

SYMPOSIUM
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29th Annual Symposium Day Abstracts

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Biology - Oral Presentations

Development of Pd-Catalyzed Allylation of Esters and Ketones Using Ionic Liquid

Dylan Levesque

Faculty Mentor: Robert Torregrosa

Allylation is an organic reaction that involves the addition of an unsaturated 3-carbon group, allyl, onto the molecule, usually in the presence of Pd catalyst. This is known as the Tsuji-Trost reaction in which Pd catalyzes the addition of allyl from allyl acetate or carbonate to an active methylene group using aprotic solvents. Here, Pd forms a Pd-allyl electrophile, and the active methylene group becomes a nucleophile. The use of protic solvent is avoided because it protonates the nucleophile, which prevents allylation from proceeding. To be able to carry out allylation in protic solvent is advantageous because protic solvents are milder and more easily accessible than aprotic solvents. To do this, ionic liquids are introduced into the reaction. Ionic liquids are organic ammonium salts that have boiling points less than that of water, which makes them useful reagents in organic reactions. The goal of this project is to develop a Pd-catalyzed allylation reaction by using ionic liquids in protic solvent. Using allyl carbonate and diethyl malonate, different ionic liquids and bases are used in the presence of Pd(PPh₃)₄ at 25°C. All reactions are performed in 50 mg scale and are analyzed by NMR spectroscopy to calculate percent conversions to product. Once the allylation conditions are determined, it will be used to produce other unsubstituted and mono-substituted esters and ketones.

Pharmacological Studies of Novel SGLT2 Inhibitors

Nina Gardella and Jarritt Romanik

Faculty Mentor: Zhao Li

Sodium-glucose cotransporter 2 (SGLT2) inhibitors are widely used to treat Type 2 Diabetes Mellitus by promoting glucose excretion through urine. Chronic hyperglycemia negatively impacts endothelial function, contributing to cardiovascular complications such as heart failure and hypertension. Recent studies suggest that SGLT2 inhibitors may offer cardioprotective effects beyond glucose control. Our research investigates the potential protective effects of novel SGLT2 inhibitors against hyperglycemia- and ischemia-reperfusion-induced cytotoxicity. Using glucose uptake, MTT, LDH, and nitric oxide (NO) assays, we evaluated ten experimental compounds for their ability to mitigate cellular damage. Results: Of the ten compounds tested, all but compound #3 reduced glucose uptake. Compound #7 reduced diabetes-induced cytotoxicity, while compounds #3, #5, and #9 reduced ischemia-reperfusion-induced cytotoxicity. Additionally, compounds #6 through #10 lowered diabetes-induced NO levels, suggesting reduced reactive nitrogen species (RNS) production. These findings highlight the potential cardioprotective effects of novel SGLT2 inhibitors, supporting further investigation into their therapeutic applications for diabetes-related vascular complications.

How In Silico Methodology can be Used to Discover Ligands that Affect the GABAA Receptor

Gavin Cabral

Faculty Mentor: Asher Brandt

Gamma Aminobutyric Acid (GABA) is one of the most prevalent neurotransmitters of the central nervous system. When bound to Gamma Aminobutyric Acid A Receptors (GABAAR), GABA initiates an influx of chloride ions into a neural cell and as a result these cells are hyperpolarized, and action potentials are harder to achieve. Therapeutic treatments and drugs that act on GABAAR have a

variety of implications in modern medicine. These drugs can be used to treat a variety of psychiatric and mental health conditions and have broader applications as anesthetics in many modern procedures. Over the past several years this research has focused on the discovery of ligands through computational methodology. It was hypothesized that using computational means it would be possible to discover numerous testable ligands that can bind to one or more of GABAAR'S potential binding site. Over the course of this study ligands were screened and filtered so that the most promising ligands could be obtained and tested to verify their ability to act on the GABAA receptor. While steps were taken in an attempt to synthesize some of molecules, these steps were largely unsuccessful and none of these molecules could be synthesized in large enough quantities for testing. In turn the most promising of the computationally discovered ligands were purchased for test. Future studies will aim to test the purchased ligands using in vitro bind assays so that the validity of these compounds can be confirmed.

Examination of Epigenetic Changes Caused by NL-63 Coronavirus Infection

Stamatoula Kanellopoulos
Faculty Mentor: Derek Dube

Viruses, although microscopically small, have immense impacts on human life, as seen in the COVID-19 pandemic. Viruses achieve this by infecting host cells and manipulating their processes to promote viral replication. Some viruses can alter the expression of their host's genes through epigenetic mechanisms such as DNA methylation. NL-63, though less severe, is a coronavirus closely related to SARS-CoV-2, the virus responsible for COVID-19. It is hypothesized that NL-63 may influence the host cell epigenome during infection. In preliminary experiments, LLC-MK2 primate cells were infected with NL-63 for varying durations, and the DNA was analyzed to assess changes in DNA methylation levels. The results indicated differences in DNA methylation between uninfected and infected cells, though the changes were not consistent across all virus preparations. To further explore this, alternative methylation experiments were performed in human cells, further suggesting NL-63's impact on host genome methylation. Current investigations specifically targeting genes such as IFITM1, ISG20, and OAS1 will help clarify the epigenetic modifications induced by NL-63 in human cells. This study seeks to identify the role of DNA methylation in response to NL-63 infection and offer valuable insights into how such alterations might affect host gene regulation. Understanding these mechanisms may also shed light on the long-term effects of coronaviruses in hosts, such as "Long COVID."

Examining the Kinetics of RSV-Induced Upregulation of Calnexin, an ER Chaperone Protein

Paraskevi Kousournas
Faculty Mentor: Chadene Tremaglio

Respiratory Syncytial Virus (RSV) is one of the most common causes of lower respiratory tract infections for both infants and the elderly, causing thousands of hospitalizations and deaths annually. Recently, two RSV vaccines have been licensed by the FDA, however treatments for severe infection remain lacking. A better understanding of RSV replication may reveal new treatment targets. Once inside cells, viruses hijack cellular machinery to replicate, inducing endoplasmic reticulum (ER) stress. Preliminary results demonstrate the ER chaperone calnexin (CANX) is upregulated during RSV infection. RSV may induce its overexpression to facilitate viral protein synthesis, as seen in other viruses. It was hypothesized that upregulation of CANX is an early response to infection, and its knockdown will lead to reduction in RSV replication. To test this, an RSV time-course experiment was

conducted, and infected cell lysates were harvested at 1, 5, 18, 24, and 48 hours post infection (hpi). Western blots of lysates showed an early spike in CANX protein expression (<1 hpi), returning to baseline at late timepoints. Therefore, it can be concluded that CANX is upregulated early in infection. Ongoing studies will determine whether RSV replication is dependent on CANX expression, by conducting small interfering (si)RNA knockdown of CANX.

Discovery of Carbonic Anhydrase 1 Inhibitors via High-Throughput Screening

Joseph Venditto

Faculty Mentor: Asher Brandt

This project aims to identify novel inhibitors of carbonic anhydrase 1 using high-throughput virtual screening (HTVS). Carbonic anhydrase 1 (PDB ID: 8RLO) plays a key role in pH regulation by catalyzing the conversion of carbon dioxide and water into bicarbonate and protons. It is also implicated in tumor growth and metastasis, making it a relevant therapeutic target. We retrieved the PDB ID: 8RLO structure from the Protein Data Bank and prepared it in Schrödinger Maestro using the Protein Preparation Wizard. A $10 \times 10 \times 10$ Å docking grid was placed around the co-crystallized ligand, veralipride. We then screened a library of 14 million molecules from the ZINC20 database, prepared using LigPrep, and docked them to the protein using Glide. This process yielded 300 potential ligands. From this set, we selected 52 compounds for purchase and sent them to our collaborator, Andrea Angeli at the University of Florence, for experimental validation. These compounds are currently being tested to determine their binding affinity and inhibitory activity against carbonic anhydrase 1.

Bacterial Monitoring of River Samples and Examining Potential Resistance to Disinfectants

Morgan Rhoades

Faculty Mentor: Derek Dube

This project studied the water quality in the Scantic River through systematic water collection and microbial analysis. The Scantic River, a vital tributary in the Connecticut River watershed, has been historically monitored for *E. coli*, which has indicated the possibility a broader bacterial community that may have negative effects on human health. To that end, water samples have been collected and analyzed in our lab over the last ten years, and the bacterial have been quantified and identified. The first goal of this study, is to continue this quantification and identification in 2024-25. To date, analysis has shown variable bacterial quantities across locations and dates of sampling, and within these samples identified bacterial genera including *Acinetobacter*, *Aeromonas*, *Serratia*, and *Pseudomonas*. The second goal of this study is to understand if environmental bacteria may have developed resistance to common disinfectants due to their increased usage during the COVID-19 pandemic. Determining if bacteria are developing resistance to chemicals utilized in disinfection protocols both in home and healthcare settings are vital to protecting human health. To test this, *Acinetobacter* isolates from the Scantic River before, during, or after the COVID-19 pandemic were tested for resistance to common disinfectants including bleach, hydrogen peroxide, peracetic acid, cetyl trimethylammonium chloride (CTC), and benzalkonium chloride (BAC). Interestingly, the isolates collected after the COVID-19 pandemic displayed an increased resistance to bleach, and additional studies are underway examining the other disinfectants and additional bacterial genera.

In Consideration of Animal Modeling

Richard Comshaw

Faculty Mentor: Dalia Giedrimiene

The animals that are used to model humans generally reproducing quickly, have relatively short lifetimes, and have somewhat homologous physiological reactions to humanity. To further research into medicine, it is imperative that as future researchers and doctors, we ask ourselves how to best utilize the resources that can be used to further research or test new therapies. Through the proper use of animal models, we can conduct work which would otherwise take generations of human suffering otherwise. The purpose of this is to question the common implementation of animal models and understand what makes an animal model viable. This overview of this presentations will be that it functions as a cumulative analysis on the implementation of many different animal models to better inform the reader as to what the information collected in this paper came from various sources such as universities, Laboratories, a Doctor of Biology, and businesses. The National Library of Medicine and ScienceDirect are the primary databases used for this research. Further information will be gathered from the University of Cambridge, this was done due to the potential differences in relevant animal modeling due to how the University of Cambridge focuses on education rather than just research like The National Library of Medicine and ScienceDirect. This paper will also include sources from the private sector due to the potential use of different models than the other two sources. Papers will be chosen based on their general observations of a specific animal model. This paper will bring general awareness and some comparative analysis of when each model can be best employed, this paper is not looking for the best model, it is looking for the best situation that any given model can be used in for an inexperienced researcher.



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Biology - Poster Presentations

Determining Signaling Mechanisms Used by CXCL5 to Promote Epithelial-mesenchymal Transition in Pancreatic Cancer

Jacob Krzeminski

Faculty Mentor: Irene Reed

Pancreatic cancer is a deadly cancer with an average 5-year mortality rate of 80%. Yet, the development of pancreatic cancer and how it advances to metastatic disease is not well understood. Once pancreatic cancer becomes metastatic, the 5-year survival rate drops from 20% to 3%. Epithelial-mesenchymal transition (EMT) is a process signified by the transition of epithelial cells into mesenchymal cells, which become more invasive and promote metastasis. CXCL5 is a chemokine that binds to the receptor CXCR2, which is associated with EMT in multiple cancers such as colon, liver, and nasopharyngeal. Overexpression of CXCL5 is linked to poor prognosis in pancreatic cancer, but the role of CXCL5 in EMT and the promotion of metastatic disease has not been investigated. In this study, we will be using HPAF-II & PANC-1 pancreatic cancer cells as our epithelial and mesenchymal cell line models, respectively. The hypothesized connection between CXCL5 and EMT is through the PI3K/Akt or the ERK signaling pathways, which regulate the transcription factor Snail to promote EMT. The expression of CXCL5 and CXCR2 mRNA, as well as EMT-related markers have been confirmed in HPAF-II and PANC-1 cells. In progress experiments are treating each of the cell lines with CXCL5 and CXCR2 siRNAs, and measuring changes in PI3K/Akt and ERK proteins to determine which pathway is involved with CXCL5 signaling. Additionally, cell viability and wound healing assays will be conducted to confirm functional impacts on EMT. Understanding how metastatic disease develops is the first step in curing this detrimental disease.

Campus Climate Action Corps at USJ

Jacob Lacki, Tatianah Zeigler, and Joseph Venditto

Faculty Mentor: Kirsten Martin

The Campus Climate Action Corps (CCAC) is a nationwide AmeriCorps program dedicated to campus-based, community-led environmental action. CCAC is focused on supporting campus/community partnerships that raise awareness and address environmental issues in underserved communities and improve ecosystem health in underserved areas. The 2024-2025 Academic year represents the first year of the CCAC program in CT, and USJ is one of only a few host sites in the state. During the spring semester, the USJ CCAC CT members are involved in a variety of environmental projects in both the community and on the USJ campus.

The Effects of Predation Risk and Fear on Female Mate Choice in *Drosophila Melanogaster*

Aidan Cooke and Jordan Kates

Faculty Mentor: Jesse Balaban-Feld

In reproduction of most animal species, females are the more selective sex, and theory suggests they should bias their choice towards males with the highest genetic quality. Many internal and environmental factors can affect mate selection behavior, and little is known concerning how fear associated with predation risk can influence female mating preferences. Fear from predation may alter the level of female choosiness as those females that have experienced predation may estimate that they will have a shorter lifespan and few mating opportunities. In this study, we assess how fear from predation influences the reproductive behavior of female fruit flies (*Drosophila melanogaster*) given

the choice between large (more attractive) and small (less attractive) males. Males of different size types were generated by altering larval density and the amount of food available to the larvae during their developmental phase. The mate choice behavior of females exposed to a live predator (Jumping Spider) is compared to naïve females that have never experienced predation risk. Following exposure training, individual “Predator-Experienced” or “Naïve” females are presented with one large and one small male, and their mating trials are video recorded. Data for this study is still under analysis and will quantify the behavior of both the male and female flies - including courtship duration and which male the female selects to mate with. This data has the potential to answer important questions concerning how fear may either increase or decrease the level of female choosiness.

Investigating the Effects of Natural Compounds on TLR Signaling and Viral Replication during RSV Infection

Dylan Levesque

Faculty Mentor: Chadene Tremaglio

Respiratory syncytial virus (RSV) targets the respiratory tract and is very common in children under the age of two. In most cases, RSV only results in mild respiratory symptoms but can lead to pneumonia and bronchitis in severe instances. There is a need for better therapeutics to treat severe disease. Therefore, this study is focused on examining the effect of natural compounds (curcumin, xanthohumol, and epigallocatechin gallate), on toll-like receptor (TLR) signaling and RSV replication during infection. It was hypothesized that compound treatment will result in a decrease in both RSV replication and cytokine production. To test this hypothesis, alveolar macrophages were infected with RSV and treated with each compound, and cell lysates and supernatants were harvested at 24 hours post infection. Enzyme-linked immunosorbant assay (ELISA) was performed and a modest effect on TNF- α cytokine production was observed for xanthohumol treatment, although the results were out of the testable range. Similarly, Western blots revealed curcumin induces a slight downregulation of RSV protein expression, however, no effects were noted for xanthohumol or EGCG. In the future, the effects of compound treatments on the production of other cytokines (such as IFN- β) and varying compound concentrations on RSV infection will be investigated.

Synthesis of Heterobenzyl Aryl Ethers via decarboxylative Coupling

Devan Fox

Faculty Mentor: Robert Torregrosa

Heterobenzyl aryl ethers (HAE) are organic ether compounds composed of heterobenzyl groups along with an aryl group. Heterobenzyl is a molecule that consists of benzene (6-carbon ring) followed by another branching carbon. A heterobenzyl group replaces one of the carbons in benzene with an atom such as nitrogen or oxygen, and an aryl group is made up of benzene. This project is important and HAE's specifically are important because these molecule groups are found in structures which exhibit medicinal and biological properties. Natural products containing HAE's possess biological activity against Chagas disease, a parasitic disease that can lead to heart failure and many other long-term negative effects, and they protect against Leishmaniasis, which is another parasite-derived disease with many negative health effects. Traditional preparation of HAE's uses heterobenzyl halides reacting with alcohols. While effective, heterobenzyl halides are very toxic and expensive as well. We propose that HAE's can be prepared by reacting heterobenzyl alcohol with aryl chloroformate to produce heterobenzyl aryl carbonate (HAC). The HAC undergoes decarboxylation, which is the loss of carbon dioxide (CO₂), to form the reactive groups which then combine to form our desired product, HAE. The formation of HAE will occur in three steps within this project. Firstly, heteroaryl aldehydes are

reduced to heterobenzyl alcohols. Secondly, the alcohols react with aryl chloroformate to create HAC. Lastly, HAC's are tested using palladium and ligands so we can determine if decarboxylation occurred successfully to produce HAE's. Once the specific methodology and conditions for the project have been proven successful through testing, we intend to create a small library of different HAE's.



