MONMOUTH UNIVERSITY | HONORS SCHOOL

THE HONORS SCHOOL

RESEARCH CONFERENCE

SPRING 2023

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HONORS SCHOOL RESEARCH CONFERENCE SCHEDULE

Friday, April 21, 2023 - Library 101

Opening Remarks:
Dr. Nancy J. Mezey, Dean of the Honors School

SESSION A: 8:20 - 9:30 AM

Cassie James, *History*
Gabriella Vangeli, *Health Studies (Health Science)*
Lejla Canka, *Political Science (International Relations)*
Danielle Dempsey, *Psychology*
Sarah Drew, *Psychology*

SESSION B: 9:35 - 10:45 AM

Riya Ajmera, *Chemistry (Biochemistry) and Communication (Public Relations)*
Jacqueline Aquino, *Mathematics and Secondary Education*
Luke Collier, *Chemistry (Advanced Chemistry)*
Anthony Cross, *Computer Science*
Julian Rebelo, *Chemistry*

SESSION C: 10:50 AM -12:00 PM

Ashley G. Ng, *Communication (Media Studies and Production)*
Cory Englehardt, *Communication (Media Studies and Production)*
Mia Lewis, *Health Studies (Health Science)*
Chiara Zambon, *Health Studies (Exercise Science)*
Jenna Moley, *Health Studies (Health Science)*

SESSION D: 12:05- 1:00 PM

Kanik Hannah Kinneret, *Computer Science*
Sarah Curtis, *English (Creative Writing)*
Dárika Lara-Rodriguez, *Design and Animation (Graphic and Interactive Design)*
Giverny Aerin Risse, *Business Administration (Marketing and Management)*
Mary Schuld, *English and Elementary Education*

SESSION E: 1:50 - 3:00 PM

Julianna Carletti, *Nursing*
Ava MacMillan, *Nursing*
Jack Holmstrom, *Business Administration (Economics and Finance)*
Emma Cusano, *Marine and Environmental Biology and Policy*
Gabriela Schnur, *Biology (Molecular Cell Physiology)*

SESSION F: 3:05 - 4:15 PM

Nicole Cappolina, *Marine and Environmental Biology and Policy*
Nico Landino, *Biology (Molecular Cell Physiology)*
Julia Panebianco, *Biology (Molecular Cell Physiology)*
Jessica Martin, *Communication (Communication Studies)*
Austin Staulcup, *Design and Animation (Graphic and Interactive Design)*

THESIS ABSTRACTS

CASSIE JAMES | FIRST READER: DR. ERIK RAJ

Investigating the Effects of the Digital (App Based) Experience as a Development Tool for Yielding Academic, Social, and Interactive Success

Technology has impacted the manner in which we communicate, educate, and learn. Investigating the specific effects of people's digital experience is essential to uncovering how technology can be a positive presence within our society. As technology develops, so do students' assumptions for a growth opportunity. This experience goes past the customary boundaries within the classroom environment. Understanding how to exploit the academic capability of new innovations is along these lines fundamental for language teachers. Some significant awareness of how technological advancements might function within schools has come to light. The use of technological mobile applications such as videogames or communicative devices can yield a higher client motivation, success rate, and willingness to target individuals' communicative disorders. Apps and videogames can be a gateway to the thoughts, feelings and intrinsic drive for an individualized method of care. The digital experience is imperative; it affects the way people carry themselves, the way they interact with others and formulate connections. Technology encompasses almost every single life across the globe. What we do with these experiences shapes the outcome of our educational experience and quality of life.

GABRIELLA VANGELI | FIRST READER: DR. JENNIFER MCGOVERN

Investigating the Risk Factors for Unhealthy Eating and Exercise Habits in Female Athletes

In the post Title IX world, female sports have been growing exponentially. Meanwhile, female athletes have shown signs of being at higher risk for unhealthy eating and exercise. The purpose of this research is to identify what factors are putting female athletes at risk for unhealthy habits and how these different components are related. While we know some factors that put female athletes at risk, extensive research has not been done to see how certain factors are related. It is essential that more research on female athletes is conducted in order to help put in place better programs. The factors that were analyzed include type of sport, body image, environment, exercise, and eating habits. In order to collect data a survey was distributed to Division I, II, and III athletes which evaluated body image, exercise, eating habits, and environment. The survey was collected and analyzed to look for correlations amongst the data.

