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SAINT JOSEPH
CONNECTICUT

USJ

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**30th Annual
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Abstracts**

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Table of Contents

Biology - Oral Presentations	4
Biology - Poster Presentations	10
Chemistry Oral Presentations.....	13
Chemistry Poster Presentations	15
Computer Science - Oral Presentations	17
Counseling – Poster Presentations	19
Digital Media and Communication - Oral Presentations.....	24
Environmental Science - Poster Presentations.....	26
Health Science, Direct PA Program - Oral Presentations	28
Health Science, PA Program - Poster Presentations	30
Health Science - Poster Presentations	32
History - Oral Presentations.....	34
History – Poster Presentations.....	36
Master of Public Health- Oral Presentations	38
Master of Public Health- Poster Presentations	40
MSDI: Master of Science and Dietetic Internship - Poster Presentations.....	42
Master of Social Work - Oral Presentations	49
Nursing - Poster Presentations	51
Psychology - Oral Presentations	62
Psychology - Poster Presentations.....	64
Pharmacy - Oral Presentations	67
Pharmacy - Poster Presentations.....	71
Physician Assistant Studies - Poster Presentations.....	74
Special Education and Elementary Education – Oral Presentations	77

Special Education and Elementary Education – Poster Presentations 79
First Year Seminar - Poster Presentations 83



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Biology - Oral Presentations

Investigating the Effect of Quercetin on CYP1 Signaling Pathways in Endometrial Cancer

*Thais Ramos Bezerra, and Devan Fox
Faculty Mentor: Dr. Irene Reed*

Endometrial cancer is the fourth most common cancer in women in the U.S. and is one of the few cancers with increasing mortality rates. Cytochrome P450 1 (CYP1) proteins influence several aspects of cancer progression, including processes that promote metastasis, which results in poorer outcomes for patients. Natural compounds such as flavonoids, which are found in various fruits and vegetables, have been shown to regulate CYP1 proteins (such as CYP1A1 and CYP1B1). However, studies exploring the cellular mechanisms of flavonoids and CYP1 proteins are lacking, particularly in endometrial cancer. Quercetin is a widely studied flavonoid and has been shown to modulate levels of CYP1 proteins in endometrial cancer cells. However, the impacts of Quercetin on CYP1 proteins within the context of cancer progression have not been explored. This study aims to investigate the influence of Quercetin on expression of CYP1 proteins and the impact on cell viability in low-grade (Type I) vs. high-grade (Type II) endometrial cancer cells. Type I and Type II endometrial cancer cells were treated with Quercetin, and levels of CYP1 mRNA and protein were measured, as well as cell viability. Preliminary data suggests that Quercetin regulates expression of CYP1 proteins in both Type I and Type II endometrial cancer cells, and cell viability was significantly impacted in Type I cells after 48 hours of treatment. Studying how different flavonoids, particularly Quercetin, regulate CYP1 protein expression in low-grade vs. high-grade endometrial cancers can contribute to the understanding of potential targets for treatment and mechanisms of cancer progression.

Water Under the Bridge: Nutrient Monitoring of the Scantic River (Northeastern CT)

*Joseph Venditto
Faculty Mentor: Dr. Kirsten Martin*

The Scantic River Watershed includes approximately 90,000 acres in Northcentral CT and Southcentral MA. The 38-mile-long river joins the Connecticut River in South Windsor, CT. The Scantic River Watershed provides a green wildlife corridor, and the water is utilized for both recreation and agricultural uses. Since 2010, water quality has been monitored by the Dr. Martin (USJ/ Scantic River Watershed Association). In addition to monthly year-round monitoring of physical parameters (turbidity, conductivity, pH, temperature, nitrate and phosphate), selected locations are also monitored weekly during the summer for *Escherichia coli* (*E. coli*) levels. In the summer of 2025, samples were collected weekly from selected locations and were analyzed for both *E. coli* and nutrients (nitrate and phosphate). To conduct these tests, we used HACH TNT Phosphate and Nitrate Reagents and a spectrophotometer. Turbidity, conductivity, total dissolved solids, and dissolved oxygen were analyzed using Vernier ISE probes. *E. coli* levels were analyzed using the IDEXX Quanti-Tray 2000 method. The information provided by these three tests helps us get an understanding of water quality and the potential impacts on human health. *E. coli* data collected was uploaded to a website maintained by the CT River Conservancy where locations were marked whether they were safe for recreational use, boating only or not safe for either.

Examining the Bacteria in Local Equine Microbiomes and their Potential Impacts

Sasha Aguirre

Faculty Mentor: Dr. Derek Dube

All animals have a variety of microorganisms that make up their microbiome. A key component of a horse's microbiome is the bacteria that are present in the gastrointestinal (GI) tract. The bacteria present in the GI tract can play important roles in supporting digestion and immune responses, such as Lactobacilli. However, some bacteria can also be pathogenic, such as Salmonella and Rhodococcus. Further, these microbes can be excreted in fecal waste and potentially cause disease in other horses, animals, and even humans. This research study investigates the bacterial communities present in horses at a local rescue shelter and the potential impacts they may have. Horse fecal samples were collected across two months from three distinct horses, as well as the rescue shelter's compost pile, which is near the banks of the Farmington River. To determine if the fecal composting process led to contamination of the river, upstream and downstream river water samples were collected. Bacterial concentrations in the samples were calculated and the species of the bacteria determined through two separate methodologies (single-isolate and metagenomic approaches). As expected, bacterial concentrations were high in the fecal and compost samples. Preliminary analyses have identified the presence of Escherichia coli, Acinetobacter bohemius, Bacillus altitudinis, and Bacillus australimirus in these samples. Identification of additional bacterial species across samples is ongoing and once completed will allow for better understanding of the bacteria impacting the horses at this shelter, the Farmington River, and inform best practices for handling and composting of animal fecal waste.

Fungi's Future: Global Warming Consequences on Microorganisms and Mammalian Populations

Nova Brown

Faculty Mentor: Dr. Charles Morgan

Microbial communities help form the base of ecosystem resilience. Because of the interconnective nature of fungi, many different ecosystems are impacted by the effects of climate change and human involvement in the ecosystem. A rise in drastic temperature changes and other environmental effects of climate change has been reshaping the future of fungi's genetics and ecology. Under these harsh conditions, fungi such as Candida auris, Aspergillus fumigatus, Coccidioides immitis, and Emergomyces canadensis have been seen to have developed specific adaptations to be able to survive. This would include thermotolerance, expansion of habitat, and an accelerated genetic mutation rate that causes higher resistance with antifungals. Within this study perspective, potential strategies including fungal surveillance and ways to counter the negative interactions of recent fungal adaptations.

Synthesis and Characterization of Fourth Generation Light-Operated CRAC Channel Inhibitors (LOCIs)

Dylan Levesque

USJ Faculty Mentor: Dr. Chadene Tremaglio (UConn Department of Chemistry, Faculty Mentor: Michael Kienzler)

Calcium release-activated calcium (CRAC) channels are responsible for mediating store-operated calcium entry into cells and thus play important roles in regulating cell signaling and transcription, particularly in immune cells. CRAC channelopathies have been associated with a number of diseases,

such as combined immunodeficiency, ectodermal dysplasia, and skeletal muscle atrophy. Previous studies have demonstrated that azoboronate-based small molecules can be used as light-operated CRAC channel inhibitors (LOCIs). In these studies, UV and visible light were utilized to modulate the inhibitory activity of the LOCIs by switching between an active trans isomer and an inactive cis isomer. This mechanism allows for greater spatiotemporal control over CRAC channel inhibition compared to traditional inhibitors, which can provide a method to study CRAC channels with more precision. However, the use of UV light to isomerize LOCIs can be harmful to biological systems, thus making it unfavorable for in vivo applications. The present study seeks to develop a new generation of LOCIs that can be modulated by more red-shifted, all visible light compared to the previous generations of LOCIs. To do this, ortho-tetrafluorinated azoboronate derivatives will be synthesized and characterized via UV-Vis spectroscopy. Subsequently, a Jurkat-Lucia NFAT cell signaling assay will be used to examine the inhibition that each LOCI derivative has on CRAC channels and calculate their respective IC50 values.

Examining Regulators of Epithelial-Mesenchymal Transition (EMT) in Cisplatin-treated Neuroblastoma, Glioblastoma, and Triple-Negative Breast Cancer Cells

Lloyd Haynes

Faculty Mentor: Dr. Irene Reed

Epithelial-mesenchymal transition (EMT) is a cellular process that enhances invasion, survival, and motility and is increasingly linked to chemotherapy resistance. Cisplatin is a widely used chemotherapeutic drug, but its effectiveness is limited by EMT-driven resistance mechanisms. While EMT and cisplatin resistance have been studied in individual cancers, direct comparisons across distinct types are more limited. This project aims to investigate cisplatin-induced EMT in glioblastoma, neuroblastoma, and triple-negative breast cancer (TNBC) cell lines. We will measure cisplatin-induced changes in EMT markers, including E-cadherin, N-cadherin, vimentin, Snail, and Twist, as well as regulators such as PTEN, PIK3CA, NF1, and DUSP6. These four regulators have been implemented in cisplatin-resistance mechanisms in certain cancer types. Semi-quantitative PCR and Western blotting will be used to assess gene and protein expression, while trans-well invasion assays will evaluate functional changes in invasiveness. Bioinformatic analyses using databases such as cBioPortal will incorporate patient tumor genomic data, which can provide connections between mutation status in these genes of interest and clinical outcomes. By comparing results across cancer types, this study will identify both shared and cancer-specific mechanisms of cisplatin resistance, which may lead to more informed approaches to cancer therapy.

