18th Annual Scholarship and Creative Works Conference

April 27th, 2021

Abstract Book

Roundtable Presentations

(in alphabetical order)

INTACH Jharkhand's Growth Strategy and Implementation
Innovation Center – Graduate
Chelsea Abreu

As part of our Strategic Management course and the Innovation Center Live Class, my group and I had the unique opportunity to work on a consulting project for INTACH, a non-profit government organization based in India. The primary focus of this project was to help INTACH's state chapter in Jharkhand educate consumers about the importance of cultural preservation and heritage. INTACH Jharkhand has a vast supply network consisting of local artisans, dancers, and craftsmen that highlight the rich culture of India. The objective of our consulting project was centered around three key areas of discovery. First, we analyzed INTACH Jharkhand's industry/situation and issues/trends that could impact their business growth. Next, we developed a growth strategy to expand INTACH's presence in Jharkhand. Lastly, we developed an implementation roadmap with timelines for various milestones between 2021-2030 that could be used by INTACH Jharkhand to achieve their business goals.

Epistemic Injustice and Social Reform
Philosophy - Undergraduate
Samuel Ajewole

Epistemic Injustice is a relatively recent field within the philosophical discipline. Miranda Fricker coined the term in her 2007 book "Epistemic Injustice: Power and the Ethics of Knowing", and she presents a thought-provoking intersection of not only epistemology and ethics but political philosophy as well. In most basic terms, the idea of epistemic justice revolves around fair treatment regarding the creation and sharing of knowledge. For instance, if a person were to cast doubt on another's claim to knowledge, solely due to the person's identity or membership in a marginalized group, that is a form of epistemic injustice. More specifically, Fricker categorizes it as testimonial injustice. A real-world example of this would be if a witness or even victim of a crime were not taken seriously by law enforcement because of her identity as a black woman. This kind of injustice can be thought of as the individual scale of epistemic injustice, dealing primarily with specific personal interactions. Fricker's system includes other forms of epistemic injustice as well.

Today, many other intellectuals have contributed to this field. Some, such as Luvell Anderson, take the concepts that Fricker laid out and apply them directly to contemporary social issues. Others seek to challenge or expand the frame the Fricker presents, as David Coady and Amandine Catala do. My particular interest lies between the two, in how potential adaptions of the concept can help address our present social concerns. I will provide a literature review of the epistemic injustice field and my progress in analyzing how it can apply to the United States today.

Synthesis of phenyl pyridines, pyridazines and pyrimidines to test for their inhibition on the enzyme Uridine Nucleoside Ribohydrolase (UNH).

Chemistry - Undergraduate
Erum Ajmal

Trichomoniasis, a common sexually transmitted disease is caused by a parasite Trichomonas vaginalis. In order for this parasitic protozoan to reproduce, it has to obtain specific nucleobases from its host. For this reason, a potential inhibition for this parasite would be the inhibition of enzymes that produce such nucleobases, such as uridine nucleoside ribohydrolase (UNH). A preliminary result had shown that a compound, 3-(3-methylpyridin-2-yl) benzonitrile, showed significant inhibition of UNH, with an IC50 value of 14 μM. Derivatives similar to this molecule were made using Suzuki cross-coupling reaction. A phenylboronic acid was reacted with an aryl bromide and palladium as catalyst to synthesize phenyl pyridines, pyridazines, pyrazines and pyrimidines. Synthetic results using Suzuki reactions and biological data of the derived compounds obtained against UNH will be discussed.

A Ninety Minute Play: The Committee
Theatre Arts - Undergraduate
Sara Alvarado

The Committee, a 90 minute play follows Ali, who is burdened by the stress of being a queer latinx woman, Alouette longs to change the world. When invited to join an anti-racist committee, Ali is forced to reconcile with the fact that she was sexually assaulted by another woman. This piece amplifies the voices of latinx victims who have been subject to the homophobia the community perpetuates, while embracing the bravery of those who choose to rebel against it.Due to the poverty, stigma, and marginalization around those identifying as LGBTQ, the LGBTQ community faces higher likelihood of encountering sexual assault. 44 percent of lesbians and 61 percent of bisexual women experience rape, (...). For LGBTQ survivors of sexual assault, their identities – and the discrimination they face surrounding those identities – often make them hesitant to seek help (...). This issue is underrepresented in the media, and rarely talked about at all. Many have to deal with being a person of color on top of being queer, it seems the media has forgotten about them as well. Lesbian, gay, and bisexual individuals who are also racial/ethnic minorities (LGBT-POC) are a multiply marginalized population subject to microaggressions associated with both racism and heterosexism. To date, research on this population has been hampered by the lack of a measurement tool to assess the unique experiences associated with the intersection of these oppressions. Being a theatre major, and a queer latinx female, I bear the burden of this gap every single day.That is why I have written this piece. In presenting my work to this conference, I hope to share my experiences and thoughts about them with a larger community.At this point in the process, I have conducted many readings of the play, had feedback from several playwrights, and from fellow students. I would now like to know: Can the piece help to educate people whom it doesn't represent, like I am hoping? The voices of these characters must be heard.

A Textual Analysis on Implicit Racial Biases in State Supreme Court Cases

Mathematics - Undergraduate

Francesca Amato

Text mining is a tool used by many disciples to extract meaningful information from documentsThe Cook Partisan Voting Index (PVI) is a non-partisan measure of how strongly each state leans towards a political party as compared to the nation. In this study, we perform a text analysis on state Supreme Court cases from 2000 to 2020. The Cook PVI is used to select the top five Democratic states and the top five Republican states for analysis with the purpose of exploring social justice issues that may be present. Statistical models are then used to analyze these results and test their significance. We make important observations on these data and state meaningful conclusions based on these observations. The goal of this research is to determine if bias is present in our court system, and if so, if there is a difference between Democratic leaning states and Republican leaning states. This type of study would be beneficial for the public and can help our court system with their decision-making process.

Last [Marginalized Person] Standing: Identity in the Battle Royale Narrative Formula

English - Undergraduate
Carson Bailey

The Japanese film Battle Royale (2000) established in its mature form an internationally popular narrative formula that found its origins in the horrors of American slavery. During the 20th century, a variety of authors transformed the horrific savagery of the antebellum tradition into a fictional narrative formula that explores tensions between the haves and have-nots of the contemporary world. Partaking of elements from science-fiction and horror, the battle-royale narrative formula depicts a sole-survivor competition sponsored by the elite, which exploits marginalized contestants.

This narrative formula is most often marketed to adolescents, who are themselves marginalized by virtue of the liminal space they inhabit between childhood and adulthood. As a result, identity and the formation of identity as it connects to marginalized populations are central issues in battle-royale texts. I investigated these issues by drawing on intersections between cultural studies, race studies, and gender and sexuality studies.

In my introduction, I discuss the cultural phenomenon of the battle-royale narrative formula, looking at reality television shows such as Survivor and popular video games such as Fortnite to establish the formula's mass success in popular culture. My first chapter highlights the connections between the historical phenomenon and nascent examples of the formula, beginning with Ralph Ellison's "Battle Royal" (1947), and developing through William Golding's Lord of the Flies (1953), and Stephen King's The Long Walk (1979). In subsequent chapters, I examine a range of texts--including Suzanne Collins's novel and film series The Hunger Games (2008), director Gerard McMurray's motion picture The First Purge (2018), and Koushon Takami's novel and film Battle Royale (1999)--to explore how issues of identity and marginalization continue to resonate with their adolescent audiences.

Misunderstanding the First Amendment: An Exploration of College Student's Views on Freedom of Speech
Communications - Undergraduate
Kathleen Beatty

The right to the First Amendment for students has been a topic of debate in the United States since at least the 1960s with many historic court cases creating a precedent. However, in a world of social media, has there been a silencing of certain political perspectives when they do not conform to the mainstream ideals? Throughout this research paper, I explore the historical context of freedom of speech for students and the modern evolutions of the debate, culminating in a modern survey of college students. The US Supreme Court has given a large amount of discretion in creating policies regarding appropriate expression of the First Amendment, to the school systems which has caused a lack of national standard allowing variation in every district. In the modern debate, there has been a question of whether or not students have become intolerant of other opinions to the point that they silence other perspectives out of fear. Additionally, this paper examines whether students believe their right to the First Amendment is protected and if they have a true understanding of what is and is not protected. In any debate about students, comes the connections with the school system and their right to create policies either helping or infringing on the rights of students.

Through a survey analysis, I will examine whether students know their rights, believe in protecting the rights of others or whether there has become an intolerance for other perspectives. In doing so, I hope to have a better understanding of the modern climate for political perspectives and whether social factors such as peer pressure and social media have played a role in influencing this debate.

Nostalgia- A Video Streaming Platform for the Shows in 1990s.
Computer Science - Undergraduate
Kiara Birch

This project creates a prototype of a video streaming website that tries to connect users to their childhood memories by hosting the videos of shows from the 1990s and early 2000s that had been taken off the air. The users will be using the website in a similar way of using Hulu, Netflix, and other streaming services. However, this project contrasts in comparison by getting shows from different networks like Cartoon Network, Nickelodeon, and Disney. The project has a target audience of people in their 20s. As the shows from the 1990s and early 2000s often considered a common precious childhood memory for the 20s, we hope this website could be the connection to the youth for the 20s. The project demonstrates the ability of a streaming platform of this type and calls for future development in this field. This website will be the connection between passed generations and the future generations to come.

Dancing Through Challenges
Dance - Undergraduate
Margaret Brackey

This dance is created to face, though not necessarily answer, one question. A question which stems from a triumvirate of artistic building blocks or, potentially, blockages: Challenge - the simple making of a dance is itself a challenge, yet also an opportunity to face those challenges and grow from them; Chance - a choreographic technique popularized by Merce Cunningham which I employed in various forms; and lastly Control. These three concepts are the driving force behind this solo.

Challenges exist everywhere in our daily lives. In dance technique and performance challenge exists almost by definition; the limits are there to be pushed. This is true for choreography as well, though different methods exist to facilitate the negotiation of choreographic challenge. These methods include using improvisation, chance procedures, and manipulation. Though these examples are offered as an illustration of maneuvering through choreographic challenges, this is not to say they are easy. Rather, the solutions present their own challenges which the dance maker must face.

Modern Dance giant Merce Cunningham was known for his use of chance procedures when constructing his pieces, which I utilized as well in my research solo. Yet I also examined the relationship that exists between control and chance. Accepting the roll of a die means trusting the process of construction and willingly letting that construction happen outside of my, the choreographer's, control. This in itself is a challenge. Challenge versus control is a constant battle, especially within the aesthetically-obsessed dance world. Before the beauty most people expect from dance appears, the body must push through the inevitably awkward - dare I say ugly - first stage of learning a movement. Because virtuosity does not appear overnight. Instead, it rises from deliberate, controlled practice. The question this dance faces is: what happens if virtuosity does not occur before the curtain rises on opening night?

Addressing the Whole Child Using Response to Intervention
Multidisciplinary - Graduate
Julia Brazil

This participatory action research study is in support of a doctoral dissertation on the development of an approach to addressing the whole child using RTI. Response to Intervention (RTI) is a multi-tiered support service model that has been adapted in many states throughout the United States. In New York, many models address academic needs and social-emotional needs for children in grade Kindergarten through 12th. However, the approach to meet social emotional needs is fragmented and does not look at the needs of the whole child. We must aim to look at a child's mental health and physical health as one, while considering the ecological factors that may be evident in diverse populations.

Based on research and data obtained from the CDC, it is apparent that there is a need for a Response to Intervention format that addresses mental and physical health universally, as well as in a tiered intervention format, to assist children in need. By using global supports in schools, to address both the physical and mental health of students, we can then assess whether further intervention is needed using progress monitoring tools. By involving the students' families and community resources, we can foster positive health skills and lifestyle changes that can be maintained across home, school, and community settings. This study seeks to guide the dissertation research focus by partnering with teachers, parents, and other professionals, in order to develop a meaningful and effective Response to Intervention template for addressing the whole child. This will be achieved in focus group settings, involving 3 special education teachers, 3 regular education teachers, 3 parents, a school nurse, 2 physical education teachers, 2 school psychologists, 2 social workers, and 2 administrators. This presentation will act as a preliminary exploration of how this dissertation topic can benefit those who participated in this project.

The Detrimental Effects of Adverse Childhood Experiences and the Significance of Trauma-Informed Care for Nurses

Nursing & Public Health - Nursing Education - Undergraduate

Ally Buettel

Adverse Childhood Experiences (ACEs) are traumatic events that occur before one reaches the age of 18. These experiences include physical, sexual, and emotional abuse, physical or emotional neglect, and/or witnessing assault or abuse. Although people seem to be aware that child abuse does occur worldwide, many are unaware of the severity of the problem. Over 35 million children in the United States alone have experienced one childhood trauma, and 22% of that 35 million have experienced multiple. To make matters more serious, it must be considered that the consequences of trauma do not simply subside come adulthood. Thousands of studies and research proposals have proven significant amounts of emotional, behavioral, and mental effects that follow childhood trauma as well as a large number of health complications. A person who was traumatized in the past may find themselves in a constant state of battle as their body tries to suppress devastating memories and emotions. From a nursing perspective, patients who have suffered ACEs will show up for help in a variety of scenarios. Many times, a nurse will be aware of a patient's background, and many times they will not. Regardless, it is a nurse's duty to provide patient-centered care in a holistic and safe way for the patient. Every patient has the right to feel comfortable while being treated. This comfort they deserve means that nurses should be trained in trauma-informed care (TIC). TIC teaches a nurse to act carefully and appropriately while providing care to all patients they treat. Unfortunately, there is an obvious lack of TIC training for both nurses in their line of work as well as nursing students. The desired result of this paper is to explain the devastatingly large issue of ACEs, the effects ACEs have on a child's mental and physical development into adolescence and adulthood, and the significance of proper training for nursing students and nurses in TIC.

The Prime Method
Chemistry - Undergraduate
Scott Buzzolani, Matthew Mistretta

Students taking organic chemistry for the first time are often exposed to a large amount of information at once, which can be overwhelming. An important part of organic chemistry is understanding what the molecules look like on paper. There are various ways to draw molecules, such as condensed structures, line structures and hybrid structures. The structures vary in explicitly showing bonds or not, explicitly showing H's bonded to carbons or not and often students can have trouble distinguishing what molecules have how many H's when doing reactions. The prime method developed by Professor Silverio combines the best of these methods, by allowing the student to label how many H's are bonded to each carbon, while also allowing for an easy way to label each carbon individually with numbers, and other elements with letters. This is especially helpful when mapping out multiple step reactions.

The goal of the study is to present this new method to students taking organic chemistry at Adelphi University to see if it is an effective teaching method. Students will answer questions presented to them that the prime method can be used to solve, but not necessarily required. Students will be surveyed to determine how well they understand concepts and if the prime method is helpful to them when solving problems in organic chemistry.

Khue Cao's Story Working for Northwell Health
Innovation Center – Undergraduiate
Khue Cao

In our project, we were responsible to design a virtual internship program for Northwell Health. The company already has their own amazing in-person internship which was cancelled due to the pandemic last year. Our group did internal and external research on Northwell Health, learned about their previous internship programs, conducted a survey to gather the student's expectations on virtual internships. We also did a competitve analysis to see what other healthcare providers do with their internship program, did they move online as well. If they did move online, then how did their virtual internship look like. In the end, we gave our final presentation to conclude a virtual internship program for Northwell Health this summer.

Counting of Pellets on the Water Surface via Artificial Intelligence Algorithms

Computer Science - Graduate
Liang Chu, Zhaoxiang Song, Ning Xu, Kira Millei

According to the American Society of Mechanical Engineers (ASME), A112.19.2 (Sec. 8.5) Granule Test for inspecting water closets performance of toilets in America and other countries, 2500 standard pellets need to be put on the water surface of toilets, to pass the test and reach the standard, at most 125 granules could be left behind.

The traditional manual counting method produces a lot of economic costs and consumes considerable time, that the tasks take an average of 7 minutes and must be performed 3 times in each tested fixture. Counting the granules with the traditional method is a dispendious activity, especially if the number of pellets is large. Consequently, automating the process of counting the granules can save an important amount of time, and reduce human error. Thus, the research question is whether appropriate artificial intelligence technologies could be deployed in real-time using video feed to identify the number of floating standard pellets remaining on the surface of the toilet after flushing?

Mathematical methods based on shapes and pixel clusters as well as artificial intelligence methods are applied in this study. Open-CV code, Hough circles, convolutional neural networks, density maps, etc. based on the Python platform has been applied. Traditional methods such as Hough Circles do not work well due to the effect of lighting. We develop competitive and novel algorithms based on Convolutional Networks (U-Net), connected components, and image partitions. In these new methods, another innovative procedure in automatic identification is that each image is further divided into four sub-images to boost the computing performance for counting the number of pellets. the accuracy of pellets recognition is above 95%, which verifies the feasibility of the research question.

Keywords: Dynamic recognition, Image recognition, machine learning, convolutional neural network, Hough cycle, density map, Computer Vision, Counting, Artificial intelligence.

Eventualities: A Critical Amplification of Contemporary Issues Through Science Fiction

Creative Writing - Undergraduate

Megan Clifford

While the longstanding literary tradition of science fiction is most often recognized for its adventurous spirit and speculative nature, its continuous criticism of economic systems, methods of government, and humanity itself can be both poignant and unsettling. Sci-fi evolves along with the world in which it is produced, and Eventualities: A Critical Amplification of Contemporary Issues Through Science Fiction aims to continue this trend as the new decade, century, and millennium progress. This work, my Honors Thesis, consists of a collection of four short stories. They are preceded by an introduction discussing my writing process and research, and followed by an afterword as well as an extensive annotated bibliography/literature review. This last component examines works of science-fiction, literary criticism essays, and news stories about science and society; it examines their thematic concerns, their relevance to the genre, and their usefulness to my writing. Social critiques are endemic to the genre of science fiction, and the stories I have written revolve around three themes that frequently overlap: capitalism, mass surveillance, and mental and bodily autonomy. I have examined sci-fi as both a reader and a writer, and Eventualities displays what I have learned—particularly, what I consider the most important to express to others. On Research Day, I plan to give an oral/PowerPoint presentation discussing my research and the fiction that I have produced as a result.

In patients with rheumatoid arthritis, what is the effect of arthroplasty, in comparison to non-surgical standard therapy on quality of life?
Nursing & Public Health - Nursing - Graduate
Yanique Comeau, Judia Taylor

Topic: In patients with rheumatoid arthritis, what is the effect of arthroplasty, in comparison to non-surgical standard therapy on quality of life?

Rheumatoid arthritis is a chronic and debilitating condition that affects quality of life (QOL). A literature review was conducted to determine the effectiveness of arthroplasty in comparison to non-surgical therapies to improve the QOL of patients with rheumatoid arthritis. The results indicate that arthroplasty provides better patient outcomes in restoring hand functionality as compared to non-surgical forms of rheumatoid arthritis treatments, such as platelet-rich plasma (PRP) therapy, injections, physical therapy, and anti-inflammatory medication. The surgical procedure (arthroplasty) also yielded lower pain levels and higher patient satisfaction scores when compared with the non-surgical procedures. In conclusion, arthroplasty improves the overall quality of life of patients with rheumatoid arthritis.

Key words: chronic, surgery, treatment, arthroplasty, rheumatoid arthritis, quality of life

Saint Kassiani and Saint Hildegard: The Medieval Nuns Who Fought the Patriarchy with the Power of Music
Multidisciplinary - Alumni
Kellyann Coveny

The power structures of Medieval Europe and Byzantium were a complex web of religion, the patriarchy, and various monarchies. When examined through the lens of music history, it is important to ponder the role of women composers in this context. In a time when women had almost no power under an oppressive system, how did some of them rise to prominence despite the odds? Why do we still know the names Saint Kassiani of Byzantium and Saint Hildegard von Bingen, and why does this matter? Despite living on different ends of Europe and having centuries between them, these two women were strikingly similar because they both used the structures of the Church to access knowledge, music, and power. To this day, their music is highly regarded and studied by musicologists. This presentation offers an overview of the lives and work of these women composers, as well as live performances of musical examples by both composers.

Substrate Efficiency in American Eels (Anguilla rostrata) Climbing Fish Ladders.
Biology - Graduate
Michael Curran

American eels (Anguilla rostrata) have a migratory life cycle that is often restricted due to anthropogenic forces such as dams. Fish ladders of multiple varieties have been produced to assist with the American eel's upstream and downstream migration patterns. Fish ladders are layered with substrates, synthetic or natural, to assist the elongated fish's success moving upstream. Three American eel individuals completed 40 attempts at climbing a fish ladder layered with different substrates. Two synthetic and two natural substrates were used to determine the American eel locomotion's efficiency rates up the fish ladder. The efficiency rates of climbs on synthetic substrates were higher when compared to the rates on natural substrates. American eels are a significant factor in aquatic biodiversity and are an essential food item in many cultures. Determining a more effective substrate for American eel climbing behavior will help aid in the already declining population levels seen today.

Using Artificial Intelligence to Predict Sales

Business - Supply Chain Management - Graduate

Patryk Czyzo, Andrew Jacobson, Ryan Connolly

Artificial intelligence is a technology that seems too sophisticated and too advanced to many. However, its use in the business world cannot be understated. AI has been incorporated into business models for many years now, and it has proven to be a crucial step forward for companies to take. As a part of the M.S. in Analytics program, our team had the opportunity to work directly with one of these companies. Grival, a Colombian manufacturer of home and commercial fixtures, gave us data and gave us the opportunity to create a real world model to forecast sales. This was done in sync with learning the material with Professor Juan Jaramillo, allowing us to immediately put into practice what we learn in the classroom. Juan Monsalvo from Grival would join us weekly and give us feedback on our models, constantly encouraging us to push or model to new heights.Using Python, our team set off to slowly flesh out our AI model. We trimmed the variables we would input into the model, tried various test-train sizes, and utilized different regression models, on top of many other things. Our goal was to obtain the best metrics from our model, in terms of r2, mean average error, mean squared error, and root mean squared error. The more favorable the metrics, the more reliable our model would be. By the end, we were able to develop a model more reliable than the one used by Grival.

Cognition, Motivation, & Video Gaming: A New Approach To The Cognitive Functions of Gamers
Psychology - Psychology - Graduate
Kendick Daley

In 2011, 91% of children between the ages of 2 and 17 played video games (NPD Group, 2011). It is imperative, therefore, that research examine the effects videogames may have on cognition, both positive and negative. For example, previous research suggests that players of shooter games allocate their attention more efficiently and filter out irrelevant information more effectively (Bavelier, et al., 2012). While research has shown cognitive benefits from gaming, enhanced cognitive performance is not seen for all video game genres (Granic, et al., 2014). Each genre requires players to use specific cognitive functions, which may have differing benefits. Further, motivation for playing games may influence the player's performance, a factor understudied in current research. This research seeks to bring together previous work on video games to look at motivation, types of games, and cognitive gains together. Specifically, we look to clarify the roles of videogames in supporting cognition by 1) asking whether different cognitive benefits are supported by different types of gameplay and 2) whether motivation for playing games dictates the extent of gains in cognitive function. We use an altered version of the Gaming Motivation Scale to separate motivations for playing videogames (Lafrenière, et al., 2012). We also measure the cognitive skills of short-term memory (corsi-block), impulsiveness (go-no-go), and attention (visual search; PsyToolkit.org). We hypothesize that 1) gamers' most played videogame genre will predict their performance in each task (e.g., first-person/third-person shooters will lead to faster search times than other games) and 2) gamers who are motivated by competition will perform significantly better on all cognitive tasks than those who are motivated other reasons (e.g., social gamers). This research will help to clarify when and why videogames reinforce cognitive abilities, and how games can be used build these skills

Sneaker Entrepreneurship/Investing
Business - Finance - Undergraduate
Andrew Delaney, Connor Murphy, Sarah Hofmeier

As student athletes business majors here at Adelphi, we will research the interconnected worlds of sports and finance/investing. We will mainly focus on the buying and reselling of Nike/Jordan sneakers within the growing sneaker market and how young entrepreneurs make high-percentage, profitable returns regardless of their age or income. We will present the nature of the sneaker market, popular market trends, how profits are made, and how to be successful with average annual returns that outperform the average S&P 500 return. (Approximately 10% annually)

Climate Change Narratives: The Rise of Cli-fi
English - Alumni
Meagan DeMaria

By approaching the emerging genre of climate change fiction, or cli-fi from an interdisciplinary perspective, this presentation will examine the ways in which cli-fi is a unique tool for shifting worldviews about climate change in our current political, social, and cultural moment. This moment, referred to as the Anthropocene, is characterized by rapid depletion of precious natural resources, the release of harmful greenhouse gases into the atmosphere, and perhaps most notably, the ushering in of a new geological epoch. The Anthropocene is however, more than science, facts, and data; the Anthropocene is also a moment in which polarized political fields, outright climate denialism, urgency among climate activists, notions of hope and fear, and above all, uncertainty exist simultaneously. The instability that defines the Anthropocene raises questions concerning the stories we tell ourselves about how we got here, what we can do in our present moment, and what the future might look like. In this way, the Anthropocene allows for an interdisciplinary accounting of the fields of eco-theory, genre studies, and narratology in order to map out the relationship between climate change and narrative. Such an interdisciplinary approach will focus on the rise of cli-fi and will provide a discussion of generic conventions of cli-fi narratives. This discussion will illuminate the implications of literary representations of climatic and ecological catastrophe, thereby presenting the argument that cli-fi presents alternative ways of conceptualizing human interaction with the environment, ultimately allowing for a necessary shift in narrative and worldview to occur concerning climate change.

Mental Health Services for Students
Nursing & Public Health - Psychiatric Mental Health - Graduate
Candace Devieira

Mental Health America [MHA] is a non-profit organization founded in 1909 to promote the lives of those with mental health issues. One policy which pertains to future Psychiatric Mental Health Nurse Practitioners (PMHNPs) is the Mental Health Services for Students Act. These services are essential to cultivating these future practitioners. In order to evaluate the Mental Health Services for Students Act, its significance, and how it applies to the PMHNP students, research was conducted regarding the act and the mental health services currently available to college students. It was found that mental health related services are available on college campuses. Despite the use of these services, there still exists barriers and stigma related to this care. Given the negative reputation associated with mental illness, those suffering do not seek care. The Mental Health Services for Students Act would raise up to $200 million in funding for 100 schools across the country to help provide mental health services for students in a culturally sensitive manner, as well as work to reduce stigma. According to the IOM report, Advanced Practice Registered Nurse (APRNs) are becoming an essential part of the healthcare system. Offering mental health services to college students allows them to succeed while also providing future career opportunities to PMH NP students.

Factors Associated with Health Symptoms among College-Aged Students during the COVID-19 Pandemic

Nursing & Public Health - Public Health - Undergraduate
Michael Dimitrov, Abraham Kariyev

The current COVID-19 epidemic, caused by a novel strain of Severe Respiratory syndrome-inducing Coronavirus, has forced billions of people from around the world to quarantine at home and self-isolate from their friends and loved ones. This has lead to the augmentation and formation of mental health symptoms. In this descriptive correlational study, we anonymously survey 350 college-aged subjects using established clinical surveys of psychological outlook, as effected by recent events of the COVID-19 outbreak, with particularly interest in the prevalence of depression, anxiety, insomnia, loneliness, and post-traumatic stress. By surveying and statistically correlating these results with surveyed demographic, sociological, and lifestyle factors, we delineate the factors that contribute and are associated with health outcomes during the current pandemic, providing insights into the populations most at risk of experiencing psychological and mental health distress, as well as determining effective strategies and choices that have led or correlated to effects on psychological outlook.

Red Isn't Always Red: Psychological Color-Word Associations in Children's Picture Books
Interdisciplinary Studies - Undergraduate
Olivia DiSanto

Contemporary research on color theory and visual perception often overlooks the extent to which psychological, linguistic, and cultural factors impact individual color related perceptual experiences. Well established theories confirm that exposure to children's picture books during childhood significantly influences one's psychological development and perceptual experiences throughout adulthood. I explore how our understanding of color and its inclusion in most picture books uniquely impact our lives, understanding that color perception is not a universal phenomena and that picture books are cultural artifacts in their own right. Working with grounded theory and arts-based research methods I conducted an interdisciplinary analysis of color from multiple perspectives including psychological, neurological/neuroaesthetic, anthropological, educational, children's literature, and studio art literature and practices. This research is folded back into my own artistic practice where I painted a series of color swatch inventories inspired by palettes of select children's picture books and gouache illustrations of an original picture book with text that experiments with color relationships. I reflect the impact of this research on my own psychological perceptions and artistic practices. It is hypothesized that greater attention to the impacts of color-word associations on visual perception may increase picture book reader engagement in children and adults alike. Research progress and preliminary conclusions suggest that this hypothesis will be supported.

Transition to Online Education During the COVID-19 Pandemic
Psychology - Psychology - Graduate
Tori DiTroia

The COVID-19 pandemic caused numerous changes to public facilities, schools being one of the most drastically affected. In the United States, many schools implemented a virtual or hybrid format. Both children and parents have had to adjust to these changes on short notice. One possible protective factor for children in this transition may be parental involvement, as it has been shown to predict children's academic achievement (Alfiansyah, 2019). However, virtual schooling may also have brought about changes to levels of parental involvement, with some parents becoming more involved and others finding involvement more difficult. Providing a strong foundation for children's success thus requires a greater understanding of the changes to and benefits of parental involvement in the face of such unexpected transitions.

Our study seeks to help understand challenges of parental involvement as a consequence of the change from traditional to virtual schooling. We also look into how involvement offers protective factors against the challenges students faced. We asked parents of middle school (6-8 grade) students to report on their involvement in their child's education as well as their child's academic performance. Involvement was measured using the Family School Relationship Survey and school success was measured by letter grades. Questions were presented twice, once based on the period of schooling before COVID-19 and once based on schooling during COVID-19. We predict that children whose parents report being more involved in their education prior to these changes will be more successful in their academics after the transition. We also predict that parents less involved with their child's education prior to the pandemic have now become more involved due to supervising the child's virtual schooling. Our hope is that the results of this study will promote parental involvement as vital to children's education and increase positive school experiences.

In patients with major depressive disorder, how does the addition of psychotherapy sessions, compared to using only pharmacological treatments affect depressive symptoms, relapse, and treatment response?

Nursing & Public Health - Psychiatric Mental Health - Graduate
Evan Donin, Scott Kolesar-Khan, Krystle Rivera

In the treatment of major depressive disorder, there is a significant question on whether the addition of psychotherapy sessions added to pharmacological treatments improves patient outcomes in symptom reduction, relapse, and treatment response. The aim of this research project is to investigate that question through the analysis and review of nine research studies on the subject. The potential significance of the question is considered a high clinical priority due to the impact it can have on patient outcomes. If the addition of psychotherapy sessions can improve patient outcomes for major depressive disorder patients receiving pharmacological treatment at a clinically significant level, it has the potential to change the standard approach to treating this disorder.

PICO Question: In patients with major depressive disorder, how does the addition of psychotherapy sessions, compared to using only pharmacological treatments affect depressive symptoms, relapse, and treatment response?

Once Upon a Mattress- Designing Vaudevillian-Renaissance Costumes

Theatre Arts - Undergraduate

Brian Donoghue

Costume designers don't solely create ball gowns, they invent complex characters through clothing. Taking a classic children's fairytale turned 1950's musical presented the challenge of realizing and adapting folk art illustrations, period paintings, and sewing patterns into realized designs.

The Music Education Left Behind Act
Music Education - Undergraduate
Mark Edelstein

In recent studies conducted to evaluate the importance of fostering creativity in classrooms, research shows by involving creativity in critical-thinking activities, students increase their overall understanding of new concepts in the classroom. Although due to the increased pressure placed on standardized testing from legislation such as the No Child Left Behind Act of 2001, many public schools have shifted their focus away from creative activities involving art and music and towards tested subjects such as math and language arts. Through a literature review of research from music education and general education journals, this project will highlight the importance of music and creativity in education as well as successful strategies for including creativity in diverse classroom settings.

Mental Health in the Pop Music Industry
Music - Undergraduate
Jason Fan

In recent years, the music industry has experienced a rise in popularity all over the world. The influence of artists and strong fan bases has been growing consistently on both ends. Constantly being on screen for fans to see is no easy feat to accomplish for musicians. People say that money and fame can cause people to change. While this statement may be true, many forget about the human aspects of artists. Due to the enormous pressure put onto these artists, many experience forms of psychological deterioration or trauma. These include the possibilities of facing anxiety, depression, drug use, and similar related struggles that many artists engage with throughout their careers. Like any other human being, the mind is weak, and the soul is frail, and there can be a breaking point at any given time. While many artists may seem fine and happy in front of fans, many of them are also quiet about their own struggles. Some artists can abuse drugs to cope with depression and stress, while some others take their own lives to end the suffering. This issue is important to bring up due to the increasing mental health crisis that exists within the music industry. There are artists who produce music to appease those who also struggle, which are apparent through the lyrics. However, these same artists may also face the same struggles and many times the red flags are ignored or unnoticed until it is too late.

The Jazz Age: The Cultural Impact of the Harlem Renaissance On Society
Music - Undergraduate
Gwyneth Fernandes

The Harlem Renaissance was a period of cultural revival of African American music, art and literature that grew out of the Harlem neighborhood in Manhattan, New York City. Jazz quickly became synonymous with the Harlem Renaissance and was used by various artists as a means of expression. It played a crucial role in the movement, bolstering and propelling it forward. This presentation will explore the cultural impact of Jazz in the Harlem Renaissance (1920's-1930's) in the United States. It will discuss the ways this era influenced jazz as a genre itself, including practices from this time that became standards of the jazz idiom. This presentation will also include information about popular jazz musicians from the movement like Duke Ellington, Louis Armstrong and Fats Waller.

The Politics of Public Persona Masking their Disabilities Through the Use of Passing
English - Undergraduate
Peri Finkelstein

Throwback to the Twentieth Century, where there was no internet, social media and networking sites, where the spin of politics was done the old-fashioned way: via print, telegram, radio, and black and white television. Inside American politics and the British Monarchy, a plethora of undisclosed information was secluded from, the press masking one's disability from that of society. The leaders in power disguised their health issues to protect their reputations and positions in office; specifically, with the individuals who have a mental or physical disability that may or may not prohibit them from successfully leading their country. These figures of authority are known to mask their health issues because they do not want to be perceived as being fragile and weak in the eyes of the world. By analyzing the fictional series, The Crown, created by a British film writer, Peter Morgan, in the showcased media-services provider, Netflix, and its portrayal of the real-life historical figures, one will be able to recognize the terminology of "passing" and how it is used in society and across the global domain by presenting disability as being both a stigma and a family curse in the royal family.

Likewise, in American politics, one is expected to conceal their shortcomings from the world, as it is considered to be a sign of weakness. An analysis of the representation of disability in The Crown reveals the social and cultural underpinnings of 'able-bodiness,' as it represents the impulse to maintain artificial ideas of natural, national and racial superiority through various forms of societal communication.

