure analogous constructs). Findings are discussed with regard to the need for multimethod research designs in studies assessing the psychometric properties of the LPFS and other measures of personality; future directions for doing so and the unique opportunity offered by the LPFS to initiate a shift in the common practice of instrument validation research are proposed.

Sexual Hypocrisy in Romantic Infidelity: The Role of the Self-Serving Bias and Personality Variables.

Benjamin Warach
Sponsoring Faculty: Lawrence Josephs

This study examines moral hypocrisy and the self-serving bias in the sexual infidelity context. We found evidence of self-serving attributions that occur between primary relationship partners following sexual betrayals. Specifically, we found that sexual infidelity perpetrators (1) blamed their primary dyadic partners (i.e., victims) for infidelities significantly more than those victims blamed themselves for such infidelities, (2) blamed the surrounding circumstances for infidelities significantly more than their victims did, and (3) rated the emotional impact of infidelities on their victims as significantly less than victims’ ratings of such impact. Moreover, we found that participants with prior experience as both sexual infidelity perpetrators and victims displayed “sexual hypocrisy” by judging others more harshly than themselves for sexually unfaithful behavior. Our findings demonstrate that personality variables associated with sexual infidelity (narcissism, sexual narcissism, avoidant attachment, and primary psychopathy) are also relevant to self-serving attributions in the sexual infidelity context.

Session 5: Derner School of Psychology, undergraduate division

A preliminary neurophysiological investigation of the relationship between audiovisual integration and perceived hearing handicap in presbycusis

Mohini Doobay
Sponsoring Faculty: Melissa Randazzo

Presbycusis is age related hearing loss which currently affects more than 50% of adults above the age of 55. Adults with presbycusis have difficulty communicating in noisy environments, which impacts quality of life. The use of visual stimuli (e.g. lipread information) applied to an auditory signal increases the signal by up to 5 to 18 dB. Electroencephalography (EEG) allows us to examine neural signatures of brain responses related to audiovisual information. We examined neural signatures of brain responses in older adults with normal hearing and those with presbycusis to audiovisual speech processing and its
relationship to perceived hearing handicap. Adults with normal hearing (n=8) and adults with presbycusis (n=8) participated in an EEG session examining brain responses to audiovisual speech, auditory-only speech, and visual-only speech. We analyzed the brain responses to examine the relationship with perceived hearing handicap, as indexed by the Hearing Handicap Index. Preliminary results are still being analyzed. We predict that adults who perceive greater hearing handicap will be more sensitive to audiovisual information in our EEG paradigm. It is important to study how audiovisual integration is related to speech processing in adults with hearing loss in order to develop new and enhanced treatments.

Healthy Dependency’s Association with Sexual Relationships
Angelina Kolobukhova, Adam P. Natoli
Sponsoring Faculty: Robert F. Bornstein

According to Bornstein (2005), dependency is associated with high levels of compliance and lack of autonomy, and can result in various impairments. Healthy dependency, though, is the ability to successfully blend intimacy and autonomy, and to be vulnerable while having confidence that you can survive conflict in relationships (Bornstein & Languirand, 2003). But how does healthy dependency relate to one’s ability to initiate new relationships? This study’s purpose was to investigate the associations between healthy dependency and the number of new romantic and sexual relationships individuals reported having over the past five years. Students were administered a self-report measure of healthy dependency and then reported on their relationships. Pearson product-moment correlation coefficients were computed between healthy dependency and the number of romantic and sexual partners participants reported having over the past five years. Results indicate a significant positive correlation between one’s level of healthy dependency and the number of sexual, but not romantic, partners he/she reported having over the past five years. The present findings reveal an association between healthy dependency and number of sexual partners, where higher levels of healthy dependency corresponded with more sexual partners. This finding might indicate that those higher in healthy dependency are less likely to fear a new sexual relationship than others or that these individuals recover more quickly when a sexual relationship ends than those who are more dependent on their current partner (c.f., dependent individuals). This, however, is unknown and requires future research to investigate the duration of, and time between, relationships. These characteristics of healthy dependency in the context of sexual relationships are important to know in order to recognize a potentially adaptive (or maladaptive if unsafe sex practices are being used) aspect of healthy dependency.
Understanding Femininity Among the College Aged Population

Tonianne Rine

Sponsoring Faculty: Devin Thornburg

The society we live in today and one’s family background are things that are generally known to affect a person’s perception of gender and femininity. This research focused specifically on college aged women and men, and their views on femininity. The use of surveys and interviews are present in order to gather clear information on the students ideas and perceptions. The ultimate goal of this research was to gain a better understanding of the possible effects that college has on someone’s perception of femininity and how we can change any negative perceptions for the better. It was predicted that being in a college setting will affect the perceptions of femininity that we have, as college is usually thought of as a time of discovery and self-actualization. The predictions of this research are based off of the idea that college has the tendency to make us question society’s expectations and in some cases, question things that we grew up with.

Marital conflict, parental romantic attachment and children's attachment security in middle childhood

Joanna Troyanos, Alecia Barton, Tina Giel

Sponsoring Faculty: Laura Brumariu

Attachment in middle childhood relates to children's cognitive, emotional, and social development (Kerns & Brumariu, 2016). Previous research indicates that marital conflict and parental romantic attachment are potential disruptors to parent-child bonds, although most studies evaluated these links at earlier ages (Bogels & Brechman-Toussaint, 2006). Therefore, we evaluated how marital conflict and parental romantic attachment are associated with children’s attachment security in middle childhood (n mother child-dyads = 112, n fathers = 60). Each triad completed questionnaires. Results showed that children’s attachment security with mothers is associated with children’s attachment security with fathers, and that maternal anxious romantic attachment was significantly related to children’s attachment security with mothers; however, no variables related significantly with security with fathers. Further, marital conflict was significantly related to maternal and paternal avoidant romantic attachment, and maternal anxious attachment. Findings expand on the current literature and suggest maternal anxious attachment in particular is relevant for children’s attachment security with mothers and that marital conflict may signal a risk factor for parental romantic attachment.

The Effects of Types of Therapy for Sexual Assault Survivors

Cristina Panagi

Sponsoring Faculty: Devin Thornburg

Sexual assault is a multi-faceted issue that affects each survivor differently. Because of the complex nature of such trauma, individual survivors need their own specific combination of treatments in order to successfully heal from the trauma of sexual assault or abuse. Cognitive behavioral therapy (CBT) is the
most common therapeutic treatment for sexual assault survivors, but it usually involves the reliving of trauma, which is not something everyone is willing to through and sometimes only reinforces the pain of that trauma. This participatory action research analyzes the effectiveness of alternative forms of therapy such as dialectical behavior therapy (DBT), eye movement desensitization and reprocessing (EMDR), interpersonal psychodynamic therapy (IPT), somatic experiencing, and Gestalt therapy in comparison to the success of traditional CBT for sexual assault survivors. This study will include interviews with survivors on their experiences with these therapies, and interviews with professionals in the field of psychology who have experience working with sexual assault survivors.

**Implicit Race Bias and Trust: Do Different Implicit Bias Tasks Assess the Same Underlying Construct?**

**Ariyanna Simmons**

Sponsoring Faculty: Damian Stanley

Despite progress towards a stated goal of equity, there are clear examples of the serious consequences of racial bias throughout our society including harsher sentences for racial minorities, lack of employment due to unfair hiring decisions, and even premature death. Previous research from our laboratory has shown that implicit race bias predicts our estimates of trustworthiness, as well as consequential trust decisions, in a manner that is independent of our explicit biases. This previous work used the Implicit Association Test (IAT) to assess bias, however, there exist a number of other measures of implicit bias, including: The Affect Misattribution Procedure (AMP), Sequential Evaluative Priming (SEP), and Shooter’s Task (ST). These tests differ in the methods by which they estimate implicit bias, and may not in fact be assessing the same underlying construct. Data from a pilot study in our lab suggest that AMP and IAT scores may actually reflect independent implicit bias contributions to trust estimations. Given these findings, we designed a study to systematically evaluate the contribution of four different measures of implicit race bias to trust estimations: the IAT, AMP, SEP, and ST. Participants will first complete a series of trust estimations (keeping them unaware of the nature of the task). Then participants will complete each of the 4 implicit bias measures (counterbalanced order; within-participants design) followed by explicit bias surveys. Analyses will test which implicit task best predicts trust disparity as well as whether the tasks measure independent components of bias or if all assess a single underlying source of bias. Based on the pilot data, we predict that the tasks will assess independent components of implicit race bias. These findings will have consequences for the measurement of implicit bias is assessed and how to address the larger problem of race bias in our society.
The Stigmatization of Mental Illness

Gianna D’Angelo
Sponsoring Faculty: Jerold Gold

Mental illness affects about one in five adults in the United States of America in a given year. Despite these statistics, mental illnesses are still viewed through a lens of misunderstanding and judgement. People with mental illnesses are frequently treated differently because they are surrounded by the stigma of being unstable, dangerous, or unsafe. Many symptoms of different mental illnesses are symptoms that the average person has experienced in their lifetime—sadness, anxiety, fatigue, etc. However, when these symptoms are collectively labeled as a diagnosable mental condition, they appear differently to others. The purpose of this project is to examine the differences in people’s perceptions of a diagnosed mental illness versus an undiagnosed mental illness (just a collection of symptoms). Participants were given various scenarios in an anonymous online setting—one listing symptoms explained away by a non-psychiatric issue (a new allergy medication, starting college, etc.) and one listing symptoms explained by a psychiatric issue. After reading these scenarios, participants were given questions designed to assess their opinions of the people in the fictional scenarios. The hypothesis for this project was that the scenarios in which there was a diagnosed mental illness would be viewed more negatively than the scenario in which there was no psychiatric diagnosis. The results of this experiment are very important because they detail the stigmatized views that people hold about mental illnesses and the people they affect. Change is needed regarding how the modern world views psychiatric issues and results from projects like the one detailed above can facilitate this change.

Racial Passing

Sibel Akturk
Sponsoring Faculty: Devin Thornburg

This research will attempt to reveal biases in regard to “racial passing,” which occurs when a member of a racial group is accepted as a member of another that isn’t their own. This research is relevant, as “passing” can affect one’s self-esteem and worldview. This research will aim toward questioning two groups of people; Adelphi students who would classify themselves as “racially passing” or having “passed” before, and their peers who would not classify themselves as “racially passing.” This research will be asked in the form of a questionnaire, with multiple open-ended questions for further elaboration, if needed. The overall goal of this research is to reveal people’s biases and beliefs toward those who “racially pass,” whether from the point of view of those passing or their seemingly impartial peers. Furthermore, this research could allude to the effects of this phenomena on the mental health, self-esteem and beliefs of those who would classify themselves as “racial passing.”
The Influence of Implicit Warmth and Competence Estimations on Charitable Donation Decisions Involving Homelessness.

Catherine Verveniotis

Sponsoring Faculty: Damian Stanley

The social decisions we make everyday are influenced by stored explicit (consciously expressed) and implicit (unknowingly present) attitudes we have towards different social groups. Evaluative implicit race attitudes (i.e. associations between racial groups and pleasant/unpleasant concepts), as measured by the Implicit Association Test (IAT), have been shown to predict trust and fairness estimations, as well as social behaviors related to approach/avoid tendencies, independently of explicit attitudes (Stanley et al, 2011). In a distinct line of research, the Stereotype Content Model (Fiske et al, 2002) has identified warmth and competence as key dimensions along which we represent other social groups. However, little is known about how implicit warmth and competence estimations might influence our consequential social decisions. In the current study, we developed two novel IATs that assess implicit warmth and competence attitudes and investigate how they predict social decision-making. Because explicit warmth and competence evaluations of the social group of homeless individuals have been shown to be strongly biased in the negative direction, we chose to investigate whether implicit warmth/competence attitudes might also play a role in consequential decisions involving homelessness. In a rigged card game, participants earned lottery tickets (points) with which they could win a monetary prize ($50 US). Following the game, participants were given the option to donate a portion of their points to a charity for homelessness. Finally, participants completed warmth and competence IATs (counter-balanced, within-participant design) followed by explicit surveys on attitudes towards homelessness and social responsibility. We predict that implicit warmth and competence biases will each uniquely predict donation decisions, in a manner that is independent of explicit bias.

Going Beyond: Student Projects from Practicum in Experimental Psychology (398-004) SPRING 2019

Jessica Abruzzo, Jacquelyn Baric, Ashlee Cooper, Jack Crawford, Kristina Derych, Brian Greenfield, Ryan Hicks, Melissa Peres, Caitlin White

Sponsoring Faculty: Carolyn M. Springer

Practicum in Experimental Psychology is one of the capstone options that undergraduate psychology major can select as their culminating class. Students utilize their prior knowledge of research methodology and statistics in this interactive class; they work individually or in groups to design and conduct their own research study. The on-going research projects of students enrolled in Section 004 of this class in spring 2019 are described in this poster. Students will discuss their progress to date in the design, implementation and analysis of data from their research studies which target diverse areas in the field of psychology including developmental, social, forensic, education, health and cognition.
The Experience of LGBTQ+ Members in Greek Life in the United States

Zachary Hopkins
Sponsoring Faculty: Chana Etengoff

LGBTQ+ college students often face microaggressions and social exclusions from campus spaces, such as fraternity and sorority life, termed Greek Life (Polihronakis, Etengoff, & Rodriguez, 2016). Historically, Greek Life on college campuses has been characterized as a heterosexist societal tool—providing exclusive leadership opportunities for heteronormative students (Worthen, 2014). In addition, this heteronormative group identity has led to conflicts and tensions between Greek Life members belonging to the “in-group” and LGBTQ+ college students sequestered to the “out-group” (Worthen, 2014). Many Greek Life chapters now aim to create a cohesive environment that encourages diverse individuals to feel a sense of belongingness and acceptance. Yet, despite these emerging shifts within Greek Life, we know very little about LGBTQ+ Greek life experience as most extant research has sampled non-LGBTQ+ Greek Members or LGBTQ+ students outside of Greek Life (Aird, 2011; Hesp & Brooks, 2009; Littlefield, 2016; Rankin, Hesp, & Weber, 2013; Solberg, 2012). Moreover, most extant research has applied deficit models to explore the heteronormative challenges of Greek Life and positive psychology models are notably absent (Harris & Harper, 2013). We are recruiting 50 LGBTQ+ Members in Greek Life across the US to complete a semi-structured online survey focusing on the intersectional relationship between LGBTQ+ and Greek Life identities and belongingness (e.g., “As an LGBTQ+ Greek Member, is your Greek organization a supportive space for you?”; “Is there someone in your Greek organization that is your key ally? If so, can you describe your relationship with them?”). In this vein, narrative analyses will build on the positive psychological models of Queer Theory (Hegarty, 2011), LGBTQ+ Identity Models (D’Augelli, 1994), and Intersectionality (Cole, 2009), to explore the potential benefits of LGBTQ+ leadership and participation in Greek Life.