LEJLA CANKA | FIRST READER: DR. KEVIN DOOLEY

The Progression of Gender Rights in Eastern Europe: How Globalization Has Advanced Legal Reform in the Balkan Region

The Balkan region has recently experienced a democratic shift in its governments, leading to the increase of progressive legislation throughout many states. This research thesis analyzed the social implications behind this recent change in legal policy within the context of gender rights. It studied the effects of globalization and Westernization and their influence on legal reform in the states of Kosovo, Serbia, Albania, and Croatia. Liberal political theory and feminist theory was also studied for their impact on the legal institutions of the Balkans. For research methods, this study conducted an ordinal regression analysis through SPSS in order to establish a relationship between a state's social ideology and its legal reform progression toward gender equality. The study concludes that in each of the case studies, there has been a progressive shift toward gender equality policy that has had a lasting impact on social ideology. While there is still ample progress to be made and necessary policy to be passed, it can be concluded that the post-Communism shift toward democracy and Westernization in the Balkans has positively altered public opinion, legal policy, and social ideology regarding gender rights in Kosovo, Serbia, Albania, and Croatia.

DANIELLE DEMPSEY | FIRST READER: DR. EMMA GREENSPON

Examining Sense of Belonging and Early College Experience of Second-Year University Students as it Relates to Social Isolation and COVID 19

The purpose of this study is to examine and understand the sense of belonging and college experience of second-year university students as they relate to social isolation and the COVID-19 pandemic. Using a comprehensive qualitative analysis through conducting a focus group interview with university students, primary and secondary topics were identified and coded to understand and analyze themes regarding sense of belonging and college experience for this population. Participants expressed four main themes: a low sense of belonging, struggling with remote learning, increased quality of relationships with family, and increased quality of pre-existing relationships with friends.

SARAH DREW | FIRST READER: DR. NATALIE CIAROCCO

Children of Divorce and Its Social Impact

Children of divorce tend to report feeling less supported by their friends and less positive friendships than children of intact families (Green & King, 2009). The current study analyzed the differences between college-aged children of divorce and college-aged children of intact families on their sense of belonging, strength of social relationships, and trust in friends. One hundred and five participants completed a series of web-based surveys asking them to self-report on their current social relationships. These surveys were then used to analyze a participant's sense of belonging, strength of social relationships, and trust in their friends. There were no significant differences between the college-aged children of divorce and the college-aged children of intact families on one's sense of belonging, strength of social relationships, or trust in friends. College-aged children of divorce may overcome troubles regarding friendships that they experience at the time of their parent's divorce. Hence, implying that although divorce may affect children and their friendships during the divorce itself, children are eventually able to heal and overcome difficulties associated with the divorce.

RIYA AJMERA | FIRST READER: PROFESSOR JOHN MORANO

Left in the Dark: The Struggle of College Students Navigating a Complex Health Insurance System

This series of four newspaper articles sheds light on the lack of health insurance literacy among college students in the United States. The project highlights the need for universities to integrate health insurance education into their curricula, as the majority of college students are required to navigate the complex insurance system on their own after age 26 or upon receiving their first job benefits. The articles explore the consequences of this knowledge gap, including a higher number of uninsured young adults, with one in four uninsured individuals being between the ages of 26 and 34. The project also emphasizes the impact of this issue on pre-health professionals, who must understand the importance of health insurance in providing effective healthcare. Additionally, the articles compare the U.S. healthcare system with globalized healthcare in other countries, stressing the need for the U.S. to prepare its upcoming generations to understand and navigate its current system. Overall, this project highlights the urgency for universities to take action and equip their students with the necessary health insurance literacy to navigate the healthcare system effectively.

JAQUELINE AQUINO | FIRST READER: DR. SANDRA ZAK
SECOND READER: DR. JASON FITZGERALD

Bringing Mathematics Closer to Hispanic ELL Students

Several studies have indicated that the stereotyping of Latinx students limits their ability to pursue careers in mathematics. This study aims to determine techniques to reduce the effects of stereotyping on a subset of Latinx students (those who identify as Hispanic and receive ESL instruction) in an effort to increase the number who are interested in pursuing mathematics careers. Participants interviewed included students who identify as Hispanic and who also receive ESL instruction, and their teachers at the Long Branch Public Schools. The student participants expressed an interest in learning more about math driven careers and having guest speakers in those careers who are representative of their community. The teachers stressed the importance of having more materials in the students' native language, workshops where teachers can learn how to support students (for example, lessons in Spanish or learning how to help students who have missed time in school), having guest speakers, and organizing school trips. This study suggests that teachers need more resources (including, but not limited to, increased funding for mathematics instruction) related to their pre-identified needs for providing quality education to students who identify as Hispanic and receive ESL instruction.