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Mathematics - Oral Presentation

The Progression of Baseball Analytics - Breaking Down the Moneyball Method

Jenna Zup

Faculty Mentor: Ekaterina Lioutikova

To many, baseball is just another sport. However, baseball is very unique. This is due to the amount of data that is involved in the game. Baseball is a statistic driven sport that impacts how both teams and players are viewed in terms of success. The concept of sabermetrics is used to predict the results by using previous data, analyze on-field performance by recording and evaluating aspects of play, and assist in decision-making by evaluating matchups, performance, and scouting data. This concept grew popular when a journalist named Michael Lewis published *Moneyball: The Art of Winning an Unfair Game* in the year 2004. This book would cover the first big jump into using statistics for performance in baseball at the Major League level and would later become a movie, *Moneyball*, in 2011. The method of *Moneyball* was to create a competitive team with average or underestimated players, who will get on-base. To further research this topic, I decided to recreate the statistical analysis of *Moneyball*. Throughout this process, tables and charts were created to show the significance of the *Moneyball* method through Python programming. This would later answer the question: Was the *Moneyball* method actually applied in Major League Baseball? After further examination, the answer to this question would be yes, as the factor of on-base percentage contributes to winning percentage, rather than just evaluating slugging percentage.



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Education - Oral Presentation

Conducting Literacy Interventions for Students with Reading Difficulties as Literacy Interns

Olivia Heslin

Faculty Mentor: Shuai Zhang

Reading and writing are fundamental to academic success. However, the 2024 Smarter Balanced assessment results indicate that over 50% of students have not reached proficiency in reading and writing (Connecticut State Department of Education, 2025). Many of these students who struggle with reading have reading difficulties or disabilities (RD). This study will evaluate the effectiveness of literacy interns conducting interventions for students with RD. Through coursework and internship in the Special Education Literacy M.A. program at USJ, the interns have developed expertise in connecting assessment, planning, and instruction. Twelve students in Grades 3–4 receiving interventions from literacy interns will participate in the study. First, the students will be assessed using standardized, norm-referenced tests (e.g., WIAT-4, WRAT-5) to identify areas for intervention. Criterion-based measures, including the CORE Phonics Survey, DIBELS Oral Reading Fluency, Developmental Spelling Assessment, and curriculum-based writing assessments will be used as pretests and posttests. The twelve students will be divided into three groups, each receiving 30-minute daily pull-out interventions. The intervention will include decoding, fluency, vocabulary, and reading comprehension. The interval between the pretest and posttest will be four months, and statistical changes in student performance will be analyzed to assess the intervention’s effectiveness. To ensure fidelity of implementation, USJ faculty will closely Mentor and coach the interns in both assessment and instructional practices. Classroom teachers, principals, and parents will complete questionnaires to provide feedback on their experiences working with the interns and their perceptions of the effectiveness of both the intervention packages and the interns themselves.



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Education - Poster Presentations

Mastering the Art of Writing: A Grammar-Infused Journey for Young Authors

Nicole Jamieson

Faculty Mentor: Andrea Spencer

This unit, Mastering the Art of Writing: A Grammar-Infused Journey for Young Authors, is designed to empower fifth-grade students with a strong command of capitalization, punctuation, and spelling to enhance clarity and coherence in their writing. Rooted in research on literacy development and multiple intelligences theory (Gardner, 1983), the unit integrates constructivist learning strategies, arts-based instruction, and inquiry-driven activities to foster student agency, linguistic confidence, and real-world application of grammar skills. By embedding grammar instruction within interactive experiences, including music composition, drama-based activities, and peer-led lessons, students move beyond rote memorization to develop a deeper appreciation for language structure. The unit also incorporates scaffolded learning opportunities to ensure equitable access for diverse learners, including multilingual students and those with IEPs. A key emphasis of this approach is the integration of grammar within authentic writing tasks, enabling students to see its immediate relevance. Assessment strategies include student-led instruction, creative projects, and reflective journaling, promoting metacognition and self-directed learning. Ultimately, this unit cultivates lifelong communication skills by equipping students with the tools to express their ideas effectively across academic, social, and digital platforms. This presentation will highlight the theoretical foundations, curriculum design, and student outcomes of this innovative approach to grammar instruction, demonstrating how multimodal engagement can transform traditional language instruction into a dynamic, student-centered experience.

Educational Experiences and Social Wellness for Students in Connecticut

Julia Martocchio

Faculty Mentor: Jennifer Kowitt and Kristen Cistulli

This correlational study examined the social wellness of Connecticut students (grades K-8) receiving both general education and special education services via online survey data collected from caregivers. It is important to understand current levels of social wellness for all students' post-pandemic, as the associated disruptions severely impacted social and emotional development and wellness for all children (particularly children with disabilities). Key variables in this study included social wellness, support needs, parent concerns, services or supports received, and involvement in extracurricular activities. While both groups generally reported high levels of social wellness and positive regard towards school, significant differences were identified. Students receiving special education services were more likely to express a desire for friends and struggle with self-confidence when compared to peers receiving general education. Caregivers of students with Attention Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD) reported their children have statistically significant differences from both peers not receiving special education and students with other diagnoses also receiving special education support. These findings have implications for both researchers and practitioners and highlight the need for targeted interventions to support social development and self-esteem in special education students, particularly those with ADHD or ASD diagnoses.

Understanding Dyslexia: What We Know and Common Misconceptions

Patrick O'Connor, Katherine Rigsby, and Julia Martocchio

Faculty Mentor: Shuai Zhang

Dyslexia is a brain-based difficulty with reading and spelling, not a problem with vision or intelligence. The term dyslexia was first introduced in 1887, and researchers have since found that it is caused by challenges in processing the sounds of language. Even though people with dyslexia can see words clearly, their brains struggle to connect letters with sounds, making reading and spelling difficult. In the 1900s, American researchers Samuel Orton and Anna Gillingham created a structured, multisensory approach to teaching children with dyslexia—one that is still widely used in schools today. Modern brain research confirms that children with dyslexia use different parts of the brain for reading, but targeted instruction can strengthen these areas and improve reading skills.

Despite decades of research, myths about dyslexia still exist. Three common misconceptions include:

1. When dyslexia appears – Many believe dyslexia only becomes noticeable when a child learns to read, but early signs—such as trouble recognizing rhymes or remembering words—can appear as early as infancy.

2. Dyslexia and vision problems – Some think dyslexia is caused by seeing letters backward (like confusing b and d), but research shows it's a problem with processing speech sounds, not vision.

3. How Dyslexia is Treated – Reading involves understanding sounds, letters, and meanings. Children with dyslexia may also struggle with spelling and learning vocabulary through reading. Intervention should be comprehensive, not focused solely on letter-sound relationships

This research highlights these misunderstandings and provides practical steps for stakeholders to better support children at risk for dyslexia.

Research Based Strategies Supporting Teacher Mental Health

Emily Beyer

Faculty Mentor: Jennifer Kowitt

In recent years, the teaching profession has seen a concerning decrease in number of educators because of a mental health crisis (Peck, 2024). This decline is in response to the increased tasks placed upon all staff with insufficient supports. Teachers are the backbone of societies, educating our youth. These educators are experiencing increased stress levels, burnout, and anxiety leading to chronic physical and mental health issues. Burnout of teachers is causing teacher shortages throughout the education community. We need supports put in place for teachers and their students, to address this rising significant issue. Research has shown supports that can be easily implemented and can effectively calm the constant feeling of being overworked, to maximize job retention. In this study, I identified practices that teachers can use to support their physical and mental health both during the school day and beyond



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Counseling - Poster Presentation

Supporting LGBTQ+ Adolescents in the Therapeutic Process

Hailey Gagnon

Faculty Mentor: Erin Friedman

Adolescents who identify as LGBTQ+ are at a higher risk of developing mental health disorders, substance use and suicidality. LGBTQ+ youth are four times more likely to commit suicide than those identifying as straight and/or cisgender (Zullo et al., 2022). 39% of people in this population have considered attempting suicide in the past year, and that number increases for transgender and nonbinary youth (The Trevor Project, 2025). These individuals often do not feel accepted by those around them and struggle to find a sense of belonging. They struggle to find support and empowerment from their families, schools and/or communities, which leads them to seek help in a therapeutic setting. Providing affirming and supportive therapeutic interventions from a multicultural lens is essential for a counselor to instill hope and self-acceptance with this population. The aim of this literature review is to compile resources for counselors working with LGBTQ+ adolescents. It will review current therapeutic interventions that are proven to help LGBTQ+ adolescents with mental disorders, substance abuse and/or suicidality. This comes at a time when those identifying as LGBTQ+ are feeling increasingly scared and there is a clear public health crisis to increase access to therapy and decrease mental health disparities for this population (Zullo et al., 2022). It's important that counselors have the tools to empower and support LGBTQ+ adolescents. By implementing the approaches in this literature review, counselors will be able to instill hope, affirm and empower their client



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History - Oral Presentations

The Universal Woman: The Tension Between Humanist and Feminist Philosophy

Nadia Krill

Faculty Mentor: Agnes Curry

The terms ‘humanism’ and ‘feminism’ are both contested and controversial. Humanism is a complex and variable term that seeks to define a field of thought spanning thousands of years. At its core, humanism is a philosophical stance that highlights the importance of human beings, their ability to reason, and their shared humanity. My paper seeks to answer how humanism is entangled with the field of feminist thought. I specifically examine the history of feminist thought from the Middle Ages until modern times, focusing on its relation to the humanist tradition. My research explores the postmodernist critiques of humanism and how these critiques impact feminism’s goals. The postmodernist critiques, like denying any universal importance shared by all women, undermine feminism’s emancipatory aim. I argue that these critiques should be used to improve humanism in connection to feminism instead of completely severing the two philosophies. Retaining the connection between the two bodies of thought is crucial to maintaining feminism’s core foundational elements. By addressing the issues illuminated by postmodernist critiques, feminism can continue to pursue its emancipatory mission.

A Mythology of Lost Cause: The Unfinished American Civil War

Trevor Stone Priesnitz

Faculty Mentor: Kevin Callahan

Numerous scales measure trust in interpersonal relationships or organizations. However, the preliminary literature review has not revealed any scales measuring trust among teammates in athletic competitions. This study aims to fill the gap; it is an attempt to develop a scale measuring trust among teammates in competitive situations. Trust among teammates in competitive situations differs from trust among individuals in interpersonal relationships; it can be described as the belief that one can rely on another person trying to achieve the team’s goals and that that person has the skill set to accomplish those goals. Student-athletes from the University of Saint Joseph were recruited via flyers and a recruitment email from the athletics department. They were asked to complete a 31-statement paper-and-pen questionnaire twice in the presence of the investigators, once thinking about a teammate they trusted, and once thinking about a teammate they did not trust (as strongly). Agreement with each statement was rated on a 7-point-Likert scale (1=strongly disagree, ..., 7=strongly agree). Item #31 measured their overall trust of a teammate, on a scale of 1-100 (1=do not trust, ..., 100=completely trust), to measure the scale’s validity. Results suggested strong internal reliability for each subscale and the overall measure. In addition, correlational data suggested strong construct validity of the subscales and overall measure. However, the pilot data do not fully support a multi-factor structure.



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English - Oral Presentations

By The Horns: Emasculation and Toxic Masculinity in Ernest Hemingway's *The Sun Also Rises*

Samuel Turgeon

Faculty Mentor: Aidan Levy

Ernest Hemingway's novels are often regarded as "manly" books. They typically contain hyper-masculine protagonists: rugged men who drink their days away and see women as prizes to be won. Beneath this machismo-laden exterior, one of Hemingway's novels, *The Sun Also Rises*, actually offers a rather nuanced exploration of conceptions of gender in the 1920s. *The Sun Also Rises* follows the post-war experiences of Jake Barnes, a soldier whose battlefield injuries have left him sexually impotent. Barnes struggles to grapple with his masculinity now that he has been deprived of his sexuality. This internal struggle presents itself in numerous different ways, such as a copious amount of drinking, and a scathing attitude towards men who Barnes perceives as "unmasculine." My project examines the symbolic significance of aspects of Hemingway's novel, focusing on their connection to masculine standards. Some details of the story, such as the romantic relationships of characters and the hobbies that they engage in, seem designed specifically to comment upon the solidity of their masculine identities. Through Jake Barnes, Hemingway elucidates a complex message regarding the pressure that strict gender roles can inflict upon both men and women, and the internal anguish that a man may suffer if he finds himself unable to meet societal standards.

Women of the Holocaust: Bringing Silenced Voices to Light

Emily Seeds

Faculty Mentor: Aidan Levy

While the horrors of the Holocaust are commonly taught in school curricula, the specific treatment of non-Jewish women in concentration camps is often overlooked. Specifically Polish women who were brought to the camps, forced to live in Nazi barracks, and were sexually assaulted on a near daily basis. They were not considered human, they were mere objects in the horrors that surrounded them. These women were subjected to unthinkable atrocities, many of them minors. Their childhoods were taken as they were forced to face the realities of war. My research examines the lives and stories of these women in the creation of a short story. The work of creative nonfiction is based on the perspective of my grandmother, a Holocaust survivor who left Poland during the liberation of Auschwitz and vowed never to return. She was a young girl with golden blonde hair and vibrant blue eyes; her only crime was the Polish blood that flooded her veins. I want to bring a light to these voices that are all too often invisible and the horrors that many women experience.

The Power of Fantasy: Exploring Worlds Old and New

Genia Clarke

Faculty Mentor: Aidan Levy

Self described as 'a feminist retelling of Saint George and the Dragon', Samantha Shannon crafts a vast, living fantasy world where religion, women, and history take center stage in her novel, *The Priory of the Orange Tree*. While these themes are common in modern epic fantasy, Shannon's world opens the reality that fantasy writing is not all about knights in shining armor slaying dragons; sometimes it's the queen who slays the dragon, if she chooses to slay it at all. Through novels like *The Priory of the Orange Tree*, modern epic fantasy is able to find footing in the same spaces where literary writing is revered, and taking lessons from them may allow us to have a deeper appreciation for the genre. This project is a work of creative fantasy writing with a secondary critical work supplementing it.



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English - Poster Presentation

The Role of Children's Literature in Presenting Climate Change to Young Children

Isabella Rusate

Faculty Mentor: Nancy Billias

Children's literature is an abundant treasure trove for young minds to connect with the world around them through fictional or real scenarios. Hence, it is no surprise that in recent years this form has been utilized to communicate pressing global issues to children. My research examines the role of children's literature in shaping their perceptions about climate change and encouraging eco-friendly practices. A wide-ranging review explored trends in picture books, plays, and short stories from the US to Greece to Taiwan, and assessed the impact (harmful or beneficial) of such literature on reducing eco-anxiety and promoting developmentally appropriate engagement with the topic. Conclusions from this project suggest ways to incorporate meaningful, accurately portrayed and motivational books about climate change into future curriculum, as well as define the criteria for what might make such books most helpful to young readers. The research culminated in field work at a local daycare, The School for Young Children. The book *What a Waste* by Jess French was read out loud to a classroom of 14 children aged 3-5 to encourage eco-friendly practices and introduce concepts such as waste management, recycling, global warming, etc. Findings suggested that visual aids and clear information were beneficial in educating young children about climate change, and they gauged a greater sense of awareness towards their surroundings such as noticing trash on the ground.



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Digital Media and Communication - Oral Presentations

Climate Change Connect

Imogen Mya Rodriguez
Faculty Mentor: Pablo Correa

This project explores the potential of social media to drive climate change awareness. With billions of users engaging on platforms daily, social media presents a powerful opportunity to shape public discourse. The hypothesis suggests that leveraging real-time social media trends, hashtag data, and digital storytelling can significantly enhance engagement with climate issues. The research seeks to answer: How can social media effectively raise awareness about climate change?

To address this, the project will develop an interactive website featuring live hashtag tracking, data visualizations, educational resources, and user-generated content. By analyzing trending hashtags such as #ClimateChange and #ActOnClimate, the platform will showcase real-time climate conversations and their reach. Data-driven insights will highlight engagement trends, while curated multimedia content will provide informative resources. The integration of user-submitted climate action stories and visuals will foster community-driven advocacy.

The methodology combines quantitative (social media engagement metrics) and qualitative (storytelling and multimedia) approaches to ensure accessibility and impact. Findings will demonstrate how social media influences climate discourse, identifying key engagement patterns and effective messaging strategies. The project aims to bridge the gap between online awareness and real-world action by encouraging users to engage with petitions, events, and sustainable practices.

Ultimately, Climate Change Connect will serve as both an educational tool and an advocacy platform, reinforcing social media's role in climate activism. By transforming online discussions into actionable change, this project seeks to inspire individuals and communities to take meaningful steps toward a sustainable future.

Passion to Profession: Building Your Brand

Tianna Durham
Faculty Mentor: Pablo Correa

In my journey, a hobby blossomed into a profound passion that shaped my career aspirations. I learned that turning passion into a profession requires more than talent; it demands a clear vision and a strong personal brand. In this presentation, I will explore the transformative power of personal branding and its role in guiding individuals toward successful careers. I will introduce a methodology that incorporates reflective journaling and autoethnography, allowing for a deep exploration of personal experiences and insights. Reflective journaling encourages individuals to document their strengths, challenges, and successes, fostering self-awareness. Autoethnography connects personal narratives with broader cultural contexts, enhancing the storytelling aspect of personal branding. The presentation will begin with identifying a niche through the creation of a personal brand statement that captures passions and skills. I will discuss strategies for establishing a strong online presence, including how to choose the right platforms and create authentic digital imagery that resonates with target audiences. Additionally, I will delve into the art of storytelling, illustrating how to craft compelling narratives that communicate unique journeys confidently. By the end of this session, participants will gain actionable insights and a clear action plan for building their personal brands. Together, we will uncover how embracing our passions can empower our professional journeys, inspiring meaningful steps toward achieving career goals.