A Meta-Analysis: Children of Incarcerated Parents

Sarah Abbatangelo, Julia Fiederlein
Sponsoring Faculty: Devin Thornberg

This study focuses on children at risk of mental disorders who have parents that are incarcerated in New York’s prison system. The purpose of this study is to observe what kind of mental disorders these children are at risk for. Past studies have shown that certain learning skills can be taught to decrease mental illness risk for those who come from unstable environments. If positive behaviors can be developed, the child may have a better outcome of reduced mental illness.
Bilinguals and Language Processing
Taylor Riches
Sponsoring Faculty: Nathan George

Research suggests that bilinguals are not two monolinguals in one. The languages bilinguals know are always active (Kroll, Dusias, Bice & Perotti, 2015), and to use one of these languages, the other must be suppressed (Grosjean, 1989). Could there be a way to analyze the language one is thinking in through their behavior? Research shows that bilinguals have a fluidity with both of their languages, and one affects the other (Hohenstein, Eisenberg, & Naigles, 2006). For instance, Spanish and English languages are phrased differently. When using Spanish, the primary focus is on the path verbs (The girl is entering the pool by jumping.), whereas in English the primary focus is on the manner verbs (The girl is jumping into the pool.) (Hohenstein, Eisenberg & Naigles, 2006). Consequently, when speaking Spanish, bilinguals use more manner verbs than Spanish monolinguals, and when speaking English, bilinguals use more path verbs than English monolinguals (Hohenstein, Eisenberg & Naigles, 2006). Yet it is still unknown if this cross-language transfer is different when thinking in different languages. This study analyzes this question in hopes of introducing a new methodology to assess what language bilinguals are thinking in. Spanish-English bilinguals will be asked to describe an image, in either Spanish or English. They will then be presented that image along with an English written description. These sentences will have either an English (The girl is jumping into the pool.) or Spanish (The girl is entering the pool by jumping.) phrasing pattern, and half of them will not accurately describe the images. The participants will need to judge the accuracy of these sentences as quickly as possible. The results will hopefully introduce a new methodology to assess what language bilinguals are thinking in, as well as assess the degree to which the active language affects English language processing.

Female College Students’ Dating and Activism in the age of the #Metoo Movement
Jessica Schulteisz
Sponsoring Faculty: Chana Etengoff

One in every five American women in college will be sexually assaulted (Office on Women’s Health, 2018). In the past year, female college students and alumni have contributed to the sexual assault awareness campaign, #metoo, through social media (Davis & Zarkov, 2018). On Twitter alone, “#metoo” was tweeted over 19 million times (Pew Research Center, 2018). However, Twitter has been critiqued as an informational platform rather than a forum leading to social change (Theocharis, Lowe, Van Deth, & García-Albacete, 2015). Given the critiques and the urgency of the issues, it is important to explore whether female college students have used the #metoo movement as a cultural tool to create offline political, relational, and behavioral changes. In an effort to answer this question, this mixed-methods study sampled 20 heterosexual, female college students at a private university in the Northeast (Mage= 19.25, SDage=1.16). Although 63% of participants had engaged with the movement online, only 45% of participants reported a basic understanding of the movement. Overall, 70% of participants had not changed their behavior based on their knowledge of the #metoo movement. Though attitudes regarding dating violence were within the safe range of the Attitudes Towards Dating Violence Scales (Price & Byers, 1999), only 15% of participants discussed their standards for consent and safety with their
partner. Although engaging the #metoo movement within romantic relationships was scarce, 50% of participants initiated discussions about the #metoo movement with others and had positive discussions. Given this sample’s limited and inconsistent engagement with the #metoo movement, future research must explore how we can encourage young women to extend their advocacy efforts for women's rights and prevention of sexual assault. As 25% of college women are assaulted each year (Mellins et al., 2017), it is imperative to research and implement evidence-based interventions on college campuses.

**Maternal role-confusion, parenting, and behavioral problems in preadolescence**

Janice Im

Sponsoring Faculty: Laura Brumariu

Previous literature suggests that parent-child relationship disturbances play a key role in children’s behavioral problems (Miller et al., 2013). We evaluated how maternal role-confusion and perceived and observed parenting strategies relate to BP in preadolescents. Participants were 112 mother-preadolescent dyads. Mothers rated children’s BP (Goodman, 1999) and maternal role-confusion (helplessness, frightened mother-child relationship, and child acting as caregiver; George & Solomon, 2008). Children rated maternal acceptance and psychological control (Barber, 1996). Fifteen-minute videotaped mother-child interactions were coded (K=.80, n tapes =17) for positive and negative parenting strategies (Laosa, 1980). Results showed that greater maternal helplessness and frightened mother-child relationships were significantly related to greater levels of preadolescent BP (r=-.44, p<0.01 and r=0.38, p<0.01). Preadolescents who perceived their mothers as more accepting and less controlling were rated lower in BP (r=-.31, p<0.01 and r=.27, p<0.01). Observed parenting was not related to BP, and parenting did not mediate maternal role-confusion with BP (Preacher & Hayes, 2008). Regression analysis showed that maternal role-confusion explained 21% variance in BP (F=9.15, p<0.01, step 1). Observed parenting explained an additional but nonsignificant 2% of variance in BP (step 2), and perceived parenting explained an additional 7% of variance in BP, F Change (2, 97)=4.85, p<0.05, step 3. Maternal helplessness, frightened mother-child relationships, and maternal acceptance emerged as unique predictors (β=.23, p<0.05; β=.23, p<0.05; and β=.26, p<0.05, respectively). Our findings are novel in that perceived, but not observed, parenting was uniquely related to BP. We also identified helplessness and frightened relationship with the child as relevant for BP. Results point to the importance of addressing acceptance and maternal role-confusion when working with preadolescents’ BP.
The Relationship Between the Big-Five Personality Traits, Adult Attachment Styles, and Academic Stressors in University Students

Cristina Ortega

Sponsoring Faculty: Jerold Gold

The proposed study will focus on the relationship between the Big-Five personality traits and Adult Attachment styles in university students, while also investigating a possible correlation between these two variables and students’ susceptibility to academic stressors. Previous research has stated that the Big Five personality traits of conscientiousness, extraversion, agreeableness and openness are associated with individuals who are more satisfied with their academic achievement. In addition, other research has shown that those with a secure attachment style are more likely to approach an academic problem in a positive way. There is little research concerned with more complex aspects of personality and with the interaction of personality variables as factors in determining an individual’s ability to cope with academic stress. With this information in mind, it is hypothesized that those students with higher levels of conscientiousness, extraversion, agreeableness, or openness, along with a secure attachment style, will cope more successfully with academic stressors. To test this hypothesis, college students ranging in age from 18 to 26 will be asked to complete four questionnaires related to the study. These include the Big Five Inventory (BFI) which assesses conscientiousness, extraversion, agreeableness, and openness, the Relationship Questionnaire (RQ) and the Relationship Scales Questionnaire (RSQ) that assess adult attachment style, and the Perceived Academic Stress (PAS) scale, which evaluates level of academic stress. The SPSS program will be used to conduct correlational tests to determine possible relationships between these variables. Recommendations for interventions aimed at individualized personality-based strategies for coping with stress will be included in the discussion of the results.

A Meta-Analysis Showing Gender Differences in Scoring on the PID-5

Tina Giel

Sponsoring Faculty: Robert Bornstein

The DSM-5 refers to fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. The Personality Inventory for DSM-5 (PID-5) consists of 25 facets or personality traits, divided into five different domains of personality and is a test which measures personality dysfunction. Despite there being plentiful literature on the PID-5, there are also many opportunities to advance the literature on the subject. One area in which the PID-5 could benefit from more research is whether or not there are differences in PID-5 scores depending on gender. In order to learn more about this and to determine whether or not there are differences between genders in those who took the inventory, I will conduct a meta-analysis on the PID-5 and on participant’s scores on the inventory. I will be using only empirical articles in which mean scores are reported for each PID-5 domain. If only facet scores are given, then I will be calculating the mean domain scores by averaging the facet scores for each domain. I will also be reporting other factors from each empirical study, such as other descriptive statistics and demographic information. For each article, the descriptive statistics will be reported for each gender, as well as for both combined. The information will be analyzed using SPSS, which will allow us to conclude whether or
not there are differences in scoring on the PID-5 for each gender. These findings will allow us to better understand the inventory, as well as how genders differ in personality.

**False Memories and the Misinformation Effect: Impacts on Classroom Learning**

Sophie Meyers

Sponsoring Faculty: Nathan George

Research on false memories, or recollections of an event or aspects of an event that did not occur (Pezdek & Lam, 2007), has focused largely on the misinformation effect, which is when incorrect information related to the original event or memory is introduced to a post-event narrative (Lee & Chen, 2013). Studies investigating false memories and the misinformation effect are of practical interest because of the potential applications, such as ensuring reliable eyewitness testimonies and preventing false memories in psychotherapy. In this study, we seek to fill a gap in the existing literature by examining the impact of misinformation in a classroom setting, where students may be more unsure of recently learned information and thus more susceptible to misinformation. We sought to examine how misinformation recall is impacted by the level of expertise that the participant believes is had by the source of the misinformation, as well as participant variables (e.g., working memory, inhibition). Participants were novel softball learners from a university subject pool. Participants were taught 9 concepts about softball. After completing a measure of either working memory (OSPAN) or inhibition (AX-CPT), they then watched a series of short videos of either an expert or novice confederate presenting misinformation. Participants then completed the remaining measure (OSPAN or AX-CPT), after which they were tested on the taught information. We predict that an expert confederate will yield higher levels of misinformation reported at recall. We also predict that participants with higher working memory and inhibition will recall less misinformation. These results have potential practical applications in classroom settings. For instance, if expertise is found to be positively correlated with levels of misinformation recall, teachers may need to put protective factors in place when students work or study in groups since they may be vulnerable to misinformation in these settings.

**Effects of social context on physiological arousal during risky decision-making**

Landon Kessler

Sponsoring Faculty: Dominic Fareri

Decision-making requires the ability to weigh the costs and benefits associated with different options in the environment. Often we are faced with evaluating choices that may be riskier in nature than others, and previous evidence suggests that evaluating risk is associated with increases in physiological arousal (e.g., skin conductance responses). Furthermore, the context surrounding these choices can change evoked physiological responses when evaluating risks. For example, cognitively distancing oneself from the importance of each choice can diminish physiological arousal associated with evaluating risk, thereby decreasing avoidance of risks. Importantly, many of our choices occur within social contexts, carrying consequences for others. However, the degree to which the social context surrounding risky choices influences physiological arousal remains unclear. This study will investigate changes in
physiological arousal during risky-decision making within varied social contexts. Participants took part in a validated risky economic choice paradigm in which they chose between risky (50% chance of winning or losing money) and safe (100% guaranteed monetary outcome) options that were either for: themselves, another person, shared between themselves or another person. Two groups of participants were recruited: one group (n=28) participated in the task with a same-sex stranger (laboratory confederate) and another group participated with a same-sex close friend who accompanied them to the experimental session (n=20). Preliminary behavioral results indicate that participants are less likely to take risks when making choices involving others (p<.001) and when outcomes are to be shared (p<.005). Future analyses will examine differences in physiological arousal as a function of social conditions. We hypothesize that subjects will exhibit greater levels of physiological arousal when choosing risky options. We further hypothesize that this pattern will be moderated.

**Effects of Social rejection on Intertemporal Choice**

Elizabeth Plaut

Sponsoring Faculty: Dominic Fareri

Those suffering from substance use disorders (SUD) are characterized by alterations in a reward valuation system such that potential smaller, short-term rewards are more heavily weighted (valued) over larger, long-term rewards. Research suggests that individuals who have more difficulty maintaining social relationships are at a higher risk for both social rejection and for developing SUD. Critically, the context surrounding intertemporal choices is known to have significant effects on how steeply people discount delayed rewards. For example, incidental effects of negative emotional states are associated with increased likelihood of choosing immediate over delayed rewards. However, it remains unclear whether negative social experiences affect intertemporal decision making. The present study will investigate the effect that social rejection has on how individuals discount delayed rewards. Participants will make a series of choices between a smaller, immediate monetary reward and a larger, delayed monetary reward to assess baseline discounting preferences. We will next employ an established social rejection paradigm in which participants will indicate expectations of being liked by unknown others, and then will be given false feedback regarding whether those others likes (i.e., approval) or dislikes (i.e., rejects) them. Participants will then undergo the intertemporal choice task again. We will assess changes in choice behavior (i.e., preferences for immediate vs. delayed rewards) from baseline after experiencing periods of social rejection. We hypothesize that experiences of social rejection will be associated with increased preferences for immediate rewards, and that this may be driven by a desire to buffer against negative feelings after rejection. Implications of this work may inform an understanding of the influence of social context on processes related to substance use disorders.
Living in America: The Impact of Social Issues on College Students’ Anxiety and Coping Skills

Erica Coleman

Sponsoring Faculty: Carolyn M. Springer

The current social and political features in the United States today cause concern for a large portion of the population. Recent polls show that almost two-thirds (63%) of Americans are concerned about the future of the country, 59% are concerned about existing divisions in the country and almost 39% are more anxious this year compared to last year. This study investigates how college students react to these social issues since it is their future that they affect. A better understanding of the impact of social issues on college students can help inform the design of appropriate interventions. At least 75 undergraduate students aged 18 years and over currently enrolled in an academic program at a northeastern college will be recruited using the psychology subject pool and via flyers posted on campus. Participants will be asked to complete a 25 minute on-line survey that asks basic socio-demographic questions, their reaction to different social issues, a trait measure of anxiety, a measure of resilience and a measure of coping. Correlational and regression analyses will be used to examine the association between the levels of anxiety experienced by college students and personality and coping and the current political and social environment of the United States today. Study findings will be compared to those of previous generations of college students as well as the general population.