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

Jordan Kates

Faculty Mentor: Dr. Jesse Balaban-Feld

Environmental factors can affect mate selection and influence reproductive behavior, including the fear associated with predation risk. Exposure to predation may alter female choosiness and overall reproductive output as individuals that have experienced predation may estimate that they will have a shorter lifespan and fewer mating opportunities. In a series of experiments, we assess how fear from predation influences the reproductive behavior of fruit flies (*Drosophila melanogaster*). Groups of male and female fruit flies were separately exposed to a live predator (Jumping Spider – genus *Phidippus*). Survivors of the spider exposure training were labelled “Predator-Experienced” and flies that never experienced predation risk were labelled “Naïve”. The first experiment examined how predation risk influenced female mate choice. Individual “Predator-Experienced” or “Naïve” females were presented

with a choice between one large (more attractive) and one small (less attractive) male. Females that had previously experienced predation took longer to begin mating but mated at a higher rate compared with naive females that had never experienced predation risk. Additionally, experienced females preferentially mated with small males, while the naive females strongly preferred large males. The second experiment is currently examining the reproductive output of groups of males and females with different combinations of predator experience (naïve females – naïve males; naïve females – experienced males; experienced females – naïve males; experienced females – experienced males). Data analysis is ongoing. The results will determine whether males and females respond differently to predation risk, and how the group dynamics of mixed predator-experienced and naive individuals may influence reproductive investment and output.

Determining Signaling Mechanisms Used by CXCR2 to Promote Epithelial-Mesenchymal Transition in Pancreatic Cancer

Jacob Krzeminski

Faculty Mentor: Dr. Irene Reed

The 5-year survival rate for metastatic pancreatic cancer is only 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. CXCR2 is a receptor that binds with CXCL5, a chemokine that 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/CXCR2 in EMT and the promotion of metastatic disease remains unclear. 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/CXCR2 and EMT is through the PI3K/Akt or the ERK signaling pathways, which regulate the transcription factor Snail to promote EMT. The expression of CXCR2 mRNA and protein, as well as EMT-related markers have been confirmed in HPAF-II and PANC-1 cells. CXCR2 knockdown was confirmed at the mRNA and protein levels in both HPAF-II and PANC-1 cells, allowing us to move forward with additional testing of effects on EMT signaling. Additionally, cell viability and wound healing assays will be conducted to confirm functional impacts on cell proliferation and migration, two major factors in EMT. Identifying if CXCL5/CXCR2 can be targeted to inhibit EMT is a major step in prevention of metastasis.

The Effects of Estrogen on the Electrophysiology of Cardiac Arrhythmias

Nina Gardella

Faculty Mentor: Dr. Dalia Giedrimiene

The role that estrogen plays for the heart is often dismissed in a general discussion of cardiac health. The focus of many studies in this area is on the role of estrogen in regulating cardiac ion channels. One crucial aspect of women's health that is often overlooked is estrogen's part in the maintenance of cardiovascular stability and protection. The purpose of this study is to explore the idea that estrogen is a cardioprotective buffer, and its absence results in an increase in cardiac arrhythmias, particularly during menopausal years. For this study, a literature review and data analysis were conducted. The analysis tracked the influence of estrogen across the lifespan, and factors such as BMI, cardiorespiratory fitness, birth control use, and hormone replacement therapy were analyzed to determine how they interact with estrogen levels to influence cardiac outcomes. The results obtained from the generated data demonstrate that the cardiovascular system needs estrogen to maintain a healthy and anti-arrhythmic environment. The onset of menopause, marked by a sudden drop in estrogen levels, is a phase of increased electrophysiological risk for women, and the presence of estrogen is critical in preventing arrhythmic

triggers and metabolic dysfunction. For postmenopausal women, the absence of this mechanism indicates that the management of cardiac health needs to be adapted to compensate for the absence of estrogen. Future studies should aim at optimizing hormone therapies and lifestyle modifications to replicate the protective effects of estrogen in the older population.

Biology - Poster Presentations

Investigating the Effect of Respiratory Syncytial Virus (RSV) Infection on Endoplasmic Reticulum (ER) Chaperone Proteins

Nova Brown

Faculty Mentor: Dr. Chadene Tremaglio

Respiratory Syncytial Virus (RSV) is a highly contagious virus that targets infants, the elderly, and the immunocompromised. In the US, RSV is a significant cause of hospitalization and death in pediatric and elderly populations. Although progress has been made on vaccine development and public health awareness, RSV is still a major global health issue. Therefore, understanding how RSV interacts with host cells is important. When RSV infects cells, it uses host cell machinery to translate its viral proteins in the endoplasmic reticulum (ER). While in the ER, the virus may interact with chaperone proteins such as calnexin (CANX) and calreticulin (CALR), which help with protein folding in the cell. Some viruses are known to use these proteins to assist in replication or even to evade immune cell detection. To investigate how RSV affects CANX and CALR during infection, human epithelial airway cells (HEp-2) were infected with RSV at a multiplicity of infection (MOI) of 1. Protein lysates were harvested, and Western blot was performed to examine CANX and CALR expression. Results showed that both CANX and CALR are upregulated 24 hours post infection (hpi). CALR remains high at 48 hpi while CANX returns to normal levels of expression. Experiments are ongoing to determine whether RSV replication is dependent on these chaperones; RSV replication is being assessed in the context of small interfering (si)RNA knockdowns for CANX and CALR. The outcome of this experiment may inform the development of therapeutics to target viral propagation by targeting host cell chaperone proteins.

Effect of Curcumin on RSV Replication and Inflammatory Signaling in Hep-2 Cells

Dylan Levesque and Sophia Maselli

Faculty Mentor: Dr. Chadene Tremaglio

Respiratory Syncytial Virus (RSV) is a major cause of bronchiolitis and pneumonia in infants and young children, with nearly all children infected by the age of two. Severe disease is most common in premature infants and individuals with underlying health conditions, making RSV a significant pediatric respiratory pathogen. Although vaccines have recently been approved for certain populations, effective therapeutic options remain limited. Because RSV replication and excessive inflammatory signaling both contribute to airway damage, identifying compounds that can target these processes is crucial. Curcumin is a naturally occurring polyphenol derived from *Curcuma longa* that has been shown to possess antiviral and anti-inflammatory properties. Previous studies suggest that curcumin can interfere with RSV replication by targeting viral proteins such as G and M2-1, while also reducing inflammatory cytokines including TNF- α and RANTES. This study focuses on determining how curcumin impacts viral protein production and inflammatory signaling during RSV infection. Human epithelial airway-2 (HEp-2) cells were treated with curcumin (10 μ M) and infected with RSV at a multiplicity of infection (MOI) of 1. Protein lysates were harvested at 24 hours post infection (hpi) and Western blot was performed to assess viral protein expression. Preliminary results suggest that curcumin treatment reduces RSV replication as compared to untreated controls. Work is ongoing to assess cell viability in the context of various curcumin concentrations. Overall, this study will help determine whether curcumin may interfere with RSV and protect airway epithelial cells during infection.

The Design and Synthesis of Novel Gadolinium Complexes for the Imaging and Therapy of Cholangiocarcinoma

Gabriella Baessa and Malaysia Delaine

Faculty Mentor: Dr. Nicola Edwards

Cholangiocarcinoma (CCA) is a rare cancer that affects the bile ducts. Patients who suffer from CCA display non-specific symptoms (e.g. fatigue and weight loss) in the early stages of the disease. This results in diagnosis at advanced stages which limits treatment options. The 5-year survival rate for patients in the United States with CCA is 30%. Fibroblast growth factor receptors (FGFRs)—a family of receptor tyrosine kinases that are vital for developmental and adult cells—are overexpressed in one type of CCA. We reasoned that these receptors could be important sites for treating and monitoring treatment protocols for this type of CCA. Gadolinium complexes based on the DOTA ligand have been extensively used as MRI contrast agents. Previous work in the Edwards Group resulted in the development of protocols for the synthesis of conjugates for novel Gadolinium complexes. This presentation will describe an expansion of this previous work where a library of ligands was synthesized by conjugating DOTA to a series of FGFR inhibitors. This was followed by metalating these conjugates with a gadolinium salt to form these complexes. Characterization of these conjugates and complexes was done using standard spectroscopic techniques (^1H NMR, ^{13}C NMR, ESI-MS, UV-Vis, and IR). Successful development of these complexes could lead to advances in the ways that this type of CCA is treated and how treatment protocols are monitored.