Investigating How Dance Theater Reimagines Physical Artifacts into Ephemeral Art

Dance - Undergraduate

Marlee Fleisher, Maddie Barry, Leila Carroll, Gracie Godinez, Julia Lawton, Casey Leyden, Kellsee Lynch, Erin McElhone, Brei Snyder

Dance and Dance Theater are ephemeral artforms, existing only in the moments of their live performance; in stark contrast to the written and visual artforms, which are able to become artifacts passed down from generation to generation. My creative research will investigate the inherent tension and potential for discovery that exist when adapting these artistic artifacts into a dance. If a picture is worth a thousand words, then how much is a work of live theater worth? How does the artform of writing, photography, or performance that the work exists within reshape the narrative? What is a photograph or text able to say that a performance cannot and vice versa? In order to investigate these questions, the Thomas Mann short story Disillusionment and the photographic collections of Gilbert Garcin will serve as primary sources to be remixed and transformed into a new work of Dance Theater. The text and photographs serve as collective inspiration points for all the collaborators, influencing the movement generation, music composition, and scenic design. As the choreographer I am collaborating with composer Carson Moody, set designer John McDermott, lighting designer Jonathan Doncker, and the dancers, to reshape Garcin and Mann's work to exist within the ephemeral art of live performance.

KatieO
Theatre Arts – Undergraduate
Haley Franke

KatieO is about a girl whose dreams came true when her podcast grew into her own radio show for relationship advice. She's using her knowledge, or lack thereof, to answer burning questions from callers suffering breakups, trying to connect with their children, and more. The show, and Katie's entire life, takes a turn when someone she'd never expect calls with very important information. Katie has to find a way to finish her show after being told this life-changing news. This show teaches Katie her own lesson about relationships and, in turn, the audience about the importance of communication with the ones you love.

Musical Theatre is my biggest passion so I always knew I'd perform a cabaret for my Capstone. I'm often coming up with show ideas but none excited me as much as this one. The idea started as a one woman show; I still have the original idea in my Notes App: "Play or one person show or cabaret where I play a radio commentator and I answer questions like #AskHaleyOrSomeThing and then I sing a song at the moment there's supposed to be a song on the radio." The main idea stayed the same but the intention and message within the piece came during the writing process. The most important aspect of the writing process was making sure the story was accessible to all. I have a close friend who was born blind. She loves theatre and I love taking her to shows and describing what's going on. However, with my show, I wanted to write it in a way that she doesn't need to see anything to know exactly what's going on. Much like the radio, all you really have to do is listen. The final product will be able to be performed in-person, recorded and streamed, or just listened to. With the pandemic at full blast, I knew I'd have to get even more creative with my approach. No one can be there in person to see it. Then we'll treat it even more like a radio show! As much as I love the energy of an audience, radio hosts don't have their listeners in the studio with them. While I'd love to one day have that audience there with me, losing them doesn't change the effect that the show should have. I also have to be cautious of safety protocols. I plan on pre-recording every caller to use as sound cues during the show to avoid having too many people in the space during the performance.

I'll be writing and editing til the day of the performance, I'm sure. I'm currently in an independent study focused on the writing and production of this cabaret with Adelphi alum, playwright, professor, and director of the cabaret, Megan Lohne. We've confirmed a date: April 30th! Soon we will confirm our performance space, cast, and how the show will be available to watch. I'm overjoyed to be working with the people I have on my team on a project I care so much about and cannot wait to see the finished product.

Medical Illustrations in the Renaissance
Interdisciplinary Studies - Undergraduate
Ridannelyn Gallo

Before the Renaissance, the most influential anatomist in the western world was Galen. However, while he was reputed as one of the greats by medical students in 15th-century Italy, his studies were then considered inaccurate when Vesalius explored the dissections of the human body himself and had his own findings incorporated in the world of art—this shows an example of the symbiotic workings of art and science, and shows the demand of accuracy at that time. The relationship between artists and physicians was symbiotic during the Renaissance as seen in the accurate portrayals of the human body by artists such as Da Vinci and Michelangelo, both of who have acquaintances with physicians and dissected cadavers themselves. By examining the artists' medical illustrations, their works, and Vesalius's Fabrica, as well as a direct experience on medical illustration for academic purposes—the following presentation demonstrates the correlation between art and science, how one benefits the other, and how it leads to a better understanding of the human anatomy.

The Sublethal Effect of Pesticides Resmethrin and Methoprene on the Prey Catching Ability of Salt Marsh Predators: Pardosa littoralis

Biology - Undergraduate
Mikayla Glick

Salt marshes provide important ecological services; for example, they absorb crashing waves to protect coastal communities from floods and they sequester carbon dioxide, decelerating climate change. Salt marshes are, however, continuously degraded by anthropogenic forces such as rising sea levels and pollution. Pesticides such as methoprene and resmethrin are commonly sprayed in salt marshes to control mosquito populations, but their combined effects on non-target organisms are unknown. In addition to inducing direct mortality, pesticides can alter the performance of organisms due to more subtle, non-lethal effects, which can scale up to impact communities. In this study, I test the combined effects of methoprene, larvicide, and resmethrin, an adulticide, on an abundant salt marsh predator, Pardosa littoralis. I applied either resmethrin, methoprene, a mixture of both pesticides or an acetone control to their dorsal opisthosomas. I recorded capturing Drosophila melanogaster in petri dish arenas to evaluate how pesticide application affects prey capture performance. Preliminary data analysis indicates that the application of resmethrin may hinder their predatory ability. If this is confirmed, other means of mosquito population control should be applied in salt marshes as the decreased functionality of predators could actually increase mosquito populations.

Links Between Empathic Accuracy and Coercive Sexual Behavior
Psychology - Psychology - Graduate
Samantha Goldman

Propelled by the #MeToo movement, conversations about coercive sexual behavior, what gives rise to it, and how we can combat it, have dominated the public conversation. Some researchers posit that sexual coercion can involve multiple intersecting factors — i.e. class, race, sexuality, gender, power dynamics. However, few researchers have examined the influence of empathic accuracy, hereby defined as one's overall accuracy in inferring another person's thoughts and feelings, on coercive sexual behavior. It is plausible that those who are prone to a catastrophic failure of empathic accuracy may turn to coercive sexual strategies to fulfill their desires. Therefore, we explored how empathic accuracy may play a mediating role in the relationship between a wide array of social and psychological factors and one's willingness to endorse coercive sexual behaviors.

In the current study, a total of n = 341 participants were recruited from Mechanical Turk. Through a survey, we administered a performance-based assessment of empathic accuracy as well as self-reported measures that captured participants' belief in rape myths, belief in traditional gender roles, exposure to sex education, willingness to endorse sexually coercive behavior, and comfort with topics of a sexual nature. Additionally, we measured participants' levels of trait narcissism.

As predicted, we found that better empathic accuracy scores were negatively correlated with willingness to endorse sexually coercive behaviors. As such, we constructed meditation models to explore how empathic accuracy can mediate the relationship between a variety of predictor variables (belief in strict gender roles, belief in rape myths, narcissism) and the willingness to endorse sexually coercive behavior.

The results from this study present novel points for intervention for a variety of institutions concerned with decreasing sexual violence and parsing the complex social and psychological factors involved.

Association between Substance Abuse and Food Insecurity: A Cross-Sectional Study

Nursing & Public Health - Public Health - Alumni
Manjusha Gopi, Korede Yusuf, Mahmooda Khaliq Pasha, Choe, Ulyee

Background: Food insecurity and substance abuse are closely related in the context of poor health among vulnerable populations. This study aims to examine the relationship between substance abuse and food insecurity.

Methods: Data were from the Community Health Needs Assessment Survey 2017, Pinellas County, Florida. Food insecurity was defined as eating less than you felt you should because there wasn't enough money for food. The exposure variable, substance use, was defined as daily cigarette smoking in the past 30 days and the use of cocaine, crack cocaine, heroin, methamphetamine, or a synthetic version of these drugs. Multivariate logistic regression analyses were conducted using IBM SPSS.

Results: The study sample was composed of 689 participants, with a 15.2% prevalence of cocaine, crack cocaine, and other drug use and a 16.8% prevalence of tobacco abuse. Among the study participants, individuals who used cocaine or crack cocaine were 39% more likely to report food insecurity, but this finding was not statistically significant [AOR (adjusted odds ratio) =1.39, 95% CI (confidence interval) =0.68-2.85]. Furthermore, among individuals who smoked cigarettes daily, the odds of reporting food insecurity increased by 74% (AOR=1.74, 95% CI=0.85-3.56). Young age, low income, female, 'other employment' status and high unhealthy mental days were also associated with increased food insecurity.

Conclusion: Substance abuse was associated with an increased risk of food insecurity in this study; however, this was not statistically significant. This insignificant finding may be due to a lack of power. Future studies with a larger sample size will be required to confirm or refute our findings.

Into the Oblivion: Drawing the Depths of Dante's Inferno

Multidisciplinary - Graduate
Fiona Govin

This project seeks to explore the significance of a visual narrative-affective interpretation of Dante's Inferno. "Narrative-affective" interpreters remain objective while adding only some emotion to the work. In order to carry out this investigation, I will create my own interpretive adaptation of Canto XVII of Inferno in a graphic novel style. This adaptation is composed of 14 full-color pages of illustration, rendered digitally. While I may use my own personal style of drawing, I attempt to be as true to the text as possible, without reimagining the time, or place. I conclude that a very literal visual interpretation of Dante's work is significant in that it contributes to the modern mythos of Hell, or the abyss. Dante's version of Hells appears in, and is referenced throughout contemporary literature, TV, and film. In addition to this, narrative-affective interpretations of this work can draw attention to the elements of this story that are not as well-known, such as the closeness and intimacy of Dante and his guide, Virgil. Equally as significant to what is gained from narrative-affective interpretation, is what is lost. One is no longer able to make commentary on certain statements or accusations that are being made in Inferno. There is not a lot of room to question Dante's choices of those who wind up in Hell, nor what their punishment may be, in a narrative-affective interpretation. Ultimately, what can be learned from creating a visual and literal adaptation of Inferno by Dante, is that, while such works can contribute to a widespread mythology of what Hell could encompass, and expand upon easily overlooked elements of the story, one may lose a level of commentary and criticism of the work.

Correlates of mental illness stigmatization attitudes among a treatment provider sample.
Psychology - Psychology - Graduate
Ana Guillen, Laura Lopez-Aybar, MS.

Stigma appears to be a major barrier to seeking therapeutic services for persons with mental illnesses (Corrigan et al., 2018). The proposed study aims to understand demographic correlates of mental illness stigma among a sample of treatment providers. It will also explore whether there is a relationship between provider stigma and sociopolitical beliefs. The study will evaluate pre-existing data from a larger study collected in 2019, utilizing a subsample of 246 medical students, psychology trainees, and licensed clinical psychologists. We will analyze scales that measure socio-political beliefs, stereotypes toward mental illness, and participants' intended future behavior towards individuals with mental illness. Data will be analyzed using multiple multivariate regression analysis to evaluate the influence of demographics (age, gender, and racial/ethnic status), and sociopolitical views upon stigmatizing attitudes towards individuals with mental illness. We hypothesize that younger providers, male providers, providers belonging to minoritized racial groups, and providers scoring higher on Right Wing Authoritarian beliefs will hold higher stigmatizing attitudes towards individuals with mental illness. We believe our sampling exploring providers' correlates of mental illness stigma and the findings can influence provider training, education, policy and bring awareness to the effects of stigmatizing attitudes on individuals with mental illness.

Stories of Women in Greek Mythology: Modern Feminist Retellings Through Original Songs

Music - Alumni
Dori-Jo Gutierrez

Patriarchal narratives of women as portrayed in mythology have impacted perceptions and treatment of women significantly throughout the course of human history. By taking ownership of these stories through retellings and reinterpretations, these myths of women which once were used as a method of subjugation and validation of treating women as second-class citizens can become a source of empowerment and strength for modern women.

My presentation is a series of original songs, for which I have written the music and lyrics, that reinterpret, retell, and draw upon the stories of women from cross-cultural mythologies as inspiration. The goal of these songs is to shed new light on the stories of women of myth that typically portray them in a negative light as imposed by patriarchal social structures. Examples of these stories include Medusa, Persephone, and Calypso.

#BlackLivesMatter and why they historically, have not mattered to America
Criminal Justice - Undergraduate
Charles Herman

The American criminal justice system was built on, and is maintained by, our nation's roots in white supremacy. From the Civil Rights Movement to various Black Liberation movements to the current #BlackLivesMatter Movement following the deaths of countless unarmed Black citizens at the hands of police, the call for the "defunding/divestment" of American policing is loud and clear. Acting on this call requires a thorough understanding of why a significant number of Black Americans and their allies do not trust the police, how the current justice system came to be, and what its "defunding/divestment" might look like. In this paper, I investigate important contemporary factors that led to the current movement—from the police harassment in the Skid Row District in Los Angeles, to city budgets prioritizing law enforcement over citizen well-being, to the school-to-prison pipeline that appears to criminalize race. What is most important in my findings, however, are the solutions: not simply "reform" but a wholesale reimagining of public safety based on a community-centric model, using Camden, NJ, as an example.

Sleep Quality and Preclinical Alzheimer Disease

Nursing & Public Health - Psychiatric Mental Health - Graduate
Sigmaur Hewitt, Sophia Solomon, Jasper Prima

Is amyloid deposition in preclinical Alzheimer's disease associated with changes in quality or quantity of sleep? There is an increased rate of dementia and Alzheimer's disease development in elderly individuals. The data collected in study bears great significance to health care, and nursing as a whole, due to how it highlights the importance of achieving adequate levels of sleep to reduce the severity of dementia and Alzheimer's Disease. Increased sleep in comparison to decreased sleep are the main interventions. The level of amyloid deposition found in the subject's Cerebral Spinal Fluid (CSF) post interventions are assessed. Outcome of the results show that there is an association between amyloid deposition in the brain and preclinical Alzheimer's disease. Individuals with more amyloid deposition experience poor sleep quality compared to those without, or little. The quantity of sleep achieved is not affected with or without amyloid deposition. It is important to study the effects of sleep on the health of patients for a possibility in the future of reducing dementia and Alzheimer's Disease in the population, or even other diseases.

Investigating Food Waste Solutions at Adelphi University

Environmental Studies - Undergraduate
Shuriz Hishmeh, Kelly Andreuzzi, Kate Cimino

Food waste is a pressing issue that has resulted in varying degrees of environmental problems. As a result, food waste has produced greenhouse gas emissions, taken up space in landfills, and is ultimately a misuse of energy and nutrients. Within the past decade, new environmental regulation has been introduced throughout New York to minimize environmental destruction due to food waste. This paper analyzes the food waste produced at Adelphi University, takes into account local regulation, and weighs in on different solutions. Solutions were weighed in terms of both upfront and long-term cost, environmental effect, maintenance required, implementation procedures, and well as external cost/benefit to the university. Based on this research, a recommendation is made for Adelphi University to maintain an on-campus composting facility. Implementing a composting facility would allow nutrients to be recycled back into the environment, minimize greenhouse gas emissions from both food decay and transportation, hands-on education for the environmental studies department, and produce fresh compost that could be used around campus or sold. Overall, this paper aims to be both a comprehensive review of food waste disposal methods as well as a direct response to Adelphi University's current need to comply with waste regulation.

SQUISHER-Broad Spectrum Antiviral Nanomachine

Multidisciplinary - Undergraduate
Ivan Hyatt, Andrew Zhang, Azka Chaudhry

Under the ongoing pandemic, the SARS-CoV-2 virus has been an underlying health concern for everyone and especially for public health officials, medical professionals, and COVID-19 patients. Severe acute respiratory syndrome causes an inflammation of fluid in the lungs and has contributed to a struggle in receiving enough oxygen supply; intubators and steroids are employed to assist critical-care patients unable to have reliable and independent lung functionality. Recent vaccines have shown promise in prompting the synthesis of SARS-CoV-2 spike proteins to provide an immune response in vaccinated patients. The second line of defense against viruses is the application of antivirals which help to decrease the severity and duration of a virus, and generally inhibit the development of a virus.

The goal of our research is to prove that a molecular machine is capable of adhering to viral spike proteins in order to destroy the virus by tearing open the viral capsid. The molecular machine is composed of three essential components: VANTA (vertically aligned nanotube arrays) struts, protein adhesives, and a molecular motor. VANTA struts are proposed as connectors between protein adhesives and a molecular motor. Cryogenic electron microscopy will reveal the location of spike proteins to make suitable VANTA strut sizes. Protein adhesives are used to form intermolecular forces with the spike protein found on spherical viruses. The molecular motor will be used to twist the VANTA struts which will cause the adhesives to pull on the spike proteins and tear the viral capsid. A rupture in the capsid exposes the nucleic acids of the virus to extracellular fluid which would render the virus incapable of replication. Primary research hurdles are creating a harmless, practical, and cost-effective stimulus that initiates motion in the molecular motor, investigating preliminary molecular-motor-substrates the VANTA strut can grow from, and creating individual nanotubes from in-bulk samples

COVID-19 Pandemic: A Nursing perspective on stress and recommendations moving forward

Nursing & Public Health - Nursing - Undergraduate

Janet Ilyayev

As the coronavirus disease 2019 (COVID-19) pandemic advances, healthcare systems are being overwhelmed. Due to the novelty of this virus, there is no cure, except a combination of pharmacological and therapeutic strategies that are supportive and preventative, aiming to reduce the transmission in communities. Nurses play a crucial role in administering current therapies to ensure a proper restoration of health and a decline in the viral manifestations in affected patients. However, many barriers currently impede a nurse's ability to provide efficient care. The purpose of this paper is to identify the current stressors that prevent nurses from providing proper care, and to advance with interventions that can eliminate these barriers. Through careful analysis of peer reviewed literature from China, Italy, and the United States, shared nursing experiences and precipitators of stress during COVID-19 were identified. Barriers such as emotional responses, shortage of staff, influx of patients, scarcity of resources, and lack of support, prevent nurses from effectively caring for those who succumb to COVID-19. Providing psychological support for nurses, addressing physiological and safety needs, counseling for nurses, and managing health of frontline staff, are recommendations that are hoped to be implemented to properly treat patients in pandemics in the future.

Key words: COVID-19, Nurses, Pandemic, Stress, Support

Environmental Economics and Policy and Global Water Insecurity
Multidisciplinary - Undergraduate
Maria Giovanna Jumper

Fresh water is unquestionably a necessary resource for the survival of humans, agriculture, and animals, yet we continue to pollute and to abuse our diminishing accessibility to fresh drinking water. Making matters worse, factories illegally discharge toxins, and water treatment plants are severely outdated. Recently, the U.S. has faced water crises in Flint, MI, Newark, NJ, Long Island, NY, and elsewhere. The crisis in Flint is especially egregious, with 12 people dead and another 9,000 children exposed to lead poisoning. In children, lead exposure can cause severe side-effects, including coma, convulsions, and death (World Health Organization). Others have had access to safe drinking water stripped from them because of their socioeconomic standing. Guaranteeing public health means protecting access to clean water and the right to drinking water. As a part of my senior thesis, I have been researching and developing policy proposals on this issue. This project includes information on lead piping, chemical waste, and environmental racism. It is international in nature, but is centered on the economic and public policy that allows for water inequities. The conclusions provide a critique on the kinds of policy that currently exist and recommendations for creating safer, healthier drinking water.

El Puente: A Historical Novella in 1928 Puerto Rico
Creative Writing - Undergraduate
Rebecca Justiniano

As a creative writing major, my work and this thesis is going to represent those peoples whose voices, whose faces, whose skin tones and languages have not been represented in the public sphere with dignity or with respect. As a Puerto Rican woman, I have an understanding of what it means to be underrepresented in the media I consume, in the classes I have been taught in, and especially in the literature I love.

I remember sitting in my second semester of college, reading William Carlos Williams and never knowing that the man who wrote about iceboxes full of plums and little red wheelbarrows was half Puerto Rican. I never knew that one of his poems was titled "Libertad! Igualdad! Fraternidad!" I have read American literature and I have read myself (and the people who look like me) written out of it. I have loved American literature and I have not been loved back. I remember studying those great works of the 1920s, the Fitzgeralds and the Hemingways and the Pounds, all so rich, all so celebrated, and never seeing myself in them.

El Puente is a novella that will take place in that grand time, in the forgotten island that is equally as known for being abandoned by its inhabitants as it is for being cannibalized by sugar and coffee and tobacco crops. When we look at Puerto Rico through the lens of history, we see it as inevitably defined by the diaspora of migrants that came out of the 1940s and migrated, with hope, to New York City, defining a new culture, a Nuyorican experience. That culture has been documented, analyzed, and upheld as the American experience of being a Puerto Rican, while the island itself has undergone systemic oppression, changes and violence. The island is, to this day, a Commonwealth, the citizens required to pay federal taxes and yet are barred from voting in Congress, the Senate, or for the President of the United States, wracked by a history of slavery, of imperialism and of hurricanes.

What We Will Be
Theatre Arts - Undergraduate
Samuel Kang

I have written a ten-minute play entitled "What We Will Be", a story revolving around a Korean-American father and son, as they both come to terms with the father's possible prison sentence and deportation. The play takes direct inspiration from an actual conversation with my father about the same topic, and all the things I wish I had said in that situation, as well as the emotions my father wanted to have kept hidden from me during our talk as a way to appear strong and in control. I wanted to represent both of those aspects within my play and to put them into words without the option to censor our true feelings. Above all else, I wanted this play to be honest and an accurate portrayal of the devastation of the failure to reach the American Dream, a concept kept alive within the hearts of all Asian-American immigrants. I will be presenting a reading of my ten-minute play.

The Importance of Candidates' Teaching Qualifications in Applying for Biology Faculty Jobs

Biology - Undergraduate
Gabriella Kashulsky

The goal of science education research is to improve student success in science, technology, engineering, and mathematics classes. Student success is linked to faculty instruction, making it important to study how departments within colleges and universities hire candidates and decide on promotions and tenure for their professors. This science education research project focuses on the importance of candidates' teaching qualifications in applying for biology faculty jobs, as well as subsequent work-related decisions. A survey was conducted that reached out to the biology departments of higher education institutions across the United States, with samples of faculty from the biology departments of community colleges, bachelor's-granting colleges, master's-granting colleges, and doctoral-granting colleges answering questions regarding the importance of particular types of qualifications when it comes to teaching and research positions at their respective institutions. The quantitative and qualitative results obtained from this study are being analyzed to draw conclusions on the teaching qualifications used by biology departments at different types of institutions across the United States to decide which individuals to hire, to promote, and to grant tenure to. A main goal of this scientific study is to identify the teaching qualifications deemed most critical for faculty personnel decisions for Carnegie-classified, a framework for representing national institutional diversity, colleges. Identifying what institutions are searching for in future faculty could help to improve the training of candidates and increase the quantity and quality of well-prepared applicants available. This could help augment the likelihood of hiring or promoting a well-qualified professor whose training or teaching aligns with the priorities of the institution, thus, enhancing student success in STEM.

Moments of Pause: An Exploration of Public Installation Art
Studio Art - Undergraduate
Nurjahan Khan

What is the role and purpose of art? This question has been tackled by many, from artists to art historians to students in their high school art classes. Artists have created manifestos time and time again, movement after movement, all articulating their beliefs and goals in their own ways. As an artist, I, too, have to ask myself what art is to me and what I want my art to do. The crux of my creative research is exploring how to create art that can resonate with everyday people that, perhaps, haven't studied art making or art history or perhaps don't enjoy going to museums at all. My work is an homage to chance happenings. Ranging from subtle alterations in lighting to more deliberate insertions of objects, my site-specific installations strive to reactivate existing public spaces and encourage passing viewers to find a moment of pause in their daily activities and re-experience their surroundings. Location dictates the project. From there, I consider what my scouted locations mean; what kind of visibility does it have, what kind of discourses or behaviors surround it, and what exists there that can be altered? These are the questions that guide what interventions I create.

In my research, I've concluded that creating art as a space is more valuable than creating art as an object and that the experience is of utmost importance. Creating something experiential and open to interaction allows people to be more engaged and transcend the object-viewer relationship. They become part of the art, and the art exists through them--through their photos, their interactions, their memories and stories. I've embraced the notion of creating things for people to stumble on by chance and reaffirmed that the "art" part of it does not exist in the physical material installation. The art exists in the viewer's experience. The art is giving someone a story to tell and providing them, even for just a moment, a flash of wonder, curiosity, or even confusion in their everyday lives.

Understanding the relationship between non-suicidal self-injury, substance use, and dependency in American college students.
Psychology - Psychology - Graduate
Vardha Kharbanda

Numerous studies in college students and adults suggest a strong association between substance use disorders and non-suicidal self-injury (NSSI) but there is a paucity of studies exploring the association between relationship characteristics, substance use, and NSSI behaviors in the USA. Research indicates that the lifetime prevalence rates for NSSI among college students in America averages at 15.3% and one in four college students in the US have used marijuana or some other drug during the past month which makes it all the more necessary to understand the relationship characteristics underlying NSSI and substance use behaviors. The online survey study examined the association between substance use, demographic characteristics, relationship characteristics, and non-suicidal self-injury. Undergraduate and graduate students completed socio-demographic questions, relationship profile tests, a screening instrument for alcohol and other drugs, and a measure of self-harming behaviors. The analysis included descriptive statistics, correlations and chi-square analysis, T-tests, and analyses of variance. Findings from the study can be used to inform the development of appropriate clinical interventions for college students.

The Harmful Systemic Conditions That are Linked to Periodontal Disease
Biology - Undergraduate
Alina Larina

Any form of infection can be potentially harmful, even life-threatening. There are numerous diseases that can cause certain conditions to develop either directly or indirectly. When studying specific diseases, it is determined whether or not they target a distinct part of the human body directly, or they lead to a cascade in which multiple steps occur as a result of it. The systemic conditions that arise from these diseases vary in many individuals, but they often affect the whole body. The conditions that stem from a variety of diseases can be caused by a lack of maintenance of the body that results in infections. In particular, periodontal disease is the infection of the gums, which are the tissues that hold the teeth in place. This can typically be avoided with proper oral hygiene, such as brushing and flossing regularly in order to avoid plaque buildup. However, when proper oral hygiene is not maintained, the effects of periodontal disease can be very severe. It is crucial that individuals maintain proper oral hygiene in order to avoid health complications in the future. A wide variety of clinical trials and research has been done and studied about the harmful effects of periodontal disease. There have been numerous systemic conditions that have been associated with periodontal diseases, such as cardiovascular disease, diabetes, respiratory diseases, and for women, adverse pregnancy outcomes.

Developing Single-Board Computer Projects for the Adelphi Physics Innovation Studio
Physics - Undergraduate
Sally Lau, Rena Beban

We are developing the use of single-board computers for projects in the new Adelphi Physics Innovation Studio. Single-board computers, such as Beaglobone Black and Raspberry Pi, are inexpensive and versatile. These devices are great for student projects. This project's goal is to develop in-house startup resources, examples, and expertise for students who desire to use the maker space for innovation projects.

Signed, Sealed, Delivered
Innovation Center – Graduate
Duc Le

The employer of the project was DeliverThat - a national last-mile delivery service based in Canton, Ohio. Their network is made of professional drivers nationwide to ensure each delivery is fulfilled according to the restaurant's standards. The internship took place between June and August 2020 with five phases: Internal and business environment analysis, assessing retention, identifying acquisition costs, forecasting revenue and expansion plan, respectively. Most of the work involved retention rate, strategy for improvement, cost analysis, as well as future directions, which would not simply stop at food delivery and catering. The project turned out to be a success, where each member was able to learn about food delivery space, even logistics industry. Ultimately, the project would not have been successful without the support of the company and the Innovation Centre, which took place on a weekly basis.

The Medical History of Diagnosis and Treatment of Dental Caries in Diachronic Perspectives

Biology - Undergraduate
Youngseo Lee

This research project investigates through the study of medical historical records the variability of concepts regarding what human populations considered as the reasons and causes of dental cavities along with their relative treatments in a diachronic context up to modernity. Historic approaches of dental practice evaluated for their effectiveness are compared to modern diagnostic ways in determining the causative agents of the infectious in nature cariogenic activities within the oral cavity; providing both preventive measures and where applicable relative interventions of treatment regimens.

Medical/odontological literature research (inclusive of available ancient writings), art-historical depictions of caries treatment of the earliest filling materials with subsequent dental extractions, along with publications from archaeological sites spanning from the Epipalaeolithic period to the 19th century in Asia, the Middle East and Europe provide an invaluable record, tracing the roots and development of the modern field of dentistry.

Of particular importance to the objectives of this investigation, in addition to the techniques and materials used for the topical treatment of carious cavities- ranging from wax in antiquity through to silver and gold fillings of recent times, was the aim to identify in a diachronic perspective the evolving concepts and thought processes which guided the framework of trends and tendencies of the dento-medical diagnostic capacities and abilities, and the changes of the treatments in the course of time.

The results of this research project are a great interest to those interested in the domain of Dentistry, Medical History, Archaeological Forensics, and Palaeopathology.

How American welfare attitudes have been changed over a decade?

Social Work - Social Work - Graduate
Eunkyung Lee

The political-economic ideology of a given society influences formation of citizens' welfare attitudes and development of social welfare policies. During the Great Recession of 2008, Americans experienced severe economic severity, as well as income support policies. Prior research paid little attention to how citizens' welfare attitude changed in the shift of social contexts. Through longitudinal research, this study examines how American welfare attitudes have been changed after the recession and what factors influenced the changes of American welfare attitudes.

This study used secondary data from the World Values Survey: the wave of 2006 and the wave of 2017. The sample size was 1,249 in 2006 and 2,596 in 2017, respectively. In consideration of Jakobsen's conceptualization of welfare attitudes, this research operationalized welfare attitude into three indicators: Preference toward (1) income equality, (2) government responsibility, and (3) redistribution through tax. This study employed the cohort analysis to analyze the changes of American welfare attitudes between 2006 and 2017 at the individual and the country level.

First, the study shows that American welfare attitudes significantly increased from 5.02 in 2006 to 5.69 in 2017 at the country level. This indicates that Americans might have had more favorable attitudes toward welfare after the Recession. Second, in 2006, age, socio-economic class, education, employment status, and political affiliation were the factors impacting on American welfare attitudes. However, the decisive factors in 2006, except for political affiliation, no longer had significant effects on American welfare attitudes in 2017. Instead, religiosity and health status had more significant impacts on welfare attitudes in 2017. In particular, political affiliation became the most important factor to influence American welfare attitude in 2017. The result implies that American welfare attitudes might have been severely politicized.

Sandstone & Brick
Dance - Undergraduate
Annie Lewis, Claire Gaylor, Adrienne Nolt, Brei Snyder

Music: "Summertime" By George Gershwin Sang by Ella Fitzgerald and Louis Armstrong

Special thanks to these incredible dancers for your time and commitment to telling this story!!
Much love Claire Gaylor Adrienne Nolt Brei Snyder

Have you ever wondered what life would've been like if you were born 30 years earlier? 50 years? 100 years? Would you have been the same person? With the same experiences?

Food Waste Practices and Projections by Students and Faculty at Adelphi University
Anthropology - Undergraduate
Chani Lieu

Food waste in America is a growing concern today, as well as on university campuses. 130 billion pounds of food is discarded in the United States each year, from which 22 million of those come from U.S. colleges. Although the numbers are intimidating, food waste can be reduced with initiative, leading to positive social, economic, and environmental effects. The objective of this project is to understand individuals' food waste knowledge, concern, and practices at Adelphi University that contribute to the overall accumulation of food waste on campus. The study gained IRB approval (#120820) before interviewing individuals, focusing on their socio cultural surroundings for motives behind food waste at home, along with how they compare to the university environment. Reducing food waste can lead to a better social environment on campus community members can be more aware of their individual impact to a larger collection of trash. They can work together to reduce that. It also places a greater understanding of the realization that many families struggle to put food on the table in Nassau County, and the greater macrocosm of the world, so the food around them should not be taken for granted with the knowledge of food insecurity. Economically the school could save money on the amount of food made in the kitchens. Lastly, reducing food waste is environmentally beneficial because it can reduce the harm of unsustainable factory agriculture. Broader impacts of this research will include its applicability to design effective methods, like composting food scraps, to reduce the university's overall food waste to be in compliance with the New York State Food Donation and Food Recycling Law introduced in 2019, to be implemented January 1st, 2022.

The understanding of mental health by Latinx parents.
Psychology - Psychology - Graduate
Andrew Lorenzana

This participatory action research study is in support of a doctoral dissertation on researching the level of understanding that Lantinx parents have on the mental and social limitations of their children with mental illness. This study seeks to guide/validate the dissertation research focus by partnering with parents in order to develop meaningful and significant questions about their experience related to mental health and, collectively, determine what the answers might be. Potential areas to explore include Latinx parent knowledge of depression and anxiety. This presentation will address, in a preliminary/speculative way, what the responses could suggest about the dissertation and how it could benefit those who participated in this project.

Queen Guinevere: Adapting Literature to Music
Music - Undergraduate
Rebecca Lukachinski

There is a long history of adapting literary works for the stage, specifically for musical theatre. Composers and librettists have sought to adapt famous texts and stories, using music to further explore a character's emotional journey. Using music as a means of character development allows for audiences to more deeply understand and connect with a character. Music invites audiences into a character's mental and emotional journey.

This presentation will begin by looking at a brief history of Arthurian Legend, focusing on the character of Queen Guinevere and how different texts portray her. This presentation will look at selections from Thomas Malory's Le Morte d'Arthur and T.H. White's The Once and Future King as the literary grounding for a discussion of Queen Guinevere. Lerner and Loewe's staged musical Camelot offers audiences a multi-faceted lens through which to view this character. This presentation will include musical excerpts, recorded and performed live, from Lerner and Loewe's Camelot as an example of how this show presents the character of Queen Guinevere.

dish the dirt
Dance - Undergraduate
Kellsee Lynch

The choreographic film dish the dirt is an exploration of how the camera can be used to frame movement that would be impossible to recreate on stage. Instead of an archival video of a choreographic piece on stage, this film attempts to engage the audience using repetitive and abrupt visual editing techniques. Using repetition as a compositional technique, the film allows multiple viewings of images to underline important themes.

Research for dish the dirt began with MySecret: A PostSecret Book by Frank Warren. This book contains only pictures of postcards with anonymous secrets on the pages, mailed to Warren by over 50,000 people across the country. Both the images and words on these postcards guided the visuals and choreography presented in this film. The artist replicated Warren's process by creating a survey that allowed individuals to anonymously submit a secret. It was a humbling sense of power seeing people leave profound information. It was also fascinating to see the duration of time individuals spent on the survey. Most would spend less than a minute, but a handful spent five minutes on it and presented baseline personal information. What ended up being the most challenging during this creative process was incorporating structured movement into the video without forcing it upon the viewer. Although I consider this to still be a dance film, it ended up being a highly visual project. These visuals were influenced heavily by the collaborators and performers on the screen. They contributed to the process by offering the most effective camera angles and ideas for non-choreographic clips which added a refreshing interpretation to the artist's previous thoughts. They assisted greatly in investigating the question, "Why does this project have to be on film and not on stage?"