Keep Your Friends Out of It: Network Interference Negatively Predicts Relationship Quality and Mental Health in Young Dating Couples

Blakely Murphy

Sponsoring Faculty: Katherine L. Fiori

In this study of dating young adults, we found that interference from and tension about partners’ friends were negatively associated with perceptions of relationship quality. These associations were mediated by feelings of trust in one’s partner. Tension stemming from both partners’ friends and family negatively predicted depressive symptoms.

Personality as a Predictor of Drinking Habits

Logan Tuminelli

Sponsoring Faculty: Joel Weinberger

The purpose of this research project is to determine whether or not individuals who exhibit a repressive coping style are more likely to engage in alcohol related behavior in order to maintain a positive affect and to avoid negative affect compared to non-repressors. This is hypothesized to be especially true of individuals who can be characterized as sensation seekers. Previous research has established that engaging in alcohol related behavior generally stems from two motivational pathways: First, social motives must be considered in the context of drinking, as social conformity plays a large role in an individual’s decision to engage in alcohol-related behaviors. Second, “drinking to cope,” or to enhance
one’s positive affect or to avoid one’s negative affect is one of the most common motivations for individuals to start drinking. Participants will complete the present study online by filling out four self-report measures: Taylor Manifest Anxiety Scale (TMAS), Marlowe-Crowne Social Desirability Scale (MC-SDS) Alcohol Use Disorders Identification Test (AUDIT), and Zuckerman’s Sensation-Seeking Scale-V (SSS-V). In order to distinguish between participants who may or may not exhibit a repressive coping style, the study will make note of participants who are genuinely low in anxiety (non-repressors) and those who unconsciously actually have high anxiety (repressors). Non-repressors score low on both the anxiety and defensiveness measures, whereas potential repressors tend to score low in anxiety but high in defensiveness. In addition to scoring high in defensives, the present study will also assess SSS-V scores. It is predicted that repressors who score high on the SSS-V crave new and novel experiences in order to distract themselves from negative thoughts or experiences they wish to avoid entirely. The use of alcohol further exemplifies a repressor’s desire to erase, or forget painful emotions associated with their anxiety.

**Common Factors among Psychopathy, Narcissism and Autism associated with Relationship Satisfaction**

Gabrielle Lipsky

Sponsoring Faculty: Lawrence Josephs

Current research has uncovered that people who are high on narcissism, psychopathy, and Asperger/autistic traits all have relationship problems and they all have low empathy. More interestingly, research has already established that narcissistic and antisocial/psychopathic individuals have overlapping features, however, there is little information on whether there is overlap with Aspergers. Considering many personality styles are overlapping and share common features, it is important to determine if narcissistic or psychopathic patients have autistic features that might be overlooked that contribute to their relationship difficulties. Perhaps, autistic patients have narcissistic or psychopathic features that might be overlooked that contribute to their relationship difficulties. Recognizing these common factors could help clinicians help patients with these personality features with their relationship problems. Since researchers have already uncovered that people with Asperger’s are thought to lack empathy, this study will investigate other shared features ASP may share with narcissism and psychopathy and how this impacts relationship satisfaction for ASP individuals. Data (N=150) the Perceived Relationship Quality Components (PRQC) Inventory that assess how commitment, intimacy, trust, passion, and love are structured and cognitively represented, then, they will fill out the Autism-Spectrum Quotient which aims to investigate whether adults of average intelligence have symptoms of autism or one of the other autism spectrum conditions. followed by the 28-item Brief-Pathological Narcissism Inventory Scale (B-PNI) composed of 7 facet scales (three assessing Grandiosity and four assessing Vulnerability) and lastly, Levinson’s Self-Report Psychopathy Scale which assesses sociopathic tendencies such as lack of empathy.
Determinants of Violence for Criminal Justice Involved Adolescents

Juliana Giannone

Sponsoring Faculty: Lauren Gonzales

Previous research regarding criminogenic risk factors contribution to violence found that understanding the criminogenic risk factors can help us identify high risk youth and provide effective treatment for those who need it, preventing them from reoffending (Schmidt, Hoge, Gomes, 2005). Specifically, the central 8 criminogenic risk factors; History of antisocial behavior, antisocial personality patterns, antisocial cognition, antisocial associates, Family/ marital status, school/work, leisure/recreation, and substance abuse (Andrews et al., 2006). An individual's history of psychiatric inpatient treatment is often perceived as a contributing factor to risk of violence. However, it has been suggested that additional violent risk factors may be more predictive of risk of violence than psychiatric history alone. This study aims to determine if history of psychiatric hospitalization alone is a contributing factor to violence risk when controlling for criminogenic risk factors for high-risk adolescents with criminal justice involvement. All participants were gathered from a larger study titled the Pathways to Desistance study (Mulvey et al., 2004), a publicly available dataset that followed 1,354 serious juvenile offenders who were between the ages of 14 and 18 when they committed their offense for over a period of 7 years. This study hypotheses that history of psychiatric hospitalization alone does not contribute to violence risk when criminogenic factors and demographics are controlled due to there being multiple variables that can affect an individual's risk violence. Preliminary analysis shows individuals who stayed overnight at a psychiatric hospital were not more likely to be violent offenders than those who did not stay at a hospital overnight while controlling for baseline violence, gender and ethnicity. Future analysis will further characterize this relationship with additional covariates of criminogenic risk.

The Female Effect: How Female Therapists Influence Language Use

Serena Chen

Sponsoring Faculty: Michael Moore, Dianne Chambless, Barbara Milrod, Jacques Barber

The "female effect" posits that therapist-client dyads with a female therapist show a stronger working alliance and empathetic resonance than dyads with a male therapist (Bhati, 2014). The current study sought to examine the role of therapist-patient gender-matching on objectively-rated patient linguistic markers of emotion regulation (anxiety, sadness, cognitive processes, insight, and causal words), given prior research linking word use and psychotherapy process (e.g., Lord, Sheng, Imel, Baer, & Atkins, 2015). Individuals diagnosed with panic disorder (N = 88) were randomly assigned to Cognitive Behavioral Therapy (CBT) (n = 50) and Panic-Focused Psychodynamic Psychotherapy (PFPP) (n = 38). Early, mid, and late sessions were transcribed for all patients and analyzed using the Linguistic Inquiry and Word Count software. Patients were sorted into dyads with all-female dyads (n = 25), all-male dyads (n = 7) and mixed dyads (n = 18). Results showed that client anxiety word use decreased significantly overall in CBT, but increased in PFPP (Cohen’s f = 0.25). Sadness words increased for clients in all-female PFPP dyads and all-male CBT dyads, but decreased for client in mixed dyads (f = 0.24). Interestingly, cognitive processing words decreased for clients in all dyads in CBT, but increased for clients in female and male PFPP dyads (f = 0.22). Lastly, insight words also decreased for clients in female and male CBT
dyads, while their use increased for clients in mixed CBT dyads, but vice versa for clients in PFPP dyads ($f = 0.30$).

**Oral Sessions: Nexus Building, classrooms**

**Session 6: Business III, undergraduate division, Nexus Building, Room 159**

*Amazon movement*

Cheemi Sherpa

Sponsoring Faculty: Laura Messano

My abstract topic I decided to write about is the Amazon and its plan (now cancelled) on building their headquarters in Long Island City. The idea would be to go in dept about why Amazon decided to pull out.

*High-end fashion/ Street Wear Reselling industry*

Rose Kaur, Alex Mark, Hope Lee

Sponsoring Faculty: Laura Messano

We will measure how effective the method of selling and reselling works. We will use our personal experience as data. We would show examples of the youth and college students benefiting from the industry. More and more students are using this method rather than getting real part-time jobs. We will show how the culture of selling and reselling is evolving.

**Session 7: Department of Chemistry, undergraduate division, Nexus Building, Room156**

*Photoelectrochemical and Surface Analysis of CdSe-POMA hybrids deposited on Gold, Platinum, and HOPG Electrodes.*

Stephanie Dulovic, Sophia Casto

Sponsoring Faculty: Widera Kalinowska, Marek Szkłarczyk, and Bartosz Maranowski

Research of semiconductors have increased in popularity over the past decades because of their applications in electronics, biomedical devices, photoelectrochemical cells, and detoxification of organic waste. Semiconductors provide the basis for the operation of a solar cell in the study of the conversion of solar energy into electricity.
This study analyzed the stability and efficiency of semiconductor hybrid composites containing cadmium selenide (CdSe) and poly(o-methoxyaniline) (POMA) in the presence of light. The deposition of the CdSe-POMA composites was performed through electrochemical cycling on highly organized pyrolytic graphite (HOPG), gold (Au) and platinum (Pt) surfaces. The system that produced the largest photopotential was Au/CdSe/POMA, while on Pt and HOPG being smaller. However, the HOPG/CdSe/POMA system presented quicker response times than the Au and Pt systems, suggesting that this composite easily stabilized. The chronocoulometric studies observed the greatest photocurrent density for the composite deposited on Au. Three composites were further tested on HOPG, with the composites differing in the order of the two components: (1) CdSe before POMA (CdSe/POMA), (2) POMA before CdSe (POMA/CdSe), and (3) CdSe and POMA simultaneously (CdSe+POMA). POMA/CdSe and CdSe+POMA showed smaller photopotential values and photocurrent density, proving to be less stable systems.

The surface morphology and compositions of CdSe/POMA were analyzed using XPS, SEM, and AFM. The surface analysis of the samples before and after photo-studies found that degradation occurred from exposure to light. The degradation of CdSe/POMA composites deposited on Au and Pt was visibly greater in comparison to the CdSe/POMA on HOPG. There was also greater degradation of the other two composites (POMA/CdSe, CdSe+POMA), indicating that the polymer deposited above the CdSe layer in the CdSe/POMA may be crucial in lessening the degree of degradation resulting from the photo-exposure.

**Structure-activity relationships of fragment-based inhibitors of Trichomonas vaginalis uridine nucleoside ribohydrolase**

Julia Persaud, Shannon Auletta, Wagma Caravan, Samantha F. Thuilot

Sponsoring Faculty: Brian J. Stockman and David W. Parkin

Trichomoniais is the most prevalent non-viral sexually transmitted disease. It is caused by Trichomonas vaginalis (Tv), a flagellated parasitic protozoan, that infects an estimated 200 million people worldwide. Current first-line defense 5-nitromidazole and tinidazole treatments are becoming ineffective to prevailing cases because of the emerging resistance in Tv. For this reason, the advancement of improved therapeutics with novel mechanisms against Tv is crucial. Tv lacks the de novo biosynthesis of pyrimidine nucleoside bases, and therefore nucleoside ribohydrolases use alternative salvage pathways to scavenge these host nucleobases. Nucleoside ribohydrolases are excellent drug targets for the development of exquisite, highly potent treatments. The uridine nucleoside ribohydrolase enzyme was previously screened against the NIH Clinical Compound Collection and a diverse fragment library using 19F NMR spectroscopy to monitor the hydrolysis of 5-fluourouridine. Of these fragments, the most common scaffolds identified were acetamides, benzimidazoles, cyclic ureas, pyridines, and pyrrolidines. These fragment scaffolds were employed in the selection of available similarity compounds and in the synthesis of new compounds in order to explore molecular complementarity within the enzyme active site. Collectively, the data defined emerging structure-activity relationships that suggest likely vectors and chemical modifications for improving inhibition potency while maintaining ligand efficiency. The structure-activity relationships suggest that the fragment scaffolds interact primarily with the
nucleobase regions of the active site. Thus, larger compounds with substituents that extend into the ribose and Ca2+ binding regions are particularly attractive.


Kelly Zhu

Sponsoring Faculty: Justyna Widera-Kalinowska and Magdalena Skompska

Photocatalysis refers to the acceleration of a photoreaction in the presence of a catalyst. In this case, the catalysts are semiconductors. WO3 is a semiconductor with a bandgap around 2.8 eV, which means that it absorbs in the visible light region of the spectrum. This makes it a suitable substance for photocatalytic applications using sunlight.1 TiO2, on the other hand, has a larger bandgap of about 3.2 eV, meaning that it absorbs mostly UV light.2 The addition of TiO2 in a WO3 system has shown to significantly enhance its photoactivity. By combining the two, the increased photocatalytic activity in the visible region is attributed to better light absorption, higher adsorption affinity and increased charge separation efficiency.3 WO3 and WO3/TiO2 composites deposited onto ITO plates using sol-gel and hydrothermal methods were successfully synthesized. The synthesized WO3 and WO3/TiO2 hybrids’ morphology and composition was studied using SEM, XRD, UV Vis and a optical microscope. Electrochemical studies including cyclic voltammetry and chronoamperometry were performed to test its photoactivity. Lastly, the samples were used in the photocatalytic degradation of 4-chlorophenol and rhodamine B. Using HPLC and UV Vis analysis of the 4-chlorophenol and rhodamine B solution exposed to light over time, it showed that both WO3 and WO3/TiO2 composites were successful at breaking down the pollutants into short chain acids and water. However, the WO3/TiO2 hybrid showed a higher rate of degradation.