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Digital Media and Communication - Poster Presentations

Collaboration with Auer Farm for Marketing Campaign

Valentin Vukaj

Faculty Mentor: Pablo Correa

I am proposing a collaborative project with Auer Farm, a dedicated 4-H teaching farm located just outside West Hartford, to develop a fundraising campaign aimed at acquiring two new alpacas. Following the unfortunate loss of the previous herd, which played a significant role in the farm's educational programs and delighted visitors, there is a pressing need to replenish this beloved aspect of the farm. Given Auer Farm's limited budget, I believe that creating impactful marketing and fundraising materials would be an excellent opportunity for my class project. This initiative would not only support the farm's mission but also provide me with hands-on experience in marketing, fundraising, and community engagement. The project will involve researching best practices for nonprofit fundraising, designing promotional materials, and crafting compelling narratives to highlight the importance of the alpacas in the farm's educational efforts. Additionally, I can organize community outreach events to raise awareness and drive donations. By undertaking this project, I aim to enhance Auer Farm's visibility and foster a deeper connection between the farm and the community, ensuring that its educational programs can continue to thrive and inspire future generations.

The Evolution of Film Photography in a Digital World

Shenella Samarawira

Faculty Mentor: Pablo Correa

While digital photography dominates today's creative landscape, film photography is making a remarkable comeback. Artists, photographers, and content creators are rediscovering its rich textures, nostalgic charm, and unique storytelling power. This session explores why film remains relevant and how it continues to influence modern visual culture.

Exploring the Shift: From darkrooms to digital screens, photography has undergone a major transformation. Understanding this evolution helps creatives make informed choices about the medium that best suits their artistic vision.

Why Film Still Matters:

Film's resurgence isn't just about nostalgia. It offers a depth, warmth, and authenticity that digital often struggles to replicate. Many photographers and brands now blend film aesthetics with digital tools to create distinctive, visually compelling work.

What to Expect:

A visual timeline showcasing photography's journey from film to digital.

A side-by-side comparison of film and digital images, highlighting differences in texture, depth, and color - this will include actual photographs!

Case studies featuring contemporary creatives who incorporate film into their digital workflows.

The Takeaway:

Film photography is more than a trend, it's a timeless art form that continues to shape modern storytelling. By embracing both analog and digital techniques, creatives can push boundaries and redefine visual expression in today's fast-paced digital world.

Polygonal Realism Art

Calvin Holliday

Faculty Mentor: Pablo Correa

Polygonal realism art, commonly known as low-poly art, is a modern digital art style that employs geometric shapes like triangles, squares, and other polygons to craft visually striking yet realistic images. This project seeks to delve into the aesthetic and technical dimensions of polygonal realism, showcasing its ability to depict depth, perspective, and emotion with minimalistic forms. By incorporating this style into various styles of 2D and 3D art, the project will emphasize its adaptability and impact on contemporary visual storytelling. The primary objectives include analyzing the principles of polygonal realism, creating a series of digital artworks that highlight its distinctive features, and evaluating its influence on audience perception and engagement. The methodology involves selecting a central theme, such as natural landscapes, urban scenes, or abstract ideas, and conducting research on the historical evolution of polygonal realism, tracing its roots in early 3D modeling to its modern resurgence. Participants will use digital tools like Adobe Illustrator, Photoshop, and Blender to develop artworks, ensuring a balance between artistic creativity and technical precision. Additionally, audience feedback mechanisms, including online surveys and interactive exhibitions, will be employed to assess the effectiveness and appeal of the artworks. A key component of the project will be the creation of a visually engaging poster that outlines the research process, thematic development, and design phases. This poster will also highlight key findings on how polygonal realism enhances visual storytelling, offering insights into its role in modern digital art and design.

Ethical Dilemmas in Digital Media

Thalia Pacheco

Faculty Mentor: Pablo Correa

As digital media continues to evolve, ethical concerns are becoming increasingly voiced. Issues such as misinformation, deepfakes, data privacy, and social media algorithms significantly impact society. This study explores key ethical challenges in digital communication, including the role of algorithms, the dangers of echo chambers, and the responsibilities of media platforms. One major issue is the spread of misinformation, which can influence public opinion, elections, and societal trust. Social media algorithms often prioritize content that maximizes user engagement, potentially leading to echo chambers which are online spaces where individuals are primarily exposed to information that reinforces their existing beliefs. This phenomenon can limit diverse perspectives and contribute to polarization. Additionally, deepfake technology raises concerns about distinguishing real from manipulated content. Addressing these challenges requires a focus on transparency, accountability, and fairness within digital media practices. This research analyzes studies, journalistic perspectives, and statistical data to examine the spread of misinformation, the role of social media algorithms in shaping public perception, and the broader implications for digital ethics. By exploring these issues, this study aims to highlight ethical concerns in digital communication and consider potential solutions for fostering a more responsible and balanced media environment.

The Effect of Digital Media: USJ Lacrosse Documentary

Leo Lopez

Faculty Mentor: Pablo Correa

Introduction: Digital storytelling has emerged as a powerful medium that combines traditional narrative techniques with modern digital tools. This project chronicles the journey of the newly established Division III lacrosse team at the University of Saint Joseph, focusing on its rapid ascent to success. By integrating visuals, audio, and interactive elements, the documentary will highlight the team's challenges, growth, and achievements, showcasing the transformative potential of digital storytelling in both educational and professional contexts.

Methodology: To capture authentic perspectives, we will conduct in-depth interviews with players and coaches. Utilizing advanced digital tools, such as video editing software and motion graphics, we will craft a compelling narrative. High-quality footage from games and training sessions will create an immersive experience for viewers. Audience feedback mechanisms, including data analytics on viewer interaction, will help refine our storytelling approach and emphasize the importance of a robust social media presence for enhancing engagement and brand growth. Additionally, the project will highlight the documentary-making process, showcasing skills acquired in Digital Media courses and addressing production challenges.

Conclusion: The project will culminate in a reflective discussion with team members and coaches, where they will share insights on the challenges and accomplishments encountered while crafting this sports narrative. This reflection will underscore the significance of digital storytelling as a powerful communication medium, celebrating the team's achievements through the documentary format.

Latino Representation in Higher Education

Angelly Aguado

Faculty Mentor: Pablo Correa

Digital Storytelling is a newly composed way to create and present stories to audiences and uses digital media tools to introduce visuals in storytelling through various different digital formats, as well as platforms. The goal of this project is to use media and digital literacy to express various ways to incorporate diversity in Higher education, and the role it plays on each university's community as a whole and on individual students.

The objective of creating this project is to include a variety of different digital formats into one project to create what's called a digital magazine where one will be presented with the opportunity to observe and learn about a topic and multiple different ways. Depending on one's preferences, varying these different formats into one magazine will be available for students outside of USJ, brought into high schools in surrounding areas and other Connecticut colleges. I will be able to advertise this magazine on social media.

This project is about the importance of Latino representation in higher education. How it can impact students, and prospective students in their academic endeavors. This project will consist of a group of representatives, who are Kiara Rondon, Nayeli Bravo, Daniela Bravo, Isabella Bravo, Santiago Carmona, Liliana Gomez Mendez. They will each give me a brief example of how difficult it has been to navigate their education. They will talk about how difficult it was to figure out what their future could look like, as well as how the educational system could improve these issues.



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Computer Science - Oral Presentation

Balancing AI and Human Intelligence: A Framework for Critical Thinking in Educational Innovation

Mateus Silvestre

Faculty Mentor: Agnes Curry

This study explores the relationship between AI technology and human cognitive development to determine how AI is changing schooling. The project investigates how educational systems might efficiently integrate AI while preserving and improving critical thinking skills. The study examines how AI affects three important areas: professional growth, cognitive engagement, and educational access. It does this by doing a thorough analysis of recent literature, including influential works by Chen et al. (2020) and Spector and Ma (2019), which uncovered important distinctions between artificial intelligence and human intelligence, including data-visualizations to support their findings. The approach blends qualitative evaluation of the growth of critical thinking in AI-enhanced learning environments with quantitative study of AI implementation results. The findings show that although AI-powered platforms have the potential to democratize education and customize learning, when used without the right frameworks, they also run the danger of lowering cognitive engagement. Building on Spector and Ma's critical thinking paradigm, the study presents a novel integration model that prioritizes self-regulation and metacognition. This model illustrates how educational establishments might use AI to supplement human cognitive growth rather than to replace it. The results provide useful guidance for educational leaders to apply AI technologies in a way that protects the development of critical thinking, addresses algorithmic prejudice, and ensures ethical deployment.



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Environmental Science - Poster Presentations

Environmental Education Project with a School STEM Club (Somers High School Somers, CT)

Olivia Thaxton

Faculty Mentor: Kirsten Martin

Environmental Education connects children to their environment, encouraging curiosity, scientific inquiry, and environmental stewardship. Hands-on learning experiences in the school curriculum can enhance student engagement and deepen their understanding of ecological connections. A BioBlitz, an all-day event at Somers High School will inform students and others about biodiversity and the individual's role in the environment. It will be an engaging experience that allows students to explore local ecosystems and aligns with the CT environmental literacy plan, state standards, and the Next Generation Science Standards (NGSS). The project focuses on creating learning material and organizing a school-based BioBlitz working in part with high school students from the Somers STEM club and their STEM teachers. This study will assess the impact of the BioBlitz formation and the event's impact on student engagement. Specifically, it will provide insight into how interactive, place-based learning experiences can foster long-term engagement with environmental science and sustainability. This will be measured with pre- and post-surveys given to participants. By involving education, scientists, and community members, outdoor learning can enhance ecological literacy and inspire future conservation effects and attitudes toward nature.



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Health Science, Direct PA Program - Oral Presentation

The Power of Fantasy: Exploring Worlds Old and New

Nova Brown

Faculty Mentor: Charles Morgan

Traditional western burial practices such as embalming fluids, caskets, cremation, and entombment, have significantly impacted the environment. Specifically, embalming fluids, which contain harmful chemicals can leach into the soil and groundwater. This can disrupt microbial ecosystems and contaminate the natural water table for any community. This literary research explores the environmental interaction and biochemistry of embalming fluids along with evaluating more sustainable burial alternatives. The findings of this research experience emphasize the need to move away from formaldehyde-based embalming techniques and move towards environmentally friendly alternatives like honey or pre-presentation refrigeration. By promoting awareness and integrating sustainable burial practices into everyday “life”, the combined carbon footprint could be reduced, and many public health risks can be mitigated.



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Health Science, Direct PA Program - Poster Presentation

Climate Change, Wildfires, and Hospital Emergency Departments

Abrianna Dunn

Faculty Mentor: Nancy Billias

In recent years and months, the number of wildfires around the world has increased dramatically. They are also becoming more dangerous and harder to stop. Their impact extends far beyond the charred landscapes, igniting a surge of health crises that flood emergency departments. As a health science major aspiring to become a Physician Assistant, I have developed a strong interest in understanding how the increasing prevalence of wildfires affects the influx of patients in emergency departments and creates new, broader demands on healthcare systems. I also have a family connection to firefighting that has given me a deep appreciation for the challenges faced by those on the front lines. My research had three areas of focus: 1) the number of patients coming into the emergency department during wildfire outbreaks; 2) the air quality statistics in areas affected by wildfires; and 3) the mental health of both the healthcare workers and the communities most affected by the fires. This research has shown me that wildfires are not only an environmental issue but have also become a serious public health problem. It is important to develop both short-term and long-term solutions to address the issue. I hope that my research will help people brainstorm more solutions for managing the systemic burden caused by wildfires, in order to ensure that vulnerable populations receive the care they need.



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Health Science - Poster Presentations

Advancing Regenerative Medicine Through Chondrocyte and Stem Cell Research

Mikolas Jalinskas

Faculty Mentor: Dalia Giedrimiene

It is known that stem cells have the potential to be grown to become new tissue for use in transplant and regenerative medicine. They are being studied to treat type 1 diabetes, Parkinson's disease, amyotrophic lateral sclerosis, heart failure, osteoarthritis, and other conditions. Researchers continue to advance the knowledge of stem cells and their applications in transplant and regenerative medicine. The summer traineeship at the Lithuanian University of Health Sciences was based on collaboration with the research team at KELI Therapeutics, which contributed to cutting-edge research in regenerative medicine. This opportunity allowed focusing on chondrocytes and placental mesenchymal stromal cell (MSC) therapies, specifically for cartilage repair related to musculoskeletal injuries and conditions. The primary goal was to advance tissue engineering techniques for cartilage repair using chondrocytes and stem cells. The research was directly associated with clinical practices, especially with orthopedic surgeries and post-surgical rehabilitation. Practical experiences included cell isolation with care and performed cell culturing, ensuring the consistent maintenance of cell condition. The live harvesting and formulation processes during cartilage preparation and the cryopreservation of cells were followed by strict protocols to ensure the cells remained viable. The study also explored the optimization of in vitro models for testing regenerative therapies. Overall, this research contributed to the development of non-clinical evaluations of cartilage defects.

The Mental Health Challenges of Athletes of Color in Competitive Sports

Maya Slisz

Faculty Mentor: Emily Badal

In competitive sports, praise surrounds the athlete's strong physique, impressive skills, and mental hardiness. Many athletes deal with the reality of challenges that often go unnoticed; this goes most significantly for athletes of color. Of all the struggles an athlete faces, for athletes of color, Black athletes face issues inseparably intertwined with their race. These are usually provoked through racism, microaggression, and biased views which deeply affect their mental well-being and the potential of enjoying sport. While the mind is becoming increasingly opened about mental health in sport, these particular struggles that have faced athletes of color get under addressed, thereby producing a gap in this respect. This presentation discusses how race and prejudice are affecting the mental health of athletes of color in competitive sports. Using research and personal stories, it will explore how racism within sports, both overt and subtle, can make these challenges worse. This presentation is going to illustrate that identifying these issues forms a vital part of developing better systems of mental health support for athletes of color. It will also look at strategies that can be put in place to make the sports environment more supportive of these athletes.



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Applied Behavior Analysis - Poster Presentations

The Impact of Client Problem Behavior on Acute Stress and Procedural Fidelity Among Direct-Care Staff

Kayley Ericson

Faculty Mentor: Andrea Courtemanche

Acute stressors as those that are short-lived, infrequent, and/or are isolated events. The effects of acute stressors on job performance have been studied in a variety of high-risk professions including law enforcement, medical professionals, and staff members working with clients who engage in challenging behaviors. Prior researchers have shown a positive relationship between the number of stressful events experienced by staff members who work with children with disabilities in school settings in the past 24 hours and their job performance. Meaning, as staff members experienced more stress, their job performance scores were higher. The purpose of this study was to continue to determine the effects of staff member stress on their implementation of behavior management strategies with special consideration for how the frequency of client problem behavior may also impact stress and procedural fidelity. In Part 1 of this study, we observed participants implementing their client's behavior intervention plan while wearing a heart rate monitor to record their stress, record the frequency of problem behavior, and the participant's adherence to behavior intervention plan components. In Part 2, we assessed the impact of two antecedent interventions on staff heart rate and their procedural fidelity when working with students exhibiting varying rates of problem behavior. Thus far, we have 12 adult and client participants and data collection is on-going. By considering the unique challenges faced by staff working with students at different levels, this research seeks to inform the development support strategies that promote staff well-being and effective behavior management practices.

A Comparison of Two Procedures on the Latency to Transition for Young Children with Autism

Amanda Caez

Faculty Mentor: Andrea Courtemanche

Transitions are periods of change from one state, condition, or activity to another. Well-planned transitions can enhance learning and contribute to a positive classroom environment, particularly for young children. The ability to transition smoothly between activities is an essential skill in both school and non-school settings, as structured routines help minimize challenging behaviors. This study evaluated the effectiveness of visual timers versus high-probability request sequences in reducing transition latency for young students with autism. In the visual timer condition, participants received a 5-minute warning before being directed to transition to morning meeting. In the high-probability request condition, implementers presented four easy, previously mastered tasks (e.g., "touch head," "touch nose," "clap hands") before instructing participants to transition. Additionally, this study explored participant preference for the two transition strategies. Preliminary data from Participant 1 indicate a significant reduction in transition latency for both transitions compared to baseline. Baseline data showed transition times as high as 300 seconds, which decreased to as low as 6 seconds with the high-probability request sequence and 12 seconds with the visual timer. Thus far, these findings suggest that both interventions are effective in reducing transition latency. Data collection is ongoing to further evaluate these effects across additional participants.



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Nutrition - Poster Presentation

An Analysis of Perceived Caregiver and Teen Barriers to Making Nutrition Changes After Receiving Nutrition Education

Teah Arum

Faculty Mentor: Katherine Sayre Bontempo

The obesity epidemic is a constant health concern in America. Studies have shown that 80% of obese adolescents become obese adults. While many students are exposed to nutrition education whether in school or in extracurricular activities, a plethora of barriers can be identified which may prevent students from making nutritional changes that could lead to better health-related outcomes in their future. Studies have been conducted evaluating the effectiveness of nutrition education in elementary and middle school students, though few studies have analyzed the barriers to making dietary changes after nutrition education in exclusively high school students. The purpose of this study is to assess the frequency and methods of nutrition education received by high school students to analyze the effectiveness of nutrition education and what barriers students and their families face when attempting to implement dietary changes. This research was conducted using an anonymous, cross-sectional online survey administered to over 1500 parents of students in the Meriden School District. The expected outcomes of this survey are to assess how frequently high school students receive nutrition education, what nutrition-related topics are discussed during education sessions, and what barriers are preventing them from making dietary changes at home. The results of this research may be used to develop nutrition education materials that address these barriers to further promote positive dietary changes to decrease obesity rates.