LUKE COLLIER | FIRST READER: DR. TSANANGURAYI TONGESAYI SECOND READER: DR. MASSIMILIANO LAMBERTO

Influence of Microplastics on Aquatic and Human Ecosystems: A Three-Part Comprehensive Study Regarding Sample Extraction Methods, Speciation of Heavy Metal(loids), and Physical Mobility through Wastewater Treatment Plants

Each year, over 380 million tons of plastic are produced and added to our planet. Microplastics, defined as plastic fragments less than five millimeters in diameter, contribute to significant pollution in various environments mainly due to plastic degradation. Due to their size, the ability to extract microplastics from various samples has proven difficult. In this study, density separation utilizing different salt solutions (i.e., NaCl, NaBr) and digestion methods (i.e., hydrogen peroxide) were carefully analyzed for highest extraction yield. It was proven that saturated sodium chloride (NaCl) solution was 96% effective in removing microplastics from commercial soap product samples. In addition, the interactions between how microplastics interact with heavy metal(loids) such as lead (Pb) and chromium (Cr) based on pH are discussed. Varying microplastic samples were subjected to various concentrations of Pb and Cr solutions (i.e., 2-10 ppm). It was found via FAAS that at all pH levels (4, 7, 10) both Pb and Cr were able to adsorb onto the surface of the microplastic. Finally, although multiple methods of small-scale separation and their limitations are discussed in this study, large-scale implementation of these methods are exhibited at a local wastewater treatment plant (WWTP). This study will allow for further investigation to occur regarding the biogeochemistry of microplastics, as well as provide additional methods that can be applied to additional large-scale operations, such as mobile water remediation systems and industrial WWTPs.

ANTHONY CROSS | FIRST READER: DR. JOE CHUNG

Analysis of Horror Media and the Consumption of It

My question that I wanted to answer is why people keep coming back to watch and consume horror media even though doing so produces fear. Even though fear is usually seen as a more negative emotion, fear has actually an evolutionary advantage for humans to feel. I wondered why industries decided to exploit fear for economic gain. A lot of companies and producers rely on people seeking out what actually makes people feel afraid in the first place. To answer my question, I read the results of various scientific research articles, and found that, among other things, the subversion and twisting of common humanity creates a large level of fear in consumers. As for why people consume media like this, it appears to pertain to the need for sensation seeking. People desire intellectual stimulation.

JULIAN REBELO | FIRST READER: DR. HILLARY DELPRETE
SECOND READER: DR. DAVIS JOSE

A Call to Action: The Need for a Paradigm Shift of Current Forensic Anthropological Sex-estimation Methods to Incite Inclusion of Transgender and Gender Diverse

Forensic anthropology is a field that classifies individuals based on their biological sex. However, these current methodologies are structured around a rigid binary system of classification and are not inclusive of transgender and gender-diverse individuals. The objective of this paper was to analyze the biological and physiological characteristics of transgender and gender diverse individuals from the literature through a systematic analysis, and determine how this can cause misunderstandings and errors in relation to forensic anthropological assessments of sex-estimation. Additionally, this paper examined the impact of the present current cultural attitudes and stigmas towards transgender and gender-diverse individuals, and how that impacts the conduct and accuracy of assessments within the forensic anthropology field. Available solutions are explored in order to incite a cultural paradigm shift towards better inclusion as a whole for transgender and gender-diverse individuals.

ASHLEY G. NG | FIRST READER: DR. DEANNA SHOEMAKER

The Influences of Social Media: Unhealthy Media Habits Lead, Mental Health Issues, and Fake News

Social media has taken the world by storm. With the evolution of social media, younger generations are spending more time on social media platforms developing unhealthy and addictive habits. Over time, young adolescents will develop mental health disorders like body dysmorphia which may lead to self-harm physically and mentally. Not only do individuals damage their own image, but also the relationships with the people around them. Our media are highly saturated with misleading information, stereotypes, and fake news. With the consumption of deceptive information and scrolling for numerous hours on social media, studies have shown that females tend to deal with negative effects more than males. Due to the convenience and accessibility of social media, the way our society communicates with one another has completely changed. As a society, we must figure out a way to maintain our morals and values in social media use while allowing for new advancements to persist.