Resilence and Resonation are not Mutually Exclusive
Creative Writing - Graduate
Matthew Mackey

A poem about being different in an oppressive world full of judgement and the resiliency to still resonate your individual light. Although this poem speaks about my own individual experience, it allows the audience the ability to connect to their own individual experiences of oppression and on a global scale speaks to what it feels like to live openly in an oppressive world.
Dedicated to those whose light was dimmed far too early.

The Life, Death and After-Life of the Western Film: How a Genre Creates and Responds to National Culture and Politics
Communications - Undergraduate
Virginia Maloney

Genre films are incredibly powerful tools which borrow from and shed light on current events and politics, and, in turn, create cultural ideals and norms which can our very being. Since its development in 1903, how has the American Western film genre drawn from and influenced United States culture and politics?

This research aims to explore this question. The research begins with a discussion of what characteristics a film must have in order to be considered a Western and a condensed history of the genre, which will include the development of the genre, its boom period, and its collapse in the 1960s. There will be brief discussion of the "after-life" of the genre, or the reimagining of the genre post 1960s. In order to examine the Western, critically acclaimed Westerns, including but not limited to Stagecoach (1939) and The Searchers (1956) have been screened, and a number of articles on the history and analysis of Westerns have been read. Throughout this timeline there will be discussion of how current events influenced the genre; for example, how the events of World War II resulted in Westerns that were more nihilistic. This research also provides insight as to how the genre contributed to the culture and politics of the United States during its popularity. It seeks to discover, for example, ties between Western protagonists and United States presidencies and Western ideals with dominating political ideals.

Starting a Science Blog During a Pandemic
Interdisciplinary Studies - Undergraduate
Ravyn Malvino

The current Covid-19 pandemic plaguing the world is ever-changing as new information emerges daily. Aside from the impact of the virus on humanity, the environment is subsequently being affected. Climate change and health are directly related, therefore the relationship between a long-lasting pandemic like Covid-19 and environmental factors can be observed. My research project examines this relationship as the pandemic continues and eventually, hopefully, slows and concludes. In the future, I hope to pursue a career in science writing, communicating scientific knowledge to the public in a readable, easily understood manner. The Covid-19 pandemic has been discussed in the media causing conflicting, misunderstood information to circulate throughout society. Throughout my thesis research, I have constructed a blog (ravynmalvino.wordpress.com) to discuss the Covid-19 pandemic in correlation to society, addressing subjects like the environmental impact, the effect on extreme weather, and related social media use. While writing different blog posts, my advisor and I decided it would be appropriate to discuss additional relevant topics on the blog such as the potential for a COVID-19 vaccine and the impact of coronavirus on the Black Lives Matter movement. While the original intention of the blog was to answer the question regarding the impact of COVID-19 on the environment, we decided a better research question may be: "How does one start a blog during a pandemic?" We are looking at blogging as a form of communication, while also delving into the science behind Covid-19 and it's human impact. This time has been, and will continue to be, frightening and filled with unknowns. My goal is that through research, new information can be delivered to the public and reach an audience that may need clarification during a time of need.

The impact of social and political factors regarding self-disclosure of sexual orientation on Adelphi University undergraduate students
Social Work - Social Work - Alumni
Emma Martin

To fully support LGBTQ+ students on Adelphi's campus, it is imperative to understand the factors that lead to a student feeling safe enough to self disclose their sexual orientation or gender identity to the community. This qualitative research specifically evaluates the influence of social and political factors as contributors to whether a student feels comfortable enough to self-disclose their LGBTQ+ identity during their time at Adelphi. By interviewing four students that chose to come out while at Adelphi, the findings will discuss how the social and political atmosphere at Adelphi influenced the participants in their decision. By using thematic analysis, two meta-themes of social and political acceptance were uncovered and are the basis for further thematic analysis. Analyzing the college environment can be used to evaluate success and space for improvement based on recent student experiences. More broadly, this project aims to acquire a better understanding of what contributes to students coming out in college, especially given the influence of recent political and social tensions surrounding the LGBTQ+ community. By conducting interviews, gathering experiences, and providing an overview of the field, the research creates a platform both for LGBTQ+ students and the larger Adelphi community. This platform serves a dual function of providing LGBTQ+ students with a space to amplify their otherwise marginalized voices while participating in a larger social justice campaign, as well as allowing for a community-wide discussion of expanding LGBTQ+ representation and resources on campus.

Philosophy of the Body: A Philosophical Perspective on the Western Health Paradigm

Philosophy - Undergraduate
Maggie Matassa

The United States has had a shift in their medical practices this past decade. Moving from the strict western paradigm seen in the 20th century, 21st century medicine can now be seen incorporating eastern practices like meditation into treatments for ailments. Research has shown the efficacy of such a shift, but still fails to explain why these new practices work for the individual. The answer can be found in a historical look at philosophy, of all places: this 20th century western health model has arisen from traditional western philosophy. Descartes, the father of modern philosophy, has incidentally created a theory of the body that has become the foundation for our understanding of modern medicine in America. Philosophers such as Merleau-Ponty and Foucault have come along later to critique this Cartesian philosophy of the body, but old habits die hard. It is only with the influx of eastern Buddhist philosophy that the modern healthcare system in the Unites States has moved away from an inaccurate philosophy of the body, towards practices that are rooted in a holistic theory. This strong philosophical imprint on the western medical paradigm has played out in much of the cutting-edge research, with huge ramifications for specifically the field of physical therapy. Pushing this shift in medicine further with an awareness of the holisitc philosophy of the body can project better outcomes for every individual who requires healthcare in America.

The Remote Work Experiment: An Analysis of the Rise and Impact of the New Working Normal

Business - Human Resource Management - Undergraduate
Monica Mattei

At the beginning of 2020, COVID-19 caused a massive shift to remote work. As the pandemic changed seemingly all aspects of daily life, it also impacted how individuals worked, how employers managed, and how companies operated. Before the pandemic, remote work and other forms of alternative work were increasingly prevalent due to changing societal, economic, and technological trends. Many companies adopted variations of remote work policies due to the increases in productivity and flexibility while reducing costs. This paper will examine and review academic studies and recent journal articles to determine how remote work has been used before the pandemic and its resulting effectiveness. The pandemic changed the way people worked as millions of individuals in the United States quickly shifted to remote work. The paper will also discuss the extent to which remote work was used due to the pandemic. Over the last year, companies and individuals have gained valuable data that is and could possibly be used to develop a more permanent remote work policy. This paper will consider the outlook of remote work and whether it will be adopted as the new working normal. A new working model centered on remote work will have tremendous impacts on national and local economies as well as on all levels of business.
Keywords: Remote work, pandemic, COVID-19, new working normal

Not Sexy* *What is the opposite of sexy?
Dance - Undergraduate
Erin McElhone

The choreographic work, Not Sexy*, is inspired by both the concept of semantic satiation and the progression of cultural connotation of the word "sexy". This piece focuses on answering the question, when does a word or movement lose its true meaning. The concept of semantic satiation observes the transition of a word from serving a function and being understood to being simply aesthetic noise. To recreate this with movement I repeated the motion "circle flip." First in a way that registers with the audience and then throughout the piece it evolves into what would appear to have no correlation. However, in reality, it is the same motion of "circle flip."

*What is the opposite of sexy?

Biased Social Media and Secondary Education
Education - Education - Graduate
Deirdre McIntyre

Society has shifted towards social media as a continuous source of interaction, communication and knowledge acquisition. A year of pandemic uncertainty, civil unrest and virtual life has caused me to be concerned by the impact of biased social media. This research paper exposed the side effects of social media on impressionable youth. The informants in this study were comprised of three current secondary education students and six secondary education teachers. As news-related topics and current events spread more quickly as our technology advances, I found it imperative to research the implications of how overexposure of current event information ultimately impacts students in the Social Studies classroom. I found that students feel they have a voice politically online, whereas in the Social Studies classroom students feel their opinions will be met with heavy criticism by their peers. Signs of friendship strife is an additional side effect of social media. Social media is essentially an outlet for social acceptance.

Students need to be taught what biased social media and subjectivity is. Research shows this will help students become less influenced by the opinions of others. It is important to not only address biases in the media but to address biases within ourselves. Everyone has their own lived experiences which have contributed to their understanding of the world. These experiences shape personal bias which then shape the way an individual interprets certain information. If students engage in lessons that allow them to embody their life experiences while also taking on the roles of others to essentially "walk in someone else's shoes", students will hopefully experience less self-internalizing behaviors and open their mind to an alternative perspective. This begins in the Social Studies classroom and in personal belief, will enhance student understanding of the Social Studies curricula and create a better student-interest educational approach.

Inside the Minds of College Athletes
Nursing & Public Health - Public Health - Undergraduate
Giana McKeough, Madison Paccione, Lauren Haggerty

As collegiate athletes, sports are part of our identity and essentially shape who we are. Many student-athletes have suffered mentally due to the cancellation of sports seasons over the past year. Our presentation will focus on the mental health of student-athletes, specifically during the pandemic.

From the first date to the talk: Mindfulness moderates attachment-related difficulties in the early stages of romantic relationships
Psychology - Psychology - Graduate
Maxwell Mikelić

A vast body of research shows that attachment styles (mental models of relationships we develop from infancy) are associated with romantic outcomes (e.g. relationship satisfaction) in committed romantic relationships. Recent research suggests that attachment is also relevant within dating contexts. This research often uses a speed-dating paradigm and has found attachment insecurity to be predictive of poor outcomes. Could mindfulness, which has positive effects in settings including dating, attenuate the difficulties associated with insecurity? Mindfulness relates to the ability to be mentally present and aware of our thoughts and feelings. Mindfulness may aid relationship initiation in those who are insecurely attached through promoting adaptive emotion regulation, which we explore in the larger, preregistered project of which this presentation is one part.

Although ecologically valid, speed-dating paradigms are cost and labor-intensive. The purpose of this research was thus to develop a novel paradigm, the Emotion Regulation and Relationship Initiation (ERRI) paradigm, to evaluate three hypotheses in the context of relationship initiation: that trait attachment insecurity will be negatively associated with adaptive state outcomes; that trait mindfulness will be positively associated with adaptive state outcomes; and that mindfulness will moderate the association between trait attachment and state outcomes. The ERRI consists of four progressive relationship initiation vignettes designed to evoke uncertainty and activate the attachment system. Data were collected from a sample of psychology undergraduate students (N = 94) through an online survey. Results indicate that the ERRI may be a useful tool for measuring state attachment in the context of relationship initiation and that mindfulness may be an intervention target. This research aims to provide direction in overcoming attachment-related difficulties for the successful initiation of romantic relationships.

The Angolan Civil War:Great Power/Regional Powers/Ideological Rivalries
Political Science - Undergraduate
James Motamed

With the process of decolonization in Africa beginning after the Second World War, many newly independent nations in Africa immediately erupted into civil wars that drew in participation by outside actors. Bipolar conflict between the USSR and the US involved intervention in many proxy conflicts across the continent. Yet, after the Cold War ended, external involvement in Africa's civil wars continued. How do we understand the dynamics of continued internationalization of civil conflicts after the Cold War?

This paper examines the ethnic/domestic, regional and global dynamics in the Angolan Civil War from 1975-2002 and assesses those dynamics in light of broader literature on civil conflicts. This civil war is selected because it provides a robust and early example of internationalization of civil conflict as a proxy war during U.S.-Soviet competition that continued well after the end of the Cold War. The length of this conflict illustrates the changing dynamics of external involvement in civil conflicts. The Angolan Civil War involved competing groups that were not only divided by ideology but by ethnic background as well. The key research question is to understand why this particular peripheral conflict became a battleground for Cold War ideologies, and how the end of the Cold War influenced the nature of external involvement. The theories used in this case to analyze the internationalization of the Angolan civil war include the theories of conflict extension, interaction and human needs, and transformation. This paper explores the internationalization of the Angolan conflict during Cold War and post-Cold War eras by focusing on theories that highlight the roles of 1) domestic actors (governmental or non-governmental) and 2) external actors (regional African actors and global actors/powers) in each era. Did the nature of internationalization of the Angolan Civil war change in these two eras, or are the dynamics largely continuous?

Workaholism in College Undergraduates

Psychology - Psychology - Undergraduate

Samantha Napoli

College students remain an understudied population in workaholism research. However, workaholism, described as working obsessively and compulsively, has proved itself to be detrimental to mental and physical health in terms of burnout, stress, anxiety, depression and high blood pressure. Workaholism can also impact those around the workaholic, as workaholics have a tendency of being irritable and states of well-being can be transferred from one person to another via empathy. In the present study, undergraduate students from the ages of 18-25 are being recruited to participate in a survey that measures levels of workaholism, depression and anxiety, burnout, work-family/friend conflict, ratings pertaining to satisfaction, performance, workaholism, and intrinsic and extrinsic motivation (as it applies to academics, athletics, extracurricular activities and professional development). It is expected that students scoring higher for workaholism will also score higher for depression and anxiety, burnout, work-family/friend conflict, and extrinsic motivation, while rating their personal satisfaction and performance in the lower range.

Synthesis of Phenyl Pyrazoles for the Inhibition of UNH in Trichomonas Vaginalis

Chemistry - Undergraduate

Kevin Nelson, Carlos Ventura, Edina Saljanin

Trichomoniasis, one of the most common sexually transmitted diseases in the world, is caused by the parasitic protozoan Trichomonas vaginalis. Current treatments use 5-nitroimidazoles to damage DNA residues, but due to increasing resistance over time, there has been a need to find new methods. Another potential is by inhibiting the function of the parasite's nucleoside ribohydrolases, specifically the UNH, which is important for metabolizing uridine from host cells. Compounds from a fragment collection were tested for inhibition of UNH. Out of the many fragments, a phenyl pyrazole, 4-(1-methylpyrazol-4-yl)benzamide, was seen to have caused moderate inhibition. To increase inhibition at lower concentrations, compounds were synthesized with a change to the position and/or type of functional group on the phenyl ring of the aforementioned fragment by way of a Suzuki reaction. This reaction was done by combining an aryl bromide with an aryl boronic acid or ester using a palladium catalyst. Inhibition was observed at a lower concentration when a hydroxyl or nitrile group was placed on the 2-position of the phenyl ring. New compounds will be synthesized by replacing the aryl bromide used for synthesis, being the 4-bromo-1-methylpyrazole, and attempting reactions with 3-bromo-1-methylpyrazole or 5-bromo-1-methylpyrazole. Based on the aforementioned observations, those with functional groups on the 2-position of the phenyl ring are expected to show higher inhibition of UNH than others.

What Makes a Video Game a Roguelike?
Computer Science - Undergraduate
Eric Nelson

The video game Rogue was released for personal computers in 1980. It featured game mechanics that had not been widespread before its release, such as permadeath, where dying makes you restart from the beginning, and random environment generation, in which the levels are constructed differently every time you play. Years later, game designers started making games under the subgenre "roguelike" by implementing these features into games of different genres. What qualifications must a game meet to truly be considered a roguelike? Both scholars and practitioners of game design have submitted arguments regarding this question, and the most complete definition that has surfaced is the 2008 Berlin Interpretation, naming several video game attributes from Rouge with two degrees of impact on the subgenre. This interpretation lacks objectivity and quantification however, resulting in a flawed guideline with limitations for both scholars of video game culture and game designers. By analyzing assorted games widely considered to be roguelikes, as well as other games that prominently feature factors from the Berlin Interpretation, I produce scores for how closely a game truly represents the subgenre, and on this basis, propose adjustments to the Berlin Interpretation to increase its accuracy. These efforts aim to lend clarity to roguelike attributes that remain the most influential while still staying true to their original ancestor.

MyPantry - A Web-based Recipe Application
Computer Science - Undergraduate
Jonathan Ng

MyPantry is a web-based application that allows users to keep a virtual pantry and then find recipes based on how similar the ingredients in the recipe are to the ingredients in the user's pantry. While there are many recipe website and apps out there, what sets MyPantry apart is that it will store what ingredients you own and their expiration date. The users will be also able to find a recipe based on the percent similar ingredients in your virtual pantry and the recipe.

The User interface and page layouts will be the frontend of the project and will be created using html and css. The backend of the project will comprise of the database structures and will be created using SQL. Then I will be using PHP to connect the frontend and the backend of the project.

A Deeper Look At Minorities With Disabilities and Their Healthcare Experiences
Social Work - Social Work - Graduate
Nia Oden-McCann

The purpose of this paper is to analyze the Americans with Disabilities Act (ADA) by using statistics to understand the disparity minorities face during their healthcare experiences. The goal of this paper is to outline specific ways in which the Disability Integration Act of 2019 can fill the gaps of the ADA. A historical approach is used to understand how disability has been viewed over time. Then, current legislation is analyzed to see how health disparities, such as access to healthcare, can be reduced. Research is used to support the idea that risk selection should be eliminated to eradicate the possibility of people with disabilities being denied access to health insurance.

The Use of Electronic Tools and Evidence Based Practice in Managing Polycystic Ovarian Syndrome

Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Fendia Osirus

The use of technology can bring forth changes in the lives of people on that have beneficial outcomes. As technology continues to advance forward, its development will continue to make those impressions. These affects will pour out in the well-being of patient, improving the way providers diagnose and manage disorders and diseases. Polycystic ovarian syndrome (PCOS), a common endocrine disorder that effects women of child-bearing age and accompanies many traumatic symptoms, commonly gets misdiagnosed. The author discusses how incorporating technology, such as electronic diagnostic and monitoring tools and applications, as well as implementing evidence-based practice (EBP) in finding alternative management/treatment plans for patients with PCOS or those with a greater chance of possibly getting PCOS have a chance of being one step closer to improved well-being. While encouraging patient involvement in the plan of care to ensure adherence to management/treatment plan.

Electrochemical synthesis of WO3 modified with exfoliated g-C3N4 for visible light photocatalytic degradation of methyl orange dye
Chemistry - Undergraduate
Lauren Parrinello, Paul Venturi

Organic pollutants released from industrial activity are contaminants that pose various risks for humans and the environment. Photocatalysis is a potential method to remove such substances. This process uses solar light to excite electrons in semiconductors generating reactive intermediates to break down pollutants into less harmful compounds. Multiple semiconductors with properly aligned conduction and valence band edges can be combined to create hybrids, such as a Z-scheme system, with enhanced photocatalytic capabilities.

In this project, the photocatalytic ability of pure WO3, exfoliated g-C3N4 and a WO3/g-C3N4 system to degrade methyl orange (MO) dye in the visible light was investigated. WO3 was deposited electrochemically using a potentiostatic method, while exfoliated g-C3N4 was deposited by casting. All samples were characterized by reflectance spectroscopy to determine the bandgap. Photocatalytic measurements were taken in alternating 15- and 30-minute intervals under irradiation with either a 400 nm diode or visible light source. Analysis of the decrease in the absorbance peak of the dye over time allowed for the determination of the rate of degradation, assuming a first order kinetic process.

Pure WO3 was not an efficient visible light-driven photocatalyst, as little MO degradation was observed. The greatest degradation rate occurred for the pure g-C3N4 photocatalyst. The hybrid performed considerably better than WO3 alone, but unfortunately a significant improvement of the degradation process was not obtained. Since Z scheme systems are associated with high degradation rates, the Z scheme hybrid of WO3 and g-C3N4 was most likely not achieved. However, a hybrid composed of WO3 and g-C3N4 has great potential for the application to visible light photocatalysis and more work is necessary to optimize this system.

Inservice and Preservice Teachers' Opinion on Technology

Education - Education - Undergraduate

Oscar Penzzi

Today's classroom can include Smartboards, overhead projectors, laptops, desktops, educational websites, or tablets/iPads. Changing from notebook and pencil to iPad and stylus is not without skeptics who doubt its efficacy as a learning tool despite research that suggests otherwise (Baek, Jung, & Kim, 2006). Common barriers mentioned by teachers include discomfort, little flexibility in application choice, accessibility of technology within the school, personal beliefs, lack of support, experience/training, and equipment. Unanswered questions could help provide a better picture of how teachers view classroom technology. Previous research has primarily analyzed opinions of computers in the classroom, but less research looks at the mix of older and newer devices. Past research has also focused on Inservice teachers; there is a need to evaluate preservice teachers to see if educational facilities are more adequately informing them about technology. This study investigated the opinions of the perceived opportunities and obstacles of technology use spanning a range of technology and looking across years of experience. Participants included Inservice teachers teaching kindergarten through college and Preservice teachers enrolled in a teacher education program at Adelphi University. Results pointed to iPads/tablets as being rated the most distracting technology. iPads/tablets and computers were found to be significantly better at helping individual student learning compared to projectors. Overall, there were not many differences between Inservice and Preservice teachers pointing to the fact that both groups are accommodating well to the technological switch in classrooms

Physical Therapists' Perception of Mood During Therapy
Education - Exercise Science - Undergraduate
Jordan Pierre

It is well established that engaging in physical activity improves one's mood. During exercise, endorphins are released that improve feeling in both the body and mind. One factor that can interfere with the course of physical therapy for those that have had surgery or a major injury is the client's mood. Clients that have pain and disability can experience pain catastrophizing, depressed mood, and fear of movement which can interfere with the client's overall course of therapy. Physical therapists have a huge role in helping clients engage in physical activities and exercises which could have a positive influence on their client's mood. There has been extensive research on mood during treatment and physical activity, but limited information on how physical therapists interact with their patients to improve mood. Thus the purpose of the study is to investigate physical therapists' perceptions of how the prescribed exercises impact their patients' overall mood. It is important to understand this because as a therapist, you have to take into account the patient's mental state while they perform their therapy. If the patient feels more confident, they'll be more inclined to perform at one hundred percent effort. To investigate this problem, I am going to interview two physical Therapists who have extensive experience working with clients with major surgery. The interviews will be semi-structured. Transcripts will be analyzed using an inductive qualitative analysis which involves coding and sorting codes leading to themes. Trustworthiness measures include member checking and peer briefing.

Directing Self-Care Theatrically
Theatre Arts - Undergraduate
Matthew Pezzulich

How do we begin to comfort ourselves after a strenuous day--how was that altered during the pandemic? Often, the result is through distant, digital means, like podcasts and meditative apps. In directing the ten-minute play 'If, Can, Mayhap' by Aleshea Harris, I gathered twelve performers over Zoom to explore what this concept meant to them. Through having the cast individually record the text of the play orally and interpret the scene through physical movement, an edited product was made that explores how we act without an audience. I will be presenting the eight minute video of the scene, and discuss the rehearsal process and how the performance all came together through editing skills I have learned both through the Department of Theatre and independently. This scene was created for Region II of the Kennedy Center American College Theatre Festival's Stage Directors and Choreographers Directing Initiative for which it placed first, and I was encouraged by Associate Dean Maggie Lally to participate in this conference.

Business Deals and Coronavirus: The New Normal
Business - Finance - Undergraduate
Jenna Piller

Coronavirus has disrupted domestic and foreign means of conducting business. Through the new shift to a completely online work environment, many employers and employees have had to adjust to the ever-changing environment. Normal daily tasks may require a longer time to get accomplished, people may have other distractions throughout their houses, and the actual mental state of many has been completely altered. Since this pandemic is a situation unlike anyone has ever experienced, the best path to examine the way people react to the situation is through their own testimonials and data. A series of questionnaires have been created and distributed to three Long Island based companies throughout the months of November 2020 and January 2021. These questionnaires have been utilized to grasp how administration and employees have adjusted to the newly remote business world. A total of 70 participants have taken place in answering questions regarding their experience working remote, rating their performance, and feelings toward a return to normal office life. Other factors have also been explored since they have been effected by the pandemic such as the history of the hand-shake and how that is now impacted and a discussion on the market as it adjusts to lockdowns, restrictions, and then loosened constraints. Results of the questionnaires confirmed that the level of work produced while remaining remote has drastically decreased as there is a lack of work ethic when there is no presence of an administrative figure. Overall the key to creating a successful work environment is to place all individuals back in their workplace, when it is safe to do so, to avoid miscommunications, attain greater efficiency and effort, and to boost morale of all in order to attain the goals of each corporation.

Memorabilia
Studio Art – Alumni
Mariah Plakas

Life is too short to be thinking about death, but I'm going to do it anyway. I dread that one day I will develop dementia. After losing my grandfather to the disease, I started recording my own memories through my artwork. The act of making puts my irrational fears on pause, despite the fact that they actively ward off nothing. These intrusive thoughts get transformed into digitized objects that are drawn in Procreate on the iPad, which become the spokesperson for my memories. The subject of my drawings are mass produced items near the center of each page, surrounded by a solid colored background. The gridded format of the works presents the objects as they are in their purest forms. The simplicity and graphic qualities of each piece is to not tie the memory down to one place or another. It is also to keep the memory isolated, and the lonely feeling of remembering something that someone else has forgotten.

"Memorabilia" originally started as an art challenge on my Instagram to get me to draw every day. One rule that I set for my artwork is that the works should end up as purchasable, mass produced goods. It's meant to be viewed as a postcard on your desk, a wallpaper saved on your phone, or that sticker you bought for your laptop. It's about taking this trivial mass produced object, that is standing in for a memory, home with you and physically holding onto it in your life. I am interested in how memories overlap in culture through objects and serve to unite us and to make us more empathetic of each other. I hope my works communicate that these are my memories, but they also are relatable to others in different ways. There can be permanence in temporary moments. My art is a statement about living by communicating shared experiences through the representation of objects that have meant something to you.

A Walk Through Memories
Studio Art - Alumni
Gabriela Ramos

The reason for the work I make is to remember the past. I have always had this fear of forgetting since I was young and that forgetting the past is to lose part of my current self. The goal of the artwork is to sometimes have the viewer to remember and acknowledge what happened in the past. Other times the goal is to show that our experience as individuals can have similarities to others. The materials I use to create my sculptures change depending on the the object and the memories. My process usually entails creating a sculptural objects based on real world objects such as doll boxes, towers and chocolate boxes. So that they are approachable and people are more inclined to interact with each piece.

 Through my artwork I am exploring memories from my childhood and the emotional attachment I have towards them. From this I am attempting to recognize and acknowledge my childhood. From my work I would want viewers to recognize, acknowledge their own childhoods. I would also want viewers to see even though their experiences are unique that others may have experienced something similar but have a different emotional attachment.

Accounting for Ethics in the Business World
Business - Accounting/Management - Undergraduate
Christopher Ricca

This presentation, following my honors thesis, will serve as an informatory project in regards to the current ethical environment of the accounting profession and how it got there. This will involve a briefing on major accounting scandals, the laws and bodies that formed as a result, and an analysis of how accounting education was impacted. In addition, it will provide speculation into what is flawed about the current model of ethical instruction as well as some suggestions for improvement. In order to expand on these ideas, various ideas from psychology and core ethical philosophies will also be cited in order to identify what ethics means from the standpoint of an accountant and how best to ensure that future accountants are given the most effective education possible regarding the dangers of fraud and malpractice, as well as the benefits of holding to a strict code of ethics. The paper will discuss the ethical responsibilities of instructors towards their students and how the current accounting curriculum may not be serving students as well as it could. Lastly, ethics in the workplace will be discussed, including how to better morale and increase ethical practice in the workplace as well as how to understand the triangle of fraud and Maslow's hierarchy of needs to root out the causes of fraud and eliminate them.

Brooklyn Chamber of Commerce Internship Experience through Adelphi´s Jaggar Community Fellowship Program

Innovation Center – Undergraduate

Maria Rivadeneira, Ann Gbollie, Nick Troiano, Jaskirat Singh Arneja, Manuela Fusaro

During our summer internship, we worked with the Brooklyn Chamber of Commerce, which has a long history of being a protector and promoter of Brooklyn´s business interests, as well as continuously evolving to offer new opportunities and services.

Therefore, our project was directed toward the Chamber´s membership growth objectives in its new platform *The Brooklyn App*, to do market research about what are the best practices for small business associations, and create a report regarding the COVID-19 impact on its members.

Our team followed a detailed process of doing an internal analysis of the Chamber and the app itself, learning its general goals.

Later, we developed a survey, which was distributed electronically and via phone calls, to understand the impact, challenges, and needs of members due to COVID-19, learning how the Chamber could help, and if members were aware of the existence of the app and the benefits it offered.

This survey process was critical in obtaining most of the information needed for the project.

Additionally, our market research consisted of understanding what other Chambers of Commerce were doing for its members, so the Brooklyn Chamber of Commerce could have a broader perspective of how to approach the current situation for its members.

Finally, after analyzing the results of the survey, we were able to create a general COVID-19 report for the Chamber and provide feedback and recommendations about the Brooklyn App.

In the end, our goal was to offer the Chamber essential information about its members, so it can be used for future assistance, address their needs accordingly, and help the Chamber to meet its goals.

What Substrate Conditions Cause Anguilla rostrata to use Concertina Locomotion Over Lateral Undulation?
Biology - Undergraduate
Julianna Rivenburgh

As a result of the body structure, environment, and speed, elongate fishes maneuver in a variety of ways. Two forms of terrestrial locomotion that anguilliform fishes exhibit include lateral undulation and concertina locomotion. In order to determine in which terrestrial conditions Anguilla rostrata will exhibit one form of locomotion over the other, three substrates were used to film the motivity exhibited by the Anguilla rostrata: sand, fixed rock, and loose rock. Each substrate was either placed at a 0 degree angle or a 5 degree angle. Anguilla rostrata do exhibit different modes of locomotion to travel across different types of substrate. Our preliminary results indicate that Anguilla rostrata use concertina locomotion over lateral undulation when they cannot generate enough support for the entire body on a terrestrial substrate.

Troubadours: The Poet Composers and their contributions to lyric poetry of Medieval 12th Century France
Music - Undergraduate
Victoria Romano

The lyric performances of the troubadours of the 12th and 13th centuries in France were important because they continued the tradition of music created in courts and through patrons who sponsored these artists. These troubadours composed many types of songs of which love songs were a central theme (Burkholder et al 75). In this presentation, I will highlight the lives and works of Adam de la Halle (1237-1288), Bernart de Ventadorn (ca.1130-1200), and Comtessa de Dia (1140-1175). A live performance of Comtessa de Dia's "A chanter" will provide a demonstration of one of these love songs.

Analysis of Pulsed Chirped Optical Sidebands: Limits on Pulsing in Injection Locking
Physics - Undergraduate
Paul Russell, Brenden Silva, Olivia Chierhio, Thomas Grilic, Mara Klebonas, Tracy Paltoo

We have developed a novel RF-system for generating 1 GHz per 6 ns at large detunings (> 6 GHz). The circuit used in the experiment is still developmental, takes up significant space, is brittle, and uses a host of secondary lab equipment such as power supplies. We will discuss our progress toward constructing a production level circuit that can be automated, controlled from a single board computer, and is built at the chip level.

Internal Symmetries in Musical 12-Tone Rows
Mathematics - Undergraduate
Viren Sachdev

The twelve-tone technique is a method of music composition from the Serialist school of Western music. This technique ensures that all twelve notes of the Western chromatic scale are given equal precedence by establishing a fixed permutation or "row" of notes that determines the structure of the composition. This technique has helped Serialist composers to produce novel atonal pieces and has also generated interest among mathematicians for the rigid and repetitive structures it engenders. In 2003, Hunter and von Hippel used group theory to enumerate equivalence classes of 12-tone rows under a group of music-theoretic symmetries. They found that highly symmetric rows constitute just 0.13% of row classes, yet these rows arise in 10% of actual compositions. Focusing on the twelve-tone compositions of Schoenberg, Webern, and Berg, we show that well half of these compositions contain unusually high levels of symmetry. We first introduce a flexible standard for quantifying the incidence of short repetitions and symmetries in tone rows. This standard generalizes the notion of symmetry in the literature, uncovering many themes and motifs that were undetected in the analysis of Hunter and von Hippel. Using the theory of lattices and partially ordered sets, we then study the set of symmetry classes under several standard gradings. We find that the portion of highly symmetric compositions in each composer's corpus is stable under choice of grading, and that this portion ranges from 48% (Berg) to 95% (Webern). Lastly, we use statistical methods to confirm that the Serialist composers Schoenberg, Webern, and Berg displayed a significant preference for symmetry in their work.

hbu?
Dance - Undergraduate
Madelyn Sarver

"The emotion of beauty is always obscured by the appearance of the object. Therefore, the object must be eliminated from the picture."
-Piet Mondrian

This choreographic work, "hbu?", is inspired by the De Stijl Art Movement, Cubism, and Piet Mondrian's work in Post World War I Europe. Examining "Composition with Large Red Plane, Yellow, Black, Gray, and Blue" by Mondrian, this proposal represents a choreographic approach to the psychology of perceiving art. Using a dance film developed for this purpose, the research studies the question: can certain shapes, gestures, and textures in movement evoke varied emotional responses from individuals coming from diverse backgrounds?

The perception of art is by its nature subjective; furthermore, its importance is appreciated by contextualization and interpretation. In this investigation, the focus is on removing the "object" from the picture to explore how it visually affects a segment of movement. Using multiple camera angles while filming choreography embodies the subjective nature of the human experience. Recent research into film strategies for choreography has guided methods for a work originally conceived for the stage. Disparate responses will be revealed in a brief post-performance question and answer session with the presenter.

Interest Groups in the Political Process: A Case Study Analysis of the Anti-Defamation League's work in Public Policy

Political Science - Undergraduate

Sarah Shin

Interest groups and civil rights organizations are the voices of the people and the bridge between the public and Congress. They seek to advocate for the public's interests and concerns through influencing Congress. This paper will focus on how exactly interest groups accomplish these goals of guiding legislation, shaping the congressional agenda, or raising the public's awareness of key issues. Additionally, this paper will demonstrate the role organizations play in acting as an influencer to both the government and the public. The Anti-Defamation League, a non-profit organization committed to fighting against hate, will be used as a specific case study to analyze how organizations interact with the public and Congress. Two particular bills that the Anti-Defamation League (ADL) has worked on will also be examined in order to observe the steps that ADL carried out to influence these two bills. The two bills that will be analyzed are the Never Again Education Act (H.R. 943), a bill that expands upon the current Holocaust education program, and the Voting Rights Advancement Act (S. 561/ H.R. 4), a bill that creates new standards to identify which states must obtain clearance before changing their voting laws. The purpose of this study is to further demonstrate the guiding forces interest groups play in altering legislation and acting as a line of communication between the public and the government.

From Disease to Domination: How the Black Death Revolutionized the European Economy
History - Undergraduate
Sabeen Siddiqui

My research is on the Black Death's effects on the European economy, particularly the relationship between the crisis and the emergence of capitalism in the region. The 16th century is generally considered the era in which capitalism was firmly established in Europe, but there is a case to be made for the 14th century because of the devastating impact of the bubonic plague. I was inspired by the Brenner Debate and its use of Malthusianism to examine how capitalist practices may have emerged even earlier in western society than previously thought. If the Black Death is understood as a positive check on population, that means that underlying structures and population pressures that persisted beforehand exacerbated the impact of the pandemic. In my presentation, I explore the role of these preexisting conditions and how the Bubonic Plague interacted within them to not only destabilize society to an extent—but perhaps strengthen more subtle forces of change that created a new world from the chaos. Although the disease itself could not be responsible for sweeping economic and social developments, the depopulation it caused had deteriorated traditional feudal institutions and allowed gradually developing changes from before to capitalize on that. Changing relationships between certain groups (such as the nobility and the peasantry, and urban cities and pastoral regions) reflect how individuals' evolving understanding of themselves inspired them to make lasting changes in the world around them. Even in the throes of the Coronavirus, we can examine how certain changes, particularly in the workplace, are rooted in trends that have been gradually emerging for some years now. Not only will this provide some economic insight into what jobs might be available in the future, but what our role is in creating the society that emerges from this crisis.