The Effect of Fear on Female Reproductive Rate in *Drosophila Melanogaster*

Zoe Dollak, and Gianna Quaresima

Faculty Mentor: Dr. Jesse Balaban-Feld

For most insects and other type III organisms, the ideal fitness outcome is to produce as many offspring as possible. However, external environmental factors, including the fear associated with exposure to predation risk, may significantly affect reproductive investment and output. Fear from predation may alter female reproductive behavior as females that have experienced predation may estimate that they will have a shorter lifespan and fewer mating opportunities. In this study, we assess how exposure to predation influences the reproductive output of female fruit flies (*Drosophila melanogaster*). Female fruit flies were divided into two different groups following a predation training phase. “Experienced” females were exposed to a live predator (Jumping spider – genus *Phidippus*) for 48 hours. “Naive” females were never exposed to predation. Directly after the training phase, individual females were placed into a mating tube with two males. The male fruit flies used in the experiment were not exposed to the predator. Data collection and analysis are ongoing. The reproductive output of predator “Experienced” and “Naive” females will be quantified and compared by assessing the number of offspring produced, as well as the sex-ratio of the offspring. Female body weight will also be measured to control for the effect of body size on fecundity. This data will help to determine how fear from predation influences female reproductive investment and provide a broader understanding of how ecological stressors can shape reproductive behavior and decision-making.

Chemistry Oral Presentations

Synthesis of Extended Benzyl Phenyl Ethers

Devan Fox

Faculty Mentor: Dr. Robert Torregrosa

Benzylation is a process in which a benzyl group combines with a different functional group to produce functionalized benzyl compounds, such as benzylamine and benzyl ester. These compounds are important because they are usually included in the structures of biologically active natural products. Benzyl phenyl ethers (BPE) are compounds made up of benzyl and phenyl ether. These are used as protecting groups in organic synthesis. Modification of BPE by replacing benzene with heteroaryl such as pyridine, quinoline, or imidazole affords heterobenzyl phenyl ethers (HPE). Preliminary work towards the synthesis of HPE was done using Pd-catalyzed decarboxylative benzylation. In this reaction, methylpyridyl phenyl ether was prepared from the decarboxylation of methylpyridyl phenyl carbonate. When Pd₂dba₃/dppf were used, methylpyridyl phenyl ether was obtained at 24% conversion. This low percentage can be due to loss of aromaticity of the preformed Pd- π -methylpyridyl intermediate, which is less stable compared to a simple benzyl. To prevent this, an additional benzene was added to make the intermediate more stable through extended aromatic conjugation. To this end, extended benzyl phenyl ethers were prepared using the same optimized conditions in good yields. The nature and position of the substituents (electron-donating vs. electron-withdrawing) from the aryl groups affects the benzylation. This reaction will also be carried out through other extended heterobenzyl groups.

Utilizing Ionic Liquids in the Pd-catalyzed Allylation of Esters in Protic Solvents

Dylan Levesque

Faculty Mentor: Dr. Robert Torregrosa

Pd-catalyzed allylation reactions to stabilized nucleophiles, such as are known as Tsuji-Trost reactions (TTRs). Traditional TTRs use an allyl group from allyl acetate and carbonate to react with a nucleophile. While known, the use of protic solvents in the TTR is usually avoided, as it can protonate the nucleophile which prevents allylation from occurring. The ability to conduct the TTR in protic solvents is advantageous because they are milder, less toxic, cheaper, and more accessible than aprotic solvents. To perform the TTR in protic solvents, ionic liquids (ILs) may be of use. ILs are organic, ammonium-based salts that are environmentally friendly. The goal of the project is to develop a Pd-catalyzed allylation using allyl carbonate as the allyl source in the presence of IL and alcoholic solvents. The effects of different ILs, solvents, temperatures, and the presence and absence of base have on the IL-assisted Pd-catalyzed allylations were examined. The optimal conditions from these results were applied to different unsubstituted ester derivatives to generate functionalized allyl products. Additionally, the substrate scope of the allyl carbonate substrate was also evaluated using allyl carbonates bearing different groups, such as methyl and phenyl groups

Chemistry Poster Presentations

Synthesis of Terbium Chelated Calixarenes: Applications in Anion Detection
Jainna Marcinczyk
Faculty Mentor: Dr. Nicola Edwards

Monitoring anion levels is important in biological, medical, environmental, and industrial settings. Anion levels that are outside the normal range in the body can result in numerous diseases and conditions. For example, fluoride levels in water as well as food and dental products are heavily regulated as people with high levels of fluoride are at risk of kidney failure and skeletal defects. A Terbium (Tb) complex based on calixarene ligand was previously synthesized in the Edwards group. This complex was synthesized by chelating a tetra-ester calixarene with a Tb salt; it was determined to act as a sensor for anions. Specifically, the Tb complex glows green (under UV light); there is a decrease in the glow in the presence of anions. The focus of this project was to obtain quantitative data on the binding of anions to this Tb complex using a variety of spectroscopic techniques (UV-Vis, fluorescence, and NMR). Additionally, another calixarene ligand was used to synthesize a second Tb complex; its ability to act as a sensor for anions is currently being tested

Computer Science - Oral Presentations

Engineering Metacognition: Aligning AI to Cultivate, Not Replace, Human Critical Thinking

Mateus Miranda Silvestre
Faculty Mentor: Dr. Hong Zhou

Last year, my research identified a "cognitive offloading" crisis in education: a medium strong negative correlation ($r = -0.68$) between AI tool usage and student critical thinking skills. The core problem is not the existence of AI, but its default alignment; standard Large Language Models (LLMs) are optimized for immediate task completion, incentivizing students to bypass the learning process. This year, I present a technical solution to this educational dilemma. Rather than banning AI, I propose "re-aligning" it. Using a technique called Direct Preference Optimization (DPO), I engineered a specialized AI agent that rejects the "direct answer" incentive structure of standard models. Instead, this model is mathematically fine-tuned to prioritize pedagogical scaffolding—answering student queries with guiding questions that force metacognition and self-regulation. This project moves beyond ethical theory into engineering practice. By modifying the underlying objective functions of an open-source model (Llama-3), I demonstrate that we can build AI tools that function as Socratic tutors rather than homework machines. The result is a prototype for "Human-Centric AI" that supports, rather than replaces, the development of human intelligence. I was doing some research, and I decided to go with Llama 3 because it is currently the best one for reasoning in the <10B parameter class. Its use of Grouped Query Attention (GQA) allows for efficient long-context inference on limited hardware, Google Colab T4, which is perfect because I am now familiar with it because of our class, and its improved tokenizer efficiency allows for richer prompt engineering within the context window. It strikes the perfect balance between high-level reasoning capabilities required for Socratic dialogue and the computational constraints of a student research project.

Making Low-Cost Electronic Health Record Software to Support Learning in Student Nursing- PULSE (Practical Unified Low-cost System for EHR)

Noah Grauer, Andrey Dermendzhiev, David Findley, Sergio Garre Guzman, Mateus Miranda Silvestre, and ACM Club

Faculty Mentor: Dr. Thomas Calabrese

This project has been 3 years in the making. In 2024, a group at USJ led by Dr. Calabrese started thinking about a vision for "A Day of Coding". This vision was to take the strengths of our university and focus on creating a product that could bring benefits to those in need. The theme of software development in service to healthcare emerged as the vision for our event. PULSE (Practical Unified Low-cost System for EHR) is a unified healthcare information portal that is designed to provide a practical (essential) level of service for healthcare clinics, urgent care facilities, or community health care conglomerates requiring lower cost alternatives to more elaborate EHR systems. System Features include: Frontend Access & Control Dashboard, Open Access Community Health Portal, Clinic Management Functions, Scheduler (Patient Visits, Staff Assignments, & Providers), Patient Portal, Report Generator, SQL Automation, Backend Coding & Platform Integration, Health Tracker Real Time Dashboard (R), Automated Patient Check-in Form, Practitioner Examination Form, Integrated Excel Daily Summary Sheet, MySQL Relational Database for Maintaining HER, AI Case Differential Assistant, Security Services, Backup/Recovery, Handheld Interface, News Feed Updater. This year the ACM members have continued the work from the last event to perfect the website and backend services. We will incorporate an AI engine to allow for diagnosis and differentials as well as care planning. Additionally, we will be adding realistic "sandbox" data so that student nurses can experiment with the tool.