CORY ENGLEHARDT | FIRST READER: DR. AARON FURGASON SECOND READER: DR. JOANNE JODRY

The Wanderer

"The Wanderer" is a self-realization journey. The purpose of this film is to act as a catalyst for awakening. What is "awakening"? Awakening is a journey of finding the self. The film focuses on themes such as materialism, balance, peace, and self-exploration. This project has been very dear to me as I relate very closely to the message. Over the last 3 years I have been undergoing a spiritual awakening of my own. Many of the locations we filmed at were symbolic in my own journey. I spent the fall semester deeply researching the spiritual/ religious practices and beliefs of Hinduism and Buddhism. I embodied the knowledge from my research and even implemented the Eastern practices into my daily routine for the production of this film. I have found a sense of clarity and peace beyond what I thought was possible, many thanks to the wisdom I've gained through constant spiritual practice. I hope you enjoy the film as much as I enjoyed creating it.

MIA LEWIS | FIRST READER: DR. STACI DREWSON

The Impact of the COVID-19 Pandemic on Undergraduate Students' Physical and Mental Health

This paper examines how the COVID-19 Pandemic impacted the physical and the mental health of undergraduate students in relation to their exercise habits. It was hypothesized that these individuals would see improvement to their overall health during the worldwide lockdown. It was also hypothesized that individuals' physical and mental well-being would further improve once lockdown restrictions were lifted. Most studies within the literature review revealed that many undergraduate students reported a decline in both their physical and mental health during and even after the lockdown. Survey questions were produced by the investigator and the primary results showed a large portion of participants were female, senior undergraduates that attended a four-year university. Prior to the shift to remote learning, most undergraduates exercised regularly. However during the Pandemic, exercise behaviors decreased, but then slightly increased once the COVID-19 restrictions were removed. Although exercise has been shown to reduce stress, anxiety, and depression, participants reported a continued and worsening of their mental health during the worldwide lockdown to now. Both the PHQ-9 and GAD-7 further reinforced the results of the investigator created survey. Future research needs to be conducted to assess the long-term impact of COVID-19 on these individuals' physical and mental well-being.

CHIARA ZAMBON | FIRST READER: DR. JAMIE PIGMAN
SECOND READER: DR. CHRISTINA MERCKX

Achilles Tendon Ruptures in Athletes

In college athletes, many different injuries can occur with or without contact. Every injury varies based on the athlete and what the athlete was doing at the time of the injury, which is known as the mechanism of injury. Through research, the whole injury process was shown with a variety of different mechanisms that cause athletes to suffer from Achilles Tendon Ruptures (ATR). A particular injury can be reoccurring due to inflammation and overuse, or the injuries can be one-time acute injuries that tend to be severe. If an athlete has a prior injury to the tendon that had not been fully healed before returning to play, this can increase their risk tremendously for a complete tear. It has been found that any athlete can sustain any type of injury and it is up to how the athlete reacts to treatment to see how long it takes for their body to heal. College athletes are prime examples because they tend to keep playing through their injuries which can make them worse, and this leads to the athlete missing out on more time than they should have originally missed. Through an evidence based educational pamphlet and an informational website design, athletes will have all the information that they need at their disposal for ways to prevent AT Ruptures.

JENNA MOLEY | FIRST READER: DR. MEGAN DELANEY

Evaluating Undergraduate Major as a Predictor for CAM Belief and Attitudes

Complementary and Alternative medicine (CAM) is becoming increasingly popular in many places, even those who have been partial to modern medicine. CAM is beginning to be integrated into the healthcare field and other fields of study. With its increasing integration throughout the world, it is important that college students receive proper education about CAM, and that college curricula reflect that. This study evaluated how undergraduate major acts as a predictor for a student's CAM beliefs and attitudes. The study was conducted via Google Forms survey, which was sent out to undergraduate students, of different majors at Monmouth University. Surveys were distributed via the university's department secretaries. The CAM Health Belief Questionnaire (CHBQ), a previously validated questionnaire, was used in the study to measure CAM health beliefs and attitudes . The belief that the student would use CAM therapies in their future career was also evaluated on a Likert scale. Average CHBQ scores were calculated for each different major, and each different school grouping to compare attitudes toward CAM. Results found that Political Science, Computer Science, and Health Studies majors had the most positive attitude towards CAM. When looking at school groupings, the School of Science, School of Nursing & Health Studies, and School of Humanities & Social Sciences had the most positive attitude toward CAM, while the School of Business had a negative attitude toward CAM. Schools with a positive attitude toward CAM also showed high belief of using CAM therapies in their future career.