Relationship Talk and Well-Being during Emerging Adulthood: Relationship Happiness as a Moderator

Psychology - Psychology - Graduate
Christine So

Research indicates that discussing one's relationship with one's partner benefits relational and individual well-being. Implications of relationship talk with friends remain less clear, though uncertainty about the relationship may stem from friends who make up individuals' wider social network. In this study, we explore whether relationship talk with one's partner and friends are each uniquely associated with depressive symptoms and uncertainty about the relationship, specifically in the form of perceived partner jealousy. We further examine whether these associations are moderated by relationship happiness. A series of path models using data from 202 romantically involved emerging adults in the U.S. revealed that associations between relationship talk and well-being were moderated by relationship happiness.

Keywords: social networks, communication style, relationship maintenance
Broader Impact Statement

This research expands our understanding of relationship talk and its outcomes to include the role of individuals' wider social networks and shows how social and relationship contexts can change the outcomes of relationship talk among emerging adults. Findings provide a nuanced understanding of the individual and relational implications of relationship talk patterns, which were dependent upon relationship happiness.

The Effectiveness of Equine Facilitated Therapy for Children Diagnosed with Autism Spectrum Disorder
Education - Exercise Science - Undergraduate
Sarah Sohn

This project explores the effectiveness of Equine Facilitated Therapy for children with autism, particularly Hippotherapy and Therapeutic Riding. Research has been completed and a thorough literature review has been done, examining the results of these treatments for individuals who are diagnosed with autism spectrum disorder. A review of the websites of various Equine Therapy facilities located throughout the country was conducted. Additionally, interviews were done with a number of occupational and physical therapists who personally provide Hippotherapy to children with autism on a weekly basis. While physical implications are important for this population, emotional and social effects of such treatments were examined as well. The overall goal of this thesis is to determine whether this is an effective modality for those with autism.

Population-level growth pattern variation in the theropod dinosaur Allosaurus
Biology - Graduate
Riley Sombathy

Most paleontological studies of terrestrial vertebrates lack a sufficient sample size to study population-level variation in life-history traits. A notable exception is the well-known predatory dinosaur Allosaurus, which is known from hundreds of specimens found across the western USA and Portugal dating to the Late Jurassic Period. Growth curve reconstruction for Allosaurus based on long bone paleohistology has revealed two distinct growth patterns within the genus: fast-growing and slow-growing types that are reconstructed to reach a four-fold difference in asymptotic body mass. However, all histologically sampled individuals come from a single quarry, the Cleveland-Lloyd Dinosaur Quarry, and only a few exemplars of the slow-growing, small type exist. I have developed five hypotheses to explain the presence of the two growth types: (H1) the two seemingly distinct 'types' are representative of a larger continuum of growth patterns, representing developmental plasticity within the genus; (H2) the two types represent sexual dimorphism within the genus; (H3) the two types represent hidden taxonomic variation, with the presence of an unrecognized dwarf species; (H4) the two types represent geographic differences in the population; (H5) the two types represent a stratigraphic difference between the two types, implying the gradual evolution from one form into the other. My sample currently includes both novel and published specimens, resulting in a total sample size nearly triple that of the previous sample while also increasing the number of sampled localities 10-fold. My findings refute H4 and H5 because two localities contain both the fast-growing and slow-growing types. Further histological analyses will be used to evaluate support for or against the remaining hypotheses.

Impacts of cross-fostering on Octodon degu mothers
Biology - Undergraduate
Ilana Stukal

Parent-child separation may occur for a variety of reasons, and studies in both animals and humans have shown that this separation can have serious and long-lasting impacts on offspring health. Fewer studies, however, have examined the effects of parent-child separation on parents. Octodon degus are a great study system for examining effects of maternal separation because they are plural breeders that naturally provide care for other group member's offspring. We used a cross-fostering paradigm to determine whether maternal behaviors are impacted by cross-fostering at different development time points (2-, 8-, of 14-days after birth) for postnatal days 1-20. In general, rates of maternal care behavior did not significantly differ between control and cross-fostered groups. This suggests that degus would be an excellent model for parent child separation studies, as total rates of maternal care are similar between biological and foster mothers.

Converting a Chirality Experiment to be Inquiry-Based and Virtual
Chemistry - Undergraduate
Samantha Tannenbaum

For Organic Chemistry, it is important to take its laboratory counterpart, with the purpose of the experiments being to reinforce concepts taught in lecture while learning new techniques. One laboratory activity at Adelphi University that incorporated new techniques was the chirality experiment, which focused on distinguishing between enantiomer and different molecules. The techniques discussed in this experiment were Infrared Spectroscopy (IR), Gas Chromatography (GC), 13 Carbon Nuclear Resonance (13C NMR), and polarimetry. The carvone experiment was rewritten twice, with the first being to create a customized experiment that was inquiry based. In published experiments, the directions are not catered to the university's specific equipment, potentially resulting in the students wasting time figuring out how to use the equipment versus learning the required material, leading to the inclusion of customised directions for the instruments in the experiment. Additionally, guided-inquiry questions were added throughout the experiment. The second revision of the experiment was due to COVID-19 and moving some experiments online, with one of them being the chirality experiment. As a result, the entire experiment needed to be converted to be virtual while continuing to teach the students the required material. This was done by filming myself completing the experiment from a student's point of view with the addition of photos of the equipment. Virtual pre-laboratory activities were created, including a worksheet on how to analyze 13C NMR spectra. Another procedure that was added was "extending your understanding" in which students were implementing what they learned and extending it further. Pre- and post-laboratory surveys were sent to all students to ask about their confidence on collecting and interpreting the data as well as their ability to answer content-based questions. The results of the surveys from both versions will be discussed.

The Role of Nurse Practitioner in Palliative Care: A Literature Review
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Grace Tesoriero

Palliative care (PC) delivers care to patients with advanced health conditions, focusing on the best quality of life and effective management of symptoms. The influx of the aging population with chronic and life-limiting co-morbidities resulted in the increasing demand for competent healthcare providers in PC. This literature review aimed to explore NP's role in addressing the demand for PC in providing effective and efficient disease management and promoting quality of life and patient satisfaction.

Multiple electronic databases were searched using keywords and subject: Nurse practitioners, palliative care, palliative medicine, end-of-life, and palliative symptom management. Inclusion criteria are studies that examined either the perspectives of patients and providers on NP roles in PC or PC outcomes delivered by NPs. This review included eleven research studies that reported the role functions of NPs in PC and the outcomes of care. The reported NP roles in PC include symptom management, patient and family education and counseling, coordination of care, and maintaining continuity of care. NPs also functions as a patient health advocate, leader, and scholar.

Most studies found PC provided by NPs is on par with that provided by physicians. Several studies showed an increase in patient satisfaction when NPs were integrated with palliative services. Patients receiving palliative care often perceive NPs as reliable, helpful, trustworthy, and empathetic providers. Increasing studies have demonstrated that NPs are uniquely suited and well-equipped in delivering comprehensive and patient-centered palliative care in various healthcare settings. Removal of barriers to NP practice and increasing the quality of their PC education/training can help address the increasing demand for PC and improve patient healthcare outcomes.

Study on the Surge of Covid-19 in USA using Data Visualization
Business - Global Business Management - Graduate
Quang Dao Tran, Huu Lam Nguyen, Rengalakshmi Balasubramanian

The COVID-19 pandemic is claimed to be the worst cataclysmic event leading to mammoth loss of life and consequential impairment to the global economy, stability, and security. As per center of disease control (CDC) data, a total of 27.2 million COVID 19 cases were recorded on 9th Feb. Total death of COVID 19 cases was claimed to be 468,088. In this project, we aim to create a data visualization dashboard that captures the trend in total death, confirmed cases, confirmed death, probable cases, probable death, recovered and total test of PCR and antibody test variables in the U.S. We have obtained the real-time data from "COVID 19 Tracking Project" website. In our work, ETL (Extraction, Transformation and Loading) process is performed for data preparation. The web scraping method is applied during the data extraction stage. In the subsequent transformation stage, data is preprocessed, and the final set of variables for the study are extracted. In the next step, the processed data is loaded on the data visualization software, Tableau. We have developed a data visualization dashboard that is capable of capturing trends in the total cases, new cases and deaths throughout the nation over time. Further, based on demographic location analysis, the most affected states are identified. Finally, time series forecasting is applied on the data to predict the surge of COVID 19 in subsequent months.

"Which Witch is Which? A Study of Witch Trials Comparing an Italian to an American Example"
History - Undergraduate
Tina Tudisco

Many are aware of the witch trials that took place in Salem, Massachusetts from 1692-1693. Since the day that the trials ended, historians have looked to decipher exactly what caused them. Many theories have been proposed, however, it is the conclusion of this thesis paper that there is no one true answer to the question of "Why" the trials occurred. Rather, it is the culmination of all the theories that historians have proposed in tandem that lead to a historical understanding of the trials. A lesser-known witch trial that took place in Triora, Italy from 1587-1589 has been described as "The Salem of Europe." This example of a witch trial captured many of the same elements that occurred in Salem and therefore, the questions that this thesis project aims to address are as follows: "What happened leading up to and during the Salem Witch Trials that made Salem different from other examples of witch trials in human history?," "What happened in Triora, Italy, that lead to its distinction as the 'Salem of Europe'?," and "What are the similarities and differences between the contexts as well as the events of the Salem and Triora witch trials?" From a broader perspective, the object of inquiry here is human nature. What drives people to start accusing their neighbors of witchcraft when they are fully aware of the consequences? Are the events at Salem and Triora indicative of differences among cultures or do they exemplify commonalities among different cultures that can be attributed to overall human nature? The "object of inquiry" is connected to establishing the "motive" for this thesis project. The motive for researching this topic is to write a comparative history of events—using the methodology of consulting the works of historians and writing in "Question, Thesis, Motive" format—examining the extremes of human nature incorporating many factors that affect human life such as culture, religion, politics, socioeconomics, and gender.

Trichomonas vaginalis cell culture methods for testing antiparasitic activity of novel compounds

Chemistry - Undergraduate

Carlos Ventura, Maria Chimarios

Trichomonas vaginalis is a protozoan parasite that causes trichomoniasis, a sexually transmitted disease which may lead to harmful complications. Although the drug metronidazole can be used to treat most infections, the prevalence of strains resistant to this drug is increasing. Our long-term goal is to identify nucleoside ribohydrolase inhibitors with potent antitrichomonal activity as a possible new treatment. In this study, T. vaginalis was successfully cultured anaerobically at 37℃. Media composed of buffer salts, maltose, tryptose, yeast extract, horse serum, iron solution, and antibacterial agents was formulated to mimic the host environment following established protocols. The parasites were initially grown from a cryopreserved sample of the metronidazole-sensitive strain 50167 obtained from the ATCC. Following the establishment of robust cell cultures, a series of previously synthesized compounds were tested to determine if they can inhibit the growth of T. vaginalis. Cell viability after 24 hours of treatment was measured using hemocytometer counting, with 0.2% trypan blue used to distinguish viable and non-viable cells. Compounds are prepared as 25 mM DMSO stock solutions and tested initially at 100 uM (0.04% final DMSO concentration). Compounds with activity are then tested in a dose-dependent manner between 100 uM and 160 nM in triplicate, with dose response curves and IC50 values determined using GraphPad Prism. DMSO and metronidazole are used as negative and positive controls, respectively. Once cultures were established, T. vaginalis cells were successfully frozen in liquid nitrogen in order for cultures to be reestablished as needed. The different life stages of T. vaginalis are also being studied and analysed in order to understand growth patterns and potential cytotoxic effects of tested compounds.

Electrochemical Synthesis of Tungsten Trioxide and Optimization of Photocatalytic Ability Through Creation of Hybrids with Gold Nanoparticles
Chemistry - Undergraduate
Paul Venturi, Lauren Parrinello

Tungsten Trioxide (WO3) is a versatile and environmentally friendly compound that can break down harmful pollutants in water through the use of radicals created by photo-excited electrons. With a bandgap of approximately 2.4 eV-2.8 eV, WO3 is mainly photoactive in the UV-spectrum range, a minor component of sunlight [1]. The goal of this research was to develop a WO3 hybrid highly photoactive in the visible range of the solar spectrum.

Pure WO3 was deposited electrochemically on a Fluorine-doped Tin Oxide (FTO) glass. The FTO/WO3 deposit was then characterized electrochemically by several methods: Open Circuit Potential, Chronoamperometry and Cyclic Voltammetry under dark and illumination. These tests confirmed its weak photoactivity in the visible light. The bandgap (2.69 eV) of FTO/WO3 was determined based on its' reflectance spectra and compared to the literature value [1]. In addition, Scanning Electron Microscopy (SEM) was used to analyze the surface morphology of the sample with Energy-dispersive X-ray Spectroscopy (EDS) for elemental analysis. The photocatalytic ability of FTO/WO3 was tested by performing in its presence the photodegradation of a model compound, methyl orange, when exposed to visible light or light of three different wavelengths: 365 nm, 400 nm, and 523 nm. The UV spectra of the dye recorded during the photocatalysis supported that WO3 was insufficiently photoactive in the visible light. To improve the WO3's photocatalytic ability, gold nanoparticles (Au NP) were deposited on FTO/WO3 surface by UV irradiation. The hybrid was not successful in decreasing the bandgap (2.62 eV), however it showed an increase in photocatalytic ability of dye degradation. Thus, successful hybrids with Au nanoparticles were created, however, more tests are necessary to prove their reliability.

Exploring and Communicating the Severity of Coral Reef Changes in the Philippines Using Remote Sensing and Widely Available Resources
Environmental Studies - Undergraduate
Gabriela Vidad

Coral reefs are foundational ecosystems that become highly stressed by occurrences such as destructive fishing practices or climate change. In the Philippines, coral reefs protect the islands from storms, while also providing food security and eco-tourism, helping to boost the economy. Understanding the socioeconomic causes of destructive fishing practices is essential to finding a way to communicate and end man-made coral reef destruction. This research explores the development of visual cues and quantification through mapping and classification as a method of communicating the severity of coral reef destruction. Mapping coral reefs is challenging, but recent satellite data contains high enough resolution to perform the task using remote sensing. We use Sentinel-2 satellite data and the ESA's Sentinel Application Platform (SNAP) to develop maps of coral reef changes in the Philippines within a two year span using the Sen2Coral software plugin. Supervised classification within SNAP is used to quantify percent changes in coral cover. We identify a possible shift in the coral-algae ecosystem state of Boracay as a response to the popular tourist destination being closed to visitors in 2018. Changes in coral cover are also seen off the coast of Jomalig Island in Quezon. With the use of freely available data and software, others can follow the steps of this research to analyze and communicate coral health in their own area.

Investigating the dynamics of race-related attitudes towards Black and Asian Americans across 2020

Psychology - Psychology - Graduate
Yuanmeng Wang

2020 was an extraordinarily turbulent year in the U.S. with the arrival of the COVID-19 pandemic, the many resulting societal upheavals, and a politically charged election, among many other factors. In this setting of extreme societal instability, there are many signs that certain racial attitudes in the U.S. may be shifting. On the one hand, the emergence of widespread support for the Black Lives Matter (BLM) movement suggests that attitudes towards Black Americans may have become more positive. On the other hand, increased anti-Asian harassment, xenophobia, and anti-Asian rhetoric indicate that attitudes towards Asian-Americans may have become more negative. To investigate this we used data from the COVID-Dynamic longitudinal study (http://coviddynamic.caltech.edu), which aims to catalog the personal experiences and dynamic psychological changes of a large cohort of Americans in the time of COVID-19. 1418 participants (50.7 % female, median age = 35.5, age range = 18-82) across the United States completed a battery of psychological measures, surveys, and experimental tasks across the period of interest (April 4th to June 27th). Implicit and Explicit attitudes towards Black, White, and Asian social groups were assessed using explicit race feeling thermometer scales (i.e. how favorable do you feel towards this group?) and scores from the Brief Implicit Association Test. To assess the impact of COVID-19 on anti-Asian attitudes we examined COVID case counts and a study-specific survey on fears related to catching COVID-19 (COVID-fear). We predict that 1) pro-Black attitudes increased following the start of the BLM protests, 2) that anti-Asian attitudes increased over time in relation to the pandemic, and 3) that there are positive relationships between anti-Asian attitudes and COVID case counts and COVID-fears. These findings will provide crucial insight into the influence of the extreme events of 2020 on racial attitudes in the U.S. and may inform future policy.

Through Children's Eyes: Investigating Children's Responses to COVID 19
Psychology - Psychology - Undergraduate
Sydney Ward

My goal is to examine how children ages 6 to 10 interpret the COVID-19 pandemic, specifically by analyzing two samples of artwork related to life before and during the pandemic, followed by a brief questionnaire for the child and for the parent/guardian. Drawings will be examined and researchers will analyze the drawings for content, presence of human figures, lines, textures, colors, etc. These aspects of the drawings will give researchers a snapshot into how children are interpreting the pandemic. This study will be useful in understanding how children interpret life-changing events like the pandemic and get useful insight into how children and families have been affected by these changes psychologically.

Adapting a Mindful Parenting Intervention to Meet the Needs of Low SES Parents of African American and Latina Descent
Psychology - Psychology - Graduate
Lily Warner

Increased stress correlates with authoritarian parenting styles that predict poorer mental health outcomes among children. Mindful parenting interventions are shown to decrease parenting stress, increase mindful parenting, improve parent-child relationships, and improve mental health outcomes among children. However, there is still a dearth of research regarding mindful parenting interventions for ethnic minority groups from low socioeconomic status (SES) backgrounds, populations that are at greatest risk of experiencing chronic stress.

Research is needed to explore what types of adaptations would best meet the needs of low SES ethnic minority parents. One focus group, comprised of 6 low SES ethnic minority parents who are seeking psychotherapy services for themselves or child at a mental health clinic in East Harlem will self-select to participate in the study. Co-researchers will meet for one hour in a focus group facilitated by the primary investigator over zoom. The primary investigator will guide the co-researchers in two brief mindfulness exercises (3 minutes each) and ask open-ended questions to facilitate group discussion. The focus group discussion will be recorded, transcribed, and coded for salient themes. This study will use action research methods to gain information about a) perceptions of mindfulness b) experiences with meditation c) barriers to practicing mindful parenting d) recommendations for outside of class mindfulness practices, and d) recommendations for tailoring a mindful parenting intervention in a low-income primarily Latina and African American sample.

The Exploration of Critical Race Theory to Examine Racial Disparities in School Disciplinary Outcomes
Psychology - Psychology - Graduate
Melissa Williams

This participatory action research study is in support of a doctoral dissertation focusing on the exploration of critical race theory to conduct a critical policy analysis of the Juvenile Justice Delinquency Prevention Act- Racial and Ethnic Disparity policy. This critical race theory policy analysis involves capturing an in-depth understanding of current legislation, its strengths, weaknesses, and recommendations of models for change. This review aims to analyze how the Juvenile Justice Delinquency Prevention Act-Racial and Ethnic Disparity policy addresses critical race theory tenets and the correlations between race, education, and policy. This study seeks to guide/validate the dissertation research focus by partnering with teachers to develop meaningful and significant questions about their experience related to race-based discipline disparities in schools and collectively determine the answers. Six people were contacted to be collaborators on this, and six have agreed to do so. A potential area of exploration includes an investigation of proposed solutions used to address race-based discipline disparities in schools. In a preliminary/speculative way, this presentation will address what the responses could suggest about the dissertation and how it could benefit those who participated in this project.

Black Adolescents Perspectives on Colorism
Psychology - Psychology - Graduate
Christopher Wong Jr.

This participatory action research study is in support of a doctoral dissertation on Black adolescent male's perceptions on colorism. Colorism is a part of systemic racism because it is defined as people of the same race discriminating against each other due to the complexion of their skin. Colorism has been around for many generations and has impacted how black people view themselves as some may discriminate against one another while straying away from the African diaspora. Research has shown that colorism is common amongst black women, however, there is lack of research on how colorism affects black men, especially adolescents. In addition, stereotypes/biases are often influenced by colorist beliefs and its being portrayed within Black communities, media, and within education. These stereotypes/biases associate behaviors to specific skin tone. For example, within Eurocentric beliefs, those who have lighter skin were perceived to be better than those with darker skin because their complexion is closest to white skin. These areas can be seen as being influential in the upbringing of black boys in America.

In addition, this action research study will focus on whether or not Black adolescents within the 21st century experience colorism and how does it shape their identity as well as how they may see themselves. This is a qualitative study that seeks to guide/validate the dissertation research focus by partnering with students and faculty at Valley Stream North High School. Working with my target population (Black adolescents) will help develop meaningful and significant data about their experience related to learning about colorism as they share about their own experiences as well. Also, I would like to explore if learning about colorism has changed how they see themselves or their identity. I had contacted my supervisor at my practicum site at Valley Stream North High School and I had obtained approval to conduct this research.

COVID-19 Information trust, Situation Awareness and Adoption of Health Protective Behaviors in China and U.S

Psychology - Psychology - Graduate
Jiadong Yu

This online survey study evaluated the influence of information sources on the willingness to adopt COVID 19 health-protective behaviors among Chinese and American participants. Structural equation model analyses showed that trust in formal information was more strongly associated with a greater understanding of COVID-19 and social distancing, whereas trust in informal information was strongly associated with worry and face-mask use. Trust in formal information was also associated with less perceived susceptibility and less social distancing.

Applying Animated Films in Diabetes Education
Nursing & Public Health - Informatics - Graduate
Chaoyi Zhang-Hsi

I. Introduction
This paper is to explore the utilization of animation films in educating Chinese American older adults with Type II Diabetes (T2D) who attend primary care clinics, applying culturally and linguistically appropriate content.

II. Significance
Current patient education in the primary care settings is delivered mainly in textual or verbal information, which presents a challenge to Chinese American older adult patients, majority of whom have low health literacy.

III. Pros and Cons
Animated films have advantages over conventional approaches that can reduce language barriers, easy to comprehend, and produce better memory retention. Challenges in digital delivery of interventions include facilitating technology use in those with disabilities, low digital literacy, low socioeconomic status and minority groups, and algorithm use to identify qualitative and trustworthy videos.

IV. Role of the Adult Geriatric Nurse Practitioner (NP)
NPs could design interactive educational interventions for elder Chinese American patients in the primary care clinics by using animation film making tools such as Animaker, Moovly or Powtoon to create new educational materials or modify existing animated films to meet the needs of cultural, language and literacy needs of elderly Chinese Americans. The outcome of the educational project can be monitored by collecting data from the survey, return demonstration, and observing hemoglobin A1C level during follow up visits.

V. Conclusions & Recommendations
It is essential to develop cost-effective and innovative approaches to improving health outcomes through culturally and linguistically-mediated animated educational films. Healthcare insurance organizations should work closely with healthcare providers in establishing a reimbursement system for electronic interventions in Diabetes Self-Management Education.

Poster Presentations

(in alphabetical order)

Extending cultural humility beyond an integrated care model between social workers and primary care physicians
Social Work - Social Work - Graduate
Julissa Adames-Torres

Empirical studies in healthcare and behavioral sciences continue to explore the continuous phenomenon that contributes to health disparities and health outcomes in marginalized groups (Beach et al., 2005; Conn et al., 2014; Hansen & Cabassa, 2012; Ruiz & Praetorius, 2016). Various studies explore the relationship between social determinants of health and its impact on health outcomes. Medical training curricula, among other health and social science efforts, have underscored the importance of the provider-patient relationship in efforts to support and train physicians and the communities they serve. Research supports the need for increased cultural humility and awareness as it relates to patient health outcomes. While social workers' roles continue to emerge in the medical field, variations of such can impact the collaboration among interdisciplinary teams.

Relevant studies underscore the need for physician cultural humility and increased awareness of cultural relevance as it may relate to patient health outcomes and medication adherence (Beach et al., 2005; Conn et al., 2014). Studies in the Latino community, such as Ruiz and Praetorius (2016) and Hansen and Cabassa (2012) reference the importance of patient-provider relationship in efforts to understand the mutual relationship, effective communication, medication and treatment adherence for diabetes and depression management. Additional studies propose cultural humility and cultural reflection training across disciplines (Danso, 2017; Rosen et al., 2017). This conceptual presentation aims to highlight methods of collaboration to enhance cultural humility across the social work and medical profession and the patient-provider relationship. Findings reveal significant impact on medical training, patient-provider relationship, development of evidence-based practice interventions, implications within the social work field, program development and evaluation (Conn et al., 2014; Danso, 2017; Hansen & Cabassa, 2012).

Inquiring Panthers: Student Projects from Practicum in Experimental Psychology (398-004) SPRING 2021

Psychology - Psychology - Undergraduate
Surieln Adrienne, Victoria Arias

Practicum in Experimental Psychology is one of the Psychology department's capstone courses for its majors. Applying their prior knowledge of psychological theories, research methods and statistics, students design and conduct their own research study or conduct secondary analyses of existing datasets to address their research questions. The on-going research projects of students enrolled in Section 004 of the capstone class in spring 2021 are presented in this poster. Research studies span a variety of areas in psychology including human development, communication, education, personality, social relations, cognitions and perceptions and health and well-being and students will describe the steps they have taken to design and implement their studies.

Physical Therapists Perceptions of Rotator Cuff Surgeries and the Treatment Logistics
Education - Exercise Science - Undergraduate
Rachel Alayev

Rotator cuff surgery is a common procedure performed by orthopedic surgeons. The rotator cuff involves a group of muscles and tendons that surround the shoulder joint and firmly keep the head of the humerus in the shoulder socket. Injuries are common especially for individuals who continuously perform overhead motions, such as painters, carpenters, or baseball players. Surgery involves reattaching a torn tendon to the head of the humerus. One issue is that these surgeries can be problematic, often creating an immense feeling of pain, large amounts of rehabilitation, and require additional surgeries. After the operation, a physical therapist is in charge of treatment and pain management for the patient. It is imperative that physical therapists are educated on these issues, how to deal with them and work with the client to resolve them. Although there has been a lot of research on rotator cuff surgeries and the issues associated with them, there is a lack of research on how physical therapists relate to the patients and deal with the recurring therapy post-operation. Thus, the purpose of this study is to investigate physical therapists' perceptions of rotator cuff surgeries and the logistics in treatment needed to properly handle the patients, since they are the ones helping to aid the patient's physical and mental health. If the therapists are not aware of the specific problems involved with this surgery, they may cause more harm than good. To investigate this problem, I will interview 3 physical therapists that commonly deal with patients who have had rotator cuff surgeries. The interviews will be semi-structured. The interview guide is structured into three sections: an introduction, the body, and closing questions. The interview transcripts will be analyzed using constant comparison, where I will code and sort the codes to develop themes. Trustworthiness procedures will include sharing the transcripts with the physical therapists.

How parental trust in the school affects student trust in the school community and belonging.
Psychology - Psychology - Graduate
Simone Allen

This participatory action research study is in support of a doctoral dissertation which examines how parental trust in the school affects student trust in the school community and belonging. According to previous research, a strong predictor of student success is a collaborative partnership between home and school. Parents who are highly involved in their child's education are regarded as caring and want the best for their child. On the other hand, parents who are not actively involved in their child's education are viewed in a negative way. For many families, establishing a strong basis of trust is crucial to involvement or lack thereof. Parent trust in the school can shape or affect a student's trust in the schools, their view of school personnel, compliance with school rules, where they fit into the student body, and any perceived concerns of loyalty to their parents.

This study seeks to guide/validate the dissertation research focus by partnering with students in order to develop meaningful and significant questions through a survey about their school and home experiences. Specifically, we are interested in 1) their feelings of involvement and trust in their school community and 2) their perceptions of their parents' trust in the school. Ten middle school students from a school in Brooklyn were contacted to be collaborators to participate in this process. Potential areas to explore include: students' perception of parental involvement, diversity, level of trust in the school community, and culture. This presentation will address, in a preliminary/speculative way, what the responses could suggest about the dissertation goals and how it could benefit those who participated in this project.

The Role of Technology in Preventing Prescription Drug Abuse
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Tamieka Allison

Introduction
Prescription drug abuse is one of the leading causes of death in the United States. The utilization of existing and developing technologies are explored along with ways to improve these technologies and reduce the number of prescription related overdoses. Technologies discussed include: prescription drug monitoring programs (PDMPs), the prescription monitoring information exchange (PMIX), and pharmacy benefit managers (PBM).

Background
Many abusers go from doctor-to-doctor. Although different states have developed PDMPs; they have proven to be insufficient due to inadequate and ineffective data collection and utilization. The illicit use of prescription drugs not only affects physical health but it affects social, financial and economic security.

Use of Technology in Prescribing Medications
a. Benefits: Databases can be developed to track and control prescribing and dispensing of frequently abused drugs. A national database can allow providers to see a full prescription history of their patients without state restrictions
b.
    b. Disadvantages: One of the most serious concerns of sharing patient information is HIPAA violations. More extensive sharing of information will most likely require legislation that may take years to become law.

Role of the NP
The nurse practitioner should be required to learn different approaches to pain management. We must also focus on what other underlying causes may be leading our patients to use prescriptions illicitly. In our practice we must remember that opioids are not the only drugs being misused and must be diligent in our prescriptive practices and following up with our patients.

Conclusion
There should be continued development of technologies with less interstate restrictions. The government may need to incentivize the use of prescription drug monitoring programs within healthcare organizations. There should be a collaborative effort to ensure the platforms are user friendly with easily accessible training.

Differentiating Glacial Tills of North Central Iowa
Environmental Studies - Undergraduate
Kelly Andreuzzi

The region of North America that includes Iowa has a complex geologic history due to the area experiencing multiple glacial periods during the Pleistocene epoch (2.58 Ma – 11.7 ka). In many locations, more recent glacial advances buried or erased evidence of previous advances. While mapping and data collection has occurred in Iowa for decades, the geologic history of the state is still not fully understood. This study aims to differentiate glacial sediments deposited by multiple glacial advances using a 1 – 2 mm sand fraction analysis method. For this investigation, the lithologic properties of 42 glacial till samples collected from north-central Iowa were examined. Till samples were passed through mesh sieves to collect the 1 – 2 mm sand fraction. The sand grains were stained for easier identification, and a random sample of 150 - 200 grains were selected for counting. Each grain was identified and tabulated into one of the following groups; sedimentary grains (carbonates or shale), quartz/feldspar, metamorphic/igneous, or other. Statistical analyses are performed to determine whether significant differences in lithology exist between glacial till units. The lithologic properties of the various tills can also provide information about the source and direction of the ice that deposited them. The results of this study will contribute to a more accurate understanding of the glacial history of Iowa and North America.

Fly-ing at 500 MHz: Model of Eukaryotic Toxicity Assay
Biochemistry - Undergraduate
Jonathan Aronov, Nandy Brijlal

Trichomoniasis is a disease caused by Trichomonas vaginalis, a parasite that infects the female and male reproductive tracts. Current treatments for trichomoniasis are 5-nitroimidazole drugs that target the hydrogenosomes of the trophozoite. Unfortunately, T. vaginalis strains have emerged that are resistant to the drugs. We are thus exploring possible new targets for the development of novel therapeutic agents that can eliminate the parasite. Potential target enzymes include the ribohydrolases required by the parasite for survival. By inhibiting the uridine nucleoside ribohydrolase (UNH) and adenosine/guanosine nucleoside ribohydrolase (AGNH) enzymes within the parasite, it can prevent it from scavenging essential nucleosides in host cells, ultimately leading to its death. In order to explore possible adverse effects of inhibitors on eukaryotic cells, Drosophila melanogaster is being used as a model system. Flies were grown with and without the presence of UNH/AGNH inhibitors and the NMR spectra of their extracted metabolites was observed. The identification of key signals in the flies was required to have an accurate assessment of their NMR spectra; multiple solutions of common fly metabolites, such as certain amino acids, glucose, maltose, and NADH, were made and compared to the spectra of flies to assign which peaks they corresponded to. Subsequently, the spectra of flies treated with inhibitory compounds are being analyzed and compared to control flies to establish the effects of the inhibitors and the overall compound safety in eukaryotes. Each group of flies are treated with one of four inhibitory compounds (AU-22, AU-23, AU-27, and AU-14) and are separated by sex, resulting in eight total groups of data whose NMR spectra are being compared to control flies for potential metabolic variations and effects.

Data Analysis Software Tools: A Deeper Look via Gap Analysis

Computer & Managemnt Information Systems - Undergraduate
Kasone Bailey, Mingyue Wang, Jonathan Bernadel

As system analysts and IT professionals, data analytics--the science of analyzing raw data to make a conclusion based on the information given--is essential for the completion and assessment of many information technology-related tasks. To fully understand and explore the depths of such a science, techniques and skills meant to conduct such analyses have been automated into mechanical processes and algorithms. Various kinds of data analytics software exist to serve a number of purposes while retaining their unique blueprints of functionality, and because of the enormity of the field, a simple selection could cause confusion and possible regret in terms of personal execution. Knowing this, how could we possibly figure out which software or tool is best to utilize no matter what situation arises? The purpose of this project is to assess popular data analysis software programs using the five steps of gap analysis to identify strengths and weaknesses of four hand-picked data analysis programs: four handpicked programs: SAS, MicroStrategy, Qlik Sense, and IBM Cognos Analytics. Our analysis identifies characteristics of an ideal data analysis software solution and we propose potential improvements to improve the effectiveness of these programs for business productivity.

Impact of Total Quality Management on the Business Workforce

Business - Management - Undergraduate
Sarah Baksh

People constantly wonder "What is the secret key in developing and maintaining a multi-million dollar company?", and "How do these companies rise to the top, constantly increasing their net worth by the second?" Companies like Amazon or Tesla, which are known on a worldwide scale, have risen to the top by successfully improving their efforts to win over customers' satisfaction. The process of adjusting your business to maximize long-term success is known as Total Quality Management, or TQM for short. This practice is used throughout all organizational functions, even in non-business areas, like design and engineering. TQM is based on the belief that a company can accomplish long-term financial success by utilizing all of its workers; from "low-level workers to its highest ranking executives" (Pratt, 2019). Without TQM, companies would lack the structure to re-establish core values in order to keep up with the constantly changing times. Overall, the main goal of implementing TQM in the workforce is to increase customer satisfaction which will, in turn, maximize long-term profits and gains. The presence of TQM in a company is unarguably the most crucial framework for the business industry.

Pick-A-Flick

Computer Science - Undergraduate
Sehajbir Bal, Shadman Syed

We present the Pick-a-Flic app, a software solution designed to increase interaction between people based on their preferences in movies. Our app combines aspects of social movie products such as Netflix Party and dating apps such as Tinder to allow people to connect and communicate based on their love of films rather than on physical appearances. Users will log in to their account and submit movie preferences, to populated suggested movies. Users can swipe left or right on suggested movies until a match is found and the matched users can communicate using the app to coordinate watching the film together.