Counseling – Poster Presentations

Wilderness Therapy Group for At-Risk Youth

Sarah Loitz

Faculty Mentor: Dr. Erin Friedman

At-risk adolescents often present with internalizing concerns such as anxiety, depression, and emotional dysregulation, as well as social, academic, and family stressors that can significantly impair functioning. Adolescents are increasingly spending more time on screens and having fewer opportunities for outdoor activities, underscoring the need for nature-based therapeutic interventions. This proposal presents a 6-session Wilderness Therapy Group for adolescents aged 13-17 that integrates Dialectical Behavior Therapy (DBT), nature-based interventions, and resilience theory to promote emotional regulation, enhance coping skills, and increase prosocial behavior. Grounded in these evidence-based frameworks, adolescents in the group will engage in outdoor experiential activities, including hiking, navigation challenges, fire building, problem-solving tasks, and guided reflection, to provide opportunities for group and individual skill practice. Each of the 6 sessions includes structured grounding strategies, mindfulness activities, and adventure challenges to foster resilience and autonomy and improve self-efficacy. Further, every activity is done as a group to enhance communication, peer connection, and prosocial behaviors. The outdoor, technology-free setting is crucial as it provides a naturally regulating and restorative environment that supports emotional awareness and stress reduction. Being outdoors is especially useful to adolescents who have not responded positively or struggled in conventional clinical settings in the past. This proposed wilderness therapy group contributes to the growing research and recognition that nature-based counseling approaches offer an innovative and replicable framework for clinicians to use with their at-risk adolescent clients.

Navigating Substance Abuse and Codependency with Counseling Families in Crisis

Jordan Fritz

Faculty Mentor: Dr. Jessica Motroni Banik

This presentation reviews prevalence rates of Substance Use Disorders (SUD) in the United States and identifies key risk factors affecting children, adolescents, and adults. It examines codependency within dysfunctional family and couple systems and considers efforts to de-pathologize codependency in counseling practice. Evidence-based family interventions discussed include Multidimensional Family Therapy, Brief Strategic Family Therapy, and Community Reinforcement and Family Training. For couples, the presentation highlights Behavioral Couples Therapy and Alcohol-Focused Behavioral Couples Therapy, emphasizing how relationship dynamics influence recovery and support sustained abstinence while strengthening relational functioning.

Self-Compassion Group for LGBTQ+ Adolescents

Serena Braun

Faculty Mentor: Dr. Erin Friedman

LGBTQ+ adolescents report higher levels of depression, anxiety, suicidality, and lower levels of self-compassion compared to their heterosexual and cisgender peers. This is often attributed to minority stressors such as internalized stigma, discrimination, social exclusion, and identity-based trauma. The need for affirming therapeutic interventions is vital for supporting positive mental health outcomes among LGBTQ+ adolescents. Therefore, this literature review proposal explores the effectiveness of and need for self-compassion work among LGBTQ+ adolescents. The literature review was conducted via a systematic search of Google Scholar, focusing on peer reviewed articles from the last ten years that addressed self-compassion interventions for LGBTQ+ adolescents. Self-compassion has been found to

foster resilience to mental distress by promoting emotional safety, positive identity development, and moderating reactions to negative events. Furthermore, the relational nature of a group is particularly effective for LGBTQ+ adolescents, since it fosters deeper levels of self-understanding, gained insight from other members, and feelings of community. The proposed 6-session group program integrates evidence-based interventions that are relevant and culturally sensitive to LGBTQ+ adolescents to develop self-compassion and tools to manage challenging experiences and enhance identity acceptance.

Beyond the Mirror: Exploring Body Image in Eating Disorder Group Counseling

Leah Scrantom

Faculty Mentor: Dr. Erin Friedman

Eating disorders (EDs) affect 13-15% of women by young adulthood, and a common, negatively impactful aspect of EDs is disturbance in body image, which refers to distortions in the way one views their body shape or weight. Social stigma impacts both individuals viewed as overweight, along with those who may not be overweight, as they perceive themselves as failing to meet the strict thin-ideal that society glamorizes, leading to body dissatisfaction, shame, and an increased risk for developing an ED. Group therapy is recommended for EDs, as it aids in decreasing social anxiety surrounding body image, reduces feelings of isolation, and provides new perspectives. Many studies show efficacy with Cognitive Behavioral Therapy (CBT) group counseling for improving body dissatisfaction, and Compassion Focused Therapy (CFT) is offered as an alternative. Body Project Treatment (BPT) is an evidence-based group intervention specifically for EDs that creates cognitive dissonance. During BPT, clients work to reduce their approval of the thin-ideal and ED behaviors through group interventions, which encourages behavior changes to align with these new attitudes they have adapted. This poster will review body image related literature and the population, in addition to proposing a six-session group with a CBT, CFT, and BPT theoretical framework. The overall goals for this group include building self-compassion and nonjudgmental awareness of one's body, decreasing adherence to the thin-ideal and unrealistic body expectations, and normalizing difficulties with body dissatisfaction and strengthening support systems.

Hope After Loss: A Support Group for Managing Grief

Fatima Rodriguez Elescano

Faculty Mentor: Dr. Erin Friedman

Despite approximately 20% of people developing prolonged grief disorder, only about 3-4% consult mental health professionals and get the help they need. (Ueno et al., 2024) Prolonged grief disorder (PGD) is an intense, enduring, distressing, and disabling bereavement reaction experienced by a small minority of people. (LaPlante, 2024) Reactions can include thoughts that life is meaningless, lack of hope for the future, avoidance of the deceased, and difficulty in functioning. (Rice, 2015) The grief process can increase the risk for physiological diseases. This literature review will highlight research on Prolonged Grief Disorder and discuss how group counseling would be a good intervention for addressing the impact that is experienced. Structured group programs can lead to reductions in grief symptoms and improve the social adjustment that occurs. The poster will also highlight a group counseling proposal, Hope After Loss, with objectives on improving self-compassion, reconstructing meaning-making of life, and figuring out ways to handle distress. The proposal uses a Cognitive Behavioral Therapy approach that aims to address distressful thoughts by increasing coping skills and sharing experiences with one another. This approach helps to process and integrate the loss, help identify negative beliefs and challenge them, and help replace maladaptive coping strategies with productive ones.

Career Counseling Considerations for Individuals in Retirement

Tia Booska

Faculty Mentor: Dr. Erin Friedman

Currently, approximately 1 in 6 individuals in the United States are of retirement age (65 and over), compared to just 1 in 20 individuals in 1920 (U.S. Census, 2020). Due to this population growth, socioeconomic factors impacting the sustainability of retirement, and mental health concerns at this life stage, counselors must be prepared to provide effective counseling to individuals in the later stages of their career. This poster integrates current literature to examine common challenges faced by retired individuals, as well as implications for developmentally appropriate counseling approaches. The studies indicate that depression is a major risk factor among retirees, noting challenges such as isolation, identity shifts, age-related discrimination, and reduced economic security and agency (Dang et al., 2022; Schmidt-Hertha & Rees, 2017; Smith et al., 2024). Furthermore, the literature emphasizes the value of counseling approaches that promote agency, meaning-making, identity exploration, and self-efficacy (Asebedo & Seay, 2018; Luke & Gibbons, 2022; Penn & Lent, 2020). Additionally, available resources to support retirees are included. This poster highlights the need for clinicians to be informed about the implications of retirement, in order to provide culturally responsive counseling to the identified population.

Art my Confidence: Expressive Arts in School-Based Counseling Groups

Sierra Goodnough

Faculty Mentor: Dr. Marte Ostvik-de Wilde

Middle school students often encounter academic, social, and emotional hurdles that can impact their self-image and overall health. Individuals in this crucial stage of adolescence may benefit from expressive arts interventions, which are suited to foster emotional expression and regulation, self-discovery, and resilience. This presentation examines how art-based group counseling has been used to enhance positive self-image and social-emotional development in middle school students. Incorporating Humanistic, Gestalt, and Reality Therapy, this six-week group session proposal focuses on working with a different material and objective each week. As an example, in the first week, group members will create a “who am I” collage, using various materials to visually represent what they like about themselves and their hopes and dreams. How can they connect their thoughts visually with colors, space, and texture to show their peers and discuss what they are proud of and what they want others to understand about them? These practices are beneficial in the school setting, boosting safety, and supporting comprehensive psychological, educational, and social interventions. The interventions support the needs of children, teachers, parents, and other professionals working together to support the health and well-being of K-12 students (Faltová, 2023). As an example, in week five, children will create a group mural to foster a sense of community belonging. Each student will design a personal section and a collective section with peers. The group will then discuss the experience of creating something larger and receiving positive messages, aiming to build community and support.

Career Counseling Adults with Chronic Pain

Hailey Gagnon

Faculty Mentor: Dr. Erin Friedman

In recent years, around 20% of adults in the United States report experiencing some form of chronic pain, or pain lasting for longer than 3 months. Of those individuals, a large portion of them also report having comorbid emotional disorders such as anxiety or depression. Chronic pain is a commonly

misunderstood and stigmatized condition that can significantly impair an individual's relationship with career. Struggling with chronic pain can negatively impact career development and is related to higher rates of unemployment and underemployment. The aim of this literature review is to understand barriers to work for those struggling with chronic pain and compile resources for those working with this population. It will review current therapeutic interventions that are proven to be effective in working with adults with chronic pain who are struggling with their career development and maintenance. It's important that we have the tools to support those struggling with chronic pain through the life of their career as the number of those struggling with chronic pain is expected to increase as people age. By integrating the approaches included in this literature review, we will be able to better support and empower this population.