**Synthesis of ONO-Pincer Hypervalent Iodine**

Arthur Fain

Sponsoring Faculty: Ivan Fabe Dempsey Hyatt

Carbon-carbon cross-coupling is a field of synthetic chemistry research in which two different molecular groups are bonded together via their individual carbon atoms. Despite the ubiquity of C-C bonding in organic chemistry, there are limitations and drawbacks to available methodologies. The work presented herein seeks to establish a methodology to bond two different sp3 carbons together without the use of expensive and synthetically problematic metal catalysts. The goal of the research is to synthesize and characterize novel hypervalent iodine compounds capable of allowing the cross-coupling of alkanes. It is theorized that if two alkane groups can be bonded to the hypervalent iodine atom they will reductively eliminate to form the desired carbon-carbon cross-coupling. If any other carbon atoms are bonded to the hypervalent iodine, such as a phenyl ring as with phenyliodonium diacetate, when the alkane group adds to the iodine the subsequent reductive elimination could potentially form an undesired alkylated benzene product. To avoid such side products, the hypervalent iodine reagent being synthesized utilizes dipicolinic acid as an ONO-pincer ligand. While attempting to synthesize the ONO-pincer hypervalent iodine complex, an unexpected product was obtained. Upon analysis by X-ray diffraction, the
unexpected product appears to be a metal-organic framework. Metal-organic frameworks are a type of molecular cage that can be used as a novel means of drug delivery as well as opportunities for new battery technology.

Session 8: Department of History, undergraduate division, Nexus Building, Room 155

"And There Was A Great Slaughter" - An Analysis of Sandor Voros' Disillusionment with the Communist Party Throughout the Spanish Civil War

Jessica D'Onofrio
Sponsoring Faculty: Edward Reno

Sandor Voros was an American who served as a commissar for the International Brigades on the Republican side of the Spanish Civil War, and he is responsible for donating the Spanish Civil War Collection at Adelphi University. A passionate writer and journalist, he was ordered by the Communist Party to collect historical documents and accounts from the battlefields. Voros was once a dedicated member of the Communist Party who was drawn in by the idealist views of the Party. However, as Voros’ Spanish Diary shows, Voros had disagreements with the Party leadership and he was sent to Spain so that the Party could get rid of him. Throughout his time in Spain, Voros became increasingly dissatisfied with the Communist Party’s constant changing of the Party Line, and the way in which members of the Party would sabotage each other in order to gain more power. Voros’ growing disillusionment and eventual separation with the Party is documented through his letters to his girlfriend Myrtle which were written throughout his time in Spain, his Spanish Diary and his play Behind the Lines, which were both written immediately after his return from Spain, and his autobiography American Commissar, which was published four decades after the Spanish Civil War. This analysis of Voros’ writing shows how Sandor Voros’ personal views of the Communist Party changed throughout the 1930s.

The Four Irishmen

Nicole Quirke
Sponsoring Faculty: Edward Reno

Irishmen volunteered during the Spanish Civil War, fighting for both the Nationalist side as well as the Republican side. What makes the Irish volunteers unique however is that most Irishmen volunteered to fight on the Nationalist side, which was pro-Franco. In my paper I examined why Irishmen volunteered to fight for either the Republican or National cause. Most of my research was focused on a document found in Adelphi’s archive, “The Four Irishmen.” This document describes the lives of four volunteers from Ireland who were apart of the International Brigade which fought on the side of the Republicans; Bill Davis, Michael Kelly, William Beattie, and William Laughran. In the original document, which is an obituary, these four volunteers are described in a way that portrays them as martyrs for the International Communist effort. It specifically connects the work they did for the Communist party in
Ireland to how they died in battle in Spain as furthering the cause of the Communist party. The obituary is also very similar to a section which can be found in the propaganda book, “The XV International Brigade.” The Four Irishmen document is a part of a more complex propaganda and publicity endeavor that the International Brigades thought was essential to guarantee ongoing assistance for the fight in Spain against what they believed was the danger of Fascism.

The Conflict of Ideology in the International Brigades During the Trial of George Wattis

Christopher Horton

Sponsoring Faculty: Edward Reno

The International Brigades that volunteered to fight on the republican side of the Spanish Civil War faced a conflict between the Marxian ideal of a classless, equal society which many of them embraced and the strict hierarchy inherent to an effective military organization. This is especially evident in the trial of George Wattis, an event which has been mostly ignored or even written out of the historiography of the American contingent of the International Brigades called the Abraham Lincoln Brigade. Wattis’ trial illustrates the ideological struggles taking place within the International Brigades. In the trial, Wattis, a British Volunteer with prior military experience, was blamed for the catastrophic losses taken by the Abraham Lincoln Brigade during the Battle of Jarama in February 1937. Throughout the trial, Wattis also became the image of cold and rigid command that the Lincoln’s refused to submit to. This paper will utilize an unpublished transcript of the trial, contained in the Adelphi University Spanish Civil War Sandor Voros Collection, to analyze both the actual events of the conflict at Jarama as well as the ideological conflict which played out in the court room between the ideals which led them to volunteer and the realities of the war they found themselves in.

Social Work in Restorative Justice: The Bridge between Legal Professionals, Victims, the Community, and the Offender

Cristino Chavez

Sponsoring Faculty: Chrisann Newransky

This presentation examines the social work role in restorative justice, which is an approach to justice that focuses on the rehabilitation of offenders through reconciliation with victims and the community at large. The goal of this presentation is to think creatively about social work practice within the court system. In light of the implication of restorative justice within our legal system, social workers continue to face an array of barriers including lack of confidence among legal professionals, lack of input on prosecution pleas, and application of effective and efficient resolutions to crime recidivism when offenders, victims, and community members are being prosecuted and brought to trial. Social workers act as a bridge between legal professionals, victims, community members, by creating programs and resources that aim to reduce crime recidivism and establish community trust. In this presentation, I will
illustrate how social workers, through their academic credentials and professional experience, are uniquely positioned to promote effective and efficient practices, as well as develop networks and community engagement on addressing crime-related concerns. I will challenge current assumptions about the social work role in criminal justice and offer recommendations to increase collaboration between legal professionals and social workers to fully realize the benefits of restorative practices applied within the criminal justice system.

Does culture explain cross-national differences in welfare attitudes?

Eun Kyung Lee

Sponsoring Faculty: Philip Rozario

Background and Objective: Each country has different social welfare systems driven by public welfare attitudes. To explain the differences in welfare attitudes at the country level, there is little attention to culture as a predictor of welfare attitudes. This study examined how cultural factors would explain cross-national differences in attitudes toward welfare.

Method: This study used secondary data from the two waves of World Values Survey (wave 5: 2005-2009 and wave 6: 2010-2014). Seventy nations (54 countries from the wave 6 and 16 countries from the wave 5) were included. To examine how cultural factors would predict levels of welfare attitudes at the country level, correlation and linear multiple regression analysis were employed.

Results: The results showed that countries emphasizing self-expression values are more likely to have pro-welfare public attitudes. This study showed that the impact of self-expression values on welfare attitudes at the country level may be substantial. After controlling for ideology and national economic factors, self-expression values explained cross-national differences in welfare.

The lived experiences of previously incarcerated women residing in Orange County, NY

Amanda O'Brien

Sponsoring Faculty: Ohiro Oni-Eseleh

The purpose of this research is to explore the effects of incarceration on previously incarcerated women residing in Orange County, New York. The study will seek to understand how their incarceration impacted their ability to re integrate into society. For the purpose of this study incarceration is defined as any length of time spent in jail or prison exceeding 30 days. Conducted by an Adelphi MSW first year student under the supervision of the Director of the Adelphi University School of Social Work Hudson Valley Center, this qualitative study will involve face-to-face and over the phone interviews using a structured questionnaire consisting mostly of open-ended questions. Focus will be placed on the impact of incarceration on the women’s social relationships, the support or lack thereof that they received during and after incarceration, post-incarceration employment opportunities and social acceptance. The sample will consist of ten to twelve participants obtained through purposive sampling. The findings of this research can inform policy and help direct prison reformation advocates at the local level. To that
extent, it will help to guide policymakers in providing evidence-based and effective corrective and rehabilitative services to previously incarcerated women in Orange County, New York.

Session 10: Multidisciplinary III, undergraduate division, Nexus Building, Room 154

Translation of Poetry/Traducción de la Poesía
Carmelo Soto
Sponsoring Faculty: Ana I. Simon-alegre

The purpose of this research on poetry translation, is to present the differences of how language expressions in English and Spanish, can change meanings of what is meant to be said and felt. In many instances, the proper translation of poetry from Spanish to English can enable the original text to keep its original context and express accurately how the writer wishes to present their point. With the use of translation studies knowledge, the translator has to unify their mind with the poets. The emotions, personality, and the cultural expressions must also be transferred into the target language, in order to create the perfect translation. I will be using poets like Carmen Conde (15 August 1907 – 8 January 1996) and Federico Garcia Lorca (June 5, 1898 – August 18, 1936) to present the process of translations that were done erroneously and correctly of their poems.

Language Isn’t Just Spoken but Can be Acted
Ninfa Vicari
Sponsoring Faculty: Ana Isabel Simon-Alegre

This capstone is to explore the cultural influences of the assistance of physical and linguistic gestures that groups of people use through daily dialect, regardless of the language spoken. Language is a verbal type of communication used between people to express themselves. Though, there are groups of people, like the Italians and Arabs, who are commonly known for speaking with their hands and using gestures with each other. The usage of hand gestures is common in many cultures and they all vary in their own ways. Some gestures may even be offensive to people in one culture where it could mean a whole entirely different thing in another. Hand gestures and cultural gestures add to a person’s body language when they speak and using them says a lot about the person and the culture it is derived from. Gestures when talking can enhance the message being sent or can distract an audience if done so in a way that doesn’t portray the message. Many political public figures, for example, use gestures because it shows passion, determination, and creates a welcoming energy among audiences. For this reason, it is important to know when and how to use the appropriate hand gestures. The conclusions of this paper will focus on how incorporating gestures can enhance an interpretation from the source language to its target language.
Why does a barrier continue to exist between non-English speaking patients and health professionals?

Cynthia Siavichay

Sponsoring Faculty: Ana Isabel Simon-Alegre

The growing diversity in the United States has created a melting pot of languages and cultures from all over the world. As a result, the need to bridge the language barrier among different communities has become crucial especially in the healthcare setting. More health professionals aren't able to properly communicate with patients which could negatively impact proper medical examination. Therefore, the need for interpreters and translators has become detrimental in aiding non-English speaking patients. As a result, federal and state laws were created in the U.S making it illegal for any health organization to deny non-English speaking patients language access services such as interpreters. This became a big stepping stone for health care because it recognized that not everyone was receiving equal care due to the language difference. Despite the law, there is no guarantee that every health organization is abiding with it and that trained interpreters are being utilized. Often the cost of medically certified interpreters is an issue for places such as hospitals where there is a large number of people that speak many different languages that seek care. As a result, new ways to provide language services have been developed such as telephone and video call interpreters. However, a barrier still exists between non-English speaking patients and their health providers because there is no proper acknowledgement that medical interpreters are a vital component in the examination process. The goal of this research is to analyze specific problems regarding the improper use of interpreters that hinders effective communication between patients and health professionals. Ultimately, it is important to uncover the reasons as to why a language barrier continues to affect proper patient care despite the services available because it spreads awareness on the issue.

The Blossoming of our Mother Language: From Womb to History

Julia Persaud

Sponsoring Faculty: Ana Isabel Simon-Alegre

The purpose of this paper is to explore the psychological influence guardians have on their child’s language development and how such influences have propagated the best female language experts. Generally speaking, women are the mothers of our society; they give birth to the language spoken by the children they bear. Language is an innate experience taught by mothers from the prenatal to adulthood. A motherhood’s influence gives our world’s human-human interconnectedness from the beginning of time to present day. For this reason, our greatest translators and interpreters despite differences geographical space and time. In some cases, individuals lack the presence of their biological mother through their childhood; such role can be substituted by an older adult, regardless of their gender. The conclusions of this paper will focus how adult figures, biologically male or female, transform and enhance a child’s language advancement through from infancy to adulthood and how these children are the best historical interpreters and translators.
**Session 11: Multidisciplinary IV, undergraduate division, Nexus Building, Room 157**

**Translating one dish at a time**

Stephanie Faldetta

Sponsoring Faculty: Ana Isabel Simon-Alegre

Different languages are what make us all unique. There are difficulties when being somewhere foreign and not knowing how to order food. That is where translating comes into play. Translation and food is a new area in the translation studies. I will be speaking about how when one goes on vacation to another country, whether it’s a Spanish or Italian speaking country fumbles on the difficulties it is to read a restaurant menu. It will be my mission to translate the menus whether it is Spanish to English, Italian to English or vice versa. The goal of this research is to find out how different resorts or vacation spots are able to translate their menus for the restaurants they have in their resort. This research is going to look for if they use possibly a translating machine that helps them translate into different languages. In conclusion, Building the bridge between two languages is the key to success. Being able to have menus for people who are foreign to that country actually enjoy and understand what they are going to eat is what I am aiming for.

**Session 12: “The Spanish Room”—Reports From the Field, Nexus Building, Room 237**

**Books in Spain**

Judith Aguilar

Sponsoring Faculty: Ana Isabel Simon-Alegre

If there is one thing most people who love to read can agree on, its books have a way of helping one through and allowing them to escape difficult times. It doesn’t matter what nationality, what language one speaks, or what social standing one has; books have a way of transporting you to another time and place. It is a wonder what it is about books that allows people to connect on such a profound level. One story can have a tendency to bring out the best in us and forge a bond between individuals who sometimes live half way across the world from each other. In the story, El Corazón Helado, written by Alumdena Grandes, we come to meet two individuals; Alvaro and Raquel. Through the power of her storytelling, Grandes is able to connect an important part of Spanish history through the story of love. Being that the story takes place in Spain, for someone like me who lives in the United States, it could be difficult to connect with the places, persons, and history that I never lived through or learned. But Grandes makes it her mission to allow the readers to get lost in her story of love, heartbreak and war. Grandes allowed me to be able to connect with both characters, even if I didn’t necessarily agree with their decisions, I connected with their emotions, and I can understand those emotions of losing a loved one. With the trip taken to Spain, meeting authors who also hail from Spain, it interesting to see how similar and yet different our cultures are when it comes to reading and writing books. The goal of this paper is to express what allows us readers to connect with the authors, whether they be from the US or from Spain is communication. The ability authors have to be able to write down their stories, their
thoughts have enabled them to reach people all over the world, over decades, and even tell stories of people who have already passed and never got to tell their stories to their loved ones.