The Impact of Breakfast Consumption on Performance and Mood in College Students

Brianna Stepule

Faculty Mentor: Michelle MacKenzie

Breakfast replenishes your supply of nutrients from your overnight 'fast'. It is thought that when breakfast is skipped, it may impact one's mood and performance levels during the day. Previous research has shown an improvement in alertness, concentration, mood, and energy when breakfast is consumed among adolescents. Further research has yet to be conducted among college students leading to our research question: "What is the perception of the impact of breakfast consumption on academic performance and mood among college students?" An anonymous survey was developed (IRB # 24-048) and posted on the USJ SOARS Instagram social media account. Results of this study may provide insight to college students in making their decisions as to whether they will incorporate breakfast into their day. The goal is to create awareness of the potential benefits of breakfast consumption as it relates to both academic performance and mood in the community of University of Saint Joseph.

Dietitian's self-efficacy in their knowledge and abilities when working with athletes who have type one diabetes (T1D)

Francesca D'Agostino

Faculty Mentor: Melissa Brown

Balancing blood glucose and athletic performance is challenging for athletes with Type 1 diabetes (T1D); therefore, having the support of knowledgeable practitioners is critical. A registered dietitian (RD) who understands the needs of athletes with diabetes can be a valuable part of the athlete's support team. Managing diabetes in athletes goes beyond simply encouraging physical activity for the

purpose of improving blood glucose management and overall health. It is common for athletes with diabetes to become so focused on blood glucose management that they lose sight of the need to fuel for performance. Moreover, as with many athletes, there is a tendency to become so focused on meeting their performance goals that they lose sight of the general nutritional needs for good health. When developing a quality sports nutrition plan for athletes with diabetes, it is necessary for the RD to consider all of the aforementioned goals. To do so, the RD must have a good understanding of sports nutrition, energy metabolism, exercise physiology, and exercise endocrinology, as well as diabetes pharmacology. Fully understanding the variables to be assessed and how they affect one another will enable RDs to design nutrition plans that address the needs of athletes with diabetes. Therefore, the purpose of this survey-based research study is to assess dietitians' confidence in their knowledge and abilities when working with athletes with T1D. Data collection is ongoing and the results will inform the need for providing additional education and skills training for RDNs working with this population of athletes.

The Long-Term Effects of Childhood Bullying on Disordered Eating Risk in College-Aged Students

Katherine Mazzarelli

Faculty Mentor: Kaneen Gomez-Hixson

Abstract: Bullying is a common experience among adolescents and school aged children, as 19% of students reported being bullied during school. Eating disorders can be characterized by many different conditions, including but not limited to binge eating, anorexia nervosa, bulimia nervosa, purging, etc. Studies have found that between 8-17% of college aged students suffer from eating disorders. Current research has found a causative relationship between bullying and eating disorders, as adolescences with medium to high exposure to bullying are at four times the risk of developing eating disorders. However, these studies failed to investigate the long-term impact that childhood bullying has on disordered eating/clinical eating disorder risk into adulthood. Using a descriptive, cross-sectional study design, data will be collected through an anonymous 42 question survey, including demographic questions, questions assessing the participants bullying history, and question from the adapted from the EAT-26 questionnaire to assess current eating habits. Current college students aged 18-24 years of age are invited to participate in this study. Exclusion criteria involves being younger than 18 or older than 24 years of age. This research will provide an increased understanding of the long-term effects childhood bullying has on young adults their eating behaviors and can be used to drive bullying prevention initiatives in schools, as well as treatment of eating disorders in adults.

The Impact Social Media Usage Has on College Students' Body Image Perception, Self-Esteem, and Eating Behaviors

Allison Bachstadt

Faculty Mentor: Katherine Sayre Bontempo

Over the last decade, social media has been exposing young adults to idealized body image, turning this ideal into the new reference standard. Exposure to this content causes comparison of physical appearance, body dissatisfaction, and drive for thinness. Many studies have explored the impact social media has on nutrition, such as unrealistic expectations, disordered eating thoughts, disordered eating behaviors, body dysmorphia, and body image distress. There is significant evidence that social media has a direct impact on body image perception, self-esteem, and eating behaviors; yet there is much

more to be discovered. This study focuses on how social media usage impacts college students' body image perception, self-esteem, and eating behaviors. The data for this study was collected using an anonymous, cross-sectional online survey conducted among USJ students. The survey was posted on the USJ Nutrition Instagram and Facebook to recruit participants. We expect this research to provide valuable insights into how social media influences students' nutritional status and overall well-being. Furthermore, the study could highlight the need for targeted educational initiatives to reduce the negative effects of social media habits and promote healthier body image and eating behaviors.

Creatine Monohydrate Supplementation Knowledge and Usage in Collegiate Athletes

Cameron Mole

Faculty Mentor: Kaneen Gomez-Hixson

Creatine is a naturally occurring substance produced in the liver, pancreas, and kidneys and consumed in the diet. Creatine supplementation has been found to increase the production of ATP for short bursts of energy and is most beneficial for high-intensity short-duration activities such as sprinting or weightlifting. Creatine monohydrate, the most studied form of creatine, is a relatively safe supplement that has become widely used, especially among collegiate athletes who compete under the National Collegiate Athletic Association (NCAA) across Divisions I, II, and III. With supplementation growing in popularity, it is important that student-athletes understand the efficacy of creatine supplementation and the appropriate dosage to reap the performance benefits. There have been many studies investigating the efficacy of creatine monohydrate for athletes, but few have investigated student-athletes' current knowledge and usage of the supplement. Using a cross-sectional study-design, data will be collected through an anonymous 21-question survey, including demographic questions, questions examining current knowledge of the use and recommended intake of creatine monohydrate and the participants' current usage of the supplement. Current NCAA athletes across all divisions are eligible to participate. Exclusion criteria include athletes younger than 18 years old and any participant that is not NCAA eligible. Investigating the knowledge and current usage of creatine monohydrate among NCAA student-athletes will provide insight into potential knowledge deficits that support staff working directly with the population can address through educational initiatives.



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Nursing - Oral Presentations

The Crossroads of Maternal and Infant Health: Examining Policy Gaps in the United States Healthcare

Meral Demiroska

Faculty Mentor: Monika Costa

This presentation investigates the gaps within United States healthcare policies on maternal and infant health, with a particular emphasis on how these deficiencies disproportionately impact underrepresented communities. While initiatives like Medicaid expansion, paid family leave, and breastfeeding support have made progress, significant disparities remain. Black, Indigenous, and other people of color continue (BIPOC) to experience higher rates of maternal mortality and preterm birth, largely driven by systemic barriers and inadequate healthcare access. This independent research examines how current policies intersect with historical inequities and structural racism, underscoring the urgent need for comprehensive reform. By drawing on insights from trusted sources such as the CDC, March of Dimes, and World Health Organization, the presentation highlights the profound influence of structural and social determinants of health (SSDH) and racial bias in care. The discussion will explore practical strategies for improving maternal and child health outcomes, including community outreach, culturally sensitive care, and policy advocacy. Participants will gain a deeper understanding of the structural challenges embedded in maternal health policies and the importance of addressing racial and socioeconomic disparities. The goal is to inspire action, encouraging stakeholders to recognize how intersecting policies shape health outcomes and to advocate for stronger, more equitable healthcare systems that promote the well-being of all families.

An Implicit Racial Bias Education for Maternal Health Providers

Fatmata Williams

Faculty Mentor: Theodora Sirota

Background: In the United States, Non-Hispanic Black women die at higher rates compared to White women during pregnancy and postpartum. Also, there is substantive literature documenting Black women's negative experience of maternal health care, including the significant trauma and financial impact of poor maternal and birth outcomes on Black communities. Implicit bias among maternal health care professionals toward Black women has been shown to be a key contributing factor to these problems.

Aim: This evidence-based practice project intervention implemented implicit racial bias training for maternal health providers to positively impact providers' awareness and confidence to address implicit bias when caring for Black patients.

Method: Participants' bias awareness, bias mitigation and bias mitigation self-efficacy were assessed prior to the intervention, followed by administration of an evidence-based implicit bias training, after which the three bias factors were re-assessed. pre-test and posttest scores were compared using appropriate statistical analysis.

Results: The results showed a statistically significant increase in participant' scores on all three factors, demonstrating an increase in bias awareness, bias mitigation and bias mitigation self-efficacy,

Conclusion: An evidence-based implicit racial bias training for maternal health providers positively increases bias awareness, bias mitigation and bias mitigation self-efficacy in this group.

Keywords: non-Hispanic Black, implicit racial bias, bias mitigation, bias mitigation self-efficacy, bias awareness, maternal health

Redefining Gender Roles in Victorian England Medicine: Midwifery Through the Lens of Gender, Women's Health, and Professionalization

Liangie Garcia

Faculty Mentor: Kevin Callahan

Midwifery, a long-standing social position occupied mainly by women, was established as a professional medical field in the late 19th and early 20th century across the Western world. However, given that women were traditionally associated with this role, the process of professionalism faced several obstacles. There were significant gender barriers during Victorian England, 1837-1901. As a result, my research will show that specific societal forces and attitudes, such as the misconception of women's health and the gendered dynamic of professionalism of medicine (which excluded women), impacted and delayed the requirement of education and certification in the field until the Midwifery Act of 1902. The study is based mainly on primary sources such as the Medical Act of 1858, the Contagious Disease Acts of the 1870s, and the 1902 Midwifery Act and testimony of women of the era. In examining the historical roots of gender discrimination in the field of midwifery and education, the research suggests the continuing persistence of gender inequality in medicine today.



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Nursing – Poster Presentations

The Use of Acupuncture for Migraine Relief: A Meta Analysis

Olivia Tourtelotte

Faculty Mentor: Sheila Garilli

Background: Acupuncture has become an increasingly popular method for treating migraines and other chronic conditions. According to the American Migraine Foundation, over 39 million Americans are disabled by migraines (2021). Acupuncture is the act of placing tiny needles into different acupuncture points of the body to trigger relief. There are many articles that researched the use of acupuncture in comparison to other prophylactic and acute migraine medication regimens.

Methods: Utilizing the EBSCO database, articles were discovered by using keywords migraines and acupuncture. The articles were all published between 2020 and 2025. Five articles were chosen for a meta-analysis review to articulate the use of acupuncture in migraine prophylaxis treatments.

Results: The studies compared acupuncture to propranolol, triptans, topiramate and other pharmacological regimens commonly used for migraine prophylaxis. The articles showed that acupuncture can be used as a first line treatment for migraine prophylaxis and can in fact be more beneficial than other pharmacological means. As shown in the studies acupuncture comes with less side effects and has shown a potential of greater effectiveness on migraine duration, frequency and symptoms.

Conclusion: There have been countless studies that compare acupuncture to first-line migraine prevention regimens. It has shown itself to be more effective than many of these treatments and should be a regular first line of treatment. Acupuncture should be prescribed and covered by insurance.

Results have shown that acupuncture has less severe and unwanted side effects due to the natural nature of the treatments.

Postpartum Depression Based on Delivery Method

Rachel Bittner, Hanaha Peck, Alyssa Roberts, Isabella Samperi, and Michaela Vicki

Faculty Mentor: Angela Carrano

Background: Postpartum depression rates after birth are higher in patients who had a cesarean section as a delivery method. C-sections can be a traumatic experience and can have long-lasting physical side effects for the mother. (Grisbrook et al., 2022)

Purpose: To educate and prepare expectant mothers for potential unexpected birthing situations such as an emergency cesarean section to lower the postpartum depression rate.

Methods: The goal of this project was that would create an educational pamphlet on birth and C-sections to prepare pregnant mothers for unplanned C-sections, reducing the percentage of postpartum mental health complications. We planned to research and create an informative pamphlet to educate mothers on C-sections so they know what to expect if there is ever a change in the birth plan. Our participants are the patients and staff at OBGYN offices. Referring to the public health intervention wheel, this is the implementation of health teaching, counseling, referrals and follow-up care, and indirect case management of this population. The intervention would be to put these pamphlets in as many OBGYN offices as possible, and the cost would be minimal.

Results: There were some promising sources, such as a study done in Australia that showed educational interventions are beneficial to preventing postpartum mental health issues. This study differed slightly from the intervention in this project but shows that this intervention is newer and should be implemented and evaluated further to determine its impact.

Conclusion: Providing educational information on potential birthing complications during pregnancy will aid in lowering postpartum depression rates in women. This is significant to nursing practice

because adding this into patient education provides resources for better outcomes for the mother and child postpartum.

Healthy Lifestyle Education in Parents with Children in Elementary Schools (Ages 5-7 years old)

Samantha Gilbert, Sarrah Mierzejewski, and Kaylee Zukowski

Faculty Mentor: Angela Carrano

Background: Currently, one in five children in the United States is obese, with the highest rate prevailing among the minorities and families with low income. One factor is low access to fresh foods and healthy eating information. This results in health complications that include diabetes and heart complications in the long run.

Gap Analysis: Current activities neglect to identify sufficient campaigns educating parents on affordable healthy decisions despite adequate community and school involvement.

Significance to Nursing Practice: Teaching parents as a measure to curb childhood obesity enhances health promotion, which is one of the major roles of nursing.

Literature Review: Cole et al. (2019) and Lloyd et al. (2015) support the fact that the involvement of parents in childhood health interventions is important, stating that education programs help to reduce structured obesity among children.

Framework: This project followed the Plan-Do-Study-Act (PDSA) model to enable ongoing assessment and modification of the intervention strategy.

Method: SMART goals revolve around enhancing parental knowledge by the year 2025. The intervention involved lectures, assessments, quizzes, and question-and-answer sessions. Flyers offered solutions to deal with the problem, such as taking less time on electronic devices, encouraging physical activities, and incorporating healthy meal habits.

Results: Parents indicated improved understanding and willingness to practice healthy behaviors at home.

Discussion: Difficulties were monetary concerns, transportation, and parents' access. Further improvement requires cooperation between schools, departments of public health, and other interested parties; potential expansion can be obtained through grants for school greenhouses.

Affordability and Accessibility of Menstrual Supplies for Women in Hartford County

Lacey Dargenio, Kate Heiden, and Mia Villamizar

Faculty Mentor: Angela Carrano

Background: Affordability and accessibility of menstrual supplies remain a critical public health challenge in Hartford County, disproportionately affecting vulnerable women contributing to menstrual inequity, limited educational engagement, and adverse health outcomes. A gap in the attainment of menstrual supplies and resource allocation needs to be analyzed and improved.

“Research shows that 64 percent of low-income women were unable to afford menstrual supplies at some point over a year’s time, and for 21 percent of respondents its recurred regularly” (Department of Health and Human Resources, 2022).

Purpose: It is a community health obligation to ensure menstrual supplies and education are available for all. Thus, there will be an increase in the availability of menstrual supplies in Hartford Public Schools in 2025 through partnerships with local community members and the implementation of a community-wide walkathon event.

Method: The Minnesota Public Health Intervention Wheel was utilized to promote outreach, health teaching, collaboration, community organizing, advocacy, and social marketing. Partnerships with public schools, town officials, community centers, and Hartford residents were key. Thanks to community contributions, costs were minimal, and outcomes exceeded expectations.

Results: There was an extensive collection of products, increased education, and empowerment. The fundraiser exceeded expectations, collecting sufficient menstrual products and generating additional funds for future distribution. There is no longer a suppression in social participation, participation in education, and better psychological and physical health levels for young women in Hartford.

Conclusion: Walkathons are a successful way of stimulating education and empowering local community members by promoting hygiene, health access, and comfortability. A limitation is that other local counties were not engaged or represented in this study.

Community Public Health Intervention

Jenna Griffith, Grace Gunning, Shelby Hine, and Braeden Laframboise

Faculty Mentor: Angela Carrano

Background: The use of E-cigarettes is becoming more prevalent in society. A high rate of middle school and high school-aged children are using these products. Contributing factors to E-cigarette usage include social media advertisements, peer pressure, and appealing flavors (Overbeek et al., 2020). A significant impact of E-cigarette usage is adverse health outcomes. There is limited information on the long-term effects of vaping because e-cigarettes have been apparent since 2007 in the United States.

Purpose: The use of E-cigarettes is significant to nursing practice due to the various health effects, including respiratory issues. The literature review focused on the health effects that vaping e-cigarettes has on the respiratory system. Additionally, research focused on the reasoning behind why middle and high school students vape and their awareness of the dangers surrounding vaping.

Methods: An intervention was developed using the PDSA framework to educate children in Hartford County. The population is middle and high school students in the Greater Hartford area and identifies the student's prior knowledge of vaping. The goal of the intervention was to educate about the effects of vaping. Students will be quizzed before and after the presentation to evaluate the knowledge gained. The cost would be the payment for the speaker and raffle prizes. The Minnesota public health intervention wheel included outreach, social marketing, and counseling.