The app uses a customized graphical user interface created with JavaScript and HTML. The app communicated with a database of movies via PHP. Users will be able to send messages to one another through our app to further their connection based on matched movies, allowing matched users to set up a watch party and offering channels of communications based on common interests.

Phylogenetic analysis of components of the cytokinin signaling pathway in algae
Biology - Undergraduate
Ramya Banda

Cytokinin is a type of hormone found in streptophyta (land plants) that has a wide range of functions in plant growth, development, and physiology. Although the function and signaling of cytokinin is known in modern land plants, the mechanism of how cytokinin functions in algae is not very well understood. By observing the evolution of cytokinin and the role it plays in a variety of algae species, researchers may have a better understanding of the mechanism of cytokinin signaling. The cytokinin signaling pathway consists of four different protein domains: receptors, RRA, RRB, and HPT (histidine phosphotransfer proteins). In model organisms, these domains have greatly studied and have been identified by an amino acid sequence. This research project focuses on obtaining these four domain sequences from a model organism, such as Physcomitrella patens, and identifying similar proteins in algae species. Physcomitrella patens is a type of land plant that will be used as a model plant in this experiment. The cytokinin signaling pathway in Physcomitrella patens has been studied in the past and the sequences for these protein domains are known. The results will help map out the evolution of cytokinin in algae. Phylogenetic trees will show a visual representation of the protein development of the cytokinin signaling pathway from algae to land plants.

Ancestral Reconstruction of Blaberoidea (cockroaches) Hindwings
Biology - Graduate
Elyane Barros De Pina

The ability to fly allows animals to disperse across physical barriers (Dudley et al. 2011) and it's a popular belief that insects evolved wings and the ability to fly only once (Ross et al. 2017). Not all insects have wings, and the fact that some have wings doesn't necessarily mean that they can fly. In fact, studies have shown that some insects have actually lost their ability to fly (Whiting et al. 2003). But why is it important and why should scientists be interested in this issue? Since flight enables dispersal across physical barriers their ability to spread across boundaries is highly influenced by whether or not they have functional wings, reduced wings, or no wings at all. This can affect their speciation rate through altering gene flow (Ikeda et al. 2012). Blaberoidea (light cockroaches) contain approximately half of the species and are distributed worldwide (Djarnaes et al. 2020), and in spite of its diversity, it's still considerably understudied. Therefore, this project's focused on studying the evolutionary history of light cockroaches, more specifically and their wings. This study has the sub-objective to reconstruct the evolutionary history of cockroaches based on characteristics of the apical field, including how it folds, the present/absence of veins in the appendiculate field, the size of the apical triangle (intercalated triangle), and the extent to which the veins extend. This study includes the largest sampling of Blaberoidea (considering both taxon and genetic data) to date. Leveraging this phylogeny will allow robust ancestral state inference. The potential sampling includes 12 outgroup Blattodea species and 102 ingroup Blaberoidea. Morphological data will be collected de novo from three sources: (i) illustrations and photos of cockroach wings from published literature, (ii) databased images of cockroach wings, and (iii) curated specimens in the "Roach Brain Lab" insect collection and (American Museum of Natural History) AMNH.

Moneyball - How Youth Sports are Being Hurt by the Dollar
Business - Finance - Undergraduate
Marcello Bellia

Sports have long been a pivotal part of the American childhood experience. However, as time has gone on, the structure on which youth athletics were built has changed. Local neighborhood teams have shifted into complex, pricey travel teams. Large companies have focused their attention towards profiting off these young athletes. Middle and lower class children have become priced out of playing with their upper class peers. Sports have become less about their enjoyment, and more about winning a scholarship from some university years down the road. In short, money has altered the way children experience athletics. Interviews were conducted with coaches, parents, and former youth commissioners, along with a deep dive into scholarly articles which provided the data to assist in breaking down the current youth sports system. This research painted a picture of an industry that is questionable in its true intentions. Going forward, what can be done to stop this change in youth sports that is hurting athletes and parents alike, and how can we return to a time when kids played to have fun?

"Finding Peace Within"
Studio Art - Undergraduate
Tamar Bernstein

Analyzing the dichotomy of my childhood and emotional pain thrusts my work into motion. People deal with pain in different ways, and throughout my life, I have noticed many wear a mask to get through the day. Creating monotypes releases my own anxiety, while inviting the viewer into my life. I love to play on the idea that nobody is perfect, because we are only human, and not a machine.

I treat my monotypes as a performance. Working in a series is important for me to keep my thinking linear in order to reach my desired product. I work on a large scale to allow for full range of motion. While I can work fast and free as an outlet to release some of the pain I feel, I love the moments where I have a smaller plate by my side to slow me down. That plate is used to swatch my colors, patterns, and textures that different materials can make. I fully embrace all types of texture, and color when concerning my paper or paint that I use. A large scale also allows me to embrace rips, tears, and imperfections in my prints because they deliver the message to my audience.

I watched people come and go, survive, commit suicide, and overdose because of the hold their addiction has over them. I create monotypes to expose the viewer to what is under the mask. The monotypes become about the fact that I am only human, and I too, have struggled, yet I allow myself to be vulnerable for all to see.

Physical Fitness Tradeoffs of Tenebrio Molitor Larvae Reared on a Polystyrene Diet
Biology - Graduate

Matthew Cal, Keith McManus

Polystyrene (PS) is the synthetic polymer constituent of Styrofoam plastic packaging products. Resulting from foam PS's low density and the logistical challenges during material separation, it is not viewed as an economically viable material for investments into curbside recycling programs. Consequently, a mere 0.9% of the total PS generated in 2018 in the United States was recycled, making it the second least recycled plastic behind polypropylene. In recent years, the larvae of the darkling beetle Tenebrio molitor ("mealworms") has been shown to be able to survive on a sole diet of Styrofoam. The ability of mealworm larvae to depolymerize and mineralize PS into metabolic end products with minimal biomass assimilation is due to a unique bacterium that comprise their gastrointestinal microbiome. This study investigates the fitness tradeoffs of Tenebrio molitor larvae reared on a PS diet. We assigned 200 T. molitor larvae randomly to four treatments (wheat bran (control), PS, PS + wheat bran and starvation (negative control)). We assessed survivorship and growth biweekly over a two-month period and subjected all larvae to leveled-surface locomotion assays at treatment days 22 and 24 to assess diet effects on physical condition. We hypothesize that T. molitor larvae fed on a sole PS diet will not incur a decrease in overall fitness as compared to the control, although may experience minor developmental hindrances. Furthermore, we hypothesize that T. molitor larvae reared on co-diet treatment of PS + wheat bran will outperform sole PS treatment group in locomotion assays. We suggest that if mealworm larvae on Styrofoam diets do not attain significant fitness burdens, they have imminent potential to be cultivated in mass quantity for the commercial biodegradation of polystyrene plastics.
Keywords: Styrofoam, polystyrene, biodegradation, physical fitness, locomotion

Characterizing Arsenic Resistance Genes in Pseudomonas B0623, Comamonas B0669 and Ralstonia B0665
Biology - Graduate
Alina Campbell

Arsenic (As) is a metalloid toxic to living organisms including humans, with the inorganic forms including arsenites being the most toxic. Many bacteria utilize the ars operon to mediate As resistance. Recently, a plasmid from Pseudomonas strain B0623, was found to carry the metal resistance gene arsB. In this project, polymerase chain reaction (PCR) was used to detect the ars genes arsB and arsC within the bacterial strains B0623; B0669; and B0665; which are strains that are already known to have metal resistance. Here, ars genes from these three bacterial strains were amplified using PCR, with the goal of comparing them with those of other organisms known to demonstrate resistance. Five primer sets chosen from the literature were used to acquire a PCR product. PCR products from all three different strains B0623, B0665 and B0669 were sequenced and products revealed homology to genes inPseudomonas and Escherichia organisms. With a better understanding of these amplicons, a comprehensive perspective on the relationship of As resistance genes to other organisms can be achieved. The relationships among these sequences will provide insight into their evolution and their possible acquisition by horizontal gene transfer (HGT). Since bacterial strains have been found to carry resistance genes that protect their cells against heavy metals, bioremediation has become a vital tool in pollution management. Therefore additional research is fundamental in further characterizing As resistance genes in these strains.

The One who Yeets
Computer Science - Undergraduate
Michael Caramico, Bryan Coene, Emily Gallagher

Our project is a video game being developed for the PC titled, "The One who Yeets". The player plays as a master swordsman who has perfected his craft through many years of training, practice, and battle experience. One day, the swordsman angers a wizard who then curses the swordsman to lose all fine control of his arms as an act of revenge. Now, with arms as stiff as boards and a limited range of movement, the swordsman must defeat the wizard and have him remove the curse from his body.

The core mechanics of the game stem directly from the plotline. The player will be limited to only moving around, picking up, and throwing objects. These core mechanics will be used in order to interact with the game's world and its inhabitants, whether it's through solving environmental puzzles or defeating enemies that get in your way. The player will need to think outside the box in order to overcome these obstacles with their current limitations. Through simplifying the game's mechanics, we provide the player with a game that is easy to understand and accessible to a wider audience. Puzzles and obstacles are given depth through specially crafted and intricate level design that ensures even this simple game can pose a challenge.

This game will run on the Defold game engine and programmed using Defold's custom LUA API. It will also use a simple art style reminiscent of newspaper comics in order to add an element of uniqueness and charm.

Synthesis and Characterization of CdSe and CdS Films on Platinum and their hybrids with PANI
Chemistry - Undergraduate
Vincent Carucci

The world is currently in need of new energy sources that are renewable and clean. The Sun is an energy source that can be used, and its energy can be converted to electrical energy through the use of certain semiconductors. CdSe and CdS are prime examples of n-type semiconductors that are used in this project. These semiconductors easily undergo a process of photo-corrosion and therefore a polymer layer is applied to serve as a protection against photo-corrosion. The polymer polyaniline (PANI) plays a protective role in two ways: (1) as a mechanical protection layer and (2) by forming p-n junction in the hybrid with n-CdS or n-CdSe.

In this project the deposition of CdSe, CdS and PANI layers happened through the use of electrochemical cycling. The deposited films were characterized by series of electrochemical techniques performed under illumination with a Xenon lamp. These studies include OCP (open-circuit potential) and chronoamperometry (I/t). The purpose of OCP is to measure the change in the semiconductor film's potential under dark and light conditions. Whereas the I/t measurement will provide the information about the potential at which maximum photocurrent can be drawn from the studied system. The goal oof this project is to optimize the deposition of CdSe and CdS and their hybrids with PANI in order to determine the configuration with the best photoactivity. These tests have revealed the effectiveness and long-term stability of these semiconductors and their hybrids. The initial data collected determined the longevity of the films created in order to see if they are considered effective to be used in solar cell. Preliminary results show that PANI does in fact act as mechanical protection layering and forms this p-n junction with n-type semiconductors.

Pink, Blue, and Yellow
Studio Art - Undergraduate
Samantha Castillo

My abstract art is a geometric abstraction painting. I mainly use triangles but I use other types of shapes as well. To make my shapes I take a pencil and a ruler and I draw it out before I start painting. This is the most important step because if I don't draw it out then I could easily lose the shapes and ruin the whole painting. For this painting I used oil paint and the colors pink, blue, and yellow. I titled my work with the colors I used to keep people's minds open to different interpretations. The most interesting part of my painting is the canvas. I took four canvas panels in the size 12 x 16 and I placed them together to create one large canvas. Together the painting size is 24 x 32. Using more than one canvas hasn't been done very often. My work is expressive and uncommon.

Tobacco Pack Design & Smoking Perception in Adolescents
Nursing & Public Health - Psychiatric Mental Health - Graduate
Jerrin Chacko, Andrew Stock, Arisa Nimnuan

Background: Many tobacco companies target adolescents with ad campaigns and other marketing strategies. This is a cause for concern, as adolescents are more easily influenced by such methods, as they do not perceive harms associated with tobacco use in the same way as older adults. Objectives: To explore the effects of tobacco pack design on smoking perception amongst adolescents.
Methods/Procedures: Database searches were conducted to locate relevant journal articles that addressed pack design and smoking perception in adolescents. To optimize the quantity and quality of search results, four databases (EBSCOhost, CINAHL, Proquest Central, and PubMed) were utilized and various search strategies were employed.

Findings: Differences in pack design, along with several covariates, were influential in terms of perception. Plain packaging on tobacco products was perceived to be less appealing than branded packaging, with the combined use of graphic health warnings and plain packaging appearing to increase adolescent awareness on the dangers of tobacco use. Branded packaging was associated with perceptions such as greater "appeal" and "taste". The utilization of graphic health warnings on tobacco products heightened feelings of fear, anxiety, and guilt.

Outcomes: Despite these findings however, pack design did not seem to influence preferences pertaining to pack selection. The combined use of graphic health warnings and plain packaging on tobacco products, appeared to have the greatest impact on mitigating smoking appeal amongst adolescents.

Conclusions: Plain packaging can reduce the allure of smoking and may potentially serve to reduce cigarette use, alter attitudes, and influence intentions to quit. Further research into the most effective warnings to utilize in combination with plain packaging is needed to ensure the greatest reduction in tobacco use and prevent tobacco-attributable morbidity and mortality in this vulnerable population.

Development of Hypervalent Iodine Reactions Toward the Synthesis of Spirolactams
Chemistry - Undergraduate
Azka Chaudhry

Trichomonas vaginalis, a protozoan parasite, causes one of the most common non-viral sexually transmitted infections, Trichomoniasis. Due to the parasite's incapability of de novo synthesis of purine and pyrimidine nucleoside bases, the parasite relies on nucleoside hydrolases for survival. The parasite uses uridine nucleoside ribohydrolase, UNH, to acquire pyrimidines from the host. Current treatments for Trichomoniasis include metronidazole and tinidazole antibiotics, which are ineffective due to increased antibiotic resistance. Enzymes required for Trichomonas vaginalis reproduction reveal a high inhibition by molecules containing the central structure of spirolactams. Employment of hypervalent iodine allows for the formation of the core spirolactam structure in the treatment of T. vaginalis. In the research discussed herein, hypervalent iodine is being used for a dearomatization reaction to synthesize spirolactams to be used for UNH inhibition.

Gender Roles and Self-Esteem
Psychology - Psychology - Undergraduate
Christina Chodkowski

Do traditional gender role beliefs decrease the self-esteem reported by collegiate women? Past research explicitly assessing gender roles and self-esteem has conflicting results. A study containing female college women used two explicit measures that measured the participants' masculinity or femininity and their attitudes towards the gender roles of women. The results showed that participants who believed in the traditional gender role reported lower self-esteem than participants with more masculine traits and a modern gender role belief (Kleinplatz et al. 1992). Other research has suggested that gender roles do not have an effect on the self-esteem of women. A study containing both male and female participants, who worked at the same health care facility, found that the gender role stress each individual faced at work had no significant effect on self-esteem (Kargin et al., 2020; Akın, 2017; Kurucu, 2019). The literature pertaining to the effect gender role beliefs have on women's self-esteem is therefore not conclusive. Literature that implicitly, as compared to explicitly assesses a women's gender role beliefs and self-esteem may be able to clarify the relationship between gender role and self-esteem. Past research that implicitly assessed women's gender role beliefs and self-esteem did not contrast it with explicit findings (Aidman & Carroll, 2003). I hypothesize that implicit traditional gender role beliefs will decrease participant's implicit self-esteem when compared to explicit gender role beliefs. Undergraduate women will complea web survey assessing implicit and explicit gender role beliefs and self-esteem. Correlation and regression analyses will be used to examine the results. Implications for the implicit effect on self-esteem will be discussed.

Qualitative Research on Relationships between Division II players and coaches
Education - Physical Education - Undergraduate
Christina Chodkowski

In the United States, we value our sports and competition. Athletes make sure they train to be in the best shape possible to compete at a high level. In addition, coaches make sure they are preparing their players to be in the best position to succeed on the field or court. Developing a relationship between players and coaches can help with recruitment, playing style, communication, and closeness. Recent quantitative studies have explored the relationship between coaches and players (i.e. Jang & Jowett, 2010). While much has been learned through quantitative research on the relationship between coaches and players, little research has been conducted from a qualitative perspective, allowing for athletes and coaches voices to be heard. The purpose of my research project is to explore relationships between coaches and players quantitatively on the Division II level. Jowett's work suggests that closeness is the most important aspect in building a relationship between coaches and players over commitment and complementary behaviors. Guided by previous work in this area, my research will include interviewing four players and two coaches at Adelphi University about how important the relationship is and what is the most important aspect of building that relationship. Data will be analyzed through deductive reasoning. Similar to Jowett, I believe results will show that on the Division II level the most important aspect of a player and coach relationship is having good character and establishing a bond on and off the court.

Quantifying Depression-Related Variation in Social Learning and Decision-Making

Psychology - Psychology - Graduate

Sarah Coburn

Depression affects 264 million people globally every year, costing the U.S. alone $210 billion each year, according to the World Health Organization. While previous studies have investigated the social factors that contribute to depression, relatively few have examined the impact of depression on our ability to learn about other people (i.e., social learning and decision-making; SLDM). Individuals with depression have been shown to have reduced social reward processing and may also have impairments in trust and cooperation. However, previous studies of SLDM in depression have involved participants directly interacting with a partner to potentially earn a reward, which confounds learning about the partner (social learning) with learning about rewards. To isolate both social learning and reward learning, we compared both first-person and third-person SLDM (which dissociates reward learning from SLDM) with non-social learning. Participants learned about various partners while playing the Trustworthiness Trait Learning Game. In two within-participant conditions, participants either played directly with partners or observed other players interacting with a third-party while playing a neuroeconomics game in which players could gain or lose money by trusting one another. In a computationally-matched non-social control condition, participants learned about the probabilities of winning various lotteries either through direct interaction or observation. We predict that first-person (personally invested) social learning will be impaired relative to third-person (observational) social learning to the extent that reflects the magnitude of participants' depressive symptomatology. To determine which specific components of the learning process are responsible for any impairment, we will employ model-based analysis techniques. This research aims to better characterize social impairments in depression with the hope of better understanding its nature and informing future treatment.

Text & Share – A Real-time Collaborative Online Text Editor
Computer Science - Undergraduate
Frankie Colasurdo, Henry Posada

Introduction

Text & Share is a web-based text editor with the ability to edit and create text with other users online in real-time. Any modifications to the editor will be updated simultaneously for all connected clients, creating a real-time collaborative environment.
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The Gap

Most web-based synchronized editing services such as Google Docs and Google Sheets focus on plain text and spreadsheets. Text & Share tries to fulfill the need for collaboratively modifying not just text, but computer code. The target audience of this project are those in the fields of computer science and information technology.

Existing applications excel at general text editing functionality, but once we reach that, we intend to separate ourselves from these projects by adding a code syntax checker.
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Methods

The project is based on Python and its libraries such as Tkinker for the Graphical User Interface (GUI). The real-time communication involves Conflict-Free Replicated Data Types (CRDTs), a data structure that can be replicated across multiple clients where each client gets updated concurrently, and/or WebRTC, an open-source framework that provides web browsers with real-time communication via APIs.
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Summary

At its base, our project will be a comprehensive text editor, with our central goal to implement real-time collaboration functionality within this text editor. Upon fully actualizing our real-time editor, we plan on including syntax checking so that users can perform low level debugging within our application. Looking even further into the future, we would also like to implement ways to download files, or push them to platforms like GitHub.

Rheumatoid arthritis and Arthroplasty
Nursing & Public Health - Nursing - Graduate
Yanique Comeau, Judia Taylor

PICO Question: In patients with rheumatoid arthritis, is the quality of life of patients with rheumatoid arthritis better with arthroplasty or without going for surgery?

Introduction: Rheumatoid Arthritis is a chronic and debilitating condition that can affect the quality of life of those affected by it. It affects the joints in the body that can result in disability and difficulty to normally carry out daily activities. The condition affects the majority of the adult population and the traditional treatments are often not effective. Prevention is not the only primary focus of the treatment and management of rheumatoid arthritis, but the restoration of the joint functionality is also essential to improve the quality of life of patients with rheumatoid arthritis.

Background: Rheumatoid Arthritis is a serious health problem requiring treatment to maintain the functionality of the hands and other parts of the body. The traditional method of treatment for arthritis includes medication, however, research studies provide that surgery remains an effective alternative or complementary treatment that can help restore functionality and promote fast recovery for patients with rheumatoid arthritis (Smolen, et al., 2014). This is supported by another clinical research of Smolen, et al. (2017) suggesting that the surgical method for rheumatoid arthritis treatment such as arthroplasty is a valuable treatment option in restoring the functionality of the hands. Unfortunately, not all patients are made aware of the surgical treatment option available for them such as arthroplasty (Chung and Kotsis, 2010). Despite the growing evidence on the role of arthroplasty in the treatment for rheumatoid arthritis in preventing the deterioration of hand functionality due to the disease, it is rarely recommended to patients. Medications are insufficient in preventing the progression of rheumatoid arthritis during the chronic stage of the disease. Surgery thus becomes necessary for restoration.

Prevalence and Characteristics of Frequent Users of an Urban Emergency Department

Nursing & Public Health - Public Health - Alumni
Bria Cuffy, Theodore Gaeta DO, MPH, FACEP, William M. Briggs, PhD

Frequent Users represent a small proportion of patients with a disproportionately high emergency department (ED) usage. Frequent use of the ED is often targeted as a quality improvement metric. Our aim was to determine visit and patient characteristics that are associated with high ED utilization. We performed a retrospective analysis of all ED visits to an urban, community hospital between 1/1/18- 12/31/18. Patients with ≤4 visits were defined as Non-Frequent Users, patients with ≥5 visits in a calendar year were defined as frequent users. Data on the age, sex, race/ethnicity and insurance coverage, reason for visit (RFV), and final disposition were extracted. We computed descriptive statistics by patient age group: pediatric (≤17), adult (18-64), and elderly (≥65). Chi-square, t-tests and Logistic regressions were used to assess associations between patient/visit characteristics and ED visit frequency. About 70,551 patients accounted for 103,040 ED visits (97.6% ≤4 visits, 2.4% ≥5 visits). The frequent users in pediatric population were more likely to be male, black, and had public insurance. In adults, frequent users were more likely to be of black or Hispanic race/ethnicity, single, and had public insurance. The adult and elderly population, frequent users were more likely to visit the ED because of alcohol/substance use, medical or mental/behavioral health issues. In the general study sample frequent users were significantly less likely to be females than males (AOR) = 0.83, 95% (CI) = 0.76-0.92 and less likely to be married have a life partner (AOR = 0.62, 95% CI) = 0.54-0.70). The odds of frequent user of the ED were significantly higher among black/African Americans than white (AOR = 1.55, 95% CI) =1.38-1.73). Many of our encounters are by repeat visitors, 11.3%. Identifying frequent users provides us with an opportunity to target specific patient services aimed at reducing unnecessary ED visits and providing alternative access to care.

The Effects of Telehealth on Health Outcomes in Patients with Chronic Heart Failure: A Literature Review

Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Ashley Davios

Chronic heart failure can affect a patient's life in many ways. With advancements in telehealth technologies, health care providers and patients can interact and respond to each other in a timely manner, which has a potential to optimize patient outcomes and improve patient satisfaction.
Objective: The purpose of this literature review was to summarize the different types of Telehealth available for patients with chronic heart failure and the effects of the telehealth on patient outcomes.
Methods: Multiple electronic databases were searched using keywords such as (telehealth OR telehealth medicine OR mobile apps OR telephone follow up) AND (chronic heart failure OR congestive heart failure). Identified research articles that reported patient outcomes were critically appraised for methodology rigor and clinical applicability.
Results: Outcomes affected by telehealth include quality of life, morbidity and mortality, adherence to treatment regimens, self-management, cost reductions, hospital readmission, as well as reduced ER visits. Telehealth technologies that aid in the above include video chat visits, telephone calls, and telemonitoring practices, smart phone apps, and more invasive telemonitoring like invasive CardioMEMS. Patients who are compliant and willing to learn about telehealth tools, have the opportunity to play an active role in their care and ultimately improve their own health outcomes. Clinical applicability and barriers for the adoption of telehealth were also identified in this review.
Keywords: Telehealth, heart failure, nurse practitioner, patient outcomes

Why Business Should Utilize Augmented Reality
Computer Science - Undergraduate
Sean Deady

Businesses are constantly innovating and evolving to keep up with consumer demands, increase efficiency, and increase their profits. More often than not, effective use of technology is a key factor to help businesses achieve these goals. In this project, I analyze the role of augmented reality (AR) technology used in business today. This project finds that AR is still an underutilized tool and offers proposals for how even more businesses can increase their productivity and profitability by effectively deploying AR technology. The rate of growth of AR technology and the need to adapt has only increased recently with the COVID-19 pandemic keeping many individuals working and shopping from home.

This research project analyzes statistics and examples of how other companies have successfully implemented augmented reality technology and have already seen great benefit to the additions. I analyze case studies of several companies that have already begun to use AR technology, such as Ikea, Amazon, and other clothing or furniture stores. With augmented reality, customers can make decisions more easily as they could see how a piece of furniture would look in their house, how a shirt would look on them, and other feedback beyond traditional interactive features. Based on the analysis, it seems apparent that augmented reality will be a massive asset for businesses. The project concludes by offering some proposals for how businesses can deploy AR technology to bring more eyes to their product, help to improve productivity, and most importantly, increase the profits for the business.

Promoting a Positive Patient Relationship with Patient Web Portals for Better Health Outcomes
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Yuifun Deocampo

This presentation is a literature review on Patient Web Portals (PWPs), shedding light on the impact of PWPs in healthcare. The positive outcomes of engaging patients to be users of PWPs is discussed from improving health outcomes for patients with chronic diseases such as diabetes to increasing patients' involvement in their healthcare. The issue of equality in access and usability of PWPs for patients is addressed. Barriers exist that the benefits of using PWPs have been limited to patients with higher health literacy, computer literacy and socioeconomical status (Coughlin, Stewart, Young, Heboyan, & De Leo, 2018). The objective of identifying the benefits of PWPs and the factors limiting its access to all is to empower providers such as nurse practitioners to promote patients to become users of PWPs. As the patient and provider relationship was found to be important in patients' engagement with PWPs (Shah & Liebovitz, 2017).

Pandemic Parenting: The Influence of Parenting Styles on College Students' Mental Health

Psychology - Psychology - Graduate

Christopher Deragon

Over the last year, the novel coronavirus pandemic has challenged our inherent human desire to socialize with others. Questions of economic well-being and physical health were rightfully prioritized by public health policies, but mental health concerns fell by the wayside during the beginning months of the pandemic (Fiorillo & Gorwood, 2020). The current study therefore focuses on college students' mental health as they returned home during the COVID-19 pandemic. We examined college students' resiliency, well-being, and post-traumatic growth in relation to their perceptions of their guardians' parenting styles. Given parenting style theory (Trinkner et al., 2011), we hypothesized that mental health outcome measures would be negatively correlated with authoritarian parenting styles and contrastingly, positively correlated with authoritative and permissive parenting. Data was collected from 74 college students at Adelphi University (Mage = 18.53, Sdage = 1.99, 73% Female and 27% Male) via Qualtrics., Correlation analyses indicate that the authoritarian parenting style was indeed negatively correlated with well-being ($r(72) = -.29$, $p = .014$), resiliency ($r(72) = -.34$, $p = .003$), and post-traumatic growth ($r(72) = -.11$, $p = .370$). Contrastingly, authoritative, and permissive parenting styles were positively correlated to all outcome measures. Limitations of the present study include no pre and post-pandemic measures, a limited, not extensively diverse sample (e.g., White 67.6%), and using students' perceptions of their guardian(s) parenting style(s) instead of directly assessing parents. Our results indicate that permissive parents may have been positively correlated with their children's mental health as they provided their children with more freedom to see their friends or be in public during lockdown. Future research should focus on understanding the importance of different parenting style(s) during critical transitionary moments in emerging adult children's lives.

Cleansed

Computer Science - Undergraduate

Michael Desena, Daniel A. Castro, Daniel Hickey

Cleansed is a 2.5D platformer with Metroidvania attributes, where the player cleanses enemies and turns them back into their natural form. In Cleansed, there are various powerups and abilities that allow the player to take on new challenges and find unique ways to traverse the land with stylish techniques to cleanse foes.

In adult patients age 18 years or older with central venous catheters, what is the effect of normal saline locking in comparison to heparin locking on preventing catheter occlusion?
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Danielle Duffy, Yuifun Deocampo, Shalamo Leviyev, Gertha Sougrain

PICO Question: In adult patients age 18 years or older with central venous catheters, what is the effect of normal saline locking in comparison to heparin locking on preventing catheter occlusion?

Background: Central venous catheters (CVC) are life-saving medical devices, allowing for needed monitoring, medications and procedures to be done. Because of this, medical providers have made it a priority to prevent CVC occlusion. However, there is not a consensus as to the best method to maintain the patency of CVC. Providers have been prescribing heparin or normal saline (NS) locking to prevent catheter occlusion. The choice to prescribe heparin locking need to be evaluated to determine if the benefits outweigh the harm of administering it. Since, administering a heparin lock has the potential to cause the severe outcome for a patient to have heparin-induced thrombocytopenia (HIT). While the alternative of prescribing NS locking as the anti-occlusive drug of choice for CVC has minimal risks of causing a drug induced harm to a patient.

Methods: A literature review was conducted using Cochrane Library, PubMed and CINAHL to determine the difference in effect of normal saline locking in comparison to heparin locking on preventing CVC occlusion. Key terms included: central venous catheter (CVC), central venous access device (CVAD), adults, heparin, normal saline, locking, catheter occlusion.

Results: The majority of the research findings suggests that NS locking has the same ability as heparin locking in preventing CVC occlusion. Overall, there is no significant difference between locking with NS versus locking with heparin. They both offer the same benefit as ultimately no group encountered the complication of having catheter thrombosis. In one study by Beigi, HadiZadeh, Salimi and Ghaheri (2014), four patients from the heparin and three from the NS group cluster bled. However, the variance in bleeding time for either group was insignificant.

DM Toolkit
Computer Science - Undergraduate
Matthew Duran, Ryan Troy

In the year 1971, Gary Gygax created the game known as Dungeons and Dragons, a fantasy tabletop RPG with the goal of creating a character and going on an adventure hosted by a single player, the dungeon master. This dungeon master is responsible for guiding the other players through their own story and maintaining the game rules, sort of like an arbitrator.

Our goal is to create a website that fulfills many of these goals without the need for various pens, pencils, and papers. This "DM Toolkit" provides useful tools to eliminate many of the requirements for physical materials.

Specifically, our project will contain 4 main features: A dice roller, random encounter generator, loot generator, and initiative tracker.

Dinosaur Dental Development
Biology - Graduate
Stephen Finch

Tooth formation time and replacement rate are important components of feeding ecology in non-mammalian vertebrates and can be calculated in extinct species by counting incremental lines of von Ebner deposited daily in tooth dentine. Dinosaurs have a broad range of tooth replacement rates, consistent with the great dental diversity within the clade. Sauropod skull morphology is conservative relative to other herbivorous dinosaur clades, but both tooth slenderness and replacement rate vary substantially. Several sauropod lineages independently evolved narrow-crowned teeth and high tooth replacement rates. To examine the potential relationship of these two factors in more detail, we estimated tooth formation times in the moderately slender-toothed brachiosaurid Abydosaurus mcintoshi from the Early Cretaceous (Albian) Cedar Mountain Formation of Dinosaur National Monument, USA. Based on histological data, we estimate Abydosaurus had unusually slow tooth formation times (~18 months), compared to teeth of similar apicobasal length in Diplodocus (~5 months), and Camarasaurus (~7 months). This prolonged tooth formation time relative to other sauropods stems from unusually thin daily increments in Abydosaurus, which are only one-half to two-thirds the thickness of daily increments found in nearly any of the approximately two dozen dinosaurs and crocodilians that have been sampled. Computed tomography of Abydosaurus jaws indicates that teeth in each alveolus differ substantially in size, as in Brachiosaurus, but contrast with diplodocoids and titanosaurs, wherein successive teeth in each alveolus are similar in size. The extended tooth formation times and the large size discrepancy between successive teeth within an alveolus suggest slow tooth replacement rates in Abydosaurus, in keeping with published estimates from the brachiosaurids Giraffatitan and Brachiosaurus. Together, these data suggest brachiosaurids evolved the slowest tooth replacement rates within Neosauropoda.

Bilingualism, Argumentative Writing, and Perspective Taking

Psychology - Psychology - Undergraduate
Avery Gaeta

There are many known benefits of being bilingual. Past research has shown that bilingualism improves several aspects of cognitive control, including inhibition and working memory. However, not many links have been made between bilingualism and social cognition. One such study, however, shows a link between bilingualism and social perspective taking (PT; Hsin & Snow, 2017). The writing of 4th-6th graders was analyzed for instances of PT. It was found that bilingual participants showed more instances of PT overall (Hsin & Snow, 2017). The purpose of the present research is to explore these differences in social PT further, by comparing college-aged monolingual and bilingual speakers. This study will expand on the findings of Hsin & Snow (2017) by providing insight into whether the bilingual advantage in PT remains through young adulthood. If the advantage is present in college-aged subjects, it would suggest that there is a long-lasting PT advantage, as opposed to bilingualism being a catalyst for a developmental checkpoint of PT. To conduct this study, we will present a brief argumentative writing prompt and analyze the use of PT in participants' writing. The three levels of PT to be identified are acknowledgement (mentions of unique agents or actors), articulation (explicit statements of thoughts or beliefs), and positioning (characterization of an agent as reflective of a position). We will also ask participants to answer questions regarding demographics and language history and implement the PT and empathic concern (EC) subscales of the Interpersonal Reactivity Index. Data collection has begun, and we expect to find a bilingual advantage in social PT. In accordance with this prediction, we would also expect bilinguals to have higher PT and EC scores than monolinguals. If a bilingual advantage is found, it would give valuable insight into the possible social benefits of bilingualism.

Health Disparities PowerPoint Presentation
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Alea Gaffar

Health disparities can be defined as differences in health outcomes that disproportionately affect specific populations that experience barriers to optimal health as a result of factors like gender, sexual orientation, disabilities, socioeconomic status, race and geographical locations. Health disparities have a direct effect on individuals' health and can result in poor health outcomes and increased morbidities and mortalities. Demographics seen in primary care who are affected by health disparities include but are not limited to sexual orientation, age, gender, disabilities, socioeconomic status and race and ethnicity. The aim of this presentation is to examine how health disparities affects patients in the primary care setting and how nurse practitioners can eliminate such disparities and provide uniform qualitative care to decrease mortalities and morbidities associated with health disparities and improve health outcomes.