**Forks in the Road**

Stephanie Faldetta

Sponsoring Faculty: Ana Simon Alegre

People can always connect their travels with food. Food is something that people fall in love with when they travel to a new place or country. Taking pictures is what I will be incorporating into my travel diary. While we visit “Mercado De San Fernando” you can see each place offers different types of food. Each place we visit I will capture each moment we indulge our teeth into something delicious.

**Architecture in Spain**

Maria Mayorga

Sponsoring Faculty: Ana Simon-Alegre

On my upcoming journey through some of Spain’s most beautiful cities, I am excited to see and find out about some beautiful architecture that the country has built. My Social Movements in Spain class will travel through Madrid, Toledo, Segovia, and Barcelona. For my research, I want to focus on Spanish architecture. I would like to see if the architecture will look different per city and if there will be distinct architectural styles, colors, and textures that will give each city its own unique identity. I also want to find out the stories and histories behind buildings such as the Palacio Real in Madrid, El Escorial in Segovia and others. During my trip to Spain, I will track all of my findings and include pictures in a travel diary.

**An Explosion of Spain’s Art Culture: From Past to Present Day**

Julia Persaud

Sponsoring Faculty: Ana Isabel Simon-Alegre

With Dr. Ana Isabel Simón-Alegre, our Social Movements in Spain class will be traveling from Madrid to Barcelona walking the paths that many of the world’s most significant artists have walked. Uniquely so, Spanish art has Italian, French, Muslim/Arabic, and Catholic influences that bathes the architecture and art pieces. Spain houses the works of the most famous, ranging from Velazquez to Picasso, which tell the best story of Spain’s history and culture. From the dates of March 8th -17th, 2019, I will be examining Spain’s artwork from the 19th and 20th century through the use of my travel journal. I will show how Spanish art has greatly influenced the cultural development of Spain throughout it history.
The Diary of a Museum Enthusiast

Laura Rojas

Sponsoring Faculty: Ana Simon-Alegre

As someone who goes to museums quite frequently, the focus of my study abroad trip is to capture the essence, both through written and photographic accounts, of the museums that we will be visiting. This is a chance to capture aspect of Spaniard museums, such as style, subject matter, and missions. Through this documentation of museum visit in Spain I hope to bring back information that can serve both as a recollection of a cultural experience and also as a cross-cultural comparison to American museum. Are museums a universal institutional with generally similar goals in regards to public access to knowledge? Or do they vary, with goals that are more specific to the history of the nation in which they reside in. How does this history reflect within the nature of the museum? These are all questions that I plan to answer through my firsthand experience in Spain and the research conducted that will be presented through my travel diary.

Spain in the tourist’s eye

Ivan Sakkal

Sponsoring Faculty: Ana Isabel Simon-Alegre

In this research, my topic will be what the experience of a student is like. In my diary, I also plan to write about what Spain is like in my diary everyday life, how people interact, dress etc. Moreover, I will show what the advertisements in Spain are like. I will show this by cutting out advertisements and pictures from Spanish magazines. In addition, I will describe what each day is like in relations to what I learned and saw.

Fashion and Social Identity

Giovanna Stanco

Sponsoring Faculty: Ana Isabel Simon-Alegre

My travel diary will be centered upon Spanish fashion as a means of expression. Although fashion changes over time, it has existed for many years, in many places, and has been represented by many different people. It is an outward means of self-expression, and is a way of making a social statement. Spanish fashion is no exception. When in Spain, I hope to encounter different styles and representations of people through their clothing. I will analyze whether clothing has implications about the society. I will be sure to show the ways in which clothing is sold, as well as how their sizes run.
Markets and Arts

Mariana Steinbuch

Sponsoring Faculty: Ana Isabel Simon Alegre

My research will focus primarily on the local markets in Spain that we are going to visit in places such as San Fernando, San Martín, and San Miguel, also in Madrid and Barcelona, Spain. The history of these markets are very important and interesting since some of these markets were built before and some were built after the devastation of the Spanish Civil War (1936-1939). The prewar markets are simpler and mostly consist of fruit and day to day traditional fare. These markets are mostly for the locals. The post war markets often offer many more diverse products and modern services from fresh food, prepared food, bars and cafeterias, gift shops and artisan products, bookstores, as well as all kinds of professional services. Cooks prepare foods, and they offer different varieties of cuisines such as vegan food, Shushi and Greek offerings among others served in a variety of ways that I will include in my paper.

A large part of the research is to compare markets from Spain to the local markets found in the United States such as those in New York’s trendy neighborhoods like the Village, SoHo and Astoria. The research will also focus on the environmental importance of using these markets and why they are so popular in Spain. I will use real experience and probing questions when interviewing vendors and chefs in both countries. The goal of this research is to show what positive effects markets can have and the influence in people’s lives as well as the benefits on the environment.

SECTION D: 11:30 A.M.–12:20 P.M.

Session 1: Computer Science and Game Development Exhibit I, undergraduate division, Nexus Building, second floor, lobby

Exploring Unity

Daniel Hickey

Sponsoring Faculty: Lee Stemkoski

Unity is an engine that is very user and beginner friendly while also being very commonly used in the game industry. The game will be quick and easy to pick up with a focus on getting a high-score to make it easily accessible for anyone to pick up.
RF-Loc
Zachary Gold, Travis Ng, Joseph Zambrano
Sponsoring Faculty: Saleh Aliyari

RF-Loc is a hardware/software system for locating individuals in emergency-response scenarios. This is done by detecting the radio signals coming from their cell phones. There are three components within the system: the detectors, the manager-access point, and the system that hosts a database that is used by the user interface. Our system will use a protocol named MQTT which is a lightweight messaging protocol based on the publish-subscribe messaging method. Once the data has been inserted into the database, registered users can access data via a web site. Information will include an overlay of the location of the detectors and, based on signal strength, a circle approximating how close the individuals device is to the detector. By design, the system is completely amnesic, which means that the physically accessible components hold no usable personally identifying information, this minimizes the privacy concerns related to intercepting wireless communications.

Clothing Shack
Vanely Chavez, Tiani Moore, Felipe Custodio
Sponsoring Faculty: Xiaoxing Liu

For our project, we have decided on building a closet organization self-service website. Users will be able to organize all of their clothing and accessory items virtually. Inside their virtual personal closet, users will have the ability to drag and drop images of their items to create outfits to then save and review in their personal outfits gallery. The website will also include a blog and a shopping feed for increased user experience with other users within the community.

Artificial Intelligence meets Texas Hold'em
Grant Clark, Brian Seidl
Sponsoring Faculty: Xiaoxing Liu

Artificial intelligence is one of the world’s leading scientific studies. Being able to have computers learn in ways similar to humans is truly an amazing feat of which we have only scratched the surface. For our project we will attempt to make a neural network based artificial intelligence to play the game of Texas Hold'em poker and learn to adapt to its opponents style of play.
LoneWander
Michael Desena
Sponsoring Faculty: Lee Stemkoski

For research day I would like to submit a 2D top down game with role playing elements. This game will feature an assortment of weapons and tools and will give the player full control over how they play. Within this game will be “Make your Own attack” system where players can chain enhancements to make an attack of their own. (Ex. Charge is a skill that will increase potency of the next attack, and slash is a weapon skill, when combined the skill becomes a “Charged Slash”). Players will also have a class which contains pre-made skills. This game will be story based. Research: I have never made a game before and I want to learn how to recreate old role playing games with a modern spin, I would also like to design this world.

Session 2: Art Exhibit, undergraduate division, Nexus Building, first floor, lobby
See Section C, Session 2

E Posters: Nexus Building, first floor, lobby

Session 3: Department of Anthropology, undergraduate division

Mammoth Extinction in Alaska
Ariel Barrera, Alyssa Booth, Noelle Martin
Sponsoring Faculty: Kathryn Krasinski and Brian Wygal

Archaeological research has been unable to clarify precisely when the Woolly Mammoth became extinct in Alaska at the end of the last ice age and how much humans contributed towards their demise. To address this question, we conducted a literature review to establish criteria for evaluating evidence for mammoth hunting and the overkill hypothesis. Secondly, we have initiated an analysis of faunal remains found at the Holzman archaeological site in interior Alaska. This site was selected because it contains evidence of the last known human interaction involving Mammoth in association with stone tools. We are in the preliminary phase of analysis where we are assessing whether mammoth postcranial remains occur at the site. We are also studying whether the bones have been cooked, broken, or used for tools as evidence of human interaction. This proposed work will fill a critical gap into piecing together the causes of Mammoth extinction, peopling of the Americas, and impact of climate change at the end of the Pleistocene.
Dental Developmental Growth And Evolutionary Tendencies Observed In The Third Molars From Archaic Homo Sapiens To Modern Hominins

Tatsuya Hondo, Zubin Andrade

Sponsoring Faculty: Anagnostis Agelarakis

This research project presents data on hominin dental developmental growth and eruption processes of the third molars in the maxillary and mandibular domains. Initiating with archaic Homo sapiens, a presented sequential span of ca. 700,000 years is represented in this study consisting of nine hominin specimens. A particular focus on the expressed range of eruption variables in the oral cavity, the contexts of third molar dental anthropological metrics-clinical dimensions of erupted crown surfaces is documented. The diachronic observation of concerned hominin odontology, decreases in the mesiodistal, bucco-palatal, and bucco-lingual crown diameters is indicative for their uninterrupted processes for diameter reductions. Our study found that a mensurational pattern of dental phenotypic expressions are congruent to the decreased crown diameter reduction trend, amongst the archaic to modern hominins. Further, the plesiomorphic character for the hominins to have third molars is diminished as the organism is closer to the present-time, and this is evidentiary data showing alveolar bone changes in the jaws and relevant muscles of mastication of said hominins in the macroevolutionary perspective. The third molars clearly appear to have a considerably diminished masticatory function, due to the advancement of tool technologies and their widespread use in food preparation and consumption. Our findings indicate that within the most recent millennia of the Holocene epoch, skeletal remains of Homo sapiens sapiens recovered archaeologically along with nowaday forensic odontological records, the third molars if not genetic may be either impacted within their alveols or partially erupted causing dental and oral cavity anomalies.

Medical Illustration

Sae Bom Ra

Sponsoring Faculty: Argio Agelarakis

This poster presentation will explore the history of scientific and medical illustration from ancient times to the present; the relationship between science and art and their interdependence. This interdisciplinary study on why science needs art will begin with early research into the drawings of animals in caves 30,000 years ago, to Ancient Greco-Roman and Egyptian time periods, the Renaissance, and into the present. Significant contributors and protagonists in the art of scientific/medical illustration in the fields of paleontology, botany, biology, human anatomy, astronomy, and neuroscience will be presented. Original work based on studies in biology and human anatomy will also be included.
Aspects of the Human Condition from the Neolithic Aposelemis in Crete, Greece
Panayotis Agelarakis
Sponsoring Faculty: Anagnostis Agelarakis

This paper is part of an ongoing interdisciplinary project investigating the demographic dynamics of the Neolithic (5th millennium BC/BCE) Aposelemis human skeletal collection recovered in Crete-Greece, while operating within the larger context of archaeological inquiry on matters of biodistance of said population to both antedating migrations from Anatolia to sea-girded European regions and the diffusion of agriculture, as well as to the postdating cultural components of the Minoans. Hence, in searching through forensic anthropologic and bioarcheological methodologies to recover aspects of the human condition and the organizational abilities in Aposelemis, a case study representative of the population sample involved illuminates features of the biological developmental growth, traits of epigenetic variability, dietary intake, and acquired as well as degenerative and traumatic conditions ingrained in the dento-skeletal record of a skeletally well preserved individual assessed to have been of male biological sex and between 35 to 45 years of age at the occurrence of death. Further, funerary rights inclusive of burial offerings reflect on burial customs and practices, indicative as they may be of prehistoric ideational concepts in Crete.

This paper presentation is of considerable interest to scholars working in the humanities, social and natural sciences and particularly to prehistorians, archaeologists, and physical anthropologists.

Anthropological Dental Analysis Including the Use of Tooth Surfaces as a Tool: The 2018 Excavation of the Aposelemis Neolithic Burial Site in Crete, Greece
Brianna Delzell, Panayotis Agelarakis
Sponsoring Faculty: Anagnostis Agelarakis

Archaeological excavations have unearthed the first formal Neolithic burial ground at the Aposelemis endoplains of the Herakleion prefecture in Crete, Greece. A considerable human skeletal population comprising seventy two individuals provides through ongoing bioarcheological research glimpses of the demographic dynamics and living conditions of the 5th millennium BCE, as well as aspects of the perceived environments of the ancients. This project addresses matters of forensic odontology conducted on the dental record of the collection with emphasis on developmental morphology and variability, incisal and occlusal coronal wear and attrition patterns based on the level and quality of dietary intake and aging processes, the particular use of dental surfaces in “third hand” functions by a select number of parent skeletons involving both biological sex subgroups of adult individuals, and the differential diagnosis of a range of pathological manifestations affecting dental proper tissues as well as the periodontium. Research results of this study are of significant interest to prehistorians, archaeologists, and dental anthropologists reflecting not only on the interdisciplinary domains of bioarcheology, but also on craft specialization and incipient social stratification during the Neolithic at Aposelemis.
Arts Based Research: A Visual Anthropological look at Native Americans of Montauk, NY

Kristie Siegel
Sponsoring Faculty: Argio Agelarakis

Using Arts Based Research (ABR) as a form of collecting data through observation of a culture’s art is the basis of this project. ABR as the research tool is explored in this study. Various Native American groups along the eastern seaboard were observed through their many summer festivities, which included dance, craft/art, and food fairs. Data was collected using participant observation methods. The main focus of this Visual Anthropological study was the Shinnecock Peoples and their dance rituals. These rituals were photographed, as were their dress, foods, and art sold as souvenirs (“is it art or not” comes into question). Despite the small scale of the area in which these groups held their festivals, the spirit of their people, their traditions, and hopes to keep their culture alive were quite evident. In conclusion, ABR as the research tool and methods of collecting and studying the data through art was an effective tool in understanding and bringing awareness to their beautiful culture. The Visual Anthropological study, in the form of photographs, documents these groups and summer festivities.