Digital Media and Communication - Oral Presentations

Who Benefits? Public Investment and Private Gain in Urban Sports Development Projects

Freeman Johnson

Faculty Mentor: Dr. Rammi Hazzaa

Large sports development projects are often promoted as ways to create jobs, boost local businesses, and improve neighborhoods. This project explores whether the Atlantic Yards development and the Barclays Center in Brooklyn, New York actually delivered the economic and community benefits that were promised. Using a qualitative review of academic research, public policy documents, and community media sources, this project evaluates whether these expectations were realized. Secondary sources included studies on stadium economics, reports from the New York City Economic Development Corporation and the Empire State Development, and community perspectives shown in the documentary *Battle for Brooklyn*. Preliminary analysis shows that the economic impact of the project was more limited than expected, which aligns with broader scholarship suggesting that stadium-centered developments rarely produce the large economic and societal gains projected by investors and developers. While the arena created economic growth, many jobs were temporary or part-time service roles with limited benefits. Social impacts were similarly mixed with the arena enhancing Brooklyn's cultural profile, residents reported concerns related to displacement, congestion, and reduced quality of life. Overall, the Atlantic Yards project illustrates the need for more realistic economic forecasting and stronger accountability mechanisms in publicly supported sports developments. This analysis suggests that future sports developments should prioritize transparent planning and equitable community benefits to ensure that large-scale investments serve both economic and social objectives. Additional analyses and recommendations will be provided during the presentation.

Environmental Science - Poster Presentations

Nutrient Uptake by Aquatic Vegetation and Impact on Chloroplasts

Madi Frazier, Olivia Thaxton, Joseph Venditto, and Tatianah Zeigler

Faculty Mentor: Dr. Kirsten Martin

In an over decade long study of water quality within the Scantic River Watershed (Northcentral CT), it has been noticed that nutrient (nitrate and phosphorous) levels are typically lowest within two impoundment areas (Somersville Mill Pond (Somersville, CT), and Windsorville Mill Pond (East Windsor, CT). Nitrate and phosphorous levels are elevated at monitoring locations above and below these areas. Both mill ponds have extensive mats of both free-floating and attached aquatic vegetation. This project looked at the ability of one free-floating aquatic vegetation species, *Lemna* sp., to uptake and sequester various concentrations of nitrate and phosphorous. *Lemna* sp. was placed in conical tubes containing differing concentrations of nitrate or phosphorous, plants were allowed to remain in the solution for at least one week, then the *Lemna* sp. was removed, processed, then analyzed using a UV-VIS Spectrophotometer. We also looked at the impact that these nutrient levels would have on chloroplast abundance.

Getting to the Root of the Problem: Testing Alternative Methods for Invasive Species Control

Amanda Frazier and Tatianah Zeigler

Faculty Mentor: Dr. Kirsten Martin

Non-herbicidal alternatives for invasive species control have received a lot of attention in recent years, with multiple options being widely promoted on the internet and secondary information sources, but little scientific research has been conducted on the effectiveness of these methods. In this study, two popular alternative methods for invasive species control, Magnesium Sulfate (Epsom Salt), and Copper nails were tested to see how they might impact root health (growth and decay) and shoot health (chloroplast abundance). Based on information gathered on the internet, three solution concentrations of Magnesium Sulfate were applied to germinated *Pisum sativum* (Garden pea). Copper nails were also placed next to some germinated *Pisum sativum*. Root length was measured at the beginning of the experiment, then was remeasured after one week. At the end of the week, 3mm of apical shoot tissue was removed, stained with Iodine, then examined under a compound microscope. The number of chloroplasts viewed in 25% of the field of view was then recorded.

***Health Science, Direct PA
Program - Oral Presentations***

One-Time Lipoprotein(a) Screening for Cardiovascular Risk Stratification

Marissa Longhi

Faculty Mentor: Kelley Piechowicz

Recent evidence suggests that incorporating a one-time lipoprotein(a) (Lp(a)) screening into routine preventive care for asymptomatic adults can enhance cardiovascular risk stratification beyond traditional lipid panels and risk scores (Kraaijenhof et al., 2025). Lp(a) is an independent, genetically determined risk factor for atherosclerotic cardiovascular disease that remains underrecognized and undermeasured in clinical practice (Bhatia et al., 2023). It has a strong causal link to cardiovascular events, but despite this, routine screening is not yet standard, resulting in missed opportunities for earlier identification and intervention (Bhatia et al., 2023). There are disparities in Lp(a) testing as Black and female patients are less likely to be screened, which emphasizes the need for equitable, guideline-directed preventive care (Faaborg-Anderson et al., 2024). No FDA-approved therapies currently exist to lower Lp(a), but agents such as pelacarsen and olpasiran are emerging and have demonstrated large reductions in Lp(a) levels in clinical trials (O'Donoghue et al., 2024; Tsimikas et al., 2020). Incorporating Lp(a) into traditional risk models and public health strategies, such as cascade testing, could enable earlier detection of high-risk individuals and more personalized prevention (Bhatia et al., 2023; Trinder et al., 2022). A universal, one-time screening approach improves cardiovascular risk prediction and lays the groundwork for family screening and future integration of Lp(a)-lowering therapies as evidence evolves (Bhatia et al., 2023; Yeang et al., 2022).

Health Science, PA Program - Poster Presentations

Early Initiation of Impella Support in Acute Myocardial Infarction Induced Cardiogenic Shock

Amy Ziegelmeier

Faculty Mentor: Kara Fluck

Cardiogenic shock complicating acute myocardial infarction is associated with persistently high mortality rates despite current advancements made with management algorithms and coronary reperfusion. Mechanical circulatory devices (MCS), such as Impella, have emerged as key adjuncts in cardiogenic shock management by providing hemodynamic stabilization and left ventricular offloading. This presentation examines how early initiation of Impella support prior to percutaneous coronary intervention (PCI) or within 90 minutes of acute myocardial infarction induced cardiogenic shock (AMI-CS) diagnosis influences mortality, end organ dysfunction, and hospital burden when compared to delayed initiation of Impella. Early Impella implantation interrupts the viscous cycle of reduced cardiac output, ongoing myocardial ischemia, and systemic hypoperfusion, all which are characteristics of cardiogenic shock. Multiple studies demonstrate reduced incidence of mortality at 30 days and one-year benchmarks, as well as improvement in lab work that is consistent with organ hypoperfusion (lactate, kidney function, urine output, etc). Collectively, these findings support a paradigm shift toward earlier mechanical unloading in AMI-CS to optimize survival and recovery.

Health Science - Poster Presentations

Regional Anesthesia as a Strategy for Non-Opioid Analgesia in Emergency Medicine

Mikolas Jalinskas

Faculty Mentor: Dr. Dalia Giedrimiene

Chest wall pain, frequently resulting from rib fractures, thoracic trauma, or pleuritic inflammation, represents a common clinical challenge in the acute care setting. Standard pharmacologic management predominantly involves opioid administration; however, opioids are associated with risks, including respiratory distress, sedation, and potential dependence. Regional nerve block techniques such as Serratus Anterior Plane (SAPB) and Erector Spinae Plane (ESPB) are increasingly used in trauma and anesthesia settings, but their role in the emergency department (ED) remains under evaluation. These blocks offer targeted pain relief with fewer systemic side effects and demonstrate significant potential to minimize opioid use when incorporated early into pain management protocols. This study was conducted at Hartford Hospital, a Level I Trauma Center with over 100,000 annual ED visits. Evaluated the analgesic efficacy of single-shot ultrasound-guided SAPB and ESPB nerve blocks in ED patients presenting with acute chest wall pain. Focusing on quantifying pain score reduction, assessing the requirement for supplemental analgesia, particularly opioids, and monitoring for procedure-related adverse events. A total of 48 patients were analyzed, 26 who received SAPB and 22 who received ESPB. The mean pain score decreased from 7.13 prior to the procedure to 4.40 ($p<0.05$) after. Oral morphine milligram equivalents (MME) decreased from 19.98 mg prior to the block to 6.95mg ($p<0.05$). Vital signs remained stable, and no adverse events were observed. SAPB and ESPB are emerging tools in the ED for managing acute, localized pain. Their effectiveness supports the transition away from routine opioid use while improving patient comfort and clinical efficiency.

History - Oral Presentations

A Capitalist Blueprint: How American Intervention in the 1948 Italian Elections Continues to Influence the Global Economic Stage

Ella Kulas

Faculty Mentor: Dr. Kenneth Long

The United States government has employed interventionist efforts in their foreign policy since the Cold War period which have significantly impacted the global political environment. Previous research suggests these efforts began in Iran and Guatemala, where U.S. intervention in those countries first revealed the relative ease with which the U.S. could influence other governments. In conjunction with an analysis of conditions in post-World War II Italy, this paper explores key National Security Council documents to suggest interventionist policies began as a reaction to a predicted rise of communism in Italy in the late 1940s. Drawing also on analysis of terrorist attacks against the United States, this paper challenges the idea that U.S. intervention is a reaction to the presence of antidemocratic movements in other countries. Instead, U.S. foreign policy dedicates itself to the defense of capitalism and in doing so, creates a cyclical system that intentionally breeds violence and profit for its benefactors.