Results: Based on the success of similar studies, providing education does lower the prevalence of vaping in teenagers.

Conclusions: Theoretically this intervention would be adopted and implemented. A limitation is a possible lack of participation by the students in the surveys.

Television Viewing and Perceptions of Nurses

Lacey Dargenio

Faculty Mentor: Melissa-Sue John

Nurses are crucial members of medical teams and deserve recognition for their contributions.

However, media portrayals can distort public perceptions of nurses, depicting them inaccurately or through stereotypes. This misrepresentation can undermine respect for the profession and affect public opinion, influencing patients, nurse performance, health policies, and students' career aspirations.

Studies have shown that popular medical dramas may reinforce negative perceptions, particularly in viewers who watch these shows frequently. A survey of 63 undergraduate students at the University of Saint Joseph examined whether television viewing shapes perceptions of nursing compared to other

occupations. While USJ students generally did not believe television affected their views, those who watched medical dramas were more likely to perceive nurses as underpaid and overworked. Such views could discourage students from pursuing nursing careers, exacerbating the nursing shortage.

Diabetes Screening and Prevention Education at USJ

Nicoll Chavez, Meral Demiroska, and Annu Shajimon

Faculty Mentor: Angela Carrano

Background: Diabetes affects 14.7% of U.S. adults and 10.7% of adults in Connecticut (Centers for Disease Control and Prevention, 2024). Lifestyle factors, such as poor diet, stress, and physical inactivity common among college students—contribute to higher rates in communities.

Gap Analysis: Current efforts, which include diabetes prevention do not address diabetes risk factors among young populations like college students.

Significance to Nursing Practice: It is essential to control diabetes as early as possible, so do screenings and education on diet and exercise, and reduce complications early, which is why we are targeting college students.

Literature Review: The project can be adopted multiple times, using the pop-up clinic model to identify at-risk individuals and encourage healthier behaviors, with ongoing adjustments based on participant feedback (Coombs, 2023).

Framework: The PDSA framework was used to ensure that pop-up health education events are more effective in raising awareness about diabetes prevention.

Method: By October 21, develop a diabetes screening and prevention program targeting the USJ community, aiming to reach at least 50 participants through pop-up tables, addressing health disparities and improving outcomes. From the public health intervention wheel our project includes screening, health teaching, social marketing, collaboration, disease and health event investigation, and community organizing. Then, they complete a post-survey based on the education provided.

Results: Many people are at risk for pre-diabetes; however, education is effective.

Discussion: The project can be adopted throughout the semester, using the pop-up clinic model to identify at-risk individuals and promote healthier behaviors. Digital tools and follow-up strategies could improve the project's effectiveness.

The Use of Hydrotherapy for Patients with Osteoarthritis

Gabriela Targonska

Faculty Mentor: Sheila Garilli

Background: Osteoarthritis affects millions of people worldwide. Osteoarthritis is a progressive joint disease that causes the breakdown of cartilage and bone. It can cause pain, stiffness, and swelling which causes limitations in daily life. There is no cure for Osteoarthritis, however symptoms are managed with medications and physical therapy.

Purpose: Exercise can help reduce pain and inflammation while improving flexibility. Heat and cold therapy may improve circulation to reduce pain and inflammation. Hydrotherapy can combine these two treatments and increase patient comfort as the water buoyancy reduces the stress on the affected joints. This research aims to analyze the effectiveness of hydrotherapy for the management of Osteoarthritis.

Methods: A meta-analysis approach was used to conduct this study. Published studies were selected from EBSCO, National Library of Medicine, and Journal of Pharmaceutical Research International and were reviewed. Articles were selected based on specific inclusion and exclusion criteria. Five articles were selected for review and analysis.

Results: All five studies presented results showing that hydrotherapy was successful in reducing osteoarthritic pain. Three studies reported an increase in muscular strength. Three studies observed positive effects on physical functioning. Two studies provided insight into the type of exercise, frequency, and duration of effective aquatic therapy.

Conclusion: Research showed that hydrotherapy is an effective nonpharmacological treatment for patients with osteoarthritis. Hydrotherapy should be considered as a first-line treatment for osteoarthritis in larger joints such as the knee. Future research should observe long-term effects of hydrotherapy on osteoarthritis.

Breastfeeding in Lower Income Populations

Valeria Aragon-Soto, Jocelin Castro Ramirez, Caitlin Hildebrand, Lindsey Hunt, and Amadou Kamara

Faculty Mentor: Angela Carrano

Background: Breastfeeding is less common in lower-income communities compared to higher-income areas. Despite Connecticut offering several programs to support women, community competence and access disparities persist.

Gap Analysis: Research shows that women from lower-income populations are less likely to breastfeed due to limited support, lack of education, and resource accessibility, highlighting the need for interventions.

Significance of Nursing Practice: Promoting breastfeeding supports infant health and addresses disparities by educating mothers on benefits and providing resources. Nurses play a critical role in advocating breastfeeding-friendly policies and offering personalized support.

Literature Review: The literature examined the relationship between socioeconomic status and breastfeeding practices, indicating that women with lower incomes and lower levels of education are less likely to breastfeed compared to those from higher-income households.

Framework: For this project, the PDSA framework was selected because it is a highly effective interactive process.

Methods: This study surveyed low-income mothers to assess knowledge and resource access using the Minnesota Public Health Intervention Wheel's consultation, counseling, and health teaching methods. Costs include materials distribution and program supplies.

Results: Based on a likely moderate response, we expect to increase knowledge to some degree. Information and accessibility to information is expected to be modified based on survey results.

Discussion: This project aims to improve breastfeeding and maternal health awareness in low-income communities. A limitation is the challenge of recruiting participants for both surveys. The study would address complications related to breastfeeding for mothers and infants, requiring a holistic educational approach with resources tailored to all participants.

Navigating Tomorrow: Increasing Advanced Care Planning Engagement in Primary Care

Orlando Carter

Faculty Mentor: Christina Mukon

Older adults, ages 60 and older, are at an increased risk of receiving futile care if they become incapacitated and lack appropriate advance care planning (ACP). Futile care refers to aggressive and invasive medical treatments that do not provide clinical benefits or improve the quality of life, often prolonging suffering. Such care is associated with prolonged hospital stays (1 to 58 days on average), high medical costs (\$4,000/day), and significant moral distress for family members and healthcare

providers. Contributing factors include chronic health conditions, exceptional frailty, patients' knowledge of advanced care planning, and limited engagement between patients and providers. Therefore, it is clinically necessary for healthcare providers to regularly screen older adults for their readiness to engage in advance care planning and to initiate these discussions when appropriate. This poster will present a planned Doctor of Nursing Practice project at Asylum Hill Family Medicine Center to address the limited advanced care planning screening and engagement among older adults at annual wellness visits. Proposed interventions include pre-appointment screening to assess patient readiness to increase early provider engagement regarding advanced care planning. A literature review of ACP best practices and a comparative analysis of qualitative and quantitative ACP studies validate these interventions. By implementing this ACP initiative, project measures include increasing the following: (a) ACP screening in older adult populations, (b) patient-provider engagement regarding ACP conversations, and (c) contributing toward sustaining actionable primary care ACP practice.

Stigma and Barriers to Mental Health Care in the Philippines

Shivani Pachchigar

Faculty Mentor: Christina Mukon

The Philippines continues to experience issues in accessing mental health services, despite increased awareness of mental health as a crucial public health issue. This stems from stigma and care-related barriers. Individuals often hesitate to seek professional mental health support due to prevailing cultural beliefs and societal misconceptions, along with associated financial burdens. Filipinos frequently associate mental health disorders with personal frailty or spiritual disturbances, which can lead to discriminatory behavior and social isolation, which in turn increases suicide rates in the Philippines. The limited availability of mental health professionals in rural areas, combined with the high cost of psychiatric services, creates additional barriers to care. The poster presentation evaluates how stigma and structural barriers impact access to mental health care in the Philippines through a summary of existing research. Erving Goffman's stigma theory serves as the primary framework for this presentation, highlighting key findings from academic studies and official government documents. The Mental Health Act of 2018 was designed to improve accessibility but continues to encounter challenges due to insufficient funding and a lack of awareness initiatives. This project aims to enhance the understanding of the current obstacles in mental health care and provide policy suggestions based on scientific research. Additionally, this project seeks to strengthen existing integration projects by addressing the issues that impede incorporating mental health services into the Philippines' healthcare system.

Comparative Epidemiology of Depression: A Cross-Cultural Analysis between Brazil and Connecticut

Kim Kim, Jeremy Perez-Aponte, and Shene Robinson

Faculty Mentor: Christina Mukon

Depression is a prevalent mental health disorder that affects approximately 5% of the adult population globally. This high burden mood disorder results in personal suffering, functional impairment, and increased healthcare costs. Depression can also be associated with premature mortality from suicide. Nurse practitioners encounter depression in clinical practice and across the lifespan. As advocates for public health, nurse practitioners play a pivotal role in informing health policy and improving health outcomes. To drive changes in practice, an evaluation of health policy, environmental factors, and current interventions will aid nurse practitioners in identifying opportunities for improvements. This scholarly poster presentation will evaluate environmental health considerations, the public health

framework, population characteristics, and the epidemiology of depression in Brazil compared to Connecticut. In addition, we will review the disability-adjusted life years (DALY) and the years lived with disability (YLDs). We hypothesize that the evaluation will inform recommendations that align with the public health principles of preventing depression, prolonging life, and promoting quality of life.

Initiative to Improve Ableism in a Community Health Center

Jeslyn Dinowitz

Faculty Mentor: Christina Mukon

As of September 2020, 26% of adults in the United States, or about 61 million people, have a disability. People with disabilities have poorer health outcomes including increased rates of early death and chronic diseases. This poster will address background information of my doctor of nursing practice scholarly project including the clinical problem ableism, the project site, and the Johns Hopkins Evidence-Based Practice Model. In 2022, the World Health Organization identified ableism as an important structural factor and clinical problem that contributes to health inequities for persons with disabilities. Ableism is prejudice, discrimination, and social oppression toward people with disabilities. In 2022, the World Health Organization released the Global Report on Health Equity for Persons with Disabilities to address the systemic health inequities for people with disabilities. Understanding disability and the barriers to quality health care that persons with disabilities face are important to address to reduce disparities. Contributing factors of ableism in healthcare include lack of knowledge among health professionals about differences among people with disabilities, inaccessible or unavailable healthcare facilities and healthcare equipment, transportation difficulties, and high rate of poverty of people with disabilities. The project site is the Community Health Center Incorporated, a federally qualified health center in Connecticut that provides medical, dental, behavioral health and specialty services for more than 145,000 patients. The Johns Hopkins Evidence-Based Practice Model is a problem-solving, evidence-based approach to healthcare decisions and includes the three phases practice question, evidence, and translation.

Increasing Colorectal Cancer Screening Rates in Uninsured Adults

Alyson Saperstein

Faculty Mentor: Christina Mukon

Colorectal cancer (CRC) is the fourth most common cancer diagnosed, but the second leading cause of cancer-related deaths in the United States, with more than 50,000 people dying from it each year. One way to prevent this form of cancer is through screening tests, such as a colonoscopy. The national goal is to have 80% of the eligible population screened for CRC, however, only 71% are up to date. Of eligible patients without insurance, only 39% are up to date with their CRC screening. Fecal-immunochemical-tests (FIT) are an approved screening method from the United States Preventive Services Task Force; it is cost-effective, reliable, and generally convenient for individuals, specifically this population. This poster details an intended project with the aim is to increase the current CRC screening rate at a local facility that provides primary care services to uninsured adults. Using the Institute for Healthcare Improvement: Model of Improvement, the intervention will be directed toward changing the workflow of the current process while providing patients with the accurate and patient-centered directions for understanding and completing their screening.

Improving Mammogram Screening in Muslim Women: An Education Intervention in a Community Setting

Wazida Tabassum

Faculty Mentor: Cristina Mukon

Breast cancer screening (BCS) has been recommended to women by the United States Preventive Services Task Force starting at age 40 and continuing through age 74. There has been a debate about the actual benefits and harms of breast cancer screening with mammography. A significant advantage is that BCS leads to early diagnosis and better outcomes. Some of the harm includes overdiagnosis, over-treatment, and mandated screening that might not align with the personal values of women. Research reported there is a lack of knowledge regarding breast cancer awareness and screening among minority groups such as Muslim women. This project will use clinical practice guidelines to develop a multimodal intervention that includes educational seminars, online resource utilization, and free mobile mammography for the women at Farmington Valley American Muslim Community aged 40 through 74. The goal of this project is to enhance knowledge about the benefits of breast cancer screening among women in the Muslim community. This poster will outline a DNP project focused on BCS education for Muslim women in the Farmington Valley Muslim Community.

The Importance of Effective Communication Related to Patient Outcomes in the Operating Room

Samantha Gilbert

Faculty Mentor: Sheila Garilli

Background: There are roughly 800 sentinel events that occur every year in the United States. The Joint Commission reported that 70% of these incidents happen due to communication issues. Conditions that affect communication in the Operating Room include stress, anxiety, conflicting personalities, and not sharing the same goals for the patient.

Literature Review: Etherington et al. (2021) suggests barriers to effective communication are others' personalities, gender and social/professional roles, hierarchies with environmental context, resource related challenges, conflicting professional values and being on call.

Framework: This project utilized the Situation-Background-Assessment-Recommendation framework to evaluate the current challenges with communication in the Operating Room which will allow for recommendations based on research.

Methods: Utilizing research databases to locate relevant information based on the key terms such of operating room, effective communication, and patient outcomes.

Results: Factors such as stress, conflict, and incivility contributed to ineffective communication and worsening patient outcomes due to lack of effective communication in the Operating Room.

Discussion: Further research on healthcare workers using problem-solving is needed. Healthcare workers will need further education on how communication between healthcare workers affects patients.

Limitations: There is insufficient data to conclude that interventional groups make a significant difference in the patient outcomes as compared to control groups towards the patient in major surgeries. Additionally, minimally invasive surgery was not expanded upon during this literature review.

Addressing Medication Nonadherence in Primary Care

Carolina Acosta Pabon

Faculty Mentor: Angela Carrano

Medication nonadherence contributes to inadequate control of chronic diseases, poor symptom control, and even death. Research suggests that multimodal nurse education interventions can enhance the use of evidence-based interventions to improve adherence. This quality improvement project was implemented in an urban primary care clinic serving uninsured or underinsured adults, where no standardized process for medication adherence screening existed. The project integrated the modified four-question Morisky Medication Scale as a standardized screening tool for all nurse blood pressure visits. The nurse identified patients at risk of nonadherence and provided appropriate resources based on the Barriers and Intervention Checklist. The QI project spanned over six weeks. I educated clinic staff on medication adherence and implemented the Institute of Healthcare Improvement method using the Plan-Do-Study-Act cycle. Each cycle was one week for five weeks. The front desk staff distributed screening questions to all nurse blood pressure appointments, and the nurses identified and provided patients with resources to address any barriers faced. At the end of six weeks, 20 patients were seen for nurse blood pressure appointments. Of the twenty patients seen, 19 were screened. Three patients were identified as at risk of medication nonadherence, and all three were given appropriate resources. Nurses successfully incorporated screening into their workflow and provided appropriate interventions, demonstrating improved utilization of screening tools and resources following education. The outcomes of this project suggest that the use of multimodal nurse education interventions can help address medication adherence.

Health Education for Inpatient Detox Patients on Overdose Knowledge and Response

Erica Bartle and Samantha Valakos

Faculty Mentor: Angela Carrano

Background: Opioid overdoses are a critical public health issue. At South Central Rehabilitation Center (SCRC) in New Haven, Connecticut patients often arrive with limited knowledge of overdose recognition, response, and legal protections under Good Samaritan laws. This project aimed to improve overdose education for inpatient detox patients.

Gap Analysis: Traditional education methods lack sustained engagement and knowledge retention. An interactive, patient-centered approach was implemented to address these gaps.

Significance to Nursing Practice: Educating patients on overdose response aligns with nursing roles in health promotion and harm reduction. Teaching Narcan administration, overdose signs, and Good Samaritan law protections can reduce opioid-related deaths and empower communities to seek help.

Literature Review: Research supports the efficacy of naloxone, the importance of bystander intervention, and the role of nurses in overdose education. Awareness of Good Samaritan laws improve intervention rates by reducing fears of legal repercussions.

Framework and Method: Using the PDSA framework, a Jeopardy-style educational session with pre- and post-tests was delivered. SMART objectives ensured measurable outcomes, including patient knowledge and confidence in recognizing and responding to overdoses.

Results: Post-tests showed improved patient understanding of overdose response and Narcan use. Attendance limitations, however, restricted the intervention's reach.

Discussion: The interactive format was effective, but follow-up health education programs are needed to assess long-term impacts. Despite limitations, this project highlights the vital role of nurses in battling the opioid crisis through innovative education in a cost-effective manner.