Session 4: Department of Chemistry II, undergraduate division

Photoelectrochemical and Surface Analysis of CdSe-POMA Composites on Gold, Platinum, and HOPG Electrodes

Sophia Casto, Stephanie Dulovic
Sponsoring Faculty: Justyna Widera-Kalinowska, Bartosz Maranowski, Marcin Strawski, and Marek Szklarczyk

Over the past decade, semiconductors have been of great interest and are currently found in numerous devices such as computers, cell phones, and medical equipment. Semiconductors are solid elements or compounds that have a higher conductivity than insulators and a lower conductivity than conductors. The conductance varies depending on the voltage applied to a control electrode or the intensity of irradiation. Semiconductors are the integral component of solar cells, converting solar energy into electricity.

This research involves the study of semiconductors cadmium selenide (CdSe) and poly-o-anisidine (POMA). Both semiconductors were electrochemically deposited on highly organized pyrolytic graphite (HOPG), gold (Au), and platinum (Pt) electrodes in a variety of different combinations. The photoactivity and stability of the deposits were studied using open circuit potentionmetry (OCP), cyclic voltammetry (CV), and chronoamperometry (i/t).

In addition, the surfaces of the deposits were studied before and after photostudies to observe the degree of degradation after the samples were exposed to light. The chemical composition, shape, and spatial variations were studied using X-ray photoelectron spectroscopy (XPS) and scanning electron spectroscopy (SEM), respectively. In addition, the surface morphology of the thin films was observed.
using atomic force microscopy (AFM). The hybrid consisting of electrochemically deposited CdSe followed by POMA on HOPG, proved to be the most photoactive and stable.

**NMR-based counter screens of fragment inhibitors of Trichomonas vaginalis uridine nucleoside ribohydrolase confirm reversible, target-specific inhibition**

Samantha Thuilot, Julia K. Persaud

Sponsoring Faculty: Brian J. Stockman and David W. Parkin

Trichomoniasis, the most prevalent, non-viral sexually transmitted infection in the world, is caused by the parasitic protozoan Trichonomas vaginalis. The parasite is incapable of de novo synthesis of purine and pyrimidine rings; therefore it relies on salvage pathway enzymes such as pyrimidine preferring uridine nucleoside ribohydrolase to obtain them from the host. Strains of the parasite have shown increasing resistance to the current metronidazole therapies, indicating the need for novel therapies. Uridine nucleoside ribohydrolase was previously screened against inhibitors from a fragment diversity library using a 19F NMR-based activity assay to monitor substrate hydrolysis, using 5-fluorouridine as the substrate. Several classes of inhibitors emerged from the library including acetamides, cyclic ureas, pyrrolidines, and pyridines. In order to validate those compounds as target-specific inhibitors, three different counter screen assays were carried out on several compounds from each class. Assays in the absence and presence of 0.01% Triton X-100 ruled out aggregation based inhibition. Jump-dilution assays carried out at 200 μM and 20 μM confirmed non-covalent, reversible inhibition. Four-fold increased substrate assays provided evidence for active site binding. The NMR assays proved to be remarkably robust for all the counter screens. Collectively, the counter screens demonstrated that all classes of compounds are well-behaved, target-specific, reversible inhibitors.

**Forming Spirolactams to Cure Trichomonas Vaginalis**

Fatima Siddiqi, Nicholas Spatola

Sponsoring Faculty: Ivan Fabe Dempsey Hyatt

Many people suffer from a common non-viral sexually transmitted disease known as Trichomoniasis, which is induced by an infection with the protozoan parasite, Trichomonas vaginalis. Trichomonas vaginalis is incapable of a de novo biosynthesis of purine and pyrimidine nucleoside bases. The protozoan parasite depends upon nucleoside hydrolases to obtain purine and pyrimidine for survival. Previous research has demonstrated a 19-F NMR based activity assay was used to analyze uridine nucleoside ribohydrolases. The 19-F NMR based activity assay included 5-fluorouridine as the substrate to determine the ideal inhibitor of the UNH enzyme in Trichomonas vaginalis. The results showed pyridines, pyrrolidines, acetamides, cyclic ureas, and spirolactams to exhibit high inhibition. Current treatments involving metronidazole and tinidazole antibiotics have been unable to successfully treat the parasite due to antibiotic resistance. By using new methodologies utilizing hypervalent iodine, a diverse array of complex molecular structures bearing spirolactam moieties can be synthesized.
Synthesis of N-HVI’s with Variations of Aryl-iodine for the HIGES reaction

Jennifer Noorollah, Nirvanie Singh

Sponsoring Faculty: Ivan Fabe Dempsey Hyatt

C(sp3)-C(sp3) bond forming reactions are of high interest in organic chemistry. The synthesis of products containing sp3 hybridized carbons are difficult to synthesize due to β-hydride elimination. When β-hydride elimination is not avoided, side products are created rather than the desired product. To avoid β-hydride elimination, hypervalent iodine is being used to synthesize products containing C(sp3)-C(sp3) bonding. A methodology that results in a C-C bond previously published by the Hyatt Research Group was Hypervalent Iodine Guided Electrophilic Substitution (HIGES) reaction. The goal of the project is to ideally establish a new reaction that utilizes novel N-Heterocycles-Hypervalent Iodonium (N-HVI) compounds that will be used towards the HIGES reaction to test for formation of C(sp3)-C(sp3) bonding. The synthesis of N-HVI is produced through a single reaction that uses phenyliodine(III) diacetate (PIDA), trimethylsilyl trifluoromethanesulfonate (TMSOTf), pyridine, and dry dichloromethane. Novel N-HVI’s with variations of aryl-iodine are currently being synthesized using substituted aryl iodonium compounds with benzyl groups as opposed to using phenyliodine(III) diacetate (PIDA). Synthesis of products with C-C bonding will have an important role in the production of pharmaceutical drugs such as antihistamines and anxiety medications.

Session 5: Department of Environmental Studies, undergraduate division

Using GIS and LiDAR to Map Ancient Shorelines of Lake Superior in Northeast Minnesota

Sarah Combs

Sponsoring Faculty: Susan Kilgore

At the end of the last ice age, around 11,000-12,000 years B.P, meltwater from the retreating Laurentide Ice Sheet filled the Lake Superior basin to levels higher than the present. As lake levels decreased over time, shoreline features such as beaches, terraces, and wave-cut cliffs remained on the landscape, marking periods of stability. While previous researchers have made efforts to catalog the relict shorelines in the past, they were restricted to ground surveys and analyses of lower resolution topographic maps. However, due to advancements in remote sensing and mapping technologies, these features can now be accurately viewed and mapped on computers. This study utilizes Geographic Information Systems (GIS), high resolution digital elevation models, and Light Imaging Detection and Ranging (LiDAR) imagery to identify the location of ancient shorelines and shoreline features in and around Grand Portage National Monument, in Northeastern Minnesota. Findings are compared with previous, lower resolution, approximations of paleolake elevations to provide a more precise location for paleoshores in the monument. Identified features are analyzed based on geomorphic characteristics, such as slope and shoreline shape, to predict the nature of the shoreline in specific locations—whether they represent terraces, cliffs, or other landforms. Previous research has demonstrated that early inhabitants of the region resided near the lake for access to food, water, and transportation. Thus, identifying shoreline features and elevations of paleolakes can assist in finding past centers of human
life This project is in preparation for field work in Grand Portage this summer, where identified and accessible shoreline features will be surveyed.

Session 6: Department of Mathematics and Computer Science, undergraduate division

Gamified Phishing Simulation
Kayla Pollock, Gerard Boniello, Joseph Collins
Sponsoring Faculty: Xiaoxing Liu and Kees Leune

Phishing emails are a common cyber attack that aims to gather sensitive, personal data. To educate Adelphi’s members of potential phishing attacks, the university routinely sends fake phishing emails to all faculty members. However, the single template used by the university is unable to represent different levels of threats the users can face. The current failure rate for phishing at Adelphi University is 10-20%. We present a system that aims to train our users more effectively and reduce the failure rate. Instead of sending all users the same email, our system will send personalized emails to users based on their susceptibility to fall for a phishing attack. Specifically, our system will keep track of how users interact with phishing emails and rate their performance based on a variety of factors, such as clicking on a bad link, or putting in sensitive data. With this rating we will determine the frequency and the difficulty of the phishing emails a specific user receives. At first, the users will be introduced to a simple phishing email, and if handled properly, receive more difficult ones. By individualizing the type of emails sent, we aim to enhance a user’s knowledge of potential attacks, directly reducing the possibility of a successful phishing attack. We expect this proof of concept to be implemented at Adelphi University and potentially other organizations in the future.

A Scope of Mathematics Education Through the Lens of Jeremy Kilpatrick
Christina Ferrante
Sponsoring Faculty: Salvatore Giunta

In this research, I will be presenting information on how Jeremy Kilpatrick influenced the research area of mathematics education. His research focuses on teachers’ proficiency in teaching mathematics, mathematics curriculum change and its history, mathematics assessment, and the history of research in mathematics education. Jeremy Kilpatrick is Regents Professor of Mathematics Education at the University of Georgia. I will discuss his role and contributions in the National Assessment of Educational Progress, the Third International Mathematics and Science Study, and the National Research Council's Board on International Comparative Studies in Education.
Contributions to Mathematics and Math Education from Felix Klein
Lara Klein, Gregory Lucas
Sponsoring Faculty: Salvatore Giunta

In this research, we will discuss the life of Felix Klein. We will discuss his various influences on the mathematics and mathematics education fields. In particular, our research project will focus on his contributions to non-Euclidean geometry and group theory as well as his supervision of the first doctoral thesis in mathematics education.

An Analysis of the Correlation Between College Drinking and Car Accidents
Alexis Ramcharitar, Emily Ramphul, Gurneet Kaur, Naveed Shah
Sponsoring Faculty: Salvatore Giunta

This presentation will be an overview of an analyzed data set. This data set consists of students from three different metropolitan colleges. We analyzed data that was determined by using SPSS to show the correlation between college drinking and car accidents. We hypothesized that there is a correlation present between college drinking and car accidents. We used the following tests to analyze the surveys: cross tabulation tests, chi square test, t-test, two sample paired t-test, and displayed the variables in a bar graph and frequency chart. From this study, we hope to demonstrate a statistically significant result between college drinking and accidents.

The Evolution of Mathematics Education Through the Eyes of David Eugene Smith
Jess Camarda, Kelli Smith
Sponsoring Faculty: Salvatore Giunta

David Eugene Smith was a mathematician who altered mathematics education through his knowledge of math history. We will be presenting on the historical content of what David Eugene Smith has contributed to mathematics education, as well as an overall scope of his career as a mathematics educator. He aspired to have all teachers gain a historical perspective on teaching their subject, and to consider international viewpoints when focusing on their classroom. We will provide evidence that embraces Dr. Smith’s ideas for the evolution of the classroom through his historical knowledge.

Session 7: Department of Physics, undergraduate division
Computer Control and Automation for Atomic Physics Experiment

Zafir Momin

Sponsoring Faculty: Matthew Wright

We will discuss our progress for developing computer control and automation for an atomic physics experiment. We have interfaced a USB data acquisition card to a centralized computer and have used it to control external equipment such as acousto-optical modulators and intensity servos. We have also developed an interactive GUI that can be used to control the experiment.

Adelphi STEAMLab: A Space for Creation

Elias Goldman

Sponsoring Faculty: Cindy Maguire

This report focuses on the history, use, and capabilities of the STEAMLab as it stands, and where we hope to bring it in the future. The Adelphi STEAMLab is a DIY collaborative learning and making lab where the Adelphi community can tinker, create, and invent using a variety of tools and materials. Accompanied with the report will be a project created utilizing the STEAMLab’s resources, demonstrating the process of creation, as well as some of the things that can be done in the space.


Olivia Chierchio, Areeba Khalid, Zafir Momin, Julianna Yee

Sponsoring Faculty: Matthew Wright

We are currently investigating the quantum interference in spontaneous emission in a dilute thermal atomic gas with an intense pulsed laser beam. A short pulse of the light (~6 ns) is used to excite Rb atoms in a room-temperature cell. During the exponential decay, we have been able to detect a quantum beat which is consistent with the hyperfine level-splitting of the excited state manifold. We plan to investigate how these beats vary on frequency, polarization, and other laser parameters.

Landauer Microstar II in Diagnostic Dose Optimization

Ong Chloe

Sponsoring Faculty: Matthew Wright

The aim of this medical physics based research is to create alternate solutions for optimized dose reporting techniques among patients during procedures that involve radiation. Medical physicists serve to provide clinical service and consultation to radiologists, but primarily specialize in research and development in radiation health and safety. Radiation dosimeters are crucial tools that allow radiation
workers to monitor ionizing radiation dose absorbed by the human body. The invention of smaller, expendable dosimeters, called nanodots, will allow diverse testing and advancement to increased dose absorption reports. For this research, we aim to use the nanodots as surface area markers to test how ionizing radiation is absorbed by the human body. Additionally, we will assess the reliability of nanodots when used in both diagnostic and radiation therapy settings. Other resources include “lab spaces” like Fixed fluoroscopy units, radiation oncology equipment, diagnostic c-arms, and the micro star ii reader. MatLAB will be used to provide visual and quantitative analysis by mapping absorption levels through diverse biomass densities.

“Measurements with Position- Momentum Entangled Photons”
Zeenat Baig, Zoya Shafique
Sponsoring Faculty: Sean Bentley

We constructed a system to generate position- momentum entangled photons. These particles interact non locally therefore anything done to one photon affects the other. We produce 405 nm photons that become two entangled 810 nm photons through the process of spontaneous parametric down conversion. We are able to extract data about the position and momentum properties such as joint uncertainties of these photons. The spatial uncertainty was found through near-field detection, a process where we imaged our crystal onto a single slit. Through far-field detection, we were able to get the momentum uncertainty. This involved focusing the beam onto slits which resulted in a fourier transform. Once optimized, we used our system as the basis for a high-sensitivity magnetic field sensor.