Health Disparities Experienced by Sexual/Racial/Ethnic Minorities and People with Disabilities in Primary Care Settings
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Alea Gaffar

Previous studies have reported health disparities experienced by specific demographic populations, which often results in poor health outcomes and increased morbidities and mortalities in the affected populations. Objective: The aim of this literature review was to examine how health disparities affects sexual/racial/ethnic minorities and patients with disabilities in the primary care settings and how nurse practitioners can reduce such disparities and provide quality and equity health care. Methods: A literature review was conducted by searching in the Ebscohost and CINAHL using keywords (health disparities OR health equity) AND (health outcomes OR mortality OR Morbidity OR mental health) AND (minorities OR disability) AND (primary care). Results: The literature search yielded a total of 13 research articles. Eight research articles studied the health outcomes of vulnerable individuals affected by specific health disparities while five articles examined the role of nurse practitioners in addressing health disparities. Most studies reported that minorities and people with disabilities affected by health disparities had higher rates of morbidities and mortalities as well as increased risk for mental health problems, decreased medication compliance, etc. Nurse practitioners can address and decrease health disparities by becoming and maintaining competency through educational training programs in caring for diverse populations that include patients experiencing health disparities, increasing workforce diversity as well as communicating with patients and providing a safe and respectful relationship and environment for every patient. Conclusion and Implication for Practice: This review concluded that people in these populations had poorer health outcomes as a result of inaccessibility, mistrust, incompetency and discrimination. Nurse practitioners can decrease barriers to care through effective communication, workforce diversity and education and training.

The Impact of Attachment Style and Relationship Motives on Social Media Use and Body Image

Psychology - Psychology - Undergraduate
AriAnne Gehring

Does social media do more harm than good to self-perception? Past studies have often found a positive association between social media use and body dissatisfaction (Holland & Tiggemann, 2016). But might this depend on people's personality? We propose that differences in personality traits, specifically attachment style, motivational style, and sensitivity to social threats and rewards, influence one's vulnerability to the negative effects of social media. We hypothesized that attachment anxiety and selfie preoccupation would be associated with body dissatisfaction. We predicted that higher scores in attachment anxiety would be associated with higher scores in sensitivity to social threat and reward. Finally, we hypothesized that a higher ratio of celebrity follows will be associated with higher body dissatisfaction scores. Undergraduate students completed a websurvey assessing attachment style, sensitivity to social threat and reward, approach and avoidance goals, body image, selfie preoccupation, and celebrity following. Correlation and regression analyses revealed a positive association between attachment anxiety and body dissatisfaction as well as selfie preoccupation and body dissatisfaction. Results showed that celebrity following on Instagram or Twitter was not positively related to body dissatisfaction. Furthermore, results showed that attachment anxiety was not associated with sensitivity to social rewards but was positively related to sensitivity to social threats. The overall findings of this study suggest that attachment anxiety, selfie preoccupation, and sensitivity to social threat are all risk factors for mental health issues such as poor body image.

Transtheoretical Model of Behavior Change

Nursing & Public Health - Psychiatric Mental Health - Graduate

Roberta Giorgi, Kendy Rodriguez, Emily Schwertl, Jasper Prima, and Jaqueline Dongmo-Mekontchou

Background-The Transtheoretical Model of Behavior Change (TTM),also known as the Stages of Change, has been around for over 40 years. It is used to help patients adopt healthy behaviors. TTM was derived from existing psychoanalytic theories, starting off with a study that examined the differences between smokers who quit on their own versus smokers who required treatment.The proponents of the theory learned that people quit smoking once they were ready and those who required a significant amount of time to quit were observed to go through stages and processes.

Philosophical Underpinning of the TTM and its Structure-Patients advance through the Stages of Change as they understand their needs. They go through the six Stages of Change, from precontemplation when they are still in denial, until they reach the final stage of termination, when they do not experience any relapse at least during the last year. The four other steps in between include contemplation, preparation, action and maintenance stages. Strengths-TTM covers a wider number of potential patients. An important and distinct feature of TTM in comparison to other behavioral change theories, is that other theories begin in the Action stage, whereas those who use the TTM model include people that are in the precontemplation and contemplation stages. Limitations-TTM has its own limitations, however. Each stage is vague and not distinct from the rest. And TTM does not distinguish between people who are able to make long term changes in their lives and it does not take the circumstances on which the change will take place. Application-Nurse Practitioners (NP) in all specializations can utilize TTM in clinical practice to assist their patients in changing their behavior to achieve their optimal health.NPs can tailor strategies and interventions for lifestyle management such as nutrition,exercise and smoking cessation, based on the patient's stage of change presentation. Conclusion-Change is at the heart of TTM.

An Animal's Kingdom- A 2D Platformer Game

Computer Science - Undergraduate

Omar Gonzalez

An Animal's Kingdom is a 2D scroller that follows the heroic tale of one brave lion who has to step up to save his home from a nasty infectious disease released by an evil rat tyrant. There are many 2D scrollers games. Normally, there will be at least one aspect that makes a game different/iconic (Sonic - immense speed; Super Mario - mushroom to grow in size, etc.). My project is unique in the way that the levels will be different and rich in background, the characters (lion, rat king, rat enemies) will be original by design and the aesthetics, and there will be powerups, audio, sound, and visuals - an animal's kingdom will be a game like no other. The game is created using the Defold game engine along with its lua programming language. The project will serve as a proof of concept of games of this type, and will provide valuable experience for me future game development.

Creating a Projectile Motion Model

Computer Science - Undergraduate

Nikhil Gottipaty, Kenny Martinez, Artem Rykov

The purpose of this project is to create an application that can solve projectile motion problems with and without air resistance. Projectile motion problems are probably one of the fundamental problems in physics, and the ability to visualize how they work is essential. In addition, projectile motion is one of the first things taught in a physics class, so getting a better understanding of how to work through these problems can be a valuable educational tool for physics students as well. We started by encoding projectile motion formulas using Matlab, and translated the calculations to Python to enable visualization of the trajectories of motion. A GUI collects inputs from the user for the back end calculations of the projectile. Thus, the GUI can display to the user a real time plot of the trajectory based on the information provided and updated by the user.

Does Mother Know Best? The Relation of Maternal and Child Defense Mechanisms with Child Attachment Security
Psychology - Psychology - Graduate
Kathryn Graham, AriAnne Gehring, Victoria Ouzonian

Defense mechanisms (DM) are automatic, unconscious psychological processes that individuals employ as a response to intrapersonal or interpersonal stress to protect the self from excessive anxiety. The use of adaptive DM is consistently associated with stronger interpersonal relations, self-esteem, and decision-making abilities. There is limited research evaluating the adaptiveness capacity of DMs in middle childhood. Furthermore, few studies have examined factors that may affect DM development in children, especially how maternal DMs and child attachment security are associated with child DMs. Our first hypothesis is exploratory as we evaluate which DMs are predominant in middle childhood. Our second hypothesis is that higher maternal DM functioning will be associated with higher child DM functioning. Thirdly, we hypothesize that higher maternal DM functioning will be associated with higher child attachment security. Fourthly, higher child DM functioning will be associated with higher child attachment security. Lastly, child attachment security will explain the relation between maternal DM and child DM. Using the Defense Mechanism Rating Scale, a team of 3 raters assessed the use of maternal and child DMs as 111 mother-child dyads engaged in an interaction task where they discussed a conflict. Child attachment security was assessed with the Security Scale. The findings indicated that children primarily relied on DMs at the disavowal level, specifically rationalization and denial. Furthermore, we found significant positive associations between maternal DMs and child DMs (r= .660, p< .001), maternal DMs and child attachment security (r= .783, p< .001), and child DMs and child attachment security (r= .608, p< .001). Our mediation analysis that child attachment security explains the relation between maternal and child DMs was not supported (r= .191, p=.070). Our findings suggest that the parent-child relationship has a profound impact on child DMs.

The Mismatch Negativity Event Related Potential in Central Auditory Processing Disorder

Education - Communication Disorders - Graduate
Rebekah Guastella

Central Auditory Processing Disorder (CAPD) is an impairment in the central auditory nervous system. People with CAPD have difficulty extracting meaning from sounds in spite of normal hearing. CAPD may cause challenges with communication and learning. The diagnosis of CAPD is controversial because the diagnostic boundaries are unclear and overlap with language impairment and attention deficits. There are confounds of language and attention in the CAPD diagnostic battery causing controversy in the field of Speech Language Pathology. Electroencephalography (EEG) records electrical signals from the brain, that are processed offline to yield event related potentials, common neural signatures of brain processes. The mismatch negativity (MMN) is an event related potential (ERP) that measures the brain's automatic, pre-attentional response to small differences between sounds. MMN is elicited in an oddball paradigm in which a series of frequently repeated stimuli are subtracted from a rare novel stimulus. When an MMN is present, a negative deflection of the ERP appears150-200ms over fronto-central electrodes. MMN has not been used to differentiate CAPD from a language impairment. In the current study, we compared MMN responses between speech and nonspeech conditions in a pilot of healthy adults and found the expected MMN for tones and speech sounds. Based on pilot results in healthy adults we predict if CAPD is a domain general impairment of auditory processing, results will indicate no MMN for tones and speech sounds in individuals with CAPD. Alternatively, if CAPD is domain specific to language, results will show an MMN for tones but not for speech sounds in individuals with CAPD.

I'll Get Help Later: A Study of Mental Health Stigma
Psychology - Psychology - Graduate
Danielle Hahn

Depression, bipolar disorder, schizophrenia and other psychoses, dementia, and developmental disorders constitute the highest prevalence of mental health issues worldwide. Despite the need for mental health treatment, our current healthcare systems are not adequate to meet these needs. A major barrier to seeking care is mental health stigma. Individual level factors such as self- stigma and gender and macro- level factors such as social networks and community ties impact help seeking behaviors. The research literature shows that beliefs and attitudes towards mental illness affects individuals, families and friends, and healthcare providers. Higher levels of self-stigma are associated with a higher degree of mental health stigma and individuals who are less connected to their community are less likely to seek assistance. For healthcare providers, dehumanization is associated with treating individuals with mental illness with less warmth. Participants completed an online survey hosted on Qualtrics to investigate their beliefs and attitudes about mental illness. The cross sectional study assessed three factors - gender, community, and self-stigma and how they affect participants' view of mental health. Participant recruitment methods included the psychology subject pool of a northeastern university, the web based announcement center of the University, and the recruitment system of the survey platform. Questions on the survey included demographic information, general attitudes towards seeking help, views about seeking help for mental illness, perceptions of different diagnoses of mental illness, and internalized stigma regarding mental illness. Frequencies and descriptive statistics, independent samples t-tests and analyses of variance, and correlational and regression analyses will be used to analyze the data. Implications of the findings for improving perceptions of mental illness and offsetting the prevalence of stigma will be addressed.

The Effects of Acculturation on Adolescent Mental Health Amongst Immigrant Families in The United States
Nursing & Public Health - Psychiatric Mental Health - Graduate
Erewarifagha Haidome

This review will examine the effect of acculturation on adolescent mental health amongst immigrant families in the United States (U.S). Acculturation is a multidimensional process with changes in an individual behavioral pattern and belief system. This change is observed in various aspects of a person's life. Immigrant families in the U.S. have been observed to display a certain degree of acculturative effect on their lives, both physically and mentally. Immigrant families move from their native countries of origin to the western world as refugees for education or job-related issues. Studies have shown that an average of hundreds of thousands of refugees migrate to the U.S. annually and have resettled with only their physical health issues addressed, but mental health issues have been overlooked. Nonetheless, the potential effects of their mental health need further discussion. Based on this knowledge, it will be evident that several thousands of migrant adolescents will present with untreated psychological issues that could impact their daily lifestyles, making them unproductive and prone to health hazards that come with untreated mental health. Understanding the effects of acculturation on adolescent mental health amongst immigrant families is essential in providing integrated and holistic care by the Psychiatric Mental Health Nurse Practitioner (PMHNP). The implications in practice for the PMHNP and practice issues related to the effects of acculturation on adolescent mental health will be addressed. Other issues requiring discussion are treatment implications, potential countertransference issues, policy, and advocacy issues for the PMHNP.
Keywords: Acculturation, adolescents, mental health, immigrants, migration, cultural influence, holistic, policies, advocacy, countertransference.

Sealed Message App

Computer Science - Undergraduate

Steven Hernandez, Benjamin Begun, Alexander Tkachenko

People on the Internet should be wary of what they do with their data and who they give access to that data. Sealed is a messaging app that aims to determine how we can implement good security into a seemingly normal messaging application. Specifically, we investigate the best possible ways to deliver an easy to use consumer product while protecting the customer's data. In this context, encryption is defined as a process that encodes a message or file so that it can only be read by certain people. Encryption usually uses an algorithm to scramble or encrypt the data and uses a key to decrypt that data to its original form.

For the project, we built the application using Android Studio that includes security and messaging protocols for devices to communicate with one another. Android Studio is an integrated development environment (IDE) designed specifically for Android development. We integrated a client-server architecture for the messaging protocols using the Firebase service from Amazon. Using Firebase, we encrypt and decrypt messages on the device it is meant for only. We, as the developers, will never read any customer messages.

Our answer to the big data problem is to not give out any of your personal data where you have no need to. Many other applications will take advantage of the data that you "allow" it to have in their terms and conditions, but with Sealed we present a messaging platform with security specifically in mind.

Comparing the Combination of Psychotherapy with SSRIs To SSRIs Alone in the Treatment of PTSD: A Literature Review

Nursing & Public Health - Psychiatric Mental Health - Graduate
Alisa Ilina, Kimberly, Korn

Background: Post-traumatic stress disorder PTSD is a type of anxiety disorder related to experiencing a severe psychological trauma. The most common interventions for PTSD are pharmacological treatment and psychotherapy. The purpose of this literature review is to explore the effectiveness and benefits of the combined selective serotine reuptake inhibitors (SSRIs) and cognitive behavioral therapies (CBT) compared to SSRI alone.

Methods: Randomized-controlled trials and systematic reviews were obtained from CINAHL, PubMed, and Cochrane databases using the keywords: (Post-traumatic stress disorder OR PTSD) and (selective serotonin reuptake inhibitor OR SSRI therapies) AND (Cognitive Behavioral Therapy OR CBT). Only research articles that compared SSRIs with the combined SSRIs and CBT therapies are included in this review.

Results: A majority of the studies found that a combination of CBT and SSRIs were effective in reducing PTSD symptoms. However, some studies reported that there was no significant difference when the two treatments were combined and indicated that either of them could be effective when used independently. Two studies indicated that pharmacotherapy is still a first-line treatment since it is effective in containing symptoms. Most of the studies affirmatively indicated that psychotherapy is effective when combined with pharmacotherapy for long term outcomes.

Conclusions: The studies in this review included different populations with specific cultural considerations such as refugees and veterans. Based on this literature review, we recommend the use of combined psychotherapy and SSRI therapy for PTSD patients to reduce symptoms more effectively. However, there is still a need for in-depth research and clinical trials with larger sample sizes to fully support or refute the effectiveness of combination therapy for PTSD.

Preadolescent empathy, mother-child attachment security, collaborative decision-making and preadolescent conduct problems

Psychology - Psychology - Alumni
Janice Im, Stephanie Waslin, B.A, Travis Nair

Conduct problems (CP) are associated with later poor social relationships and academic difficulties (Ferguson, Horwood, & Ridder, 2005). We evaluated how preadolescents' attachment security, collaborative decision-making (CDM) with their mother, and their cognitive and affective empathy operate together to predict preadolescent CP. We also tested whether preadolescents' cognitive empathy moderates the relation between CDM and preadolescent CP. Participants were 112 mother-child dyads, M(SD)child age=12.11(1.07) years. Mothers reported on their children's behavioral problems (SDQ; Goodman, 1999) and empathy (GEM; Dadds et al., 2008). Preadolescents reported on attachment security with their mothers (Kerns, Klepac, & Cole, 1996). Mother-preadolescent dyads completed a 3-minute pre-conflict task where they decided on a topic of disagreement in their relationship, which they subsequently discussed. This pre-conflict discussion was videotaped and coded for CDM by two research assistants (K=.83, n videos= 22), 1 to 3 scores, 3 = greater collaboration. CDM and affective empathy were not significantly related to preadolescent CP. Greater cognitive empathy and greater attachment security were significantly related to lower CP (r= -.31, p<0.05 and r= -.39, p<0.01), respectively. Cognitive empathy did not significantly moderate the relation between CDM and CP. Regression analysis, however, showed that empathy, attachment security, and CDM explained 22.1% variance in CP, F Change (4, 103) = 7.31, p<0.001. Cognitive empathy and attachment security emerged as unique predictors (β= -.21, p<0.05; β= -.31, p<0.01). Controlling for demographics variables did not impact results. Preadolescent cognitive empathy and attachment security were uniquely related to preadolescent CP. Our results point to the importance of addressing preadolescent's ability to understand others' emotions and the quality of their interactions with their mother when working with preadolescents at risk for CP.

Photoelectrochemical characterization and surface analysis of various hybrids containing CdSe and PDAC combinations on HOPG

Chemistry - Undergraduate
Hye Jin In, Amandeep Kaur

Over the past few decades, the exploration of semiconductors has grown rapidly in search for efficient methods of generating energy in solar cells. This study was conducted to determine the optimal hybrid solar cell composition by combining cadmium selenide (CdSe) and poly(1,8-diaminocarbazole) (PDAC) deposited on highly organized pyrolytic graphite (HOPG). Multiple methods of PDAC polymerization were applied to optimize the hybrid's performance. The films were fabricated in 3 different configurations: i. CdSe deposited on HOPG substrate with PDAC deposited on top (HOPG/CdSe/PDAC), ii. PDAC deposited on the HOPG substrate with CdSe deposited on top (HOPG/PDAC/CdSe), iii. composite made through the simultaneous deposition of CdSe and PDAC (HOPG/(CdSe-PDAC) on HOPG. We emphasized the importance of the order of both deposited components on the HOPG surface and their thickness, on the photoefficiency of the obtained hybrid. PDAC was polymerized either chemically or electrochemically in acidic and neutral media. Photoelectrochemical studies were conducted to measure the photoactivity of these hybrids. Surface analysis of the samples were conducted before and after photostudies using X-ray photolectron spectroscopy, scanning electron spectroscopy, and atomic force microscopy. As a result, HOPG/CdSe/PDAC hybrid with chemically polymerized PDAC was the most stable and photoactive with a maximum photopotential and photocurrent of 318.3 mV and 120 µA/cm2, respectively. The hybrid was studied also in terms of increasing polymer film thickness, by applying 10, 15 and 20 electropolymerization cycles in acidic or neutral media or 1, 2 and 3 dips in monomer solution in chemical polymerization. The increasing number of polymerization cycles in the acidic medium enhanced the hybrid's photoactivity, however, showed a decreasing effect in the hybrid synthesized in neutral medium. Using the PDAC chemical polymerization method, the optimal hybrid performance was achieved after 2 dips.

Growing up with a Sibling with a Mental Illness: Exploring Potential Adaptive Outcomes

Psychology - Psychology - Graduate

Bonnie Ippolito

Family systems theory highlights that within the family unit, family members continuously influence one another, and in order to fully understand any individual family member, the member must be analyzed within the context of the larger system. The onset of an illness in a child is not only a significant event for the individual, but for the rest of the family as well (e.g., parents, relatives, siblings). Although research on the topic has largely focused on the negative associations of growing up with a sibling with an illness such as poor mental and physical health and low levels of satisfaction, there is evidence to suggest that there are also positive associations of growing up with a sibling with an illness. The present study has two aims. Our first aim is to examine differences between those who grew up with a sibling with a mental illness and those who did not. We hypothesize that compared to individuals who did not experience childhood with a sibling with a mental illness, those who experienced childhood with a sibling with a mental illness will have greater levels of resiliency, and empathy, but higher levels of depressive symptoms. Our second aim is to examine associations between familial functioning (i.e., intimacy and conflict), democratic parenting style, parental and sibling bonds, resiliency, post-traumatic growth (PTG), life satisfaction, and depressive symptoms within both groups. For both groups, we hypothesize that greater familial functioning, greater democratic parenting, and greater parental bond will positively predict sibling bond, resiliency, PTG, and life satisfaction, and negatively predict depressive symptomatology in adulthood. We also hypothesize that sibling bond will positively predict resiliency, PTG, and life satisfaction, and negatively predict depressive symptomatology in adulthood for both groups. The findings of this study have implications for clinical work with individuals who grew up with a sibling with a mental illness.

Analysis of the function of the LSH3 gene in growth of Arabidopsis thaliana
Biology - Undergraduate
Nandini Jojode

Signaling transduction pathways and gene regulation are essential to understanding plant growth. Cytokinin, an adenine-derivative plant hormone, regulates cell growth and differentiation in shoots and roots through gene regulation of the cytokinin signal transduction pathway. Previous research shows that type-B Arabidopsis response regulators (ARRs), a family of transcription factors, are found in the cytokinin signal transduction pathway. LSH3, light-dependent short hypocotyl 3, is a protein that may be involved in this signaling pathway possibly by interacting with ARR proteins. LSH3 was previously identified as a gene involved in plant development but its molecular mechanism of action is unknown. In order to explore the function of LSH3, the LSH3 protein was overexpressed in the plant Arabidopsis thaliana and created the fusion protein LSH3-GFP. This research aims to characterize LSH3 levels in Arabidopsis thaliana plants that have LSH3 overexpression in wildtype and arr10arr12 mutant transgenic lines and compare with the phenotypic effect of this overexpression. This is found by analyzing the growth of the plants and also performing gel electrophoresis and western blotting on the plant tissue. I hypothesize that the overexpression of LSH3 will cause decreased growth in transgenic arr10arr12 mutant plants. Preliminary results showed that transgenic arr10arr12 lines with overexpressing LSH3 were phenotypically more stunted in growth than transgenic wild-type plants. Western blot results have shown evidence of LSH3 overexpression in wildtype and arr10arr12 transgenic Arabidopsis plant lines and their growth shows promising results of LSH3's possible ability to act in the cytokinin signal transduction pathway. Thus, preliminary results suggest a correlation between the overexpression of LSH3 and effects on growth, which could indicate a role in cytokinin signal transduction.

An Exploration of First and Second Generation Turkish Muslim Identity
Psychology - Psychology - Graduate
Elif Karatas

The purpose of this study is to examine the subjective acculturation experiences of Turkish Muslim immigrants living in the United States through qualitative, semi-structured interviews. Acculturation is a change in the culture of a group and a change in the psychology of the individual; it consists of the following four types of strategies: integration, separation, assimilation, and marginalization (Berry & Sam, 1997). Kaya (2009) argues that important differences exist between first and second-generation Turkish immigrants in regard to their American and Turkish identities and cultural practices. In the literature review for this study, I examined experiences of immigration, including intergenerational differences and psychological factors affecting the identities of first- and second-generation Turkish Muslim immigrants. The participants in this study were four immigrant families from Turkey that migrated to the United States, as well as their American-born children. My analysis is of two individuals in each family, one parent and one child, making for a total of eight individuals. Through semi-structured interviews, participants described their immigration experiences, acculturation processes, and intergenerational similarities and differences. This study is in progress, as we are currently analyzing data. We are looking forward to observing intergenerational differences between the two groups with regard to their cultural and religious observance in specific acculturation experiences, the psychological effects, and the coping strategies of each participant. This study contributes to the field of psychology by adding to the minimal amount of existing literature about this small immigrant population. Furthermore, it provides helpful information for clinicians to increase multicultural awareness about immigrant populations in the United States.

Analysis of lncRNA in Cocaine Addicts in the Rewards Pathway
Neuroscience - Undergraduate
Allen Karimov

Previous research on drugs of abuse and addiction has shown an integral change in the mesolimbic pathway in the brain. The mesolimbic pathway, which includes the brain region nucleus accumbens (NAc), is concerned with focusing on what stimuli count as rewards, and proceed to give a rewarding feeling by releasing dopamine. Recent research has found changes in addicts' mesolimbic pathway indicating a reliance and easier susceptibility to drugs of abuse. One of the proposed theories is that long noncoding RNA (lncRNA) epigenetically affects DNA found in the mesolimbic system leading to overexpression of proteins related to dopamine stimulation. Thus, leading to constant need of drugs to fulfill the need for reward. This study seeks to observe how one of the principal dopamine agonists, cocaine, affects the lncRNA in the NAc and how that may affect DNA and addiction. Using the NCBI Gene Expression Omnibus, a collection of lncRNA sequences were gathered, obtaining both non-addicted persons' lncRNA and cocaine addicted person's lncRNA (n=92). Using SRAfiles obtained, the data was converted into FASTQ files using a program known as MobaXTerm on a shell server capable of processing the data and prefetching it into usable and analyzable data. All lncRNA sequences can be counted and compared between cocaine users and controls to determine differential expression caused by cocaine use. FASTQ files and differential expressions of the lncRNA can be correlated with the cocaine addicted phenotype. This differential analysis allows us to determine lncRNA that may be important to creating or sustaining cocaine substance use disorders.

The Relations of Parental Romantic Attachment and the Emotional Socialization of Their Children in Middle Childhood
Psychology - Psychology - Undergraduate
Nicole Katsanis, Stephanie Waslin

Emotion socialization is a key factor related to children's healthy development (Denham, 2019). Previous studies demonstrated that greater quality of mother-child attachment is linked to greater emotional socialization strategies (Kerns et al., 2007). Both parent-child attachment and romantic attachment are rooted in Bowlby's theory (1969), and it is crucial to understand if they show relations with parental emotion socialization strategies. However, few studies assessed how parental romantic attachment style relates to children's emotion socialization, and they showed that insecure romantic attachment is related negatively with emotion socialization strategies (Gentzler et al., 2015). Still, little is known about its connection to emotion socialization of children's positive emotions. Thus, we evaluated the relations between parental anxious and avoidant romantic attachments and the savoring and dampening strategies of socializing their children's positive emotions in middle childhood. Participants were 112 mother-child dyads (M child age=11.69, male=49%), and 61 fathers. Parents completed the Experience in Close Relationships Scale and children reported on parents' emotional socialization (Parental Responses to Children's Positive Events-Youth Report). We found no significant associations between parental romantic attachment and emotion socialization. However, maternal anxious romantic attachment was positively related to paternal avoidant attachment, and maternal avoidant attachment was positively related to paternal anxious and avoidant attachments. Our results point out that parental romantic attachment may not be directly related to how parents approach the emotion socialization process of children's positive emotions and may have different outcomes than parent-child attachment. Our results also show that individuals with greater insecure romantic attachments are likely to enter into romantic relationships with partners who are also more insecurely attached.

The effect of small molecule activators on PKM2 activity in VHL(-) and VHL(+) cells

Biology - Undergraduate

Simranjit Kaur

VHL is a tumor suppressor gene that codes for proteins that prevent the formation of tumors. Mutations in the VHL gene predispose individuals to develop tumors in the central nervous system, kidneys, retina, pancreas, and adrenal glands. Previous studies have observed the dependence of cancer cells on the Warburg effect. The Warburg effect is the tendency for cancer cells to ferment glucose into lactate, even in the presence of sufficient amounts of oxygen. By utilizing the Warburg effect, cancer cells are able to shunt pathways related to glycolysis into producing large amounts of biomass. Hypoxia inducible factor (HIF-α) detects hypoxic conditions and is able to increase glycolytic enzymes through its transcription activity if hypoxia is detected. If hypoxia is detected, VHL will not bind to HIF-α, hence the activity of glycolytic enzymes would increase, contrary to being shunted towards the production of biomass. Lowering the activity of the last glycolytic enzyme, pyruvate kinase (PK) is expected to decrease the conversion of glucose to pyruvate. Cancer cells are able to perform this by predominantly using an isoform of PK: PKM2. PKM2 serves as a gatekeeper because it can switch from its less active dimeric form to its more active tetrameric form. The tetrameric form favors the production of pyruvate and the dimeric form results in the production of biomass. Due to these reasons, PKM2 serves as a good target for therapeutics. In this study, PKM2 was activated using small molecule activators such as TEPP-46 and DASA-58 in VHL(+) and VHL parental cells to increase PKM2 activity to levels similar to PKM1. Growth assays and colony assays were performed and stained to assess for cell proliferation and survival. It was observed that as PKM2 activity was increased using activators, there was a decrease in overall cell survival. The assays will be repeated in different cell lines and also be tested for apoptosis.

High-throughput, Modus-operandi: Low-density and High Malaria Diagnosis Accelerated by Leveraging Low Power Lenses

Biology - Graduate

Areeba Khalid, Shoaib Ashraf, Arend Devos, Yanfang Feng, Akilan Palanisami, Tayyaba Hasan

The elimination of malaria, a mosquito-borne parasitic disease that hijacks human red blood cells, is a global priority. Symptoms of the disease include fever, vomiting, headache and in severe cases, even results in death. Microscopy is the hallmark and gold standard for diagnosing malaria, till date. However, this approach is cumbersome especially in countries where the number of malaria cases are high or in areas where malaria transmission is low (low-density infection) and requires highly skilled personnel. Consequently, the results are delayed due to exhaustive microscopy exercises which contribute to poor performance and misdiagnosis. As a result, real-time data can be misleading and hence, this jeopardizes the whole malaria management scheme. Thus, there is a dire need to make malaria diagnosis less labor intensive, fast and reliable. For this, we have developed a platform and have incorporated the current methods with modern technologies that will make malaria diagnosis easy, quick and accurate. Our algorithms are compatible with free online software using low power objectives in manual (e.g. routine microscope) and automated imaging systems (e.g. Nanozoomer). The robust strategy rapidly diagnoses malaria and can play a pivotal role towards informed decision making.

An Advanced Simulation Model to Predict the Impact of Collaterally Sensitive Drug Cycles for Cancer Therapy
Mathematics - Graduate
Areeba Khalid

Chemotherapeutic agents are the cornerstone regimens to treat human malignancies. However, in many cases, chemotherapy is not successful due to development of drug resistance. The hallmark of the process is when a drug is not able to elicit a therapeutic response at recommended protocols. One of the main strategies to counter this problem is the sequential application of drugs. The process is followed through a phenomenon known as collateral sensitivity where resistance to one drug displays higher sensitivity to another drug. To solve this problem optimal therapy scheduling based on a pair of collaterally sensitive drugs has been explored in this study. Our previous model described the effects of sequential drug pairing on the structure of cell classification considering the resistance and sensitivity against the drugs. Despite advantages of the simplified modeling setup to derive analytical work, the previous model is limited to understand cellular heterogeneity. In our advanced model, we added a new cell type that is not treated by either drug in the collaterally sensitive drug pair. Hence, based on our simulation model, we conclude that the introduction of a third type can describe the situation that the resistance developed even under the optimal scheduling of the drugs.

The temporal dynamics of the neural response to social rewards
Neuroscience - Undergraduate
Aadil Khan, Melanie Ruiz

Our ability to process social information (i.e., approval/praise from others, whether someone reciprocates our trust) as rewarding is key to successfully navigating the social world. Evidence indicates that shared, positive experiences are crucial to establishing and maintaining social bonds with others and that positive experiences shared with close others, relative to strangers, are processed in the brain's reward circuitry as having enhanced value. These findings suggest that social rewards may carry some unique qualities relative to other types of rewards (i.e., food, money). Yet, it remains unclear whether shared positive experiences retain their enhanced value over time, or whether they are subject to losing their value with repeated exposure, in a manner similar to eating the same food you like every day for a week.

This study seeks to investigate whether the affective value of rewards experienced in social contexts (i.e., with close others, strangers) persists longer than that of those experienced in non-social contexts (i.e., with a computer). We will conduct a secondary analysis on previously published fMRI data (Fareri et al., 2012) which had demonstrated increased recruitment of neural reward circuitry (ventral striatum) when sharing positive experiences with friends relative to strangers and computers. Here, we will examine the temporal dynamics of the neural response to rewards experienced in social relative to non-social contexts. We hypothesize that the striatum, a region known to be important for representing reward value will show a prolonged, elevated response to rewards experienced with social partners relative to those experienced in non-social contexts.

Social Support and Resilient Coping as Moderators of the Association between COVID-Related Uncertainty and Depressive Symptoms

Psychology - Psychology - Graduate
Amna Khan

The COVID-19 pandemic has resulted in increasing risk factors for mental health problems, placing the burden of care on health systems to address pandemic-related mental health needs. Specifically, rising disruptions as a result of the pandemic may be implicated in worsening mental health problems, such as decreased well-being and life satisfaction. Recent research on the COVID-19 pandemic has confirmed this association, although theoretically the effects should vary depending on individual characteristics, such as sociability. The purpose of the present study is to examine the role of sociability in moderating the association between COVID-related disruptions and life satisfaction in a sample of adults, as a means of informing future intervention work. Using data from an online survey given to N = 485 adults, COVID-19 disruptions related to conflicts with household members or roommates was negatively associated with life satisfaction. However, other disruptions were not found to be associated with life satisfaction. Sociability was found to moderate the associations between COVID-related disruptions and life satisfaction; specifically, high sociability was found to exacerbate the negative associations between disruptions and life satisfaction. The findings of this study indicate that sociability may be a liability during the pandemic, serving to exacerbate against the negative mental health effects of the pandemic. It could be that highly sociable individuals are not better able to offset social disruptions. Future research is needed to better understand the mechanisms that might explain this exacerbating effect. The drawbacks of sociability can be used to inform future interventions to help individuals better navigate social disruptions (due to the current pandemic or future pandemics).

Cyberbullying and the Significance of Its Impact
Communications - Undergraduate
Lauren Klein

Over the past few years, electronic and social media have grown drastically. People have more access to technology than before and are spending increasing amounts of time with screens.Adolescents are spending a significant part of their days utilizing technology. With the rise of social media sites, adolescents can communicate with their peers in ways that were not possible before. This increased use of social media provides a platform for more cyberbullying. Scholars have widely researched and discussed the issue of cyberbullying, and there are two schools of thought regarding its impact on adolescents. The Multiple Effects School believes that cyberbullying has a severe impact on both the mental and physical health of adolescents. The Limited Effects School views the impact as less severe and considers cyberbullying to be an extension of traditional bullying. This study aims to determine which school of thought is more credible and suggest effective prevention and intervention methods. I will be examining the similarities and differences in the current literature surrounding this debate using a Critical Analysis with four research questions. My analysis identified difficulties in comparing research due to inconsistencies and the enormous growth in the use of electronic and social media in the recent past. I concluded that the topic requires further research in order to decide which school of thought should form the basis for developing prevention and intervention strategies.

Improving Phishing Awareness Through Gamification Techniques
Computer Science - Alumni
Eleni Kokoris

As the third most common cause of data breach, phishing contributes to vulnerabilities of maintaining the confidentiality of private digital information. Phishing uses social engineering techniques to trick people into unknowingly sharing personal information through the use of fake websites and spoofed emails. Current methods of improving phishing awareness require a lot of time and are not necessarily the most effective. This research will test if awareness improvements can be made through the combination of a phishing simulation and gamification elements. Gamification has been proven to make non-game contexts more interesting and engaging for participants and can help train people to recognize phishing attacks at a pace to better match their skill level. By tracking features that include email open rate, link click-on rate, and landing page submission form rate, points will be awarded or deducted from the participant's score based on their actions, which then determine the difficulty and frequency of the next phish they receive. Users who fall for attacks more easily will be trained more often and through easier phishes, while users who are better at recognizing phishing threats will be trained less often and with more difficult phishes.