KANIK HANNAH KINNERET | FIRST READER: DR. RAMAN LAKSHMANAN SECOND READER: JONATHAN OUELLET

Amino-roids: Mobile iOS Application to aid in Mastering Recognition of Amino Acids

This literary review explores the use of mobile applications in Science, Technology, Engineering, and Mathematics (STEM) education. Mobile applications have gained popularity as a unique platform for delivering STEM education due to their interactive and multimedia-rich features. The review examines the effectiveness of these applications in enhancing student learning outcomes, such as engagement, motivation, and understanding of complex STEM concepts. Additionally, the review explores the challenges associated with integrating mobile applications into educational systems, including teacher training, access to technology, and the need for a supportive infrastructure. The findings of this literary review suggest that mobile applications have the potential to revolutionize STEM education by providing an engaging and interactive learning experience. However, successful integration requires careful consideration of the challenges and limitations associated with the use of mobile applications in the classroom. The development of this Capstone Thesis was utilized through the XCode integrated development environment, and Swift coding language. With the successful creation of the application, 'Amino-roids, students will be able to have an interactive and user-friendly application to aid in their Amino Acid learning.

SARAH CURTIS | FIRST READER: DR. MIHEALA MOSCALIUC

The Art of Revision: Revising Raindrops

For my capstone project, I aimed to understand the importance of the revision process in poetry. Revision is an essential part of the writing process that all poems are subject to. In my research, I reviewed the literature of various revision components as explained by acclaimed writers, poets, and scholars. Additionally, I examined various revision strategies, discussions of revision, and writings on poetic craft. I explored the craft elements of poetry as a means to write an effective poem and found such effectivess is related to revision. Indeed, it is during the revision process in particular that poets pay minute attention to how various craft elements work together and separately to create a well-wrought poem that has reached its full potential. I then took this knowledge and applied it to Raindrops, a collection of poetry that I wrote and self-published in high school. I selected twenty poems to perform major overhaul revisions on, and completely transformed and reconstructed my poems. I utilized new knowledge of poetry and revision strategies which I acquired through my studies as an English major with a concentration in creative writing at Monmouth University and my extensive research on the matter for my creative capstone project endeavor. By the end of my project, I had a series of entirely reborn, revised, and enhanced poems.

DÁRIKA LARA-RODRIGUEZ |

FIRST READER: PROFESSOR WOBBE KONING
SECOND READER: DR. NANCY MEZEY

Finding a New Home: Habitat Loss Caused by Climate Change

Climate change considerably affects humans, but it is easy to forget how it also affects the other neighbors that share this planet with us: wildlife. In 2022, due to climate change, summer temperatures rose to a high record in certain areas and have caused wildfires to set off more easily. Wildfires can force people close to the vicinity to move out and relocate themselves. That means the wildlife who live there may also have to find a new home. This capstone explores this concept in a short 3-D animation where a fox sees and lives through the effects of climate-induced wildfire. In this visual narrative, all audiences immerse themselves in his journey and the decisions he makes. The project, therefore, creates a connection that is easier to relate to or empathize with. And after seeing this animation, it is easy to see how climate change induces the loss of habitat to animals and not just humans. One must be mindful that this planet is not just ours, but it is theirs too.

GIVERNY AERIN RISSE |

FIRST READER: DR. SCOTT JEFFREY
SECOND READER: DR. ANNA SADOVNIKOVA

Conscious Consumerism: Educating the Common Consumer on Their Role in and Methods to Achieve Sustainable Consumption

This project discusses the concept of conscious consumerism, where consumers seek to incorporate sustainable living practices into their daily lives. However, many consumers who claim to be environmentally conscious do not actually purchase eco-friendly products or modify their behavior to reduce their environmental impact. This is due to several factors such as brand loyalty, perceived increase in cost, lack of knowledge about sustainable living, and failure on producers' end to market their products effectively. To address this issue, I have created a website that educates consumers on sustainable living practices and helps them identify sustainable products. The website will use common language and be easily accessible to all socio-economic classes. In publishing this site, I hope to make sustainable living accessible and understandable for all, in hopes that more consumers will be motivated to incorporate sustainable practices into their daily routines.