Super-Resolution Patterns in Quantum Dots
Hamid Jalili, Thomas Danza, Richard Mouradian
Sponsoring Faculty: Sean Bentley

In this research, quantum dots and other materials were measured for their ability to absorb nonlinearly. Using the second harmonic of a nanosecond Nd: YAG laser an interference pattern was etched onto a quantum nanoparticle thin-film sample and a reference sample which were then compared against linear and nonlinear absorption. After one pattern was formed, a second pattern was interlaced with the first by introducing a phase shift into one arm of the interferometer. Due to the nonlinear nature of the absorption, this allows the formation of a pattern with twice the resolution possible with linear techniques. While the visibility of the combined pattern is reduced as compared to simple interference, it is still sufficiently high for many applications.
Developing a Community Outreach Program on the Physics of Smell

Carissa Giuliano

Sponsoring Faculty: Matthew Wright

From the beautiful smell of roses to the harsh smell of bleach, have you ever wondered how your body is able to detect these scents? How is a scent molecule—an odorant—detected, and how does it go from being detected to transmitting signals to your brain? I will present our progress toward developing a public outreach program on the physics of smell to give to local high schools and museums. Researching and teaching others about the physics of the sense of smell will allow us to further understand the human body, as well as uncover possibilities for technological applications, such as creating artificial olfactory conduits and pathways.

Toward Controlling Atomic Physics with Optimization Algorithms

Charanpreet Singh

Sponsoring Faculty: Matthew Wright

We are exploring various means to optimally control atomic physics experiments with frequency and intensity-modulated laser beams. We have begun developing algorithms such as an evolutionary algorithm and using built-in MATLAB optimization tools. We have also begun to interface our computer to the instruments in the lab. We will discuss the evolutionary algorithm we constructed and the use of our new EUVIS arbitrary waveform generator.

Session 8: Department of Communication, undergraduate division

Electoral Voting App

Scott Stachurski

Sponsoring Faculty: Paul Thaler

As technology advances, I decided to create a different way to cast an electoral vote on Election Day by use of a smartphone called “Vote” or by a secure online website, www.voting.com. Simply download the App through your smartphone or use the website to cast your electoral vote and enter your driver’s license bar code or county personal identification number to confirm residency. When the polls are open you can cast your vote and it will be automatically be sent to the Election Office in a secure manner. The Voting App and website include features such as voice activation, read information about the candidates and their position, reminder feature to cast your vote on Election Date. Polling locations with directions and opening and closing times are also provided in the App.

The reason for this invention is that our election system is very primitive and has problems. One of the biggest problems is voter suppression that includes powerful politicians being able to create obstacles,
glitches, and other illegal, nefarious methods to suppress votes. With my new system, there will be no way that political leaders can rig the system. People will now be able to vote from anywhere which will make our voting system as it should be: a democratic and fair process! For others it is too difficult to get to the election polls to vote. The new electronic voting platforms can assist the disabled citizen by providing an alternative way for them to cast their ballot privately and independently. In the App, a voice activation feature will be included to aid the disabled citizens to vote. Furthermore, it will provide others with the flexibility and convenience to vote electronically when going to the polling stations is an obstacle. This new voting method will increase the number of ballots cast during elections by providing a streamlined voting process to make it easier to find information about when, where, how to cast a vote and vote.

Session 9: Department of History, undergraduate division

The Sorrow and the Pity and the Reawakening of the Memory of Vichy France

Catherine Olsen

Sponsoring Faculty: Michael Christofferson

The dominant historical narrative of France during World War II in the decades following the war’s end was a relatively simple one. The French were defeated by the Germans, and the country was split into an Unoccupied and Occupied zone. However, the French Resistance would prove to be triumphant in working with the Allies to overcome finally the Germans. At least, that was the myth that had been perpetuated for years by the French government and even by the French people themselves. Up until the 1970’s, the French people were taught, and believed, that during the Occupation General Charles de Gaulle was the “Sword” for France as a leader of the Resistance, while Marshal Pétain was the “Shield” as the head of the Vichy government. There also was the belief that very few French Jews were deported and killed in the Holocaust. The truth of the willing collaboration of Frenchmen and the Vichy regime under Marshal Pétain was swept under the rug, as was the fact that many more Jews were deported to camps than recorded, as they were not “naturalized” French Jews. It was not until an outpouring of documentaries, articles, and books in the 1970s and 1980s exploded into French culture that the truth of the matter was revealed. One of these aforementioned documentaries was The Sorrow and the Pity, which was the first to challenge the myth of wartime France. Though this film was released in September of 1969, it would only be allowed a limited release in France until it was finally shown on October 28th, 1981. The censorship of this film was a result of Ophuls showing the true state of France during the Occupation. In this paper, I will seek to prove that Marcel Ophuls’ The Sorrow and the Pity was a pivotal part of the reexamination of the Vichy regime that took place during the 1970’s in France, particularly in regards to the exploration of Holocaust and the reawakening of Jewish memory.
Session 10: Multidisciplinary, undergraduate division

Rape Culture & It’s Effects on Reporting
Alyssa Guillen
Sponsoring Faculty: Devin Thornburg

Every 98 seconds an American is sexually assaulted. 1 out of every 6 American women has been the victim of attempted or completed rape in her lifetime. 230 out of every 1000 rape cases are reported to the police and 995 out of every 1000 rapists walk free. (RAINN) These statistics alone are proof that rape culture exists. According to Marshall University, Rape Culture is an environment in which rape is prevalent and in which sexual violence against women is normalized and excused in the media and popular culture. These ideals are evidently true, simply from examples of the spoken words of our current President Donald Trump. When victims of rape and sexual assault are asked why they refused to report, or move forward with the case, majority of their answers stem from fear. That is fear of not being labeled a liar, fear of their attacker, fear of ridicule or fear of nothing even being done and feeling humiliated. Rape culture exists in the United States and everyday it deters females from reporting. How can we as a society change this?

Analysis of Stone Technology from Ice Age Alaska
Christina DeBlasio, Julio RuizDiaz
Sponsoring Faculty: DBrian T. Wygal and Kathryn Krasinski

The recently discovered Holzman archaeological site, located along Shaw Creek in the Tanana Valley, Big Delta, Alaska, provides invaluable insight into how the first Americans adapted to their new landscape. The first trace of human activity at the Holzman site dates to 13,700 years ago. To understand how the first Americans adapted to their new landscape we spent two years analyzing the stone tools and waste debris for attributes of manufacture, platform size, size, weight, and raw materials to reconstruct the technology of the first people in Alaska. The reliance on lower quality local materials such as siltstone, chert, basalt, and quartz indicate that the First Alaskans may not have been familiar with the territory especially with respect to higher-quality stone materials such as chert and obsidian. The majority of stone tools include scrapers, flake tools or blades, and a few projectile points suggesting some hunting, hide processing, and meal preparation occurred at the Holzman site. In the oldest layers dating to the end of the Ice Age, quartz scrapers were found associated with worked ivory indicating interaction with the woolly mammoths which along with other large animals went extinct about the same time as the initial arrival of people in the area. The results of this research are critical to understanding the lives of the very first Americans as they adapted to rapid changes in their environment.
Michelangelo, The Artist and Scientist

Gianna Castronova

Sponsoring Faculty: Argiro Agelarakis

Michelangelo was an artist, architect, and sculptor, best known for his works the Pieta, David, and the Sistine Chapel, just to name a few. However, Michelangelo was also a scientist.

In studying his work, there is evidence he had great knowledge of human anatomy. His interest in anatomy was beneficial in helping him to create extremely accurate, realistic, and detailed paintings and sculptures of people. This presentation will aim to explore his scientific and human anatomical studies and participation in human dissection. Publications, such as a recent study by Johns Hopkins Researchers published in the Scientific Journal of Neurosurgery that claim to have found evidence of hidden anatomical diagrams (the brain the Creation of Adam at the Vatican’s Sistine Chapel) will be discussed. Furthermore, the theory that he had perhaps “hidden” aspects of human anatomy within his work will be analyzed. Were they intentional? It is hard to imagine that Michelangelo only accidentally depicted the brain or kidney in several of his works, leading to question, was there a secret message?

A Meta-Analysis: Children of Incarcerated Parents

Sarah Abbatangelo, Julia Fiederlein

Sponsoring Faculty: Devin Thornberg

This study focuses on children at risk of mental disorders who have parents that are incarcerated in New York’s prison system. The purpose of this study is to observe what kind of mental disorders these children are at risk for. Past studies have shown that certain learning skills can be taught to decrease mental illness risk for those who come from unstable environments. If positive behaviors can be developed, the child may have a better outcome of reduced mental illness.

Session 11: Department of Sociology, undergraduate division

Social norms

Mannat Boparai

Sponsoring Faculty: Devin Thornburg

Society has made a set standard on the way we should portray ourselves. In order for one to be accepted to be a part of this world, it is common for us to abide by a set of these unsaid rules set by the general public. In a society, it is important to come to a realization that we are victims of following suit in what seems to be an idealistic way of living. According to Lawrence Kohlberg’s study of the developing stages of morality, he found teens and adults typical tie in with the conventional level. When you adopt a sense of morality you are able to distinguish the wrong from the good and have the respect
and obedience to follow the rules. As you mature you are more in control of what choice you make however the actions made are based on what you think society will view you as and expectations, they might hold upon you. We all desire to have a positive relationship with the world, and to be welcomed we tend to follow the social norms to fit in and be what is considered to be normal even if there are no consequences if you decide to go against them. In my research, I will focus on why people have the need to conform to the idealistic ways we should carry ourselves when we have the freedom to do what we want. There is no written rule on the way you should act yet when you walk into a café your voice notches down a few levels just because of others around you are quiet. I will have a few participants go around campus perform what is said to be ‘odd things’ such as sitting on the table when there are chairs around, clapping after a lecture is over, taking off your shoes and walking in socks, etc. I will observe how others around the participants react and approach them and find out why they reacted the way they did. I will also interview the participant if they themselves felt comfortable doing this ‘odd thing’ and if they would do it again on their own will. After the interviews, I will analyze and discuss the common themes that come about with the participants.

School Shootings
Elisabeth Finanger
Sponsoring Faculty: Jacqueline Johnson

School shootings in the United States have become a disturbing trend that seems to be on the rise. In this study, I will advance the sequential model where strain leads to rampage shootings within schools. While public discourse has isolated factors, such as mental health or exposure to guns, as factors that drive school shooters, Levin and Madfis sociological insight provide a useful framework for understanding the cumulative factors that drive school shooters. Drawing on Agnew’s famous strain theory, their model describes five stages through which emotional strain advances to violence: chronic strain, uncontrolled strain, acute strain, planning strain, and the massacre. While Levin and Madfis argue that the stages intersect, no stage, alone, can be viewed as a cause of school shootings. Rather, they present a sequence of steps through which “the accumulation of factors that in the end leads to the massacre” (Levin & Madfis, 2009, p. 1228).

The whole idea is that school shootings are not a situation where an individual suddenly “snaps” but that it is a complete process. Moreover, boys are particularly vulnerable to progression through each stage of this process because of cultural scripts that associate extreme violence with masculinity. Most school shooters are not gun enthusiasts. Rather, the research shows that school shooters often turn to guns, a symbol of masculinity, to prove their masculinity. Schools, as sites of primary social interaction among kids, are an ideal target for violent claims of masculinity to unfold because that is the site where it is most often attacked. In sum, the process model does a great job of demonstrating that school shootings rarely come out of nowhere. Most school shooters do not “snap” under the pressure of emotional strain. Rather, school shootings are the end product of social interactions and processes that unfold over time and involve narrow, but powerful scripts that associate masculinity with violence.
Session 12: School of Social Work, graduate division

How does theory inform research? An presentation of Karl Marx’s Theory of Alienation as a lens to conceptualize turnover rates of social workers in domestic violence settings.

Marcella Pizzo

Sponsoring Faculty: Stavroula Kyriakakis

Social work draws upon numerous disciplines thus, theories from these disciplines can be utilized to inform the examination of social problems in this field. For the purpose of this presentation, Karl Marx’s Theory of Alienation is modified and applied to conduct research on the phenomenon of turnover rates of workers in domestic violence settings. Social workers in domestic violence organizations experience high rates of turn over related to the work they do. Social workers in these settings assist women at high risk for harm and in need of immediate assistance thus, placing workers at heightened risk for workplace stress. Five areas that mitigate turnover are: a) training, b) supervision c), pier support, d) safety and e) job satisfaction. Karl Marx’s Theory consists of four types of alienation that are a result of capitalist labor markets. They include: (a) alienation of worker from their product, (the decisions made by those at the top of the hierarchy remove the ability for social workers to make decisions, this can directly impact the amount of time spent with client and the methodology utilized in treatment), (b) alienation of the worker from their production, (the structuring of (a) time spent with clients, (b) writing notes, and (c) administrative duties all function as a forms of oppression), (c) alienation of the worker from species essence, (human nature is tied to (a) the ability to make decisions (b) empathy, and (c) the ability to reason. Marx posits that production that involves choice is expressed in one "species essence", which contrasts ‘alienated’ production of the social worker, (d) alienation of worker from their species, (social workers become isolated from peers due to the time constrains of their day). This theory helps capture the systemic oppression that social workers face, and creates a framework to be implemented in a proposal for future study.

Disparities Between Benefits of State and Federally Activated Guard and Reservist

Gavin Walters

Sponsoring Faculty: Juanita Hotchkiss

This survey is intended to compare the benefits received after discharge between the National Guard and Reservist Veterans that were federally activated versus state activated. The survey is not intended to let anyone think nor assume, veterans are mistreated. The intention of this survey is to suggest more research into the disparities between benefits received by National Guard and Reservist Veterans.
Dating Experiences of Hispanic Women with HIV/AIDS

Karime Hernandez

Sponsoring Faculty: Patricia A. Joyce

This qualitative study used phenomenological research methods to explore the dating experiences of eleven (11) Hispanic women diagnosed with HIV/AIDS. It used Stigma Theory to contextualize the findings. Findings suggest that respondents though all respondents reported experiencing stigma associated to their diagnosis, overall they stated that they did not allow this stigma to dominate their lives. Findings also suggest that the participant’s perceptions regarding the phenomenon of noviazgo affected whether they dated romantically after they received their diagnosis. Findings suggest that the intersectionality of culture, gender, and ethnicity impacted how the participants experienced the phenomenon of HIV/AIDS related stigma in their dating relationships. Implications for practice, policy, theory, pedagogy, and future research will be presented.