Microplastic Distribution on Shoreline and Offshore Environments on the South Shore of Long Island
Environmental Studies - Graduate
Navita Kumari

The National Oceanic and Atmospheric Administration considers plastic particles whose diameter are <5mm microplastic (Arthur et al., 2009). There are 2 different types of microplastics: primary and secondary microplastics. Primary microplastics, such as industrial and abrasives, are manufactured for direct use, while secondary microplastics are broken down pieces of larger plastics (Arthur et al., 2009). Global production of plastic from 1950 to 2016 has increased from 1.7 million tons to 335 million tons, correlating with consumer use patterns. Inappropriate disposal of plastic waste has led to microplastics being present in waterways (Karbalaei et al., 2018). To determine if this is also the case locally, a study was conducted on the south shore of Long Island to understand the distribution of microplastics. Samples were collected from shoreline and offshore environments near Jones Beach and Freeport, NY, using a plankton net. Offshore samples were obtained by boat, while shoreline samples were collected on foot. To compare distribution between shoreline and offshore environments, samples are processed and analyzed for mass using NOAA standardized methods (Marine Debris Program, 2015). This study is part of a broader investigation that will examine microplastic sourcing from an outfall pipe that releases sewage into the water 3 miles off the south shore of Jones Beach.

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Choosing for Friends Relative to Strangers in Need Decreases Risky Decision-Making
Psychology - Psychology - Undergraduate
Tereza Kuzmina

Existing research on risky decision-making suggests that people's tendency to endorse risky behavior depends upon a combination of individual differences in risk attitudes and loss aversion, as well as the contexts surrounding our choices (Sokol-Hessner and Rutledge, 2019). Indeed, many of our real-world choices affect not only ourselves but our close ones and people we barely know and are often prosocial in nature. Yet, the way in which prosocial contexts may influence our willingness to take risks on behalf of others is unknown. We conducted an empirical study (n = 32) by adapting an economic computerized risky decision-making task (Fareri et al., under review) to include 2 manipulations of social context. Across the trials, participants chose between 50/50 chance gambles and guaranteed options (100% chance of receiving a non-negative outcome). Participants made choices in 3 rounds. First, they made choices that would affect only themselves. In the next 2 rounds, participants were told to imagine making choices such that the outcomes would affect another person (i.e., best friend, stranger) who was in desperate need to pay off debt. A generalized linear mixed-effects logistic regression modeling effects of choice options (i.e., gamble outcome amounts/guaranteed amount), social presence, and partner identity on choices revealed a reduced likelihood of gambling when choices affected a person in need, relative to baseline choices for oneself ($z = -7.68$, $p < .001$); this effect appeared to be driven by partner identity ($z = 2.91$, $p < .004$), with a lower likelihood of accepting a gamble for a best friend in need relative to a stranger. These preliminary results imply that attempts to help others may influence the way in which we are willing to take risks. Future analyses will employ Hierarchical Bayesian Estimation to examine how the social context of our choices may change computational processes (i.e., risk attitude, loss aversion) underlying risky decisions.

Benford's Law and its Application to Algebra
Mathematics - Undergraduate
Aung Thiha Kyaw

Benford's Law is an observation that the first digits of a collection of numbers do not tend to be distributed evenly, as one might expect, but distributed lopsidedly such that the digit 1 occurs almost a third of the time, followed by the digits 2, 3, 4 and so on until the digit 9, which occurs less than 5% of the time. Benford's Law has been consistently observed in data coming from a wide variety of sources ranging from census and population data to number of days between volcanic eruptions to lottery numbers. As a result, the law has wide-ranging uses from detection of scientific and data anomalies to investigating financial fraud. In this paper, we will examine if Benford's Law applies to several datasets on Group Theory, a subtopic of Abstract Algebra that studies algebraic structures called groups. A group is a set of elements with a method for combining elements that obeys a set of rules. A group is called Abelian if both results of combining any two elements in either order are the same; a subgroup is a subset of a group that obeys the same rules as its parent group. Some examples of groups include the set of integers under addition, the set of symmetries of a square and the set of permutations of n distinct elements. The latter family of groups, called the Symmetric Groups, are especially important to Group Theory due to Cayley's Theorem, which states that every finite group is structurally equivalent to a subgroup of a Symmetric Group. Hence, studying Symmetric Groups and their subgroups gives us insights into all finite groups. In this paper, we will determine whether several substructures of Symmetric Groups, such as maximal Abelian subgroups, largest Abelian subgroups, and Conjugacy classes of Alternating Groups, obey Benford's Law.

Do Students who have Healthy Dependent Personality Styles Excel in College?
Psychology - Psychology - Undergraduate
Alexander Lacorazza

Many factors, including an individual's personality features, affect the academic performance they achieve. One such factor, interpersonal dependency, is defined as the propensity to obtain help from another person even in situations where one is capable of functioning on their own. It has been found that people express underlying dependency needs in varying ways, including destructive overdependence (DO), healthy dependency (HD), and the converse of overdependence, dysfunctional detachment (DD). College students who were enrolled in a psychology course at a Northeastern university were administered the Relationship Profile Test to determine the degree to which they show each of these three personality styles. Participants also reported their most recent semester GPAs, and their help-seeking behavior directed toward faculty and advisors. We hypothesized that students scoring high on HD will report the highest GPA, and moderate levels of academic help-seeking. Students scoring high on DO should report the most help-seeking behavior, with GPAs that are less high than those who score high on HD. Students scoring high on DD should have lower GPAs, and show the least amount of help-seeking.

Thoughts and Feelings About Sadness
Psychology - Psychology - Undergraduate
Kamma LaGattuta-Pennetti

The purpose of the research study is to examine ambivalence that people may experience related to their symptoms of major depressive disorder. Symptom ambivalence in depression refers to having both positive and negative feelings towards depressive psychopathology. The study also assesses potential barriers people with depression may face that prevents them from seeking treatment. Currently, there is no research that is focused on feelings of ambivalence toward depressive symptoms in adults, therefore, this study seeks to explore these feelings. Symptom ambivalence may be related to ambivalence about seeking treatment, another variable that is a focus of the current study. For instance, a client that has both positive and negative feelings about their depression may n ot seek treatment because they wish to maintain those positive feelings.

By studying the inter-relationships among symptom and treatment ambivalence and symptoms of depression, the current study may highlight variables that potentially impact both the decision to seek help and clients continuing in therapy once they seek treatment. It is an unfortunate fact that not everyone who suffers from symptoms of depression seeks help (e.g., Kessler, Merikangas, & Wang, 2007) and that people in therapy frequently and prematurely drop out (Swift & Greenberg, 2012). The current study will hopefully highlight an understudied, but potentially important, factor in seeking and staying in treatment for people suffering from depression. Data collection is ongoing and is projected to be complete by the time of the conference.

The hypotheses for this study are: (1) Higher scores of depressive symptoms will be positively correlated with feelings of symptom ambivalence, (2) Higher scores of depressive symptoms will have a positive correlation with treatment ambivalence, (3) Symptom ambivalence will have a positive correlation with treatment ambivalence.

What Doesn't Kill You Makes You Stronger: The Role of Psychotherapy for Young LGBTIQ+ Survivors of Homicide
Psychology - Psychology - Undergraduate
Huy Lam

Homicide comes from different forms, shapes, and frequencies, but such incidents that target against the LGBTIQ+ community is among the most extreme to be reported. Depending on the specific, unique circumstances, homicide-oriented acts can be divided into many categories, such as euthanasia, capital punishment (death penalty), murder, manslaughter, and killing in war. Given that homicide can be viewed and handled differently, some are considered crimes followed with punishments, while some are executed by the legal system (anti-LGBTIQ+ homicide). Survivors of homicide are classified according to three levels of victim, primary (indicating victimization), secondary (witnessing the act of violence), and tertiary (learning of a violent death, mostly via death notifications). In this ePoster, several topics are going to be discussed, including legal systems that justify homicide based on gender and sexual orientation, signs and symptoms that may take place after the exposure to homicide, available treatment and intervention, and lastly but most importantly, the role of psychotherapy in the process of healing and recovery for the homicide survivorship. Diversity is going to be discussed and inclusivity is the core value in every facet of the ePoster. In addition, a brief part of the project is going to be distributed to appropriate languages used with children when delivering death notifications of a survivor of homicide.

Maternal role-confusion, maternal emotion regulation, and preadolescent behavioral problems

Psychology - Psychology - Alumni
Alecia Lyseight, Travis K. Nair, Joanna Hurley

Theoretically, maternal functioning, such as maternal role-confusion with her family of origin and maternal emotion regulation, is a key factor associated with children's behavioral problems because it sets the precedent for how competently children regulate their behavior in adolescence and adulthood (Morelen et al., 2014; Pettit et al., 2001). However, few empirical studies tested these links. This study evaluated 1) whether maternal emotional role-confusion (rather than instrumental role-confusion) with her own parents and maternal emotion regulation are associated with preadolescent behavioral problems, and 2) whether maternal emotion regulation mediates the relation between maternal emotional role-confusion with her own parents and preadolescent behavioral problems (n mother-child dyads = 112, n male = 55). Each dyad completed questionnaires. Maternal instrumental role-confusion was not significantly associated with any of the main variables. Maternal emotional role-confusion was significantly related to aspects of emotion regulation, but not with preadolescent behavioral problems. Further, mediation analyses (Hayes, 2018) indicated that maternal emotion regulation had a significant indirect effect on the relation between maternal emotional role-confusion and behavioral problems. Results indicate that mothers' higher emotional role-confusion, but not instrumental role-confusion, with her own parents may influence their children's greater behavioral difficulties, most likely by setting an example for how to manage problematic behaviors. Specifically, the findings suggest that maternal emotional role-confusion is indirectly linked with preadolescent behavioral problems through maternal emotion regulation. These results underscore the importance of addressing maternal childhood history of providing emotional support to her own parents and her emotion regulation abilities when working with preadolescents experiencing behavioral problems and their mothers.

Discrete Wins DFS Optimizer and Website
Computer & Managemnt Information Systems - Undergraduate
John Magliocco

A Daily Fantasy Sports (DFS) optimizer allows users to use complexed data analysis and simulation-based projections to determine which fantasy players they should put on their weekly roster. In this project, we present Discrete Wins, a DFS optimizer we designed and created that can be utilized by fantasy football fans across the world. Discrete Wins will be able to suggest which players have the highest chance of reaching their fantasy football value based on analyzing player statistical variables such as player's catch %, Avg. separation from defensive player, fantasy points per target, etc. Discrete Wins analyzes the player's performance using unique variables such as the ones previously mentioned. This results in generating lineups that are contrarian to the public (which is crucial for success in DFS).

This project will not only be a beneficial product for users but the Discrete Wins community will also welcome users to interact with others who have the same interests or hobbies. With Discrete Win's social property, it will likely to contribute to the community by making the community more entertaining and fun as users can follow the project's social media accounts and communicate on our blog.

Due to the fact that the upcoming NFL season begins in September, 2020 statistics will be used to demonstrate the workings of the optimizer until data for week 1, 2021 can be obtained.

Variation in Tooth Microstructure Across Species of Coryphodon
Biology - Undergraduate
Danielle Mark

Few studies have examined the tooth microstructure of Coryphodon, the first mammal that evolved a body mass of over 1,000 kg, which then dwarfed to half its size at least once in its evolutionary history. The body mass of Coryphodon evolved dramatically through the Paleogene epoch, a period of rapid global warming and cooling events. Various histological slides of Coryphodon teeth were imaged under high magnification, studied and annotated using Adobe Illustrator, and then analyzed using ImageJ software. Daily deposited incremental lines in tooth dentine, the density of dentin tubules, and the thickness of enamel were quantified in several thin sections of Coryphodon. These features will be used to reconstruct aspects of the growth and metabolism of Coryphodon through time, in order to better understand how large-bodied herbivores evolve through periods of dramatic climate change.

Cloud Security and its Challenges
Computer Science - Undergraduate
Anitra Marley, Amna Quadri

Cloud computing has become more and more popular over the past few years. Many businesses/companies are switching over to cloud computing since it offers many unique benefits compared to traditional environments. The objective of our project is to understand some of the risks in transitioning to the cloud which are preventing organizations from utilizing cloud services more extensively. In this project, we identify some of these risks and ways in which they vary across the deployment and service models. We aim to highlight the importance of cloud computing and how it manages many organizational needs. Our research also includes an analysis of recent cloud data breaches and their causes. A survey is conducted to identify risks that have impacted their decisions about using cloud services. The survey information will be used to identify the most common areas of concern and areas for which additional solutions are necessary. This project is our attempt to lay out some important information about transitioning into a cloud environment and encourage more businesses and organizations to make this transition.

Juggle
Computer Science - Undergraduate
Alexandra Mashkow

In this project, I present Juggle, a game in a 3D extended reality (XR) environment, with a simple objective: to keep as many objects from falling to the ground as possible. Even though the game has a simple concept, the focus of the project is to create an intuitive experience for the player. By implementing different mechanics and physics for the different types of objects the player can juggle, the game offers entertainment and replayability, despite the seemingly simple concept.

The game was built using the Unity game engine with customized resources and motion patterns for various objects. Hand gestures of the juggler are captured using the Ultraleap motion controller with programming to make the interactions with the game feel natural and intuitive.

Modifiable Risk Factors for Esophageal Cancer: A Literature Review
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Justine McAleese

Esophageal cancer is an aggressive malignancy as indicated by its 5-year survival rate of roughly 15-20%. It consists of two main subtypes, squamous cell carcinoma (ESCC) and adenocarcinoma (EAC). Risk factors for the development of esophageal cancer include modifiable and unmodifiable factors. Common unmodifiable risk factors include male and Caucasians. Understanding modifiable risk factors can help decrease the likelihood of developing both subtypes of esophageal cancer. The purpose of this literary review was to examine up-to-date evidence of modifiable risk factors that influence the development of esophageal cancer, specifically the main subtypes. A database search was performed including CINAHL, PubMed and Cochrane over the past 10 years. Keywords searched in these databases were "esophageal cancer" AND, ("modifiable risk" OR, "risk factors"). The literature review includes 5 research studies that investigated specific modifiable risk factors for specific subtypes of esophageal cancer. Most studies found smoking and the consumption of red meat increase the risks of developing both subtypes, while alcohol intake elevates the risk of ESCC subtype but not EAC. Fruits and vegetable intake decrease the risk for EAC. Interestingly, increased BMI is associated with increased risk for EAC but decreases the risk of ESCC. These findings suggested there should be a separate evaluation for risk factors for each subtype rather than the broader umbrella of esophageal cancer. Furthermore, health care professionals should provide tailored education for patients with different risk factors. More studies are needed to investigate genetic and epigenetic factors and potential genetic therapies.

Examining Relationships between Empathy and Social Network Variables
Psychology - Psychology - Undergraduate
Carly McMann

Maintaining and creating a social network requires the investment of both time and energy, and individual characteristics can shape the efficacy of such investments. Empathy is one such individual characteristic that may act as a social skill, improving the efficacy of individuals' investments of time and energy into their social networks. Guided by the Differential Investment of Resources (DIRe) Model, the purpose of the study is two-fold: (1) to examine the association of empathy with various indicators of social networks, including social network size, proportion of close ties, and proportion of kin; and (2) to explore whether empathy may actually moderate the association of time and energy investment with these social network variables. Participants between the ages of 18-29 completed an online survey addressing key aspects of the DIRe Model such as discretionary time, energy, social network variables, and empathy. Data collection is still in progress. It is expected that individuals with higher levels of empathy will have larger networks as well as a larger proportion of close ties, and that empathy will moderate the association between time and energy and these social network variables. For example, we expect the association between energy and network size to be weaker among individuals with higher levels of empathy, as presumably they would exert less energy to maintain the same size network as an individual with lower levels of empathy.

Space Assault
Computer Science - Undergraduate
James Meurer, John Kulins

Space Shooter is a single player, vertical scrolling arcade shooter based on the old arcade classic 1942. The story follows a star ship pilot who is tasked with making a bombing run to take out the leading ship of the enemy fleet. There will be three levels in which the player must break through the blockade of their home planet, Get to the enemy planet, and finally destroy the capital ship in order to win. The player can choose between one of three spaceships each with varying upsides and downsides in order to destroy other ships along the way. Once a certain number of enemies are destroyed. A boss will appear on the screen and once the boss is destroyed then the player will be able to travel to the next level. The goal of the game is to beat three levels and get the highest score possible!

The game was programmed in the Java programming language using the Java Development kit. The game will employ movement patterns, boss behaviors, and other game elements to create a fun game that will be appropriate for all audiences. It will be challenging enough to be entertaining but will be enjoyable by a casual audience. The game is also re playable as it encourages players to try to beat the game with all of the different ships at their disposal and to try to beat their high scores on each play-through.

Racial Based Disparities in the CoronaVirus (COVID-19) Disease
Biology - Undergraduate
Amna Minhas

In 2019, the novel coronavirus disease (COVID-19) caused by SARS-CoV-2 was identified as a new type of coronavirus following an outbreak in China. As a result, COVID-19 has caused a worldwide pandemic of respiratory illness and has become a global health crisis. The United States has quickly become the epicenter of the pandemic as it has the most cases reported worldwide. Notably, the hardest hit cities harbor the largest amount of different ethnic groups. Occurrence and severity of infection amongst patients are multifaceted, depending on different biological, economical, and cultural factors. However, current research on the virus indicates that minority groups are more susceptible to infection. Disproportionate rates of disease incidence can be attributed to the presence of longstanding health and social inequities across different ethnic groups. In particular, minority populations have higher proportions of people with comorbidities and low socioeconomic status which may exacerbate their susceptibility to possible infection and hospitalization from COVID-19. This paper will discuss the vulnerability of specific ethnic minorities to COVID-19 infection resulting from the presented health disparities. The specific geographic regions of the United States most severely impacted by this ongoing racial crisis will also be addressed along with possible reasons for the differences.

Potential Benefits of Kelp (Saccharina latissima) Aquaculture on Marine Fauna Communities

Biology - Graduate
Lauren Monopoli

Kelp aquaculture is one of the fastest-growing industries, representing 27% of the 30.1 million tonnes of aquatic plants produced in 2016. One of the most commonly farmed species is sugar kelp (Saccharina latissima). Sugar kelp grows predominately in the Atlantic Ocean and was once present throughout much of the Long Island Sound in New York. Being structurally unique, kelps have the ability to create and maintain habitats. This has a cascading effect on nearby marine communities, influencing species composition. With global populations expected to reach 10 billion by 2050, kelp is likely to become a highly valuable crop due to its high nutritional yield. Yet the extent of our knowledge on the implications of kelp aquaculture on natural communities is limited. The primary goal of this study is the determine how seabirds and other marine fauna communities respond to sugar kelp aquaculture. We predicted that 1) seabirds will forage within close proximity of sugar kelp and 2) species richness and diversity will be greater in the presence of sugar kelp. From February 2020 to May 2020, data was collected using GoPro Hero White 7 cameras located at four sites throughout Long Island, NY. With aquaculture gaining traction in the United States, it is crucial that the interaction between kelp farms and the surrounding marine community be further studied. Kelps are a unique and highly complex system that, when used for aquaculture, has the potential to provide habitat for various marine wildlife.

Losing Sleep Over It: Worry and Sympathy as Predictors of Sleep Problems in a Nationally Representative Sample of Older Adults

Psychology - Psychology - Undergraduate

Hannah Moran

Previous research primarily focuses on the effects of anxiety on sleep within samples of young adults. Additionally, there is limited research on the relationship between sleep and sympathy. The purpose of the current study was therefore to examine worry and sympathy as unique predictors of sleep quality within a sample of older adults. In doing so, we aimed to examine the relative influence of general worry and worry/concern about others (i.e., sympathy) on sleep quality later in life. Our sample included 3,294 participants from the third wave of the Midlife in the United States Study (MIDUS). Participants were, on average, 63.64 years old (SD = 11.35), the majority of whom identified as White (72.5%). About half (54.9%) of participants in the sample were female. Building on existing research, we hypothesized that older adults who worry more would have higher levels of self-reported sleep problems. Additionally, we raised the following two research questions: (1) what is the nature of the association between sympathy (i.e., concern/worry for others) and sleep problems and (2) do associations between worry, sympathy, and sleep differ for men versus women? To test our hypothesis and explore these research questions, we conducted a linear regression that included age, income, and education as control variables. In support of our hypothesis, results indicated that worry was significantly positively associated with sleep problems (b =.58 , p <.001). Sympathy was not a significant predictor of sleep problems and there were no gender differences in these associations. Our findings suggest that one way to promote sleep quality later in life may be to decrease the frequency at which old adults worry, perhaps by bolstering their social support systems, or by encouraging their use of mindfulness and other anxiety-reducing practices.

Nurse practitioner post-graduate residency program: Best practice.

Nursing & Public Health - Adult Gerontology Primary Care - Graduate

Jacqueline Mounayar

This review aims to better understand the novice nurse practitioner (NP) transition to practice while providing content from organizations focused on quality transitional programs. A major problem is the shortage of NPs in primary care. This is related to high turnover due to the difficult transition from expert RN to novice NP. To better understand this transition, Duchscher's Transition Shock Theory was examined and used to support the importance of residency programs. This review provides support for the use of NP residencies to positively impact the transition to practice for the novice NP. The Community Health Center Inc. NP Residency Program promotes quality NP residencies and is used as an exemplar. The article also addresses the concern with residency variability and the cost associated with these programs.

Keywords: nurse practitioner, residency program, transition to practice

A crime to be bilingual? Jury Perception of Non-Native Language in Testimonies

Psychology - Psychology - Undergraduate
Anna Mouras

Bilingual and multilingual speakers have been perceived as less trustworthy and less credible by others when expressing themselves verbally in English (Planken, et al., 2018). These poor perceptions have been attributed to potential language errors or non-native sounding parts of their speech or writing (Planken, et al., 2018). While this has been discussed in specific settings, like business (Mozafari, et al., 2017), little attention has been paid to the potential implications within legal settings. This study seeks to shed light on the ramifications of non-native speech on jurors' judgments of eyewitness testimonies. We plan to recruit 20 monolingual English speakers and 20 bilinguals to respond to a survey assessing their perceptions of nine different eyewitness testimonies. These testimonies' are divided into three categories: three testimonies are native-sounding (no errors), three are non-native-sounding (containing odd word choices or grammatical phrasings, e.g. "retreated the car", as opposed to "backed up"; "exited by running" instead of "ran away"), and the remaining three are ungrammatical (containing grammatical errors, e.g. "getting", as opposed to "got"). The testimonies are presented in the survey through (accent-free) audio recordings, and in text as well. Participants will rate each testimony with respect to the witness's credibility and likability. Compared to the grammatical testimonies, we predict that the non-native sounding and ungrammatical testimonies will be perceived as less credible and likable by both groups of participants. We also predict that the bilingual group will be more favorable in their assessments of the eyewitness compared to the monolingual group, specifically when it comes to the non-native sounding and ungrammatical testimonies. The results may reveal biases against bilingual witnesses, solely based on how they express themselves linguistically, and highlight the value of language diversity in juror selection.

Made By US
Art - Undergraduate
Kristen Moy

The postage stamp is a government-sponsored form of currency that continues to showcase graphics of great American pride. Just like any good investment, "Forever" stamps offer long-term reliable usage. As the stamp represents the American national identity, so does this series, in which Forever USA- celebrates all that is, and forever will be - American invented, created, started, and designed products.

The Dollar and Cents of the Game; Accounting In Professional Sports
Business - Accounting/Management - Undergraduate
Catherine Murphy

Introduction:
Thesis: To analyze accounting challenges associated with reporting financial results of a sports team.

1. What is a sports accountant and how the accounting department is set up for a professional team?
o Day-to-day in the life of a sports accountant
o Use articles to describe the issues that they have to deal with and what they have to make sure they include on their financials
o Use financials of a team, if applicable to showcase information

Revenue recognition: ASC 606
• Look at different streams of revenue and when it will be recognized
o Television/radio rights/broadcasting
o Ticket sales
o Naming rights/corporate sponsor
o Concessions and in-stadium purchasing
o Revenue from MLB
Revenue Sharing Plan
o Development Revenue – as seen on Braves financials
Lease agreements

How teams deal with the cost of players/contracts
• Roster Depreciation Allowance
o Safe Harbor
• Luxury Tax
o MLB
o NBA

Long-term contracts:
• There are accounting and financial reporting implications of signing players to long-term, multimillion-dollar contracts.
• Expensed as incurred
Impact of COVID:
• How it affected the business and financial results
• Look at financials, and make and forecast what could change due to COVID
• NBA and NHLbubble expenses, and revenue without fans, look at TV ratings and compare it to a regular season

Conclusion

A Comparison Between Cannabis Use and Abstinence as it affects Psychotic Symptoms in Patients Diagnosed with Schizophrenia

Nursing & Public Health - Psychiatric Mental Health - Graduate
Charmaine Nagasarsingh, Matthew Killian

PICO Question:

P: the population or patients: patients age 18 and over with a diagnosis of schizophrenia
I: the intervention, influence, or exposure: recreational use of cannabis
C: the comparison: abstinence from cannabis
O: the outcomes: an increase in psychotic symptoms

In patients age 18 and over with a diagnosis of schizophrenia, what is the effect of recreational use of cannabis, in comparison to abstinence from cannabis, on psychotic symptoms?
Team Members: Charmaine Nagasarsingh and Matthew Killian

Background/Introduction: Cannabis is the most consumed illicit drug in the world amounting to 120 to 224 million users (McLoughlin et al., 2014). Today, cannabis is legal in many states which is a factor that promotes the minimization of the effects for social and political reasons. Clinical evidence suggests schizophrenic patients have the worse overall outcome from using cannabis. However, there are some people with schizophrenia who claim that using cannabis helps their symptoms and reduces the side effects of antipsychotic medication. High comorbidity rates between cannabis misuse and schizophrenia have been established (Hamilton, 2017).

Methods: A literature review was done using EBSCO, Cochrane Library, and CINAHL

Results: The mental health of a patient is compromised by their drug use while for others there appears to be no adverse effect. Subjectively, patients with psychosis report more extreme effects, both positive and negative, from cannabis use compared to the general population (Rebgetz et al., 2015). The effects of cannabis could offer a short-lived acute psychotic reaction, or it could trigger longer-lasting problems of schizophrenia (Hamilton, 2017).

Conclusions: These studies provided evidenced a relationship between cannabis and psychosis, and that for those individuals with schizophrenia, cannabis use exacerbated their symptoms (Hamilton, 2017).

Effects of Cannabis Use among Adults Diagnosed with Schizophrenia
Nursing & Public Health - Psychiatric Mental Health - Graduate
Charmaine Nagasarsingh, Matthew Killian

A literature review was completed to assess the effects of recreational cannabis use among adults diagnosed with schizophrenia. Ameliorative outcomes from recreational cannabis use include reduced schizophrenia-related symptoms and decreased medication side effects, as reported from studies containing subjective, self-reported data. Higher co-morbidity rates were also found in this population. Implications for nursing practices are explored.

Empathy in Middle Childhood: Links with Maternal Depression and Role-Confusion, and Children's Attachment Security and Emotional Regulation
Psychology - Psychology - Undergraduate

Travis Nair, Kathryn Graham, M.A.

Empathy is a key determinant of children's prosocial behavior and healthy adjustment (Flouri & Sarmadi, 2015). Previous studies have provided some evidence that maternal depression, maternal role-confusion with her own parents, and parent-child attachment security are linked with empathy in early childhood (Macfie et al., 2015; Stern & Cassidy, 2018). Children's emotional regulation may explain these associations (Panfile & Laible 2012). However, few studies have assessed both cognitive and affective empathy and examined these links in middle childhood (Stern & Cassidy, 2018). Thus, we evaluated: 1) whether maternal depression, maternal role-confusion with her own parents, and child attachment security are associated with both children's cognitive and affective empathy, and 2) whether children's emotional regulation explains these relations in middle childhood. Participants were 112 mother-child dyads (N=112; M age=11.69). Children's greater attachment security and lower emotion regulation difficulties predicted higher cognitive empathy. Greater maternal role-confusion was associated with greater affective empathy and lower cognitive empathy. Our findings suggest that maternal depression might have a diluted effect on child empathy. The relation of Maternal role-confusion to children's affective empathy, calls for further investigation into how a mother providing emotional support to her own parents translates to her children's greater ability to respond to others' emotional states. Aspects of children's emotion regulation seem essential to understanding others' thoughts and affective states (i.e., cognitive empathy). Results also suggest that a more secure mother-child relationship characterized by open and appropriate expression of emotions facilitates children's cognitive empathy. Our findings encourage future research into the factors associated with affective and cognitive empathy in middle childhood.

The Reactivity of Hypervalent Iodine in Iodine-Guided Reactions via Transmetallation

Chemistry - Undergraduate
Jennifer Noorollah, Nirvanie Singh

The acid activation of phenyliodonium diacetate (PIDA) with trimethylsilyl triflate (TMSOTf) is investigated toward the goal of elucidating the mechanism from calculated energies of relevant intermediates. The computational study of the activation of PIDA is applicable in the transmetallation of hypervalent iodine compounds in iodine-guided reactions including the hypervalent iodine-guided electrophilic substitution (HIGES) reaction. The HIGES reaction provides a principle for selective bond formations including the Reductive Iodonio-Claisen Rearrangement (RICR) and the para-selective benzylation of aryl-λ3-iodane diacetates. One disadvantage of the previously reported HIGES para-selective benzylation is the preparation and isolation of hypervalent iodine starting materials. An alternative approach is reported herein in which the para-selective benzylated product is afforded through the fluorination of iodoarenes via an in-situ oxidation reaction. The novel in-situ method of preparing (difluoro)iodoarenes for the HIGES reaction is economically favorable in that the C-C bond formation occurs while retaining the iodo-aryl bond. The metal-like properties of hypervalent iodine allow for a transmetallation with metalloid reactants upon activation with Lewis acids and are further explored in novel transformations of reactions between Grignard and hypervalent iodine reagents.

Comparison of Retention in Methadone and Buprenorphine Treatment for Opioid Use Disorder: Preliminary Findings from a Literature Review
Nursing & Public Health - Nursing - Graduate
Jane Ottah

The Department of Health and Human Services has declared opioid addiction a public health emergency. Opioid use disorders (OUD) result in over 47,000 deaths per year in the U.S.. To address this epidemic, two FDA approved medications, Methadone and Buprenorphine, are typically administered in outpatient treatment programs to reduce craving and withdrawal symptoms. To achieve the therapeutic effects of these medications, it's critical for the patient to remain in treatment. This is a preliminary report for a literature review to investigate the retention rates among patients receiving Methadone compared to those receiving Buprenorphine. Databases such as Medline, CINAHL and Cochrane library have been searched using key words (Methadone) AND (Buprenorphine) AND (retention OR adherence). A total of four research articles, including two systematic reviews and two cohort studies, have been identified. One of the cohort studies conducted in Australia was chosen for a critical appraisal and is presented in this poster. This cohort study found that the implementation of Methadone led to an overall better rate of retention in treatment from 2001 to 2010 while retention rates for Buprenorphine increased over time. For example, the 12-month retention rate for Buprenorphine increased from 20% in 2001 to 30% in 2010 while for Methadone, the rate decreased from 48% to 38% during the same time frame. One of the limitations of this study is the lack of reliable information on Methadone and Buprenorphine dosages or treatment policies in clinics, both of which are critical for treatment retention. Since this study is not a randomized clinical trial, selection bias has resulted in significant differences in the characteristics of patients who treated with methadone as opposed to buprenorphine. To make a sound recommendation for clinical practice, I will continue to critically evaluate the remaining articles and make efforts to identify randomized clinical trials.

Views of Mental Health Across Generations

Psychology - Psychology - Graduate
Alyssa Pammer

Mental illness is a rapidly emerging issue in our country and in our world; the prevalence rates increase over time. In the United States alone, 1 in 5 adults suffer from mental illness, which is 51.5 million people. This means that 20.6 of adults that live and exist in the United States have a diagnosed mental illness. Prior research indicates that older individuals have more stigmatized views about mental illness. Parents of children with mental illness may also endorse negative stereotypes that exist about mental illness. The proposed study investigates how conceptualizations and perceptions of mental illness vary across generations. The researcher investigated factors that may account for these differences including public awareness of definitions of mental illness, refinements in the way mental illness is classified, the role of current events and their impact and public viewpoints about how to deal with challenges.

Participants completed an online survey hosted on Qualtrics. Measures included demographic questions, values, and a mental health questionnaire which included questions on different attitudes towards mental illness, feelings of those participants who may suffer from mental illness, and the stigma that surrounds these factors. Analyses will include frequencies and descriptive statistical analyses, correlations and chi- square analyses to examine relationships and independent group t-tests, and analyses of variance to look at group differences. Findings from this study will help us understand current views of mental health and may help in the design of better mental health services and treatment.

Uncertainty During COVID-19: Adaptive Coping Moderates Mental Health Outcomes for Couples
Psychology - Psychology - Graduate
Megan Parmenter

The COVID-19 pandemic has altered people's daily lives and resulted in significant uncertainty. This research used actor-partner interdependence modeling (APIM) to examine whether uncertainty (i.e., about the health self and others) and coping responses influence the degree of distress experienced by couples during the pandemic. First, we anticipated that both partner's ratings of uncertainty would be associated with mental health (i.e., anxiety and depressive symptoms). Second, we hypothesized that there would be cross-partner effects, such that partner 1's uncertainty would be positively associated with partner 2's mental health (and vice versa). Third, we hypothesized that both partners' adaptive coping would buffer the negative effects of their own uncertainty, such that the association of uncertainty with mental health would be weaker with greater levels of coping. Finally, we hypothesized that partner 1 and partner 2's levels of adaptive coping would buffer the negative effects of their partner's uncertainty, such that the association of uncertainty with mental health would be weaker if their partner engages in greater coping. Participants were 43 couples (n = 86 individuals) from the second wave of a larger longitudinal study on social networks. Our initial findings indicate a significant main effect for uncertainty and anxiety and depressive symptoms. We will use APIM to look for cross-partner effects, as well as the presence of moderation. Taken together, preliminary data suggest that uncertainty related to the pandemic is a potent stressor with implications for mental health. These results are particularly interesting given the demographics of our sample (i.e., healthy, young adults). Furthermore, our results may point to the possibility that adaptive coping is a modifiable factor that can act as a treatment target, and that for individuals in committed relationships, adaptive coping can be viewed as a joint resource which can benefit both partners.

QuickQuestion
Computer Science - Undergraduate
James Phillips

QuickQuestion – An Online Quiz Game

QuickQuestion is a web application that allows users to participate in multiple-choice quizzes, as well as submit questions that could potentially be answered by other users. Quizzes are divided by subject. After choosing a subject, the users must continue to answer questions until they fail/quit.

While platforms like Kahoot have quizzes of a limited length, the quizzes within my application are ongoing, and consist of a wide variety of questions, as long as they don't deviate from the chosen subject (e.g. geography, literature). It could also be considered similar to Trivia Crack since questions are randomly selected and categorized into one of six categories.

The ongoing and unpredictable nature of the program will likely make the game fun, and encourage the users to continue playing.