MARY SCHULD | FIRST READER: DR. KERRY CARLY-RIZZUTO

Social Emotional Learning Through Children's Literature

In order to develop emotionally intelligent and beneficial members of society in an ever-changing world, elementary schools need to provide students with the necessary skills to respond to various social and emotional situations. With the creation of a website, this project serves to advocate for the need for social emotional learning (SEL) in classrooms, and aid in the successful implementation. Through research-based conclusions, the capstone project creates standards for children's literature that teaches SEL in kindergarten through fifth grade, which is demonstrated in a rubric. The project develops an inventory of children's literature to which teachers can refer when lesson planning to incorporate SEL. This collection of books will highlight how to cope with anxiety, stress, depression, and self-esteem, adjusting the maturity and content levels based on the grade level. The identified SEL competencies are further connected to the New Jersey State Learning Standards. By incorporating mental health education in the classroom, children can identify their feelings, effectively communicate them, and decrease the stigma surrounding mental illnesses. By providing teachers with strategically focused children's books that teachers can actively use in the classroom, we can break down the stigmatization surrounding mental health, thus creating more accepting communities.

JULIANNA CARLETTI | FIRST READER: PROFESSOR BETH GOUGH

Pediatric Distraction Techniques

The pediatric population undergoes more needle procedures than any other age group. Vaccinations given through intramuscular injections are required for children to enter school. Currently, acute pain in the pediatric population is undermanaged. Although the physical pain of vaccination is brief, the psychological effects can be long-lasting, especially if the pain is not properly managed. One way to manage pain associated with intramuscular injections is to decrease perceived pain through distraction techniques. This research explored the efficacy of different types of distraction techniques. The existing research was analyzed to determine if distraction techniques effectively manage pain associated with intramuscular injections in children. It was determined that each child has a different preference for distraction techniques depending on their age and interests. Providing children with a toy tailored to their age group minimizes perceived pain.

AVA MACMILLAN | FIRST READER: DR. KATHRYN VIEIRA

Importance of Combining Physical and Psychosomatic Treatment in Adult Patients with Medically Unexplained Physical Symptoms

The aim of this thesis is to analyze diverse methods of treatment in cases of Medically Unexplained Physical Symptoms (MUPS) and determine what treatment method is the most successful. MUPS constitute over a fifth of all primary care visits a year yet the majority of patients with MUPS report receiving unsatisfactory treatment. A literature review was carried out consisting of 25 peer-reviewed and scholarly research articles. These articles discuss what MUPS is, which populations are primarily affected by MUPS, physician viewpoints, and different treatment methods and how they have affected patients. These articles promote Cognitive Behavioral Therapy or multimodal therapy that combines psychiatric and physical treatment as it produces the best results in adult patients who present to their primary care provider with MUPS. In conclusion, there is evidence that combining treatment produces better outcomes for patients with MUPS. A presentation was then created to increase physician awareness of this population along with how they can improve patient outcomes through focusing on creating a therapeutic relationship and strengthening interprofessional communication and care.

JACK HOLMSTROM | FIRST READER: DR. GINA MCKEEVER

Financial Literacy Seminar

Recent adjustments in rules from the National Collegiate Athletic Association have created an opportunity for student athletes to be paid for the use of their name, image, and likeliness for the first time in the association's history; as a result, student athletes are at a position in time where being financially literate is a characteristic that can make or break their ability to earn amounts that could relieve the many financial pressures of young adulthood. This project looks at peer reviewed sources that study relationships between financial literacy and young adults (e.g. young adults' financially literacy rates, correlations between financial literacy rates and financial outcomes, and other factors that affect financial literacy rates in young adults). This review includes studies on young adults in general, and particularly those who are educated, because the student athlete is representative of most demographics, majors, and education levels. Overall, this project establishes the need for, and creates, a seminar on financial literacy that will be used to educate student athletes, students in general, and their parents. Financial literacy is a necessity for student athletes, as well as the general student population, that needs to be improved.