Session 13: Department of Art and Art History, undergraduate division

Human Trafficking in the United States

Nicole Grace

Sponsoring Faculty: Cindy Maguire

This paper looks into human trafficking, with a focus on issues in the United States. The different forms of human trafficking are outlined, with examples from situations uncovered across the United States. A focus is placed on human trafficking situations from the New York City/Long Island area. Two surveys will also be distributed to contribute to the research, and an art component will be utilized. The initial survey will be distributed to Adelphi students, faculty, and staff, to collect information on their current knowledge of human trafficking. The results will be analyzed, and an art installation installed on campus will follow. A few weeks after the art component is utilized, a second survey will be sent to Adelphi students, faculty, and staff. This survey will measure participants’ awareness of human trafficking and knowledge of the art component exhibited on campus. The results will be analyzed and a discussion of the use of art as a tool for awareness and change will follow.
Oral Presentations, Nexus Building, classrooms

Session 14: Business, IV, graduate division, Nexus Building, Room 159

**Can an increase in Supply chain activities in an organization contribute to an increase or decrease in customer satisfaction levels?**

Rajevan Radhakrishnan

Sponsoring Faculty: Johann Lloyd

Can an increase in Supply chain activities in an organization contribute to an increase or decrease in customer satisfaction levels?

There are some companies which expand their supply chain activities by setting too many systems in place to satisfy their end customer while some other companies keep it simpler to satisfy the consumer.

This research is about trying to understand which of the above will have a positive impact in terms of satisfying customer needs and achieving the business goals of the organization. Research indicates that the aim of supply chain management is to gain an advantage in terms of customer service and cost over competitors. It is also said that “To provide customers with the type and quality of products and services they require, time and cost are usually lowered”.

“Time is money” is a correct and important edict. If a product can be produced much faster than by other competitors, customers would certainly retain their relationship with the supplying company. For a smooth goods transfer, logistics companies must reduce all the measurable delivery and transportation times by all means for faster placement of orders to reach end customers. In light of the previous research, my research addresses a gap in setting up too many systems by companies for product manufacture and delivery that affects customer satisfaction. This research focuses on using Qualitative data analysis in Excel as a methodology tool by coding the response data from survey questionnaires to analyze the results. The questionnaire consists of ten questions primarily designed to understand the customer satisfaction levels on the basis of cost and delivery of the products ordered online. I predict that this research will show that companies should set-up limited sources to supply with low cost and on-time delivery in order to increase customer satisfaction levels.

**Food waste and losses in global supply chain: Determinants and solutions**

Yen-Ting Chao

Sponsoring Faculty: Kimberly Kim

The purpose of the research is to determine how we can prevent food waste and losses in global supply chain. The survey that will be implemented in the methodology of the research includes questions about why people throw food away to figure out ways we can prevent that in global supply chain. This is an urgent issue about food safety because the United Nations Food and Agriculture Organization (FAO)
estimates that around 815 million individuals suffered from hunger and undernourishment in 2017. However, in 2016 the number of undernourished individuals was around 804 million, indicating a rising level from 2016 to 2017. It is a serious problem that people yearn to solve. The situation is much worse than what it was a decade ago, and research predicts it will become gradually more serious. The current literature concludes that one of the determinants is weaknesses in “Global food supply chain.” The transportation has become not only longer and further, but also more complicated which means we transport more delicate food with short expiration dates to fulfill expectations from global customers. Therefore, to learn how to optimize the preservation of food and avoid flawed parts of food are the main objectives of the research. In the research, the survey will be used to determine the customers’ behaviors that are about food waste and losses. I consider the results will show how important good quality of food is to influence the customers’ behaviors.

References


Stress levels in relation to student athletes
Chase Morley, Jack Silverman, Devin Kennedy
Sponsoring Faculty: Messano

Students athletes experience greater levels of stress due to heightened levels of responsibility brought on by both school and said sport

Session 15: Department of Biology, undergraduate division, Nexus Building, Room 157

Transgenerational Effects of Rapamycin on Drosophila melanogaster
Danielle Grushkovskiy
Sponsoring Faculty: Eugenia Villa-Cuesta

Epigenetics is the study of biological change in organisms caused by modification of gene expression rather than the change of the genetic code itself. Transgenerational effects on health and development have recently come to light with gained information on epigenetics and its mechanisms. Since nutrition and dietary factors are vital in maintaining expression of proteins involved in metabolic function and aging, and aging can be modified through epigenetic programming, age-linked epigenetic modifications could lead to new development in treatments to delay debilitating age-associated diseases. Rapamycin is an immunosuppressant that is known for inhibiting the mammalian target of rapamycin (mTOR) pathway and slowing down aging. It is also known to act as a dietary restriction mimetic. Cellular aging is
an mTOR dependent process, and since rapamycin inhibits the pathway, it slows the development of cells. In this experiment, wild-type D. melanogaster larvae are used to track development in rapamycin-mediated treatments and are compared to those in control to see whether there are epigenetic effects that are exhibited from this drug or whether resistance is developed. Previous research was conducted and indicated that 7 μM rapamycin delays development of D. melanogaster larvae and increases the longevity of survival. However, the dosage seemed to be toxic for larvae and too many of them died during development. Upon performing a series of titrations, it was then discovered that 3 μM rapamycin treatment still significantly delayed development but did not cause lethality to the larvae. Though nutrition is known to have transgenerational effects and rapamycin slows down development, epigenetics effects of rapamycin are still unknown. Further, dosage dependence is another factor that is unclear when dealing with rapamycin. It is hypothesized that as more generations of larvae are exposed to rapamycin-mediated treatment, their progeny will experience delays in development.

**Pesticide Tolerance in Hemigrapsus sanguineus and panopeid mud crabs on Long Island**

Regina Lena McManus

Sponsoring Faculty: Aaren Freeman

The use of pesticides in the agricultural sector impact more than just the immediate crop community. Pesticides can enter runoff water that leads to rivers, oceans, and/or estuaries, such as the Long Island Sound. These pesticides can then impact estuary communities and ecosystem dynamics. Previous research has shown that the Asian Shore crab (Hemigrapsus sanguineus) is more tolerant of malathion than native, panopeid mud crabs. In this experiment we exposed both the invasive Asian Shore crab and native panopeid mud crabs to varying concentrations of malathion (0 ppm, 250 ppm, 500 ppm; 0 ppb, 250 ppb, 500 ppb) to compare pesticide tolerance. One claw was randomly removed from each crab before treatment and, after 48 hours of exposure, the other claw was removed. Because malathion inhibits acetylcholinesterase, we hypothesized that ACHE levels would be differently affected in Asian Shore crabs relative to native mud crabs. A colorimetric assay for acetylcholinesterase was used to examine the levels of acetylcholinesterase activity in the tissues from the claws from before and after exposure to malathion. This research will provide to the knowledge of biological advantages of Hemigrapsus sanguineus that may contribute to its successful invasion. Moreover, this research has the potential to provide information that can be used to educate the public as well as stakeholders for the designing and implementation of successful management policies.

**The Effects of LSH3 in the Cytokinin Signal Transduction Pathway**

Duckhyun Moon, Priya Patel

Sponsoring Faculty: Lawrence Hobbie

Cytokinin is a phytohormone that activates the cytokinin signal transduction pathway. This pathway is known to regulate the growth and development in Arabidopsis thaliana through the expression of Arabidopsis response regulator genes (ARRs). Type-B Arabidopsis response regulators produce transcription factors to increase plant growth. Specifically, ARR1, ARR10, and ARR12 are genes that
regulate the cell division in the root apical meristems. It has been previously shown that there may be other proteins involved in the cytokinin signal transduction pathway to regulate the expression of the response regulator genes. LSH3 might play a role in inhibiting the expression of ARR1. Previous studies have shown that LSH3 is a protein that is known to suppress differentiation. In this research, the objective is to observe and compare the levels of LSH3 expression to the growth of the plants. It is expected that an increase in LSH3 would cause a decrease in plant growth.

Session 16: Derner School of Psychology, graduate division, Nexus Building, Room 156

Understanding Date Night: How Insecurity affects Relationship Activities and Relational Boredom

Bonnie Ippolito

Sponsoring Faculty: M. Joy McClure

According to the American Psychological Association (2000) 40-50 percent of marriages in the United States will end in divorce. An overlooked and understudied issue contributing to this problem is relational boredom. Relational boredom is associated with decreased relationship satisfaction (Tsapelas, Aron, & Orbuch, 2009), decreased communication, decreased relationship quality and affection, and disengagement between partners (Caughlin & Huston, 2006; Harasymchuk & Fehr, 2012). In the present study we intend to address an important gap in the literature: how individual differences, particularly in interpersonal insecurity, may contribute to relational boredom. We will examine whether individual differences in attachment security and relational self-efficacy predict the pursuit of novel, growth-enhancing activities versus familiar, security enhancing behaviors and so to experiences of relational boredom. We hypothesize that individuals that are more insecurely attached will report a greater desire to pursue familiar and comforting activities with their romantic partner rather than seeking novel and growth-enhancing activities. We further hypothesize that more insecure individuals will have lower relational self-efficacy beliefs, which will help to explain the preference for familiar rather than novel activities in individuals who are more insecurely attached. Finally, we hypothesize that for individuals that are more insecure, this preference for familiar activities will contribute to higher levels of relational boredom. Understanding how individual differences in insecurity contribute to relational boredom will allow researchers to develop more nuanced interventions to address this important problem in long-term romantic relationships and marriages.

Keywords: relational boredom, self-efficacy, attachment, individual differences
**Maternal Childhood Role Confusion: Links with Parenting, Preadolescent’s Emotion Regulation, and Anxiety**

Naa-Adjeley Kuma, Co-Authors: Joanna Hurley, Kathryn Graham

Sponsoring Faculty: Laura Brumariu

The purpose of this study was to explore the links among role confusion in the mother’s childhood, her parenting strategies, and her children’s emotional and anxious states in preadolescence. We hypothesized that maternal emotional role confusion, rather than instrumental role confusion, with her parents, would relate to her parenting quality in preadolescence; maternal emotional role confusion would also relate to children’s emotion regulation and anxiety in preadolescence; maternal parenting quality (psychological control and parental acceptance), would be related to preadolescents’ emotion regulation and anxiety; maternal parenting quality would explain the relations between maternal emotional role confusion and children’s emotion regulation and anxiety; and children’s emotion regulation would explain the relations between maternal parenting quality and child anxiety.

Participants were 112 mothers and preadolescents, ages 9 to 14 years. Results show that maternal role confusion in her childhood relates to maternal parenting quality and preadolescents’ adjustment. Besides identifying these direct links, this study also increases our understanding of how maternal role confusion in her childhood and her levels of psychological control in her relationship with her child operate together to predict preadolescents’ emotion regulation and anxiety level. Results highlight the importance of parents’ childhood influences on their own parenting, and its effect on children’s ability to regulate their emotions and their anxiety levels.

**The Impact of Comorbid Personality Disorder Traits on Defensive Functioning for Panic Disorder Patients**

Kathryn Graham

Sponsoring Faculty: Jacques P. Barber

Defense mechanisms are automatic, unconscious psychological processes that individuals employ to protect the self from excessive anxiety. The aims of the present study were to determine if: 1) changes in defensive functioning is similar across different treatment modalities; 2) comorbid personality disorder traits predict change in overall defensive functioning (ODF) over time; and 3) comorbid personality disorder traits predict change in defensive functioning at the obsessional and other neurotic defense levels, which are the primary defense levels associated with panic disorder. Participants were taken from a RCT comparing treatments for individuals diagnosed with DSM-IV panic disorder. Defense mechanisms were scored by a team of five raters according to the DMRS-5 at an early, mid, and late session of treatment. GEEs were calculated to assess each hypothesis. The findings indicate that there is not a significant interaction between treatment modality, defensive functioning, and session rank Wald X² (3, N=103)= 1.693, p=.429, η²=.019. For ODF, treatment modality, session rank, and personality disorder severity each contribute to ODF Wald X² (4, N=87)= 11.99, p<.02, η²=.121. Lastly, treatment modality, session rank, and personality disorder severity each contribute to the obsessional defense level Wald X² (4, N=87)= 23.73, p<.001, η²=.214. At the other neurotic level, treatment modality, session rank, and personality disorder severity each contribute to the other neurotic defense level Wald
X² (4, N=87) = 24.65, p< .001, η² = .221. The results indicate that treatment modality does not effect change in ODF therefore conclusions may be drawn regarding the identified negative impact of personality disorder traits on defensive functioning. The presence of personality disorder traits may therefore make it more difficult for individuals with panic disorder to improve their defensive functioning, which may in turn be associated with poorer treatment outcomes.

**Are narcissists worse at providing support?: Exploring the relationship between narcissism and capitalization in romantic relationships**

Sean Gaughran

Sponsoring Faculty: M. Joy McClure

The process of sharing news of a positive event with another in the hope of receiving support is known as capitalization. Receiving active and constructive support (e.g. feedback which is enthusiastic and positive) for one’s capitalization has been associated with positive outcomes in romantic relationships. Narcissism has been shown to be related to negative outcomes in romantic relationships. Though research has demonstrated correlations between narcissistic personality traits and several relational deficits, the relationship between narcissism and capitalization remains underexplored. In this study, we examined the relationship between narcissism and capitalization. We explored this relationship by focusing on two forms of narcissism: grandiose and vulnerable. A sample of undergraduate students in romantic relationships completed measures of grandiose and vulnerable narcissism, capitalization support, and partner responsiveness. We hypothesized that both grandiose and vulnerable narcissism would be negatively associated with active and constructive capitalization support. We also hypothesized that vulnerable narcissism would be associated with more passive and destructive capitalization support. We finally hypothesized that those high in narcissistic traits of either type would report that their partner is less responsive to their own capitalization than those lower in those traits. Data collection is currently ongoing.