Mitigating Food Insecurity in New Haven's Vulnerable Populations

Krista Christmas, Jezabeth Santic, Olivia Beaumont, and Jelina Kolb

Faculty Mentor: Angela Carrano

New Haven faces a significant problem of food insecurity, affecting 22% of residents—nearly twice the national average—while 25% live at or below the poverty line. Poverty is a contributing factor which limits access to affordable, nutritious food. This leads to an increased risk of chronic health conditions, such as obesity and diabetes, among affected populations. The project aims to educate New Haven residents about local food pantries and organizations to improve population health and nutrition opportunities. Food insecurity raises a significant problem in nursing, such as malnutrition and undernutrition, chronic conditions, access to healthcare, mental health, anxiety, depression, and stress. The review suggests public awareness of food pantries' hours and locations, improving reporting accuracy and public health surveillance, and evaluating current measures to combat food insecurity crises. The framework is a conceptual web of causation framework of nutrition and urban poverty that displays a visualized relationship between all possible causes of food insecurity. By November 1, 2024, through a pamphlet with education on available food pantries and local organizations in New Haven, food insecurity would be reduced by 5%. Surveys were handed out called the U.S. Household Food Security Survey Module and the Food Pantry Guest Feedback Survey. In Study 1, marketing flyers on social media reached more people, aiding those in need and attracting donors. Study 2 suggests extending the intervention to one year instead of a few months to gather more data. This allows more time for survey responses and increases participation. The intervention, adapted after a literature review, would run for one year, incorporating weekly surveys and social media links to food banks' websites, aiming to improve health in vulnerable New Haven communities.

Diabetes Education in Older Adults in the Hartford, CT Area

Winnie Anderson and Roukeatou Amadou

Faculty Mentor: Angela Carrano

Background: Self-management of diabetes is an issue among the elderly in Hartford, CT, and results in complications that include cardiovascular disease and frequent hospitalizations (Poulin., 2020). Poor health literacy and mobility difficulties further compound this. The project manages these barriers through a structured education program that teaches participants how to manage diabetes effectively, enhance glycemic control, and contain healthcare costs.

Gap Analysis: This project is necessary because accessible and customized learning tools for older people are absent in today's Hartford society (ElSayed et al., 2023). Strengths include integration with the local health centers and using a team of professionals to provide health care.

Significance to Nursing Practice: Addressing diabetes self-management in the elderly is significant to nursing practice as it enhances patient care, promotes health literacy, emphasizes preventive care, and empowers nurses to advocate for better health policies.

Literature Review: Research proves that diabetes self-management education affects patients' health status, fewer hospitalizations, and better quality of life when it is age-sensitive.

Framework: The PDSA paradigm is applied to guarantee measurable results and iterative changes.

Method: The project's intervention plan is to have 80% of participants improve in managing diabetes within three months. Based on the Public Health Intervention Wheel, the program includes weekly educational sessions on nutrition, medication, and glucose management in community settings. Patient outcomes will be monitored by pre- and post-program surveys with the participants.

Results: Survey results show increased knowledge and better glycemic control for the participants, with few reported hospitalizations.

Assessing Awareness Regarding College Students' Mental Health Resources

Liangie Garcia, Peyton Greger, Sydney Romano, and Catherine Potter

Faculty Mentor: Angela Carrano

Background: Mental health struggles among university students are a growing issue within the United States, and COVID-19 exacerbated mental struggles amongst students. Students are often unaware of local resources which can cause them to not seek the appropriate care for their mental wellbeing. During the 2020-2021 academic year, greater than 60% of college students met the criteria for at least one mental health problem. The MHC reported in 2019 that 53% of college students were unaware of the counseling services on their campuses.

Purpose: Holistic care is an essential aspect of nursing and includes mental health support. This proposed study aims to assess the USJ, Trinity College, and UHart college. The students' wellbeing in addition to their awareness of mental health resources within their area is to be assessed. By the end of the 2025 Spring semester, we hope there would be a 20% increase in understanding of college students' awareness of mental health resources if this project was implemented.

Methods: The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was hypothetically utilized and a scannable QR code linked to an anonymous survey. The PDSA framework was used to organize the study. Results: We assume there would be a significant number of students at these universities experiencing mid-low mental wellbeing along with a generalized gap in student awareness and use of mental health resources.

Conclusion: This proposed study would significantly increase the understanding of mental wellbeing and awareness of resources among college students in the Hartford area. We think a limitation of this study would be a lack of control over the participants, causing a potential inaccuracy of data. This proposed study can serve as a basis for further nursing intervention in battling mental health issues among young adults.

Impact of Marijuana use in Teens 13-18 in Connecticut

Kim Boganski, Emma Yacovino, Grace Socha, and Daniella Ramirez Aguillar

Faculty Mentor: Angela Carrano

Background: Marijuana usage among teenagers aged 13-18 is a public health concern due to its potential effects on cognitive development, academic performance, and mental health.

Gap Analysis: The interventions were designed to educate and raise awareness about the harmful effects of marijuana to reduce its use among teenagers. However, the group lacks substantial data to determine whether these efforts successfully decreased marijuana consumption.

Significance to Nursing Practice: Nurses in school and community settings are positioned to address this issue by implementing evidence-based strategies to reduce use, improve outcomes, and reform policies.

Literature Review: The 2011 Monitoring the Future Study identified marijuana as the most used illicit drug among United States adolescents, with increasing prevalence. Its use in adolescence impacts academic, social, and occupational functioning into adulthood.

Framework: The Health Belief Model was used to explore teenager's perceptions of risks, benefits, and barriers to marijuana use and interventions.

Method: The project aimed to educate about the cognitive effects of marijuana on the developing teenage brain. Interventions from the Minnesota Public Health Wheel, including health teaching,

referral, and outreach were implemented. A \$400 budget supported informational flyer was created with funds raised through a fundraiser. Flyers were distributed to USJ students and professors, as well as to parents and guardians. The group also hosted peer-led discussions and educational workshops on campus and within high schools in the community.

Results: Many teenagers were unaware of marijuana's harmful effects on cognition, including concentration, problem-solving, learning, and memory.

Discussion: Theoretically, the presented interventions would lead to positive outcomes such as increased awareness of risks, improved coping strategies, and a decline in self-reported use.

The Impact of Heart Disease on Student Athletes Between the Ages of 18-25

Rachel Heaney, Natalia Kownacki, Jade Robinson, and Vicente Carbonell

Faculty Mentor: Angela Carrano

Adequate cardiovascular health is crucial for overall well-being. In particular, student athletes must have exceptional cardiovascular status to enhance their performance and training. Despite their physical abilities, student athletes continue to suffer from sudden cardiac arrest. The rise in sudden cardiac arrest during strenuous exercising, often without warning, has urged educational institutions and sports organizations to begin prioritizing cardiovascular screening strategies. The literature review examined how questionnaire distribution impacts student response rates and emphasized how to educate student athletes on cardiovascular health. It highlighted the role of health screenings in preventing sudden cardiac death. Nursing practice is critical in preventing heart disease among young student athletes by advancing early detection, education, and screening. The PDSA framework guided data collection for the University of Saint Joseph student athlete population, aiming to raise cardiovascular disease awareness and educate 50% of student athletes during the 2024 fall semester. Hypothetically, an online questionnaire analyzed athletes' health status, while the Minnesota Health Intervention Wheel aided in prioritizing models such as health teaching, screening, and collaboration through an educational pamphlet. Based on research from other studies the intervention was ineffective due to low response rates and the questionnaire distribution method. Other studies have shown success in gathering information about risk factors that impact cardiovascular health and success in educating students. The intervention was adapted by implementing a pop-up table, as it would better suit the student athlete population. The pop-up table would reach various students and be an effective educational resource.

Educating Teachers on Childhood Trauma and its Manifestations in the Classroom

Rylee Guillet, Julie Robinson, Samantha Rosato, and Kaitlin Reen

Faculty Mentor: Angela Carrano

Background: Childhood trauma affects millions of students, often leading to misinterpreted negative behaviors. Teachers may inadvertently harm these students' academic success, mental health, and feeling towards their education, without proper training.

Purpose: School staff often focus more on students' negative behavior than the causes of their acting out. Education is needed on how to address why they may behave negatively. Trauma experienced during childhood is a significant factor in the development of mental health issues.

Methods: Teachers will be prepared to create safe and supportive classrooms by the end of the Fall 2024 semester that reduce the likelihood of triggering events through their understanding of trauma and ability to recognize signs. After completing the required training, this group of teachers will be able to respond to student behaviors that indicate trauma in a way that embraces an understanding of

the underlying causes and prevents re-traumatization. The Minnesota Public Health Intervention Wheel depicts how our interventions will improve the health of the community, specifically through teaching, surveillance, consultation, and collaboration.

Results: Staff vocalize an understanding of trauma-informed care and feel confident in their abilities to individualize interventions to various traumas.

Conclusion: The key nursing implication is education which includes behavioral manifestations, prevention of re-traumatization, and screening a child in the classroom setting. We would need to adapt the intervention to work in other areas across the state. This means making changes to fit the needs of different school districts, different student populations, traumas, support systems, and resources available in those areas.

Improving Diabetes Education for Elementary Students

Logan Biro, Darlene Gautier, Vina Nguyen, and Andrew Petronis

Faculty Mentor: Angela Carrano

Background: Diabetes is a complex disease that requires lots of education and lifestyle management. Over 283,000 children in the United States have Type 1 and Type 2 Diabetes. Complications such as diabetic ketoacidosis, diabetic comas, and seizures can occur if diabetes is not well controlled.

Managing diabetes is important for everyday living.

Gap Analysis: There is a lack of research studies done to assess the knowledge of diabetic students in relation to the disease process and management, as well as effective ways to educate them in a school setting.

Significance to Nursing Practice: A lack of diabetes education can increase hospitalizations of children with diabetic complications.

Literature Review: The literature focused on diabetes education for school personnel in the form of an online learning program. Online learning programs are likely to increase individuals' knowledge in diabetes management. (Taha et al., 2018)

Framework: The PDSA framework was used to provide a structures approach to teaching our intervention.

Method: This was a hypothetical intervention with the population being elementary school students with diabetes. The goal is to assess and further the knowledge of diabetic students. Hypothetically, the intervention would lead to lower glycated hemoglobin levels and fewer diabetes-related complications experienced by the students. The Minnesota Public Health Wheel focuses on screening, surveillance, and health counseling.

Results: Studies have shown that diabetes education greatly benefits patients, helping reduce diabetes related complications and improve self-efficacy. Theoretically, our intervention would be successful in assessing patients' gaps in diabetes education and individualizing their education to improve their knowledge and self-management.

Discussion: We would adapt and implement our intervention. A significant limitation was obtaining approval from the Board of Education which can be a long and complicated process. Instead, we adapted our intervention to be a voluntary process.

Increasing Awareness of Gastric Sleeve Complications

Gabrielle Targonska, and Olivia Tourtelotte

Faculty Mentor: Angela Carrano

Background: Gastric sleeve Surgeries are the most popular weight loss surgery in the US. Over 500 Gastric Sleeve surgeries are scheduled to be performed at Hartford Hospital in 2024 due to increasing obesity prevalence.

Purpose: There is a greater focus on Gastric Sleeve benefits rather than potential postoperative complications. The literature review focused on the complications of Gastric Sleeve surgeries. System wide complications result in patients often being readmitted for hospitalization. Parts of the nursing practice include health promotion and education to reduce adverse effects and improve patient turnout.

Methods: PDSA framework was used to determine the use of a Facebook page as an intervention to educate the interested population. The population is the Hartford region and targets people interested in weight loss surgery options. The goals of the intervention are to increase awareness of the complications of this surgery resulting, increased patient satisfaction and promotion of health. These interventions will be seen through a decrease in surgeries at Hartford Hospital by 10% and 100 followers for the Facebook page by October 2024. The Minnesota public health intervention wheel included counseling, collaboration and advocacy.

Results: Based on success of similar Facebook pages, theoretically, this intervention would be successful and gain popularity. In return, this results in a decreased number of elective Gastric Sleeve surgeries, resulting in complications.

Conclusion: Theoretically, this intervention could be adopted and implemented. A limitation is recruiting APRNs to operate the Facebook page on a volunteer basis.



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Psychology - Oral Presentations

Trust Among Teammates in Competitive Situations

Friedrich Feldrappe

Faculty Mentor: Kristin Cistulli

Numerous scales measure trust in interpersonal relationships or organizations. However, the preliminary literature review has not revealed any scales measuring trust among teammates in athletic competitions. This study aims to fill the gap; it is an attempt to develop a scale measuring trust among teammates in competitive situations. Trust among teammates in competitive situations differs from trust among individuals in interpersonal relationships; it can be described as the belief that one can rely on another person trying to achieve the team's goals and that that person has the skill set to accomplish those goals. Student-athletes from the University of Saint Joseph were recruited via flyers and a recruitment email from the athletics department. They were asked to complete a 31-statement paper-and-pen questionnaire twice in the presence of the investigators, once thinking about a teammate they trusted, and once thinking about a teammate they did not trust (as strongly). Agreement with each statement was rated on a 7-point-Likert scale (1=strongly disagree, ..., 7=strongly agree). Item #31 measured their overall trust of a teammate, on a scale of 1-100 (1=do not trust, ..., 100=completely trust), to measure the scale's validity. Results suggested strong internal reliability for each subscale and the overall measure. In addition, correlational data suggested strong construct validity of the subscales and overall measure. However, the pilot data do not fully support a multi-factor structure.

Menstruation and Self-Perception

Juliana Murcia

Faculty Mentor: Kristin Cistulli

According to the National Library of Medicine, menarche typically occurs between the ages of 10 and 16 (Lacroix, 2023). Previous studies have indicated that university students have a generally negative experience with menstruation, including both physical and emotional effects (e.g., Munro et al., 2021). The purpose of the current project is to further explore the extent to which menstruation affects people's self-perception. Participants who have experienced menstruation will be recruited from the University of Saint Joseph. Their self-perception (the extent to which they feel capable, confident in their appearance, sociable, energetic, and peaceful) will be measured twice, once as they imagine they are menstruating and once as they imagine they are not menstruating. A series of repeated measures t-tests will be used to compare participant responses on each item. It is hypothesized that participants will report feeling less capable, confident in their appearance, sociable, energetic, and peaceful as they imagine menstruating. Results may have important implications for people's experiences with menstruation across contexts.



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Psychology - Poster Presentations

Benefits and Accessibility of Educational Programming for Informal Caregivers

Julia Martocchio

Faculty Mentor: Maria Anderson

50 million people suffer from dementia worldwide, with 10 million new cases diagnosed each year. It is estimated that 94% of people with dementia live at home, relying on unpaid family caregivers for support. Informal caregivers are found to have significantly higher levels of anxiety, stress, depression, feeling burdened, guilt, resentment, sadness, anticipatory grief and loss, and poorer health. Caregiver knowledge, often provided by educational programming, is strongly correlated with improved outcomes for both the informal caregiver and the person with dementia. These benefits include an increased quality of life, lessened feelings of burden, and increased community involvement for both individuals. Access to educational programming becomes challenging as caretakers struggle to find the time, respite care, financial ability, etc. to participate in such programming, especially when compounded by challenges related to lower socioeconomic status. This study seeks to explore the main benefits of educational programming as an intervention for informal caregivers, explore findings related to improving accessibility, and propose a study aiming to better understand the most accessible and effective forms of educational programming.



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Pharmacy - Oral Presentations

Evaluation of DNA Double-Strand Break Activity of Mimosine for Cancer Therapy

Raymonde Smith

Faculty Mentor: Anisha Gupta

DNA double-strand breaks (DSBs) are a lethal form of cell damage that triggers cell death. Double-strand breaks are vital in cancer research to target cancer cells and trigger apoptosis. There is a growing interest in designing molecules that can target genomic DNA and induce DSBs. Mimosine is a non-protein amino acid that can produce DNA DSBs and cause cell cycle arrest. Mimosine causes DSBs by acting as a chelating agent, binding to metal ions like iron and copper, which may lead to the production of free radicals and causing DNA damage. Though mimosine has been known in the science community for decades, only few studies have focused on testing the anti-cancer properties of mimosine. In this study, we are testing the effect of mimosine and its di- and tri-peptide derivatives in different cancer cells. Cancer cells treated with mimosine are subject to a comet assay and γ H2AX foci assay to measure the production of DNA breaks and confirm the ability of mimosine to induce damage in the targeted cells. In addition, we are doing cell viability studies to assess the effect of mimosine on viability of targeted cells. Our research study may provide insights into how cancer cells respond to treatment by mimosine, and help with developing new strategies for cancer therapy. Overall, studying the activity of mimosine on different cancer cells can provide information about their DNA repair capabilities and potentially lead to a new drug for combating these mechanisms and an advancement in precision oncology.

Targeting AKT with Antisense RNA Technology for Breast Cancer Therapy

Natasha Shah

Faculty Mentor: Anisha Gupta

Breast cancer is the second cancer-related mortality in women worldwide. Despite the advancements in cancer therapy, more effective treatments for breast cancer are crucial. Protein kinase B, also known as AKT, are genes that when mutated become oncogenes. The Akt serine/threonine kinases consist of three isoforms: AKT1, AKT2, and AKT3. Once the AKT pathway is activated, each isoform has distinct roles in breast cancer. For example, AKT1 is responsible for local tumor growth and proliferation and AKT2 is responsible for cancer cell survival, migration, and metastasis. Inhibition of specific AKT isoforms can lead to a promising therapeutic strategy for breast cancer. To our knowledge, no prior study has targeted multiple isoforms of AKT simultaneously. Chemically modified nucleic acids based antisense oligonucleotides (ASOs) are a promising strategy to suppress AKT gene expression by inhibiting translation of AKT mRNA. To target AKT1 and AKT2 mRNA simultaneously, we selected specific nucleotide regions which are present in both isoforms. We designed ASOs with two chemical modifications: addition of three 2'-O-methyl groups (2'-O-Me) on the terminal ends and the addition of phosphorothioates (PS) at alternating positions throughout the sequence. With the chemical modifications, the ASOs demonstrated enhanced enzymatic stability. To assess the effectiveness of the AKT inhibitors, we performed cell viability studies, RT-PCR, and Western blot analyses in MCF-7 and MDA-MB-453 breast cancer cell lines. By utilizing ASOs as a therapeutic tool for breast cancer treatment, we hope to create a new path towards targeting AKT inhibition, minimizing adverse events, and enhancing patient outcomes.