EMMA CUSANO | FIRST READER: DR. PEDRAM DANESHGAR SECOND READER: DR. SEAN STERRETT

Sea-level Rise Influences Bird and Mammal Populations in Monmouth and Ocean County Coastal Forests

The goal of this project is to assess the differences in wildlife composition and ecosystem services between healthy coastal forests and dead ghost forests in Toms River and Sandy Hook, New Jersey. Wildlife sightings, activity, such as scat and nests, and acoustics were recorded to provide data on wildlife populations within the two ecosystems. This research hypothesized that there is a significant decline in wildlife biodiversity and mammal abundance in ghost forests compared to healthy forests because of climate change-induced sea level rise. Wildlife presence and their use of the environment were found to be vastly different. Birds of prey and marsh-dependent species were observed within ghost forests where they mainly used dead trees as spots to perch, but no mammals or canopy-dependent birds were detected in this ecosystem. The absence of mammals within ghost forests is an alarming consequence of climate change and its effect on wildlife populations in coastal areas. The information gathered from this research can be applied to wildlife population studies and further research regarding ecosystem transitions and subsequent habitat alterations. Understanding the complexity of environmental changes may be valuable for future studies that aim to protect wildlife species from displacement and vulnerability.

GABRIELA SCHNUR | FIRST READER: DR. JONATHAN OUELLET

Purification and Production of a 2-HG Biosensor

This research project explores whether a biosensor can be created to successfully detect 2-Hydroxyglutarate (2-HG), an oncometabolite formed in those who have Acute Myeloid Leukemia, can be made more effective through the process of Systematic Evolution of Ligands by Exponential Enrichment (SELEX). Since 2-HG is present in elevated levels in patients who have diseases such as Acute Myeloid Leukemia, the levels of this oncometabolite can be used as a diagnostic marker for genetic mutations and can be used to monitor the disease. The goal of this project was to create an RNA aptamer that will successfully detect the presence of 2-HG. The hammerhead ribozyme was used for the selection process of the aptamers. In its natural form, the hammerhead RNA has three helices and one conserved section of RNA and when folded correctly can completely cleave. The aptamers self-cleave when combined with the ribozyme allowing for the detection of 2-HG. The study explored whether or not an effective RNA aptamer can be made to detect 2-HG and be further purified through SELEX.

NICOLE CAPPOLINA | FIRST READER: PROFESSOR JOHN TIEDEMANN
SECOND READER: DR. JASON ADOLF

Analyzing the Abundance and Types of Microplastics found on Hathaway Beach in Deal, New Jersey

The rise in global plastic production has caused an increase in plastic debris in the natural environment. Microplastics (MP's) are fragmented from larger plastics and are defined as 5mm or less in size. MP's can enter the environment through a variety of sources and can be found in different colors and sizes. The abundance of microplastics present on beaches negatively affects coastal ecosystems including the health of both wildlife and humans. Organisms can ingest these plastics or become entangled by them. Bivalves can also filter feed microplastic particles and develop diseases that in turn affect the aquaculture industry. This study examined type, quantity, color, and distribution of microplastics found on Hathaway Beach in Deal, NJ and compared the results to baseline data collected in the spring of 2022. The data showed that 42 plastic items were collected in the current study, compared to 89 plastics found in the preliminary data. The most abundant type found was fragment, while in the preliminary data, the most common type was film. It is important to monitor plastics in the natural environment in order to develop mitigation strategies to help reduce plastics in the natural environment and prevent further harm from wildlife and humans.

NICO LANDINO | FIRST READER: DR. DENNIS RHOADS
SECOND READER: DR. MEGAN PHIFER-RIXEY

The Impact of Diet & Genetic Background On Body Size in House Mice From the Americas

In the Americas, body size in house mice (Mus musculus domesticus) follows Bergmann's Rule, the observation that body size positively correlates with latitude and distance from the equator. Genome scans and gene expression studies have identified candidates that may contribute to this pattern, but the underlying genetic mechanisms are not yet fully understood. Body size is a complex trait, dependent on the environment, and manipulation of the environment can be used to uncover genetic variation relevant to the trait. In this study, mice from newly wild-derived strains were fed a typical breeder diet or a high-fat diet. In addition, strains were crossed in order to facilitate the identification of specific genetic variants contributing to induced differences in body size. Here, we analyze body size and growth in these strains (Florida, New York, and Brazil) and crosses (New York x Brazil, Florida x New York) at ten post-weaning under the two treatments. The results of this study suggest that treatment, strain, and in some cases, the interaction, contribute to variation in aspects of body size. These results highlight the potential for gene expression studies of these strains and crosses to uncover new genetic variants contributing to Bergmann's rule in these populations.