Wilma Rudolph and Wyomia Tyus - A Dive into the Struggles of Black Female Athletes During the 60s and 70s

Emily Gaudet

Faculty Mentor: Dr. Jennifer Cote

The landscape of women's sports in the United States has undergone immense transformation within the past half century. While issues in women's sports are often lumped together by the sports media as if every woman experiences the same struggles and setbacks within the athletic community, many Black female athletes faced and continue to face complex issues that White female athletes do not. Using both Wilma Rudolph's and Wyomia Tyus' athletic experience as a lens into the struggles of Black female athletes during the 60's and 70's, one can gain an understanding of the unique gains and setbacks they experienced including a transition in stereotypes, expectations of exercise, and intersectional issues of racism, classism, and sexism.

History – Poster Presentations

Echoes of a Poet: How Dante Alighieri Influenced Florentine Architecture and Culture

Umar Malick

Faculty Mentor: Dr. Jennifer Cote

The Divine Comedy is comprised of the three works: “Inferno”, “Purgatorio”, and “Paradiso”. While the trilogy is a cornerstone of literature, its impact extends into the city of Florence itself, through statues, plaques, paintings, and locations, creating an atmosphere of reverence for the great poet. This presentation will specifically examine the statue outside the Basilica di Santa Croce, the locks on Ponte Santa Trinita, the colors of the Basilica di Santa Maria del Fiore, and the 33 plaques on buildings throughout Florence that feature quotes from the Divine Comedy. While each expression of tribute individually serves to commemorate the poet, they come together define the culture of Florence.

Symbolic Erasure and Legal Barriers: The NCAA, Native American Imagery, and the Legacy of Cultural Appropriation in American Sports

Brianna Cannon

Faculty Mentor: Dr. Jennifer Cote

Many professional, collegiate, and primary sports still use mascots that depict Indigenous people. Even though Indigenous-led groups like AIM and NCAI have pushed for change, the NCAA has not updated its policies. Universities, such as Florida State University, can continue using these offensive symbols without facing any real consequences. This lack of action shows that society is hesitant to address the reasons behind cultural appropriation, which come from colonial power structures. The protection of free speech under the first Amendment prioritizes speech rights over cultural sensitivity. This leaves critics and activists with few legal options. Keeping these mascots alive continues to spread harmful myths and stereotypes, making it seem like Indigenous cultures are ‘savage’ or less important. These images are not just symbols. They reflect ongoing marginalization and unequal power structures. Real reconciliation means retiring these mascots and committing to respectful representation that honors local heritage and Indigenous voices.

Master of Public Health- Oral Presentations

CAR-T Therapy Effectiveness After Quadruplet Induction in Multiple Myeloma: A Systematic Review in U.S. Public Health Care

Mahnoor Khan

Faculty Mentor: Dr. Kaydian Reid

Many challenges exist when treating Multiple Myeloma (MM), uncontrolled proliferation of plasma cells within the bone marrow, due to relapse and resistance. Chimeric antigen receptor T-cell (CAR-T) therapy has improved outcomes for patients with relapsed or refractory multiple myeloma (MM). However, its use in real-world settings is limited by several barriers. These include rapid disease progression, manufacturing delays, geographic limitations, insurance coverage issues, severe toxicities, and racial disparities that can affect patients' treatment plans. At the same time, quadruplet regimens that incorporate anti-CD38 monoclonal antibodies used prior to advanced therapies have been shown to enhance treatment response. This systematic literature review evaluates the comparative effectiveness of CAR-T therapy when administered after quadruplet induction, in comparison to triplet induction or no prior induction within U.S. public health systems such as the Veterans Health Administration, Medicaid dominant locations and under deserved populations. A systematic search of medical databases (e.g., MEDLINE (PubMed), Embase and the Cochrane Central Register Trials of Controlled Trials) from 2025 to 2026 will be used to assess CAR-T outcomes following prior induction therapy in adults with multiple myeloma in the U.S. Primary outcomes include overall survival, progression-free survival, and treatment-related mortality. Secondary outcomes include severe toxicities, time from referral to CAR-T-treatment initiation, and hospitalization burden. The review of significance to the field may enhance equitable access and ensure timely outcomes for patients with advanced MM within public health systems.

Master of Public Health- Poster Presentations

Process Evaluation of University of Saint Joseph Pre-Health Peer Mentorship Program

Devonish Brown

Faculty Mentor: Dr. Kaydian Reid

Background: Gaining admission to medical, dental, and physical assistant programs is highly competitive. Higher education institutions often provide guidance to undergraduates on clinical health program applications late in their college career or after graduation, which can leave students unprepared. To better support first-year pre-health students, the University of Saint Joseph launched the Pre-Health Peer Mentorship Program. The pilot program aims to help students build awareness, confidence, and readiness for healthcare careers through structured mentoring and specialized workshops. Method: A mixed-method process evaluation is being conducted to assess the program's fidelity, quality, coverage, doses, reach, and satisfaction with the intervention, as well as its feasibility and scalability. Program data, surveys, and semi-structured interviews will be conducted with staff, mentors, and mentees. Results: Initial data indicate the program's reach, with 17 first-year mentees and 5 mentors selected from a competitive applicant pool. Preliminary analysis suggests a high perceived need: 80% of students reported limited familiarity with application requirements, and 79% of mentees reported they would significantly benefit from guidance. Completed results will be presented on the symposium day. Implications: The findings will provide critical insights into the feasibility and acceptability of a peer mentorship program model. Findings may help refine the program, improve retention strategies, and guide future program scalability. Ultimately, the aim is to enhance the success for undergraduate students pursuing post-baccalaureate clinical health professions.

***MSDI: Master of Science and
Dietetic Internship - Poster
Presentations***

Curcumin and Oligomeric Proanthocyanidin (OPC) Supplement Use in Adults Undergoing Active Cancer Treatment

Jonathan Garcia Vazquez

Faculty Mentor: Katherine Sayre Bontempo

Botanical supplementation, such as curcumin and oligomeric proanthocyanidins (OPCs), has gained attention for its antioxidant properties and potential therapeutic role in cancer prevention and symptom management. Despite growing interest and the high prevalence of supplement use during cancer treatment, limited human research examines the perceived effects of specific botanical supplementation on symptom management and quality of life. This study examines whether curcumin and/or OPC use among adults undergoing or recently completing treatment is associated with differences in symptom management, treatment-related side effects, and quality of life. This study will be conducted using an anonymous, cross-sectional online survey administered to assess demographics, cancer type and stage, treatment status, dietary supplement use, symptoms, treatment-related side effects, and quality of life. Data will be analyzed to explore the associations between botanical supplementation use and patient-reported outcomes. Understanding the relationship between curcumin and OPC supplementation and patient-reported outcomes may help identify gaps in the existing literature and guide future clinical research evaluating the safety, efficacy, and clinical relevance of botanical supplementation during cancer treatment. These findings may also contribute to more informed discussions between cancer patients and healthcare providers regarding integrative approaches to supportive cancer care.

Impact of Nutrition Education Intervention on Nutrition Knowledge for Individuals with Intellectual and Developmental Disabilities

Mia Ouellette

Faculty Mentor: Katherine Sayre

Nutrition education is essential to ensure a strong foundation of nutrition knowledge that individuals can carry throughout their lives. There is substantial evidence demonstrating that nutrition education among school-aged children and young adults improves nutrition-related knowledge. However, the majority of this research has been conducted with neurotypical populations, which highlights a gap in the literature regarding individuals with intellectual and developmental disabilities (IDD). The purpose of this research is to investigate the effect of a classroom-based nutrition education on nutrition knowledge among individuals with intellectual and developmental disabilities. The intervention will consist of a structured PowerPoint presentation covering the major food groups, examples of foods within each group, and their importance for overall health, with knowledge assessed using a pre- and post-intervention questionnaire. This quasi-experimental study will take place at the Gengras Center in West Hartford. Findings will address a critical gap in the literature and provide preliminary evidence to guide the development of tailored, evidence-based nutrition education strategies for this underserved population. Furthermore, the study may help identify instructional strategies that are most effective for this population, which could inform the development of future nutrition education programs tailored to those with intellectual and developmental disabilities.