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Pharmacy - Poster Presentations

Validation of a High Throughput Method for Bio-Sample Screening in Idiopathic Hypersomnia

Suela Resuli

Faculty Mentor: Andrew Jenkins

A major problem for patients with excessive daytime sleepiness is that there is no biomarker defining the diagnosis of idiopathic hypersomnia. Instead, it is a diagnosis of exclusion, which can become time consuming, expensive, and represent an enormous burden on patients. The discovery of a biomarker for the disease would mark a tremendous advancement in this area of medicine. Gamma-aminobutyric acid type A receptors are the predominant form of fast synaptic inhibitory receptors in the central nervous system. We have discovered enhanced gamma-aminobutyric acid type A receptor activation can be seen in cerebral spinal fluid (CSF) of patients suffering with excessive daytime sleepiness. These receptor interactions are detected using patch clamp electrophysiologic techniques, the gold standard for measuring ion channel activation. This technique is characterized by a high precision and low throughput mechanism. However, it is not translatable to the clinic as a diagnostic tool, where there is a need to screen many patient samples in a short period of time. In this study we sought to validate a novel microfluidic-based automated high-throughput electrophysiology platform to see if it could increase throughput without compromising data quality. We measured 26 of the previously studied human CSF samples on gamma-aminobutyric acid type A receptor modulation using the IonFlux Mercury system. Our findings would support our hypothesis that this miniaturized system could produce data of an equivalent fidelity to the original gold standard methods. The IonFlux Mercury method would collect more data per mL of sample and increase throughput by almost 1,000-fold.

Comparison of A1C Outcomes Among Various Continuous Glucose Monitors

Alexa Mytko

Faculty Mentor: Madyson Allard

Introduction: A hemoglobin A1c test (A1C) determines the average amount of glucose in a patient's blood over the previous three months. Type one diabetics typically have an A1C goal of less than seven percent. Monitoring blood sugar levels throughout the day is an imperative step in order to control and/or reduce one's A1C.

Methods: Compare and contrast A1C levels through clinical studies of the three most popular continuous glucose monitors (CGMs) in the United States- Freestyle Libre, Dexcom and Medtronic.

Results: At a 6 month follow up, 27.8% individuals using the Medtronic MiniMed 780G system obtained an A1C under 7%. Patients initiated on the Freestyle Libre 3 system with diabetes management education saw a reduction in average a1c from 8.5% to 7.6%. Dexcom trials also resulted in a significant a1c reduction in type one diabetic patients. 52% of patients enrolled in the trial had at least a 1% reduction in a1c compared to baseline. However, no patients achieved an a1c less than 7% during the trial.

Conclusion: These results showed that while all three continuous glucose monitoring devices result in a decrease in patient a1c levels, the Medtronic MiniMed system may be the most effective in achieving an a1c of 7% or less. However, other factors will have to be considered before prescribing, such as whether or not the patient wants a wired device, and if the device is covered by insurance.

Therapeutic Potentials of Epigallocatechin Gallate (EGCG): a Structured Literature Review of Clinical Trials

Brisita Crews

Faculty Mentor: Heba Eassa

Epigallocatechin Gallate (EGCG) is the main and most significant polyphenol in green tea. EGCG has numerous health promoting effects acting through different pathways, as antioxidant, anti-inflammatory and anti-atherogenic agent. EGCG possesses great potential for the treatment of disease, particularly in cancer and diabetes mellitus due to its anti-inflammatory and antioxidant properties. Many clinical trials are currently in progress to identify potential disease targets for EGCG as a treatment option. A structured literature review was performed to assess human clinical trials reporting the effects of EGCG on specific disease outcomes. Two databases were searched; ClinicalTrial.gov and WHO International Clinical Trials Registry Platform using established guidelines. There were 171 clinical trials that met inclusion criteria. The majority focused on applications in the treatment and prevention of several types of cancer (24%), treatment of obesity (8%), and diabetes (5%), specifically regarding insulin resistance. Other studies were related to inflammation, infection, cognitive functions, and others. Current evidence suggests many potential clinical benefits, which warrants further investigation into the use of EGCG in several disease states.

Targeting Oncogenic MiR17-92 Cluster by Antisense PNA

Ivy Browne

Faculty Mentor: Anisha Gupta

RNA therapeutics has made a remarkable progress in recent years with the FDA approval of RNA targeting drugs - nusinersen, casimersan and patisiran. MicroRNAs (miRs) occupy a central position in the realm of RNA therapeutics. MiRs are 21-25 nucleotides long non-coding RNAs that regulate gene expression by binding to mRNAs. A 6-9 nucleotide long seed region of a miR binds with 3'-UTR of a mRNA, allowing a single miR to regulate expression of several mRNAs. Different miRs share a common seed region. An effective strategy for targeting multiple miRs is by targeting the seed region with antisense molecules. The miR17-92 cluster is upregulated in several cancers making it an ideal therapeutic target. Currently, very few studies have employed antisense molecules to target miR 17-92 cluster. Clearly, antisense molecules targeting miR 17-92 would broaden the scope of cancer therapies. We designed peptide nucleic acid (PNA) based antisense molecules to target miR 17 family. PNA is a DNA/RNA mimic in which the phosphodiester backbone is replaced with a neutral N-(2-aminoethyl) glycine backbone. PNA binds to miRs with high affinity and is resistant to enzymatic degradation. We have designed short gamma PNA probes with increased specificity and robust binding affinity. Through preliminary studies, we observed effective binding of PNA probes with target miRs. We are testing the efficacy of PNA probes in different cancer cell lines using cell viability, gene expression and protein expression assays. We hope that our findings can provide valuable insights for developing cancer therapy through miR inhibition.

Drugs, Deception, and Decisions: Analyzing the Impact of Pharmaceutical Drug Ads on TV

Luis Osmanlli and Edward Tupper

Faculty Mentor: Madyson Allard

Background: Advertising and promotion for pharmaceutical drug companies is currently only legal in two high-income countries, the United States being one of them. Every day we see drug commercials that highlight so much, ranging from indications to a long list of adverse effects that were experienced. Advertising and promotion in industry companies is well regulated and as such, offers job opportunities to many health care professionals to ensure that all claims are accurate.

Objectives: In this study we will review the commercials of 5 immunologic drugs with indications of treating dermatologic diseases to assess for relativity to original article, monetary benefit after airing, and regulatory compliance.

Methods: We examine the population included, activities performed within the commercial, regulatory compliance, and monetary benefit after airing of each commercial. We hope to isolate data that will show trends in drug advertising strategies, understand common shortcomings of regulatory processes and provide recommendations for optimizing compliant and effective advertising and promotion campaigns.

Results/Conclusions: Differences/similarities of population enrolled in study compared to the population represented in commercial:

- Monetary benefit:
 - o Limited data
 - o Biggest benefit for Humira, estimated \$14 billion
 - o Lowest benefit for Enbrel, estimated \$1.8 billion
- Regulatory compliance:
 - o Sub – analyses looking for trends in time spent addressing regulatory compliance
 - o Seconds in commercial devoted to adverse events
 - o Fair balance of benefits and risks mentioned
 - o Truthfulness of claims

In conclusion, pharmaceutical advertising is heavily regulated. Commercials should be accurate, addressing what was studied as well as treatment experience to not mislead the public and to maximize profits



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Physician Assistant Studies- Oral Presentations

Parenteral Esketamine for Prevention of Postpartum Depression

Meggin Costa

Faculty Mentor: Mary Minto

DNA double-strand breaks (DSBs) are a lethal form of cell damage that triggers cell death. Double-strand breaks are vital in cancer research to target cancer cells and trigger apoptosis. There is a growing interest in designing molecules that can target genomic DNA and induce DSBs. Mimosine is a non-protein amino acid that can produce DNA DSBs and cause cell cycle arrest. Mimosine causes DSBs by acting as a chelating agent, binding to metal ions like iron and copper, which may lead to the production of free radicals and causing DNA damage. Though mimosine has been known in the science community for decades, only few studies have focused on testing the anti-cancer properties of mimosine. In this study, we are testing the effect of mimosine and its di- and tri-peptide derivatives in different cancer cells. Cancer cells treated with mimosine are subject to a comet assay and γ H2AX foci assay to measure the production of DNA breaks and confirm the ability of mimosine to induce damage in the targeted cells. In addition, we are doing cell viability studies to assess the effect of mimosine on viability of targeted cells. Our research study may provide insights into how cancer cells respond to treatment by mimosine, and help with developing new strategies for cancer therapy. Overall, studying the activity of mimosine on different cancer cells can provide information about their DNA repair capabilities and potentially lead to a new drug for combating these mechanisms and an advancement in precision oncology.



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Physician Assistant Studies- Poster Presentations

Challenging the Risk Assessment Models for Congenital Heart Surgery Tool: A New Comprehensive Score is Needed

Brianna Warren

Faculty Mentor: Kara Fluck

Congenital heart defects are widely researched, and alternative treatment options are being developed for those who are unable to undergo or do not wish to pursue surgery. The mortality rate and survival to adulthood for children with congenital heart defects have plateaued over the last 20 years. There is a lack of a comprehensive risk stratification score to help assess the optimal time to do surgery, the mortality risk, and the morbidity risk. Other risk stratification scores have shown that those developed specifically for a condition are better than general scores. In children with uncorrected congenital heart defects, a comprehensive risk stratification score would be a better predictor of surgical outcomes than the current risk assessment tools, decreasing the mortality rate and surgical complications. Using researched risk factors and published recommendations, this paper will outline a comprehensive risk stratification score to provide an objective assessment of risks associated with congenital heart defects.

Bridge-Enhanced ACL Repair is Superior to Autograft Technique

Courtney Litts

Faculty Mentor: Kara Fluck

The anterior cruciate ligament (ACL) is the most common ligament injured in the knee in the United States. Since the ACL fails to heal on its own due to its anatomic location in the synovial fluid, surgical correction is required to return to baseline activity. The most used surgical technique for ACL tears is ACL reconstruction (ACLR), which utilizes a tendon autograft or allograft to replace the torn ACL. Research on ACLR has revealed high graft failure rates, donor-site complications, and increased risk of osteoarthritis postoperatively. The bridge-enhanced ACL repair (BEAR) is a new surgical technique that uses an extracellular matrix scaffold engorged with autologous blood to bridge the gap between the torn ACL ligament ends and facilitate healing of the ligament with suture repair. Early research on the BEAR technique has shown non-inferior patient-reported outcomes, knee laxity scores, and improved hamstring strength postoperatively when compared to ACLR. Our findings suggest that the BEAR technique is more successful at obtaining subjective and functional ACL recovery when compared to autograft ACLR.

Genicular Nerve Radiofrequency Ablation is Superior to Intra-Articular Platelet-Rich Plasma for Pain Reduction in Patients with Knee Osteoarthritis

Nicholas Isabella

Faculty Mentor: Colleen Chappell

Knee osteoarthritis is a chronic degenerative condition which impacts millions of individuals worldwide and is a leading cause of disability, poor quality of life, and excess medical expenses. The incidence of this progressive condition is expected to rise in the future indicating the necessity for impactful and long-term management options. No cure exists for knee osteoarthritis which means treatment is primarily aimed at improving quality of life as early as possible. Current physical, pharmacologic, and surgical therapies are limited by various adverse effects, contraindications, and conflicting efficacy which amplifies the importance for new therapies. This literature review aims to

evaluate and compare intra-articular platelet-rich plasma (PRP) and genicular nerve radiofrequency ablation (RFA) as new emerging treatment modalities for knee osteoarthritis. A structured search was performed on PubMed using keywords correlated to genicular nerve RFA and intra-articular PRP in knee osteoarthritis treatment. Studies published between 2018 and 2024 were included and filtered based on their relevance to symptomatic relief, functional improvement, global perceived effect, and adverse effects. Using a narrative approach, the data and conclusions were synthesized to compare the efficacy of treatment. Current research suggests that genicular nerve RFA is superior to intra-articular PRP on basis of providing superior short and long-term pain relief while improving objective and subjective functionality all while limiting adverse effects.

Bone Morphogenetic Protein Coated Implants are Superior to Uncoated Implants for the Repair of Long-Bone Fracture Non-Union

Joseph Olandt

Faculty Mentor: Brian Munday

Long bone fracture non-unions can be a complex adverse outcome in the bone healing process. There is not one guaranteed method of fracture repair that avoids this outcome entirely, and similarly there is not one method of revision that is guaranteed to repair the non-union. There are various methods of repairing a fracture non-union, of which intramedullary implants will be the primary method explored. To further complicate non-union repair, there are various adjuncts which may be used in conjunction with the implant in order to elicit the best outcome. Some examples include bone chips, autologous bone graft, allogenic bone graft, hydroxyapatite coatings, and bone morphogenetic proteins (BMP). There are many potential benefits of using BMP-coated intramedullary implants, including recovery times, complication rates, and rate of successful repair that justify its use as opposed to the implant alone. Such benefits have already been proven in multiple animal studies where BMP-impregnated hydrogel-coated implants were used, however similar results have yet to be achieved in humans. Interestingly, no human study has used a BMP-impregnated hydrogel-coated implant, which studies have shown to be the optimal method of BMP delivery to the fracture site. Therefore, this paper argues that Intramedullary implants coated with BMP are superior to intramedullary implants without BMP coating for the repair of non-union long bone fractures.

Umbilical Cord Mesenchymal Stem Cells Improve Quality of Life in Adults with Cardiac Muscle Damage

Grace Heine

Faculty Mentor: Susan Curilla

Cardiovascular disease is the leading cause of death globally and has been the leading cause of death in the United States for over a century. The myocardial layer of the heart; a major component of cardiovascular disease, was believed to be a non-regenerative structure until recently. Stem cell therapy research has led to the discovery of regenerative heart tissue and umbilical cord derived mesenchymal stem cells (UC-MSCs) were found to be a safe and abundant resource for research and treatment. In this systemic literature review, the effects of UC-MSCs on the reversal of myocardial damage and their impact on patients' quality of life were investigated. Quality of life was measured across various primary research publications using variables such as walking distance, hospitalizations and pill burden. The effects of increased left ventricular ejection fraction (LVEF) including improved mortality, exercise capacity, shortness of breath and fatigue were also investigated. This review found statistically significant increases in LVEF and other measures of cardiac function with UC-MSC

therapy. Improvement was noted in a six-minute walk test and ventilation/carbon dioxide equivalents (VE/VCO₂) in patients given UC-MSCs. No differences were noted in peak volume of oxygen (VO₂) or any other exercise capacity variables. Decreases in hospitalization and death rates were non-significant. These results show potential for the use of UC-MSCs in the treatment of cardiac muscle damage, but do not indicate significant improvement in patient quality of life yet.

Cardiovascular Disease Risk Determination in Transgender Adults

Gabrielle Gontarek

Faculty Mentor: Susan Curilla

Approximately 2% of the U.S. population identifies as transgender. Gender-affirming hormone therapy (GAHT) is the most common treatment for the gender dysphoria experienced by transgender patients, allowing them to align their secondary sex characteristics with their gender identity. However, knowledge is limited on the long-term effects of GAHT and how it may change the risk of developing future medical conditions such as cardiovascular disease (CVD). One of the most widely used methods to determine CVD risk is the American College of Cardiology (ACC) 10-year Atherosclerotic Cardiovascular Disease (ASCVD) risk calculator, which uses gender in the algorithm to calculate risk. Currently there are no guidelines that address how to calculate CVD risk in transgender individuals receiving GAHT. Research studies focused on physiologic changes associated with cardiovascular health in GAHT use have found that both natal and affirmatory gender play an important role in the development of risk factors of CVD. This literature review discusses the significant differences in predicted CVD risk that are seen when using natal versus affirmatory gender in the ACC's 10-year ASCVD risk calculator. Based on this information, it is proposed that calculating two 10-year ASCVD risk scores, one with each gender, and using the average of the two may provide the most accurate risk prediction in the transgender population.