Studying the evolution of cytokinin signaling using the green algae Coleochaete scutata
Biology - Undergraduate
Sandra Pinto, Ramya Banda

The phytohormone cytokinin promotes plant development and plays an essential role in the plants' response to biotic and abiotic stress. 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. This study's focus is to test whether and how Coleochaete scutata, a green algae, responds to cytokinin. This study is conducted in four phases. The four phases are as follows: the preliminary experiment to establish experimental conditions, the second phase to test growth with adenine (control) and iP (cytokinin) treatments, and the third phase to test growth using different cytokinin (iP, cis-zeatin, trans-zeatin, kinetin, and 6-BA). The last phase will use guanine instead of adenine to determine if growth is nucleotide-specific, since previous experiments have shown that adenine affects plant growth. Growth is being measured by using a scoring system to determine if the cells grow in unorganized callus or in defined 2D and 3D cell row formations after one week of incubation in the respective media treatments. Experimental conditions established in phase 1 were implemented in phase 2 and are currently being implemented in phases 3 and 4.

The Impact of Stress on Eating Behaviors
Psychology - Psychology - Graduate
Danielle Rafal

Environmental and psychological factors contribute to the onset of disordered eating. Disordered eating can contribute to putting the life of individual and the people around them in turmoil, leading to the destruction of relationships and the self. There can be a fine line between disordered eating and eating disorders. One model that has been used to explain disordered eating is the diathesis-stress model which examines the role of stressful life events. The model posits that stressors in the individual's social and cultural environments interact with genetically inherited predispositions to impact the likelihood of developing a psychological disorder. Protective factors in the environment such as a positive view of the self or strong social support can decrease the likelihood that a disorder will emerge. "The development of eating disorders occurs as a result of the interaction of an individual's biological or cognitive predispositions and severe environmental events (Kroplewski, Szcześniak, Furmańska, & Gójska, 2019)." The purpose of this project is to investigate current attitudes and perceptions about food and eating related behaviors. Participants completed an on-line survey posted on Qualtrics. Questions on the survey included, basic socio-demographic information, an assessment of mood; perceptions of the body; how family, peers, and media view eating; concerns about eating, and beliefs and behaviors toward eating and food. Data analyses included frequencies and descriptive statistics, independent samples t-test and analyses of variance, chi-square analyses, and correlational analyses. Findings from the study can help us better understand environmental factors that affect perceptions and behaviors about eating and inform the design of educational programs for the general public.

Mood Tracker Web App
Computer Science - Undergraduate
Sarah Rasheed, Benjamin Shear

During these unprecedented times, there is no surprise that the mental health of our population has been put under pressure. We present the Mood Tracker Web App to help individuals record their moods along with a description to track the user's mental health. If a negative mood is logged with a severity that is too high, the app will give contact information for a crisis center hotline and will provide other suggested resources. The user has the option to view their mood statistics and download them to send to a therapist. The app will also provide a quick mindfulness activity generator.

The Mood Tracker Web App is a convenient and centralized center that motivates users to focus on their own wellness and receive life-saving help, if needed. In test cases, each user experienced logging a mood, adding another mood to the database, viewing statistics, viewing recommended Spotify playlists, and completing a mindfulness activity. Recording moods, viewing statistics, listening to recommended Spotify playlists, and interacting with a mindfulness activity made it easier for the user to utilize therapeutic tools. The accessibility of therapist information and hotlines at the user's fingertips provided convenience. The help should prove to be an effective to help individuals better understand their mental health progression during stressful times.

Parent-Child Attachment Security and Internalizing Symptoms in Preadolescence: The Role of Gratitude and Forgiveness

Psychology - Psychology - Graduate

Gabriela Rodrigues, Carli A. Obeldobel (Kent State University) & Logan B. Kochendorfer (Kent State University)

Parent-child attachment security is a key predictor of children's internalizing symptoms (Madigan et al., 2016), but little is known about the mechanisms involved. Gratitude and forgiveness may explain this relation as securely attached children develop a positive worldview (Bowlby, 1969) and thus are likely to be thankful for positive encounters and overcome negative feelings following interpersonal distress. Further, these traits may broaden children's repertoire of adaptive strategies when experiencing sadness and worry (Fredrickson, 2001). Thus, we expected that gratitude and forgiveness would mediate the relation between parent-child attachment security and internalizing symptoms. Our sample included 105 mother-child dyads (M child age =12.07 years). Preadolescents rated their attachment security with parents, depression, anxiety, dispositional gratitude, trait forgiveness, and completed an interview assessing interpersonal forgiveness. Mothers rated their child's behavioral expressions of gratitude. Parent-child attachment security was negatively associated with preadolescent's internalizing symptoms and positively associated with dispositional and behavioral expressions of gratitude and interpersonal forgiveness. Preadolescents with more dispositional gratitude reported fewer internalizing symptoms and those with more interpersonal forgiveness reported less depression. Bootstrapped mediation analyses showed that dispositional gratitude partially explained the relation between attachment security with parents and depressive symptoms and also partially mediated the relation between attachment security with mothers only and anxiety symptoms. Our meditational findings uniquely underscore the importance of cultivating an appreciation of positive events in a secure parent-child relationship. Further, our findings indicate maternal emotional support may be especially important in guiding preadolescents to appreciate others, which in turn, serves to regulate anxiety.

Use of Telemonitoring to Improve Health Outcomes in COPD Patients

Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Bethania Rodriguez

Introduction: Millions of people worldwide suffer from Chronic Obstructive Pulmonary Disease (COPD). COPD is expected to be the third leading cause of death by 2021. With advancement in health Informatics, telemonitoring services have the potential to benefit these patients because of early symptom recognition and treatment implementation.

Objective: This literature review was to evaluate the effects of telemonitoring services on healthcare outcomes, including quality of life, readmission, emergency room visits, mortality, and exacerbation related outcomes

Method: Multiple electronic databases, such as Medline, CINAHL, Pubmed, and google scholar were searched using keywords (telemonitoring OR telehealth OR eHealth OR telemedicine OR mHealth) AND (COPD OR chronic obstructive pulmonary disease). Identified research articles were evaluated for methodology strengths and clinical applicability.

Results: 15 articles were identified that examined the effect of telemonitoring on healthcare outcomes in COPD patients. Most studies found telemonitoring services reduce readmissions over 3-12 months of discharge and the need for in-person visits, It is also associated with better disease management, early detection of acute exacerbations and improved patient-provider relationships. Barriers included low quality data and increased cost and workload for providers.

Conclusion: The literature reviewed shows conflicting data regarding telemonitoring services in COPD patients. While some studies show telemonitoring should be considered as interventions by beneficial outcomes, other studies show little to no effect on quality of life or mortality rates. Concerns about patient privacy and confidentiality in using telemonitoring services in COPD patients should be considered by healthcare providers. More studies are needed to evaluate the effects of telemonitoring services on

Do face masks really make speech difficult to understand?
Education - Communication Disorders - Graduate
Lauren Rothberg

Since the onset of the Covid-19 pandemic wearing face masks has become part of daily life. However, many people complain that face masks make it hard to speak and understand others. Face masks filter the acoustic signal and decrease visual feedback. Converging evidence from studies examining the acoustics of masked speech shows that different styles of masks have differential effects on sound attenuation. Although there have been studies that examined speech perception through masks and studies that examined people's feelings about mask-wearing, to date no studies have looked at correlations between these factors. We examined the perception of speech through face masks in 4 conditions (no mask, disposable surgical mask, cloth mask, and N95 respirator). 100 healthy adults participated in an online experiment. They each listened to 24 unpredictable sentences recorded in the 4 masks conditions. Sentences were mixed with multitalker babble to simulate the type of background noise experienced in daily life. Participants also completed a survey querying their experiences (Never, Rarely, Sometimes, Often) with masks/face coverings (e.g. How often do you wear a face mask/speak to someone wearing a mask?; How often does a face mask affect your ability to understand/talk to others?). Preliminary results indicate that speech is most difficult to understand through N95 masks and participants' rating of difficulty communicating through masks in their daily lives is correlated with PWC. This study has implications for understanding not only how face masks impact communication but also how daily experiences with face masks influence speech perception.

Preparation of selenomethionine-labeled adenosine/guanosine preferring nucleoside ribohydrolase for X-ray crystallography studies
Biochemistry - Undergraduate
Edina Saljanin, Yasmeen Syedda-Hensley

Trichomoniasis, the most common sexually transmitted infection in the world, is caused by the parasitic protozoan Trichomonas vaginalis. Upon infection, T. vaginalis been known to cause many adverse effects and predispositions for other illnesses in individuals. Since T. vaginalis cannot synthesize nucleobases de novo, it relies on nucleoside ribohydrolases within its pyrimidine and purine salvage pathways in order to acquire nucleobases from its host. Nucleoside ribohydrolases such as adenosine/guanosine preferring nucleoside ribohydrolase (AGNH), cleave the N-glycosidic bond of purine nucleosides resulting in the formation of a nucleobase and a ribose sugar. In order to inhibit AGNH function, a better understanding of its structure would be highly beneficial as it would aid in guiding inhibitory drug design. A selenomethionine-labeled protein is required to serve as a heavier resonance center to obtain AGNH's structure through X-ray crystallography. To obtain the selenomethionine AGNH, E. coli B834(DE3) methionine auxotroph cells were transformed with plasmid DNA containing the T. vaginalis AGNH gene. The cells will then be grown in rich LB media in order to combat the poor growth rates often observed in the defined selenomethionine media. The starter cultures will then be thoroughly washed and inoculated into the selenomethionine media for further growth until the desired density is obtained. IPTG will then be added to induce AGNH expression, and the resulting selenomethionine-labeled AGNH will be purified using Ni2+ affinity and gel filtration FPLC.

Effects of Negative Social Feedback on Impulsive Decision-Making

Psychology - Psychology - Undergraduate
Lily Schatzberg

Social connection is a fundamental human need, and a lack of connection is often associated with significant negative physical, mental and emotional health consequences. For example, increased levels of reported loneliness and social isolation typically correlate with increased rates of mortality and depression. However, an underexplored behavior often associated with negative social experiences is substance abuse, which involves maladaptive decision-making processes. Evidence indicates that people with substance use disorders demonstrate increased rates of impulsive decision-making—they are more likely to choose smaller, immediately available rewards (i.e., drug high) instead of larger rewards available in the future (i.e., health). Yet, the link between negative social experiences and impulsive behavior is not well established. This project will explore the relationship between negative social feedback and impulsive decision making. We will be use a validated social rejection task (adapted from Rodman et al., 2017), in which participants (recruited through the Psychology Subject Pool at Adelphi University) will receive positive or negative feedback (i.e., like or dislike) on a photo of themselves, and validated delay discounting paradigm (adapted from Yu et al., 2017). The rejection paradigm is designed to mimic experiences on social media. Participants will perform the delay discounting task both before and after undergoing a social rejection paradigm in order to assess changes in impulsivity We expect that experiences of negative social feedback will be associated with increases in impulsivity as assessed by steeper discounting of future rewards. This project will have implications for understanding how negative social feedback from others may lead to maladaptive decision-making.

Solubility Study of Hypervalent Iodine
Chemistry - Undergraduate
Vanie Seecharan, Kevin Freddo, Sailesh Prasad

Within this study, we focused on analyzing the solubility of Iodobenzene Diacetate within various solvents. Idobenzene diacetate is an organic reagent with minimal prior research on its interactions with other solvents outside of dichloromethane and acetonitrile. We were able to analyze the solubility in a range of different common solvents such as dichloromethane, hexane, tetrahydrofuran, diethyl ether, toluene, and acetonitrile. Within this study, we were able to study other hypervalent iodine molecules, including those of our own design, such as those derived from butanoic acid and decanoic acid. We collected data regarding the solubility of each of these different molecules in various polar and nonpolar solvents at room temperature conditions 20 ℃. The data reported can be used by others to optimize reaction conditions in the development of pharmaceuticals. Data on the solubility of the designed reagents indicate that it is possible to perform reactions with hypervalent iodides in nonpolar solvents, which will open up new types of reactivity for these reagents.

Common and distinct neural drug cue reactivity responses in cocaine and heroin users: an activation likelihood meta-analysis.
Psychology - Psychology - Graduate
Nicole Senia

Chronic substance abuse represents a significant public health threat—in 2018, over 29,000 deaths were attributed to either heroin or cocaine overdoses alone. People with primary heroin and cocaine use disorders often differ in their reported use patterns and risk-taking tendencies. Drug cue reactivity—the subjective and physiological response to cues associated with drugs of choice––is one of the most studied disease maintenance mechanisms in addiction. Neuroimaging studies implicate the vmPFC, OFC and nucleus accumbens in drug cue reactivity responses in those with substance use disorders. However, it is unknown whether neural processing of drug cues differs between cocaine and heroin users, contributing to their differing clinical presentation, or whether these neural phenotypes are shared, indicating increased risk for co-use. We performed an activation likelihood estimation meta-analysis using GingerALE on 25 studies (11 cocaine, 14 heroin) investigating drug cue reactivity that included drug > neutral whole-brain contrasts. Results revealed recruitment of: 1) middle occipital gyrus, right precuneus, and bilateral amygdala in heroin users and; 2) left posterior cingulate cortex, right middle frontal gyrus, and bilateral precentral gyrus in cocaine users. Contrast analyses revealed increased bilateral middle occipital gyrus and right precuneus engagement to drug cues in heroin (vs. cocaine) users. These results indicate that distinct neural pathways may underlie responses to drug cues in heroin and cocaine users. Increased occipital lobe and precuneus engagement in heroin users could reflect enhanced attentional bias to drug cues, which may be both a risk factor and an intervention target for this group.

The Severity of Periodontal Disease Based on Multiple Factors Contributing to its Direct Effects

Biology - Undergraduate
Trisha Shroff, Naomi Dutes

In this study, research was conducted focusing on the effects of periodontal disease using scientific literature while consulting radiographs obtained from anonymous individuals at a dental practice. The pathological effects caused by periodontal disease in the alveolar bone were evaluated in order to determine how the pathology can affect the oral cavity as an entire unit. Lifestyle factors that contributed to the disease were conditions like smoking, diabetes and inadequate care. These conditions were considered in order to determine how the advancement and severity of the disease affected the masticatory apparatus and the overall health of the patient. Furthermore, periodontal disease is subjective depending on condition and treatment with its severity being dependent on multiple factors inclusive of the age cohort and health status of the individual involved. These multiple factors were taken into consideration and a scale was created using scientific sources and images aiming to explain and better understand a comprehensive treatment regimen of interest to the field of dentistry.

The Chirper: A Novel Device For Creating Rapidly Modulated Laser Signals
Physics - Undergraduate
Brendan Silva

We have developed a novel RF-system for generating 1 GHz per 6 ns at large detunings (> 6 GHz). The circuit used in the experiment is still developmental, takes up significant space, is brittle, and uses a host of secondary lab equipment such as power supplies. We will discuss our progress toward constructing a production level circuit that can be automated, controlled from a single board computer, and is built at the chip level.

Hypervalent iodine-guided reactions for the formation and diversification of I-isatin for the treatment of trichomoniasis
Chemistry - Undergraduate
Nicholas Spatola

A common non-viral sexually transmitted disease known as trichomoniasis is induced by an infection with the protozoan parasite, Trichomonas vaginalis (T. vaginalis). T. vaginalis is incapable of de novo synthesis of purine and pyrimidine nucleoside bases. As a parasite, T. vaginalis depends upon nucleoside hydrolases to savage purines and pyrimidines from its host for survival. In the research discussed herein, the objective is to inhibit the uridine nucleoside hydrolase enzyme (UNH). Previous literature has demonstrated that isatin has high bioactivity and has the potential to inhibit UNH. A diverse array of complex molecular structures can be made based off the core structure of isatin. One major structure that can be used to make many derivatives is I-isatin. I-isatin can be synthesized using hypervalent iodine via a dearomatization-rearomatization reaction. The I-isatin can be used as a transfer reagent to bond to other bioactive fragments to inhibit UNH.

SocAware - A Social Media Platform
Computer Science - Undergraduate
Alyssa Stallone

SocAware is a social media platform that allows users to "follow" other users on the platform and create posts to share with users that "follow" them. It also allows users to stay up to date with news and current events. There are a variety of social media websites that exist today including Facebook, TikTok, Instagram, Snapchat, etc. It has become clear that a successful website must have low response times and an easy to use intuitive user interface. These elements help attract users to the website and keep them coming back, SocAware is unique because the idea for SocAware was inspired by the impact of COVID-19.

Like other social networking platforms, our website allows users to follow other people and create posts. To set it apart from other available platforms, it also provides important resources that allow users to stay informed on important current events and news. SocAware is created with HTML and CSS with a Bootstrap framework to create something that looks pleasing and draws users in. Due to the time constraints of the project, the website will have basic functionality for users to create posts and access resources. In the future, we hope to develop it further into something that will last and continue to be used to share content and stay up to date on important information.

Skate The Streets
Computer Science - Undergraduate
Chris Tornatore

Skate The Streets is a 2D skateboarding themed platforming game. In this game, players move through the levels attempting to make their best time, doing different tricks to help them advance farther. There are other skating games such as the Tony Hawk's Pro Skater series and the Skate series. Those games are simulation games with a focus on giving players an immersive, "real" feeling of skating. My project focuses on making the game fun and entertaining to play through by combining the skating theme with simple and easy-to-learn controls. It is expected that people who aren't into skateboarding should still be able to pick up on the controls and get through the game. While this game is a "skateboarding game," at its core it is still a typical platformer. For the future, more modes and levels will be added, and AI players will be implemented so that the human players can compete with the AI.

Synthesis of 2-(2-methylpyridin-3-yl)phenol derivatives as Uridine Nucleoside Ribohydrolase Inhibitors

Chemistry - Undergraduate

Davi Vanegas

Trichomoniasis is a sexually transmitted disease that is caused by a parasite called Trichomonas vaginalis. The parasite does not create nucleobases and will obtain them from the host to reproduce. Uridine nucleoside ribohydrolase (UNH) is one of the salvage pathway enzymes used by the parasite to obtain nitrogenous bases.There are treatments for trichomoniasis but some strains of the parasite are growing resistant and new treatments are needed. Using a different pathway, potential inhibitors can be used as treatment against the parasitic infection by stopping the enzyme from taking nitrogenous bases from the host. 2-(2-Methylpyridin-3-yl)phenol (Figure 1) was found to moderately inhibit the salvage pathway enzyme but a good inhibitor should inhibit the enzyme using the least amount of drug concentration, usually sub micromolar. Using the 2-(2-methylpyridin-3-yl)phenol scaffold, derivatives were made using the Suzuki reaction. Suzuki reaction is a cross-coupling reaction that combines a boronic acid and an aryl halide with a palladium catalyst, to create biaryl compounds. After the compound was made, they were tested against the parasite to obtain an IC50. The goal is to create a compound that can inhibit UNH at a sub micromolar IC50 value.

Barriers to Nurse Practitioner Practice in Primary Care
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Seena Varghese

Nurse practitioners have ample practice authority, which is most advantageous for cost-effective and high-quality health care. Even though nurse practitioners provide similar duties as physicians in delivering primary care services, billing practices, and regulatory environment, the dearth of understanding of the nurse practitioner role restricts effective NP practice. This ePoster intends to assess research studies conducted regarding the barriers of nurse practitioners' practice in primary care and propose future research areas linked to the importance of alleviating these barriers for cost-effective health care reform. Numerous barriers were identified during this review of articles, and considerable disparities were seen among rural versus urban NPs and specialty versus primary care NPs. Furthermore, legal and organizational barriers that impede nurse practitioners' proficiency to practice independently or with equivalent resources as primary care clinicians were also identified during this review. Further research is needed to detect the barriers that nurse practitioners face when practicing in primary care alongside improving their scope of practice. Keywords: Nurse practitioner, the scope of practice, barriers, autonomy, utilization

The effectiveness of decolonization in reducing surgical site infection in patients receiving orthopedic surgery
Nursing & Public Health - Nursing Administration - Graduate
Tina Varughese, Melissa Wells BSN, RN

Introduction: In healthcare many steps are taken to improve patient outcomes of surgery. Data is collected and monitored and used to know that changes are improving the outcomes. With outcomes having a major correlation on reimbursement, steps are taken to improve preventable surgical site infections.

Purpose: The purpose of this study was to find out how effective is decolonization in reducing surgical site infections.

Methods: Multiple cross-sectional, systemic and meta-analysis design studies were used to examine outcomes when using a nasal povidone iodine and skin prep antimicrobial decolonization regimens.

Findings: In a systematic and meta-analysis review, use of a prophylaxis like a nasal decolonization prior to a total knee and hip arthroplasty proved to be beneficial. Pre-operative decolonization regimens reduce infections in urgent extremity repairs. A longitudinal controlled study screened and decolonized to reduce surgical site infection in elective total joint arthroplasty.

Conclusions: Numerous cross-sectional studies have shown a reduction in surgical site infections. The implementation of an antimicrobial to decolonize a surgical site will be beneficial in reduction of preventable surgical site infections.

Keywords: decolonization, preoperative, presurgical patients, infections and reductions

Diagnostic Accuracy of Mobile Applications to Detect Atrial Fibrillation
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Jennifer Vasquez

Background: Mobile applications (apps) that can be installed onto a smartphone or through a piece of hardware are being increasingly used for screening and diagnosis of potentially lethal arrhythmias such as atrial fibrillation (AF) in high-risk patients such as the elderly. Considering the prevalence of AF and the increased risk of stroke, heart failure and death associated with AF, it is imperative to routinely screen and diagnose AF accurately in order to initiate prompt pharmacological treatment.
Purpose: This review seeks to assess the diagnostic accuracy and feasibility of mobile apps while exploring ethical dilemmas.

Methods: A literature review was conducted by searching PubMed Central, EbscoHost and ProQuest Central from January 2013 to October 2018. Included in this review were published studies of the diagnostic accuracy and feasibility of mobile applications. Keywords used for the literature search were (atrial fibrillation OR irregular heart rhythm OR arrhythmia) AND (mobile applications OR mobile apps) AND (accuracy OR sensitivity OR specificity OR feasibility).

Results: Some apps use direct and indirect photoplethysmography (PPG) technology while others measure the chest movement triggered by the heart or auscultate the heart. The accuracy of these mobile apps varied among different technologies, their application settings and study populations. The sensitivity ranges from 66.7% to 98% and specificity from 79% to 100%. Some studies with small sample sizes have demonstrated the efficacy and functionality of mobile apps.

Implications: Further studies consisting of larger sample sizes are needed to validate the diagnostic accuracy of mobile apps. Further studies are also needed to assess how constant accessible monitoring can impact a patient's perception of their health and their privacy.

Pressure Injury Prevention in Critically Ill Patients
Nursing & Public Health - Adult Gerontology Primary Care - Graduate
Cristen Veltre, Polina Gulkarov, Alea Gaffar, Grace Tesoriero

Background: Pressure injuries (PI) have a costly effect on both hospitals and patients and can lead to severe illness if left untreated. Currently, there are different recommendations on how to prevent PIs: repositioning and the use of pressure redistributing devices. This presentation will compare turning and positioning every 2-4 hours to the use of pressure redistributing support surfaces to prevent PIs in critically ill hospitalized patients.

Objectives: This presentation will compare turning and positioning every 2-4 hours to the use of pressure redistributing support surfaces to prevent PIs in critically ill hospitalized patients.

Methods/Procedures: Steps and tools of evidence based practice (EBP) were used to draw conclusions and make recommendations about how to prevent PIs. A literature search was used to find evidence based research articles that investigated the use of repositioning and pressure-relieving devices to prevent pressure injuries in critically ill hospitalized patients. Twelve articles that met the inclusion criteria were used to gather data for this presentation.

Findings: Manual repositioning, special mattresses and cushions as well as turning frequencies were all used for the prevention of pressure ulcers in critically ill patients.

Outcomes: Repositioning patients with the use of pressure-relieving devices, is one of the best interventions in pressure ulcer management. However, identifying the best positioning interval with pressure-relieving devices is challenging. It was determined that special pressure-relieving mattresses and surfaces should be used for patients at risk for skin breakdown. An increase in turning frequency did not prevent pressure ulcers. Silicone foam dressings were found to prevent the

The Relations of Maternal Emotion Socialization with Preadolescent Adjustment, Parent-Child Attachment Security, and Maternal Depression
Psychology - Psychology - Graduate
Stephanie Waslin, Logan B. Kochendorfer, M.A.

How parents approach and teach their children about emotions is a key determinant of children's healthy adjustment (Denham, 2019). In preadolescence, children begin individuation and parents shift expectations of children's emotion competence (Cassano et al., 2007). Our study aimed to expand the literature by examining the relations of maternal emotion socialization strategies (ESS) with preadolescent adjustment, parent-child attachment security, and maternal depression. Our sample was comprised of 226 mother-child dyads (Mage child=11.03). Mothers completed the Coping with Children's Negative Emotions Scale (CCNES), revised to include three additional ESS identified in a preliminary study, rated their child's adjustment (SDQ) and reported on their own depression (CES-D). Children completed the Security Scale with Mothers. An EFA yielded a three-factor loading of the RCCNES: Collaborative Coping, Negative Reactions to Child's Distress, and Low Expectation for Child's Self-Regulation. Correlational analyses showed that mothers using more collaborative coping rated their children as more prosocial. More negative reactions were associated with more internalizing and externalizing behaviors, less prosocial behavior, less secure attachment, and more maternal depression. Collaborative coping seems to promote prosocial behavior. Mothers effectively addressing preadolescents' distress teaches how to better engage in helping others in distress. Negative reactions emerged as an important correlate of maladjustment, suggesting that these ESS may undermine a child's ability to learn how to effectively regulate emotions and significantly impact daily functioning. More negative reactions related to less attachment security complements previous literature showing that sensitivity and acceptance of children's negative emotions is a predictor of security (Fearon & Belsky, 2016). Finally, our results suggest that depression may impair mothers' ability to engage in constructive ESS.

College Women's #MeToo Awareness and Activism
Psychology - Psychology - Undergraduate
Julie Weissman

In 2007, the #MeToo movement sparked an increase in feminist activism by inviting women to voice their concerns regarding sexism, misogyny, and rape culture through social media (Mendes et al., 2018; Yung, 2015). Between 2017-2018, Twitter users used the hashtag #MeToo 19 million times, signifying the movement's momentum (Anderson & Toor, 2018). However, there is little empirical research investigating how college-aged women engage and respond to the #MeToo movement. Given prior political science, media, and law studies of the #metoo movement's cultural influence, it is important to explore the psychological perspective of #Metoo movement as a cultural tool. In effort to examine college women's knowledge of and engagement with the #MeToo movement, this study sampled 158 heterosexual, female college students from a private university (Mage= 19, SDage=1). Participants reported learning about the movement from social media (62%), the news (29%), college campuses/classes (20%), and relational resources (13%). Yet, 68% of the participants identified as being only somewhat familiar with the movement, while 20% were very familiar, 6% unfamiliar, and 6% did not respond. Moreover, almost half (48%) of participants reported not engaging with the #MeToo movement online. However, as expected, correlation analyses indicate that there is a strong positive, significant correlation between #MeToo familiarity and the extent of online #MeToo engagement, $r(154)=.57$, $p=.00$, as well as frequency of engagement, $r(154)=.53$, $p=.00$. As with all correlational studies, the present findings are not indicative of causative models. The present study suggests that while emerging adult women may passively consume #MeToo content, they are less likely to participate or contribute to online activism. Future research would benefit from exploring ways to increase female college students' online activism.

AY Password Manager
Computer Science - Undergraduate
Yael Weiss

This project showcases a password manager in the form of a Google Chrome extension. The Chrome extension component will give the user the ability to specify the complexity of the password they wish to generate, store the password in an encrypted form, access all the passwords saved in the account of the user, change and delete it. Other similar implementations of a password manager use the same structure as we do but they do not have the extension component.

This extension will be written using JavaScript, HTML5, CSS, MySQL and Python. The protection of the system will rely on up-to-date encryption like AES-128 or analogies to keep the passwords safe. Every password retrieval from the database will go through the encryption/decryption algorithm. This project is an opportunity for us to apply our technical knowledge and create a useful product that can be used by people.

The effectiveness in reducing surgical site infections in orthopedic surgery
Nursing & Public Health - Nursing - Graduate
Melissa Wells, Tina Varughese

Introduction: Surgical site infection (SSI) is a preventable hospital acquired condition. It is associated with poor outcomes such as increased morbidity, mortality, hospital length of stay and cost. Thus, prevention of SSIs is the focus of quality improvement initiatives in many hospitals.

Purpose: This literature review was to evaluate the effects of decolonization on SSIs in patients receiving orthopedic surgery.

Methods: Multiple electronic databases were searched using keywords, e.g. (decolonization) and (SSI) and (orthopedic surgery).

Findings: A total of 9 (nine) studies were included in this review. In 2007 and 2014, 12,910 knee and hip surgeries were screened. Pre-screening for MSSA rate was 0.75% which reduced to 0.25% post screening ($p < 0.0001$). The overall orthopedic SSI rate fell from 1.92% to 1.41%. The most cost effective MSSA prevention was seen total hip arthroplasty (3% to 1.5%, $p = 0.002$).

Conclusions: Systemic review and meta-analysis of clinical trials have shown a reduction in SSIs. However, the timing of administrating the decolonization protocol varies from the day of surgery to 5 days prior to surgery. A cost-effective study shows a need of at least 35% reduction in SSIs to balance the cost of implementing a decolonization protocol. Thus, the cost-effectiveness of different decolonization protocols should be compared before implementing a quality improvement initiative.

Keywords: decolonization, surgical site infections, orthopedic surgery.

The effectiveness of decolonization in reducing surgical infections in pre-surgical joints.
Nursing & Public Health - Nursing Administration - Graduate
Melissa Wells, Tina Varughese

Title of Poster Presentation: The effectiveness of decolonization in reducing surgical infections in pre surgical joints.

Authors Name(s) with Degrees & Credentials: Tina Varughese, BSN, RN & Melissa Wells, BSN, RN

Introduction: In healthcare many steps are taken to improve patient outcomes of surgery. Data is collected and monitored and used to know that changes are improving the outcomes. With outcomes having a major correlation on reimbursement, steps are taken to improve preventable surgical site infections.

Purpose: The purpose of this study was to find out how effective is decolonization in reducing surgical site infections.

Methods: Multiple cross-sectional, systemic and meta-analysis design studies were used to examine outcomes when using a nasal povidone iodine and skin prep antimicrobial decolonization regimens.

Findings: In a systematic and meta-analysis review, use of a prophylaxis like a nasal decolonization prior to a total knee and hip arthroplasty proved to be beneficial. Pre-operative decolonization regimens reduce infections in urgent extremity repairs. A longitudinal controlled study screened and decolonized to reduce surgical site infection in elective total joint arthroplasty.

Conclusions: Numerous cross-sectional studies have shown a reduction in surgical site infections. The implementation of an antimicrobial to decolonize a surgical site will be beneficial in reduction of preventable surgical site infections.

Keywords: decolonization, preoperative, presurgical patients, infections and reductions

PitchingGuru: A data visualization and storage tool for baseball players
Computer Science - Undergraduate
Terence Wong

This project is a data storage/visualization tool for baseball pitchers and coaches. Players can input their own data and coaches can view each of their players data

There are other applications similar to PitchingGuru but these fall into two main categories, either these tools are too expensive in cost for regular consumers or they lack the same level of functionality and features that this application will provide

This application focuses on user experience to present the information for users in a clear manner through the use of data visualization tools such as line graphs and heatmaps

Future plans for this application would be to implement a similar kind of functionality for all types of baseball players, not just pitchers

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

Chemistry - Undergraduate

Samantha Wynter, Vincent Carucci, Hyejin In, Marisa McLeod, Andrew Oh, Lauren Parrinello

As the need for renewable energy increases, scientists have focused on to solar cells development as the world's next energy source. Cadmium selenide (CdSe) and Cadmium sulfide (CdS) are inorganic, binary n-type semiconductors from the II-IV semiconductor compound group. Compounds within this group are commonly used in the field of electrochemistry, especially in photovoltaic applications, because of their direct band gaps and high absorption coefficients. Current interest in these compounds is focused on the development and testing of nanoparticles, quantum dots and thin films.

The aim for this research is to utilize the electrochemical techniques in order to synthesize and 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 will measure the potential under open circuit conditions. 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 deposited films were exposed to irradiation by white light. The data obtained from the experiments show that the semiconducting catalyst system decays under illumination, as indicated by both the current and potential decrease with time progress, causing the films to no longer function. The data collected will determine the longevity of CdS and CdSe in solar cells, biosensors and other applications.

The Dark Triad Personality Traits as Predictors of Political Conservatism, Racial Discrimination, and Attitudes Towards Police Behavior.
Psychology - Psychology - Undergraduate
Irene Yannios

Our primary aim is to explore the interaction between the Dark Triad personality traits (i.e. narcissism, psychopathy, and Machiavellianism), Social Dominance Orientation (i.e., conservatism), Right-Wing Authoritarianism (i.e., obedience to authority; aggression towards out-groups), and how they might predict attitudes towards racial discrimination and police behavior. Participants (N = 243) will be asked to complete three personality measures and two attitude measures evaluating the aforementioned variables. We are predicting that those higher on the Dark Triad will be associated with higher levels of political conservatism, racial discrimination, and exhibit more positive attitudes towards police behavior. The study will aim to highlight any differences between narcissism, psychopathy, and Machiavellianism in their individual expressions of racial discrimination, political conservatism, and attitudes towards police behavior. Data collection is still ongoing at this time.

Dos Burning

Mathematics - Undergraduate

Michelle Zhang, Christopher Benson, Daniel Delasherasgarcia, Michael Gabriel, Chante Parker, Andrew Velasquezber, Samantha Vicari, Eleni Zamagias,

Graph burning was recently introduced as a way to model the spread of information across a complex network. In this work, we explore an alternative to this problem which aims to model the spread of competing ideas across a network via a combinatorial two player game which we call "Dos Burning." Our research looks at winning strategies for different graph configurations. We make use of classical proof techniques, such as mathematical induction, and also computer programing to arrive at our conclusions.

The Going Concern Disclosure
Business - Accounting/Management - Undergraduate
Jacqueline Zito

The question that my project will address is if the going concern disclosure is helpful to users of financial information. The going concern disclosure is a disclosure which the auditor can make on annual financial statements. It signifies a lack of confidence from the company's management and the auditors that the company can continue operations for 12 months and meet all of its financial obligations.

This question occurred to me during the outbreak of the pandemic during which many big companies declared bankruptcy. The keyword here is "outbreak"; just a month in large companies were declaring bankruptcy and blaming it on COVID. When I did some background research, mostly on financial news outlets, it appeared that these companies were struggling prior to COVID, however the companies had no going concern disclosure. This made me question how accurate and reliable the disclosure was.

First, I wanted to educate myself on some of the issues surrounding the going concern disclosure. This basically encompasses all times that there was no going concern disclosure and a company still declared bankruptcy. Once I got a sense that it was very common, I started looking into the going concern disclosure. I analyzed the codification, read CPA journals that commented on the disclosure, and interviewed accountants who work with the disclosure. Then, I decided to look into some companies that went bankrupt during COVID-19. I looked into the background of these companies and conducted financial analysis on them. This helped me determine whether management and the auditors made the right decision to not give these companies, that have declared bankruptcy specifically amidst COVID, going concern disclosures. I will use all of this research and evidence to draw larger conclusions about the going concern disclosure. Specially, if the disclosure is even useful or if management and auditors need stricter standards when evaluating companies for a going concern disclosure.