The Effect of Energy Drink Consumption Frequency on the Average Sleep Duration and Grade Point Average of College-Aged Students

Tori Lanese

Faculty Mentor: Kaneen Gomez-Hixson

Energy drink consumption is widespread among college-aged students and has been associated with sleep disturbances and changes in Grade Point Average (GPA). A GPA of at least 2.0 is what is typically required for a college student to remain in good academic standing. If frequent consumption of energy drinks increases sleep disturbances in college-age students, their GPAs may be negatively impacted. Previous research has identified an association between frequent energy drink consumption and shorter sleep duration and lower GPAs in students. Limited studies have investigated the relationship between energy drink consumption, the type of energy drinks consumed, sleep duration, academic major, and current GPA in college-age students. Using a cross-sectional design, data will be collected through an anonymous 16-question survey, assessing demographics, energy drink consumption, sleep duration, academic major, and current GPA among college-aged students. Current full-time college students aged 18-24 years old are invited to participate in this study. Exclusion criteria include those outside the 18-24 age range, part-time college students, those prescribed stimulant or sleep medications, and those diagnosed with sleep disorders. The purpose of this study is to determine the effect of energy drink consumption frequency on sleep duration and grade point average of current college students. It is hypothesized that frequent energy drink consumption negatively impacts sleep duration and GPA. This study aims to add to the knowledge of the negative consequences of frequent energy drink consumption among college-age students. This research project has been approved by the USJ IRB (protocol 26-001).

Seed Oils: Perception and Knowledge

Jillian Pampuro

Faculty Mentor: Michelle MacKenzie

Seed oils are edible oils extracted from the seeds of plants, most used in cooking, baking, and processed foods. Recently, they have become a controversial topic on social media with influencers questioning their role in diets and often portraying them as harmful. Debates center on whether seed oils are health-promoting or toxic. Critics argue that the way they are made, and high omega-6 fatty acid content contributes to issues ranging from brain fog to chronic inflammation, and even to obesity. Despite growing public attention, limited research has directly examined consumer knowledge or perception of seed oils. In the present paper, consumer behaviors, buying preferences, attitudes, and knowledge toward dietary oils are discussed. It is hypothesized that there is a gap between evidence-based knowledge and consumer perceptions, with misinformation shaping attitudes/beliefs over scientific evidence. A recent systematic review of five studies identified that seed oils rich in polyunsaturated fats support heart health¹, yet consumers often rely on branding, safety, and price instead of nutritional knowledge when choosing oils. The studies identify a disconnect between scientific research supporting seed oil consumption and public perception. Existing research studies mostly focus on general or household populations, leaving a gap in understanding how specific groups (such as communities engaged in fitness and gym culture) perceive seed oils. This gap leads to the current research question: What are gym-goers' perceptions of seed oils, and where do they get their information from?

The Impact of Fiber Knowledge on Estimated Daily Fiber Intake Among College-Age Students

Zachary Hoffman

Faculty Mentor: Kaneen Gomez-Hixson

According to the American Cancer Society, since 2010, colorectal cancer rates have increased by about 3% per year in people between the ages of 20-49 in the United States. Increased fiber intake has been shown to lower the risk of colorectal cancer. The current evidence surrounding fiber intake and

knowledge among younger populations is not well researched. The most frequently perceived benefit of fiber among this age group is promoting bowel movements and is followed by promoting healthy gut bacteria. Further research identifying the current fiber intake and knowledge of these individuals will help inform educational initiatives directed towards increasing fiber intake and potentially help prevent serious outcomes related to poor fiber intake, such as colon cancer. The purpose of this study is to address the research gap on fiber intake and knowledge among college-age students. Using a cross-sectional design, data will be collected through an anonymous 20-question survey assessing current fiber intake and knowledge among college-age individuals. Current college students between the ages of 18-25 are invited to participate in this study. Exclusion criteria include individuals outside of the age range of 18-25 and those who are not current college students. It is hypothesized that a low-established fiber intake will be associated with a low-fiber knowledge score. This research will help inform future nutrition education initiatives for this population to help minimize the risk of serious health conditions like colon cancer.

The Impact of the Frequency of Use of Artificial Intelligence, Social Media, and Mobile Health Applications on Knowledge of Nutrition and Perceptions of the Nutrition Health Profession in a College-aged Student Population

Avraham Pardes

Faculty Mentor: Kaneen Gomez-Hixson

Roughly 84% of all young adults between 18 and 29 and 98% of college students making regular use of social media and between 86% and 90% of college students admit to regular use of Artificial Intelligent (AI). This is of concern for the nutrition field as a significant volume of nutrition misinformation exists online. However, limited research has investigated whether regular social media or AI use impacts nutrition perceptions or knowledge in college-age students. Previous studies had conflicting findings with some identifying an association between social media use and adequate nutrition knowledge, while other studies identified an association between social media use and poor dietary habits. Previous studies did not examine how the frequency of social media use or use of other forms of information technology impacted nutrition knowledge or perceptions. The purpose of this study is to examine the impact of the frequency of information technology use (including social media, AI, and mobile health apps) on nutrition knowledge and perceptions of nutrition health professionals in college-aged students between 18-32 years old. Using a cross-sectional study design, data will be collected through an anonymous 32-question survey, assessing demographics, information technology use, general nutrition knowledge, and perceptions of the nutrition profession. Exclusion criteria include being outside of the age range of 18-32 years old and individuals who are not current college students. This research will provide a greater understanding of the impact of information technology use on nutrition knowledge and perceptions of the nutrition profession and will guide future educational initiatives.

Impact of Free Digital Habit Tracking Tool on Young Adults with the Desire to Engage with Healthy Behaviors and Outcomes of Improved Self-efficacy and Behavior Change

Maggie Mahoney

Faculty Mentor: Dr. Laura Christoph

There is a rising prevalence of chronic disease among young adults. The CDC reports that 53.8% of adults aged 18-34 years have at least one chronic condition, with 25.5% being obese. Identifying digital interventions that can foster healthy behavior change among young adults could reduce individual risks of chronic disease. Digital interventions could also increase access to behavior change intervention. The purpose of this study is to assess whether a simple digital habit-tracking app, with the ability to customize goals, notifications, frequency, and app format, can improve adherence to behavior change, app interaction, and self-efficacy among young adults. My research question is, “What is the impact of a free digital habit tracking tool on young adults with the desire to engage with healthy behaviors and outcomes of improved self-efficacy and behavior change?” College students will create a nutrition or physical activity-related SMART goal. They will then utilize a simple habit tracking app (HabitGrid) to track adherence. The students will complete pre-post questionnaires to assess changes in self-efficacy, diet, and physical activity. Participants will submit a screenshot showing adherence data to daily and weekly habit-tracking. The research study will be underway at the time of the symposium, and preliminary data will be presented.

Beetroot Juice Knowledge, Usage, and Perceived Benefits Among NCAA

Franklin Teixeira

Faculty Mentor: Kaneen Gomez-Hixson

Beetroot juice (BRJ), a dietary supplement rich in inorganic nitrate, has been widely studied for its potential to enhance exercise performance through increased nitric oxide bioavailability. While laboratory-based research has demonstrated improvements in exercise economy, endurance performance, and vascular function following BRJ supplementation, limited research has examined knowledge, usage patterns, and perceived benefits of BRJ among collegiate athletes. The purpose of this study will be to assess BRJ knowledge, usage behaviors, and perceived performance and recovery benefits among current National Collegiate Athletic Association (NCAA) student-athletes across Divisions I, II, and III. Using a descriptive, cross-sectional design, data will be collected through an anonymous 24-item online survey administered via Survey Monkey. Eligible participants will include current NCAA student-athletes aged 18 years or older from any sport, academic year, gender, or racial/ethnic background. The survey will assess demographic characteristics, general dietary supplement behaviors, BRJ-specific knowledge, frequency and methods of use, perceived benefits, and perceived barriers to supplementation. Data will be analyzed descriptively to identify trends in awareness, utilization, and perceptions, as well as potential differences across NCAA divisions. This study aims to extend existing BRJ research by focusing on behavioral and perceptual outcomes among NCAA student-athletes recruited across all divisions, thereby contributing to a more comprehensive understanding of supplement use in collegiate sport. Findings will contribute to a better understanding of supplement knowledge and behaviors in collegiate athletics and will help inform future evidence-based sports nutrition education initiatives for NCAA student-athletes. This research project has been approved by the USJ IRB (#26-009).

Culturally and Linguistically-Adapted Infant Food Introduction Education for Latino Parents with Limited English Proficiency

Paolo Quispe

Faculty Mentor: Katherine Sayre Bontempo

Around 25 million people in the U.S. have limited English proficiency (LEP). Individuals with LEP are those whose first language is not English and experience difficulty reading, writing, or speaking in English. As of 2023, Hispanics make up 19.5% of the U.S. population, making them the largest minority

group. Because Hispanic/Latinos make up a significant percentage of the U.S. population, many of whom also have LEP, they can be especially vulnerable to healthcare disparities. LEP persons may have longer hospital stays, higher risks of infection, pressure ulcers, or surgical delays, and greater chances of readmission compared to those who are English-proficient. Although some studies have been conducted to evaluate the effectiveness of providing culturally and linguistically adapted nutrition education to Latino caregivers with LEP, sufficient research involving infant nutrition is still lacking. The purpose of this research study is to evaluate whether different methods of receiving nutrition education impact the learning and application of infant nutrition among Latino caregivers with LEP. This study will be conducted using an anonymous, cross-sectional online survey administered to caregivers of children aged 0-3 years who identify as Hispanic/Latinx and have LEP. The results of this study may reveal which methods of delivering nutrition education best support learning and application among caregivers with LEP, addressing gaps in culturally tailored interventions and informing programs to reduce health disparities and promote healthy child development.