New Over-the-Counter Progestin-Containing Contraception Pills Versus Existing Contraception Options to Lower Teen Birth Rates

Julia McGurn

Faculty Mentor: Colleen Chappell

Access to safe and effective contraception is a crucial component of reproductive justice, which refers to the power of the individual to decide if and when they become pregnant. Contraception is also essential to medical care of those with reproductive capacity. There are many contraception options currently available, ranging from prescription pills to implanted hormonal devices to over-the-counter (OTC) barrier methods. Though these options are widely available to some, others face major barriers to access which prevent their regular use, leading to unintended pregnancies and the negative medical, financial, and psychosocial outcomes that may accompany them. Adolescents in particular experience limited access to contraception, especially those facing racial and socioeconomic inequalities. In July of 2023, the U.S. Food and Drug Administration approved the first ever over-the-counter contraceptive pill that is available without a prescription from a medical provider, removing one of the main obstacles for many patients seeking contraception. This literature review will synthesize findings from 34 total sources, including 13 primary or meta-analysis articles. Epidemiologic data from the Centers of Disease Control and Prevention's most recent report will be used to analyze teen birth rates state-by-state and discuss contraceptive access as a cause for disparities. The studies reviewed will also prove that progestin-containing contraceptive pills are a safer option to be available over-the-counter than

estrogen-containing pills, and data from clinical trials will be used to model the effect of over-the-counter status on teen birth rates.

Letrozole is Superior to Clomiphene Citrate in Ovulation Induction to Treat Infertility in Women With PCOS

Isabella Arigno

Faculty Mentor: Kara Fluck

Polycystic Ovarian Syndrome is a multi-system disorder which effects up to 116 million women globally (Ahmed et al., 2024). One of the most drastic elements of this disorder for some women is the effect it has on fertility, often causing anovulation and therefore, infertility. For the past few decades, clomiphene citrate, a selective estrogen receptor modulator, has been the mainstay of treatment for patients with PCOS struggling with infertility (Thomas et al., 2020). However, this drug has been shown to adversely affect conception and successful pregnancies, despite increasing ovulation (Chera-aree et al., 2023). Letrozole, an aromatase inhibitor, is an alternative option which has promising results of increasing ovulation as well as live births (Basarakod et al., 2023). Letrozole has been shown to have more successful ovulation induction as well as viable pregnancies (Basarakod et al., 2023; Al-Obaidi et al., 2019). Although clomiphene citrate has historically been used as a first line treatment for infertility in PCOS, the side effect profile has demonstrated to be more severe, including higher risks of multiple pregnancies (Thomas et al., 2020; Basarakod et al., 2023). Additionally, the mechanism of action of letrozole, which selectively inhibits the production of estrogen, provides a more favorable environment for the maturing follicle in women with PCOS (Mejia et al., 2019). Letrozole is superior in not only ovulation induction, but endometrial receptivity, dominant follicle size, and number of viable pregnancies to term (Chera-aree et al., 2023; Al-Obaidi et al., 2019; Basarakod et al., 2023).



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First Year Seminar - Poster Presentations

Uniting USJ through Compassionate Service to Destigmatize Disability

Elena Amin, Megan Audet, Nicole Balda, Faith-Maria Campbell, Malaysia Delaine, Gabriella Gonzalez, Aiden Hebb, Nicolette Hines, Aubrey Jackson, Lindsay Jackson, Camille Jones, Gianna McKeone, Kyla Nixon, Christian Quinones, Toryn Riley, Christina Roberts, William Slayton, and

Lauren Taschereau

Faculty Mentor: Derek Dube

While more than one in four adults in the United States have a disability, there is still significant stigma and barriers to building community between individuals with and without disabilities. Individuals with disability often feel isolated. One way to overcome feelings of isolation is to actively build connections across diverse populations. The University of Saint Joseph includes the college, the School for Young Children, and the Gengras Center. The Gengras Center, founded in 1965, provides education and vocational training for students with development disabilities, behavior challenges, and autism from elementary to transition ages. In this service project, undergraduate students will collaborate with the Gengras Center, to make connections, build relationships, and foster a sense of community across all of USJ. Through this collaboration, money will be raised for the building of an accessible playground at the Gengras Center, and donations collected for the community partner, Hands on Hartford, which supports individuals struggling with financial needs. To accomplish these goals, undergraduate students will tour the Gengras Center as a group, engage with classes at the Gengras Center, and coordinate the 2025 Gengras-USJ Spring Festival. To plan the Spring Festival, the undergraduate students will divide into three groups, leveraging personal assets to publicize the event, to support fundraising and donations, and to develop activities for the festival, occurring on Friday April 25, 2025. Through these activities, we anticipate increasing awareness around the diversity of the USJ community, building connections destigmatizing disability, and generating funds and donations to support those in need.

Increasing Student Engagement by Connecting Literacy and STEM Instruction

Faith Brown, Sly Curto, Joseph Gratta, Ella MacKenzie, Carolina Mancini, Sarah Mathew, Navai Mendez, Richard Murphy, Aiden Peterson, Emily Pettola, Marissa Roy, Kara Salisbury, Rylie Sima,

Lauren Stolfi, Summer Tulier, Mariah Usher, and Mia Yacono

Faculty Mentor: Christopher Fox

Student engagement continues to challenge today's educators. More and more students face traumas outside of school that can affect the way they learn, think, and act. This makes it difficult for students to focus on the academic and social demands in schools. Increasing student engagement by connecting literacy and STEM instruction provides students safe space and an "escape" from reality. Developing inquiry-based STEM activities will guide students to apply prior knowledge to new problems. Harvey Daniels, author of The Curious Classroom (2017), states that a student-directed inquiry approach is "based on kids' interests, not just from standards, benchmarks, targets, tests, and the 'data desires' of people outside of schools. Curriculum is then built from kids' wonders and then back-map projects to the relevant standards (pg. xxiii)." Lynette Colon, a guest speaker in our class, shared this quotation with us and it has inspired our work: "The meaning of life is to find your gift; the purpose of life is to give it away." In FYS, we participated in many activities to identify and share our "gifts." These activities allowed us to collaborate with our peers to support curiosity, teamwork, and engagement to learn the mindset of younger children. As class, we developed STEM activities for students in grades Pre-K through Grade 5 using non-fiction texts. Students from the CREC Academy of Aerospace and Engineering Elementary School in Rocky Hill, CT will have the chance to complete the activities and work with their families at STEM Night on March 27th. These activities will then engage students and

continue to build their minds in the area of STEM. We hope that this experience will help us not only become more confident communicating with our peers during classroom discussions and projects, but also with elementary-aged students in a variety of occupational settings after graduation.

Our Stories: Bridging Generations Through Story Sharing

Marco Aparo, Gabrielle Bernabe, Alex Carrier, Adelphe Cisse, AJ DeMio, Davina Dhanraj, Logan Granfield, Grace Kociszewski, Ben Levinson, Angelina Loukrezis, Nashaly Morales, Gracie O'Connell, Senai Pinott, Leah Potter, Norah Prestley, Emily Skorupski, Peyton Tyler, and Eileen Whittel

Faculty Mentor: Michele Confessore

Intergenerational programs foster empathy, wisdom, and a deeper understanding of human experience. This project is a 5-week program that connects first year seminar students with residents of The McAuley, a nearby senior living facility, through meaningful dialogue and personal storytelling. Through guided conversations--some guided while others spontaneous, participants explore themes of resilience, identify and explore societal change through impactful events, and personal growth, creating a reciprocal learning experience that enriches both generations. Students gain valuable insight from the lived experiences of older adults, while seniors find renewed purpose in sharing their stories and perspectives. This program cultivates communication skills, historical awareness, and intergenerational bonds, fostering a sense of community and mutual respect. Research suggests that intergenerational programs benefit both age groups by reducing ageism, enhancing psychological well-being and strengthening community ties (Jarrott & Smith, 2011). The program employs a reflective framework where students document their experiences through discussion, and reflective summaries. By fostering reciprocal learning and emotional connection, this initiative contributes to broader efforts to combat social isolation among seniors and enrich the personal growth of younger participants (Gupta & Von Hippel, 2022).

Caring for the Elderly: Echoes of King Lear in the Modern World

Anthony Bell, Michael Brown, Frank Calabrese, Matthew Clark, Alyssa Dugus, Freddy Fuentes, Bree Girard, Kylie Howe-Barnett, Annessa Jacobs, Neal Griffin, Richard Osei-Bonsu, Maela Sosa, Jakari Tertulien, and Nevaeh Yorke

Faculty Mentor: Christina Flood

In the play King Lear by William Shakespeare the theme of abuse towards the elderly is prevalent. To counter this abuse our FYS II: Shakespeare in A Changing World class will be collaborating with Saint Mary Home, a senior housing community in West Hartford and Capital Classics Theatre Company, a local theatre company in Hartford that hosts the annual Shakespeare Festival on the USJ campus during the summer. Students will be meeting with residents from Saint Mary Home as part of the Grand Parent Program and hosting an arts and craft session with the residents where they will be decorating picture frames. Flyers to invite residents to attend the Capital Classics summer performance of King Lear and Twelfth Night will also be distributed. This project will develop intergenerational relationships between students at the University of Saint Joseph and residents at Saint Mary Home in order to help residents feel cared for and supported. This will also educate USJ students on the importance of compassion and service toward the elderly. The project's goal is to promote companionship for both the students and the residents through their activities and conversations.

Building a Connection with Our Neighbors at the School for Young Children (SYC) to Practice Compassionate Service

Bella Apruzzese, Nathan Brasky, Julia Conard, Jason Delevante, Rea Hoxha, Nora Jalinskas, Loucie Jean, Ridaa Khan, Olivia Kulinski, Grace Levesque, Katelynn Little-Davis, Robert McCarron, Gabriella Naranjo, Sophia Onofrio, Daichelle San Nicolas, Elis Sulollari, and Gabriella Wanner

Faculty Mentor: Sheila Garilli

Within the University of Saint Joseph Community is the School for Young Children (SYC), a preschool where each student in our First Year Seminar II will volunteer and complete tasks or projects given by the SYC. Through this experience volunteering at SYC, students can practice a deeper understanding of Mercy Values and put them into action by directly supporting the school community through compassionate service. Teachers struggle to find time to clean up after students or prepare future lessons while simultaneously supervising a classroom of young children. By volunteering at the SYC, students help the teachers manage their program smoothly, as balancing classroom activities, cleaning, and preparing for the next day can be challenging. To help them, students must spend a minimum amount of time completing tasks that contribute to their structured and welcoming classroom environment. Beyond helping teachers, this experience also benefits the children, fostering social and emotional development by engaging in a positive learning environment. USJ students will engage with children at the School for Young Children to familiarize themselves with working with children while assisting the teachers by organizing and maintaining the classrooms. Ultimately, students will end up with a greater sense of responsibility, compassion, and service toward others. By the end of this experience, our goal is to strengthen a connection between USJ and the School for Young Children, building an educational partnership.

Shaping Young Minds Financial Personality- Educating Gen Z Students About The Ins And Outs Of Financial Literacy

Ana Alexander, Vianca Bilbraut, Amare Cockfield, Logan Delgrego, Zoe Dollak, Abby Julian, John Kane, Harmandeep Kaur, Nicholas Lombardi, Geret Madeira, Mario Milardo, Viktor Orzolek, Alexis Pancavage, Anthony Pereira, Aidan Scully, Lorynes Suriei, Marcus Tarfano, and Minnu Vinod

Faculty Mentors: Octavia Rossini and Anne Carofino Hunt

According to the College Student Financial Survey, more than 1 in 4 college students would give their finances a grade of "C" or worse; 85% of college students would take a course in personal finance if it were available and they got credit toward their degree, and 7 in 10 college students feel overwhelmed by their financial responsibilities. Overall, the financial literacy rate among Gen Z is only 37%, which has decreased from 48% since 2020. However, Gen Z is the first to sign up for a financial literacy course if offered. (Kiernan, 2024) It is with this in mind that the students taught a workshop to local high school students regarding the various resources available to them to help pay for college and beyond. The students chose specific topics to focus on, which included financial aid, employment, banking, budgeting, and credit. Students also relayed the importance of understanding how to pay back student loans. Paying for college involves multiple factors such as FAFSA, scholarships, grades, college saving plans, and extracurriculars that can benefit scholarships and loans. The students worked in groups presenting on one topic: Financial Aid for College, Employment and Banking, Budgeting, Credit Cards, and Covering Costs for College. Students then answered individual questions based on their presentation. Our goal for this project is to help students shape their financial future.

Making a Big Difference Through Small Acts of Kindness

Alyssa Acuna, Trinity Cruz, Manuel Hernandez-Plaza, Brianna Loja, Brenna Lyver, Natalie Muscarelli, Dominic Oakes, Johny Rivas, and Gia Shoban
Faculty Mentor: Daniela Rivera

As a high school student, the process of getting into college and what college life can be is very daunting to think about. STEM-REACHES is a STEM Outreach program that brings East Hartford High School students interested in Health science, Biology, and Environmental Science as well as other professions to the University of Saint Joseph. STEM-REACHES has been designed to bridge the gap between high school and college, with the overall goals being to have high school students engage with college students, learn the ins and outs of the college application process and have a chance to participate alongside college students in STEM-related activities created by the students. This year with the emphasis being compassionate service, an FYS class was created to facilitate the STEM-REACHES program to give current USJ students a chance to create workshops and fully engage with the high school students themselves. Two workshops were planned featuring different activities tailored to the high school students' interests. Being that it is a STEM-focused program, FYSII students decided to hold workshops focused on vital scientific skills such as micropipetting and how to work a microscope, along with a mock class and a chance to view our Nursing simulation room. Open to all skills and participation, this program is meant to highlight team building and compassion as well as letting our USJ students feel like they can help other students that are going through the struggles of the college process by offering advice they may have needed themselves.

Cultivating Change: Seed Starts for Sustainable Communities

Kaitlyn Allen, Michael Barzee, Carolyn Capel, Abby Demers, Sadie Girgasky, Brady Higginbotham, Moo Ku, Jack Kushman, Jaina Marchinczyk, Alina Neimczyk, Hayley Phelps, Kayla Phelps, Jaylynn Poll, Gianna Quaresima, Olaf Talar, Norine Than, and Amber Trepanier
Faculty Mentor: Brianna Laskey

Our class worked throughout the semester to help the environment by growing fruits and vegetables for those who need them. As shown within the past years, especially with COVID-19, there have been gradual increases in fresh food prices, with the scarcity of fresher foods, due to climate or other economic issues. We worked throughout the semester to learn and teach others about sustainability and food poverty. West Hartford currently has around 6% of its population facing food insecurity. The purpose of our seminar was to inform others about the benefits of healthy food and how to get it at a lower cost. One way we helped others with sustainability is by making starter plants and handing them out at our Earth Day event. At this event, we also had information to get the word out about how to use sustainability in the community. The plants we provided are good for people who can't have gardens in their backyard. We research plants that can grow inside during our New England weather, growing between 150-200 seedlings of different varieties. We used healthy foods like carrots, tomatoes, kale, squash, and more. We have worked together to keep these plants watered and healthy to give out. We kept logs and pictures of the growth of the plants, some growing faster than others. By working together and sharing our knowledge, we were able to reach so many people to help them with better, healthy living and sustainability.

Strengthening Community and Connections Through Sport

Justin Cardinale, Damir Cirikovic, Ryan Czyz, Kristopher Dube, Mia Harding, Christina Huynh, Kaila James, Simon Loewenstein, Dilan Mamudi, Ella Michaud, Marlon Perez Sanchez, Alissa Perna, David Reischerl, Eryn Ross, Madison Rossetti, Kaitlin Trudeau, Sequoia Turcotte Briggs, and Cameron Zampolin

Faculty Mentor: Kelley LeDoux

Sports have the unique ability to bring people together, fostering connections that transcend differences in background, role, or experience. To bring this to life, FYS II students will organize and host a basketball event at the University of Saint Joseph (USJ), managing key aspects such as event logistics, marketing and outreach, sponsorship and fundraising, and participant and volunteer coordination. This event is designed to create a welcoming space where students, faculty, and staff can engage beyond the classroom and workplace. Through friendly competition, participants will have the opportunity to build relationships, strengthen communication, and develop a greater sense of belonging within the USJ community. With inclusivity at its core, this initiative prioritizes making all participants—regardless of skill level—feel encouraged to join. More than just a game, it serves as a platform for bridging gaps, fostering mutual understanding, and reinforcing the supportive network that defines our campus. By uniting members of the university through shared experiences and teamwork, this event highlights the role of sports in cultivating a stronger, more connected community.

Children's Museum West Hartford: A Social Media Strategy

Alyahna Aguilar, Lariyah Booker, James Bruck, Christopher Capen, Landon Coelho, Isabelle Dagonini, Bryan Diehl, Connor Doyle, Kamila Kwietniak, Mackenzie Stone, Ozzie Weber, Elina White-Charette Julia Loughman, Aurora Miller, Naomi Mission, Mia Peters, and Charlotte Poltronieri

Faculty Mentor: Charlotte Mann

The Children's Museum, located in West Hartford, is the oldest museum in Connecticut. As a nonprofit, the museum operates under the mission to "to provoke lifelong experiential learning and innovation among children, adults, and their communities." In an effort to support this mission, and in conjunction with the Museum executive director, we have developed a social media strategy to support the marketing goals of the museum. Lemel (2021) asserts that the metrics that are most relevant to a successful social media account are the number of followers and the level of engagement (likes/followers per post). Children's museums that are successful across the metrics (e.g., Stepping Stones, Providence Children's Museum, Indianapolis Children's Museum, Boston Children's Museum) have a higher ratio of video/picture posts, and a higher average number of posts week. These museums also incorporate educational videos, exhibit highlights, and staff spotlights into their social media presence. The strategy, including the approval, capturing, and posting of the content, will be implemented by the authors and success pre and post implementation will be evaluated according to the metrics outlined by Lemel (2021).