JULIA PANEBIANCO | FIRST READER: DR. MADDIE BALMAN

Differences in Behavior Among Different Strains of Wild-Derived House Mice from Different Climates

How animals behave impacts their fitness. Behaviors that have a genetic basis are fuel for adaptation. House mice, Mus musculus domesticus, have expanded their range from Europe into North America over the last ~400 generations. Previous research has shown that a variety of traits, like nest size and body size, vary among new wild-derived mouse strains from the Americas. Exploratory behaviors may be important to fitness because they reflect how an organism responds to and engages with their environment. For example, finding mates and avoiding predation depend on these exploratory behaviors. The study asks whether these new strains (Arizona, U.S.A (AZ); New York, U.S.A (NY); Edmonton, Alberta, Canada (EDM); Manaus, Amazonas, Brazil (BR); and Florida, U.S.A (FL)) vary in behaviors related to exploration and risk-taking using a light and dark test and an open field test. Comparing exploratory behaviors of mice from different locations may help us understand how they have adapted to life in the Americas. The study found differences in behaviors between locations, not sex. Specifically, Canada mice were found to be the most exploratory and active strains compared to the other locations. Future research can focus on larger sample sizes to test whether these differences were consistent.

JESSICA LYNN MARTIN | FIRST READER: CLAUDE TAYLOR
SECOND READER: DR. REBECCA SANFORD

Living With Social Media: Instagram Compulsion and Mental Health

The purpose of this study was to investigate the effects of Instagram compulsion on the mental health of young adults, aged eighteen to twenty-one. Negative psychosocial implications associated with excessive social media use have been observed among young adults, a population increasingly prone to social media platform use on their smartphones. This study analyzes the mental imputations associated with the compulsion to engage with Instagram. The overall concept of compulsion in addition to sub-concepts of the social network, social comparison, self-esteem, and physical appearance are discussed. Quantitative and qualitative analysis were used in this study. Participants from Monmouth University completed electronic surveys. Survey participants were given the option to participate in in-depth interviews. Findings indicate that negative mental health implications were more prominent during teenage years rather than early adulthood. Gender also plays an important role in participants' social networking site (SNS) experience, as women receive more media feedback and experience a burden to maintain an exaggerated narrative and presence. The "Hide Like Count" feature developed by Instagram has been revolutionary in protecting users' mental health and personal profile satisfaction.

AUSTIN STAULCUP | FIRST READER: DR. MARYANNE RHETT
SECOND READER: PROFESSOR MIKE RICHISON

Using Augmented Reality to Enhance the Comic Book Reading Experience

While the medium of the graphic novel/comic book first attracted controversy for its often violent and mature themes, it has been able to embrace the ability to do so and withstood the test of time to where we are today, using that reputation as a defining style and characteristic. Of course, it would not have been able to grow to where it is today if not for its ability to change with the times. Now, in the age of digitalization, streaming-services, and constant superhero content, the time calls for something different. Enter Adobe Aero. Aero is a newly-launched program built for creating augmented reality experiences. I intend to use this ability to allow for elements of the page to "pop out", for some to bleed into one another, and for them to interact creatively with one another overall. So, if my intentions with augmented reality are interactive storytelling, I must present it in a way that shatters overused tropes, typical storylines and common themes. Create something that differentiates from the archetypal set that exists. Something… ULTRAVIOLENT!

OUR MISSION

The Honors School promotes transformative learning in a collaborative community of student leaders and faculty mentors both inside and outside of the classroom. Students challenge one another to maintain the highest standards in their own discipline and across all fields of interest. Student scholars in the Honors School are expected to develop a great depth of understanding within their field of study, while appreciating intellectual inquiry in a broad context. Particpants in the Honors School raise students' culural, ethical, and scoial awareness as they develop into well-rounded scholars and citizens of a global community.

PROGRAM DESIGN BY GINA DIGE