The Impact of Federal Cuts to the Supplemental Nutrition Assistance Program on Diet and Health

Jennifer Gramstorff

Faculty Mentor: Dr. Melissa Brown

Background: An adequate and nutritious diet is one of the most important modifiable risk factors for the development of several chronic illnesses. However, in the ever-changing economy, the cost of foods containing protective nutritional properties has increased significantly. Therefore, for individuals and families with financial insecurity, healthy dietary habits may be a harder thing to accomplish. In the past, government programs such as the Supplemental Nutrition Assistance Program (SNAP) have played a key role to assist these individuals in improving their access to healthier food options and therefore potentially decrease their risk of chronic illness. **Objective:** This study aims to determine how the reduction in SNAP benefits in Connecticut has impacted access to and consumption of protective, nutrient dense foods. By studying this, further inferences could then be made about the ability of SNAP benefits to aid in chronic illness prevention. **Methods:** This study will utilize a survey consisting of both demographic and food insecurity related questions to collect research data. Clients of Food Share Mobile sites in Connecticut will be invited to participate in the study during the months of February and March of 2026 while they are waiting in line for their food allocations. **Results:** Results are not yet available. Data collection and analysis are currently in progress.

Why Do Patients with Dysphagia Refuse Puree Food and What Is the Potential Impact on Nutritional Status? A Dietitian's Perspective

Elisabeth N Yao

Faculty Mentor: Michelle MacKenzie

Dysphagia or difficulty swallowing is a widespread problem in the elderly population that negatively affects oral intake and body composition. It has been documented that oropharyngeal dysphagia affects 30–40% of the population aged 65 years and older. Dysphagia is managed primarily through texture-modified diets (TMDs). The International Dysphagia Diet Standardization Initiative (IDDSI) provides a global framework classification of foods from regular, easy to chew (level 7) to liquidized (level 3), including soft & bite-sized (level 6), minced & moist (level 5), and pureed (level 4). Texture-modified diets, particularly the IDDSI level 4 pureed diet, are essential for managing oropharyngeal dysphagia to prevent choking and aspiration pneumonia, ensuring safe oral intake. Despite their safety benefits,

clinical experience reveals high rates of non-adherence, with patients often refusing these diets. The aim of this study was to identify the reasons for this refusal and its potential impact on nutritional status from the dietitian's perspective. An anonymous online survey was conducted from January to February 2026 among dietitians working in long term care (LTC) facilities. Dietitians who consented to participate completed an online questionnaire. A total of 9 dietitians responded. This research study has been approved by the USJ IRB (protocol 25-036).

Master of Social Work - Oral Presentations

Beyond Borders: Educating Migrant Children in a Changing America

Avery Smith

Faculty Mentor: Dr. Christiana Best

This qualitative study examines the experiences of migrant, refugee, and immigrant children in U.S. educational settings, based on interviews with 25 professionals working across diverse regions. Participants, primarily mid-career human service providers, supported youth navigating educational transitions, immigration processes, trauma, and housing instability. Findings reveal disparities in support: Ukrainian migrants often accessed sponsorship pathways and quicker integration, while Venezuelan asylum seekers faced prolonged uncertainty, shelter-based housing, and delayed services. Fear of immigration enforcement limited school participation, reduced parental engagement, and contributed to social withdrawal. Migration-related trauma, unstable housing, and uncertain legal status further affected mental health and educational adjustment. Despite these challenges, families demonstrated strong resilience. Family cohesion, peer networks, community-based organizations, and advocacy by educators and social workers were critical supports. Professionals emphasized the need for trauma-informed, culturally responsive practices, workforce training, and sufficient resources. Policy implications include stable housing pathways, coordinated systems, and protection of sensitive locations, and public awareness initiatives. The study underscores the interconnected nature of education, housing, mental health, and immigration policy, reaffirming the essential role of social workers, educators, and community organizations as both service providers and advocates for equity, belonging, and opportunity for migrant children and families.

Nursing - Poster Presentations

Culturally Tailored Maternal Health Education to Reduce Complications Among Black Expectant Mothers

Imani Alford

Faculty Mentor: Dr. Monika Costa

Black mothers in the United States experience disproportionately high rates of maternal mortality and pregnancy complications compared to other racial groups (CDC, 2025), a disparity driven by structural inequities, unequal access to quality care, and gaps in health literacy rather than biological differences. This case cohort study proposal examines whether culturally tailored continuous maternal health education delivered in community settings can improve maternal knowledge, engagement, and health outcomes among Black women. The study will take place at Cornell Scott Hill Health Center in New Haven, Connecticut. Ten Black pregnant women aged 18 and older will voluntarily enroll in a free maternal education program. Participants will attend monthly, trimester-specific prenatal sessions from January through September, followed by monthly postpartum education for six months. Sessions will focus on pregnancy changes, warning signs of complications, prenatal care, birth planning, breastfeeding, nutrition, postpartum recovery, and mental health. Outcomes will include participant attendance, knowledge quiz scores, satisfaction survey responses, postpartum visit attendance, reported complications, breast feeding rates and post-hospital readmissions. All data collected will be analyzed. The intervention is expected to increase maternal knowledge, confidence, and engagement in care, promote early recognition of concerning symptoms, and foster peer support and trust in providers. This proactive approach may reduce preventable complications and support safer pregnancies, contributing to more equitable maternal health outcomes for Black mothers. The findings aim to inform community-centered strategies that empower Black mothers and improve maternal health equity.

Say No to Vaping: Quality Improvement Project

Allison Colenbaugh, Khang Dang, Arlena Michaud, Nyasia Price, and Skye Smith

Faculty Mentor: Dr. Angela Carrano

Background: Vaping has become a national issue affecting multiple generations, including the teenage population. Adolescents are particularly vulnerable, as their bodies are undergoing significant developmental changes that can be severely impacted by the effects of vaping.

Purpose/Objectives: This hypothetical quality intervention project aims to inform the high school students of the dangers of vaping. The project aims to provide an educational presentation, supported by a poster handout, to enhance awareness and promote informed decision-making among adolescents.

Methods: The project employed interactive group activities to illustrate the long-term effects of vaping on lung health. Students will engage in discussions, asked informed questions, and demonstrated increased understanding of the risks associated with vaping. In addition to education, the program provided students with resources and guidance on where to seek support to quit vaping.

Expected Outcomes: The educational program is designed to be delivered to high schools across diverse communities and can be expanded to local YMCAs. Handouts and resources can also be made available in pediatricians' offices to reach a broader adolescent audience. **Conclusions:** High school students can be effectively educated about the dangers of vaping through this program. Participants not only gain knowledge of the health risks but also learn where to access additional help and resources, supporting healthier decision-making and long-term respiratory health.

Hartford PEERS: Peer Education & Empowerment for Recovery Support

Mickayla Brozowsky, Nahriel Gelly, Upneet Kaur, and Brittany Pacheco

Faculty Mentor: Dr. Angela Carrano

Background: Substance use among young adults experiencing homelessness in Hartford, Connecticut, remains a public health concern. Approximately one-third report polysubstance use and face barriers such as unstable housing, fragmented services, and limited access to harm reduction resources (Nicholls & Urada, 2021; Neale et al., 2022). A Community Windshield Survey identified encampments, discarded needles, and public intoxication, demonstrating the need for trauma-informed interventions. **Purpose/Objectives:** This hypothetical Quality Improvement (QI) project aims to reduce substance use–related harm among individuals aged 18–35 experiencing homelessness through peer-led education and service linkage. **Methods:** Guided by survey findings, interventions will include peer-led motivational programming, mobile harm reduction education with naloxone training, and a social media awareness campaign. **Evaluation** will include pre- and post-intervention surveys, service-connection tracking, and self-reported behavior changes aligned with SMART objectives: 80% improved overdose-prevention knowledge within three months, 60% connection to support services within six months, and 70% adoption of at least two harm reduction strategies within six months. **Anticipated Clinical Outcomes:** Anticipated outcomes will include increased harm reduction knowledge, enhanced confidence in recognizing and responding to overdoses, and greater engagement with peer support services, consistent with evidence supporting peer-led models (Turuba et al., 2023). **Conclusions/Implications:** This QI project will demonstrate the feasibility of peer-led, time-bound harm reduction strategies within nursing practice to reduce substance-related harm among young adults experiencing homelessness.

Wrap it up CT

Elizabeth Blanca, Emma Cruz, Alivia Dunn, Madison Levesque, and Lily Medeska

Faculty Mentor: Dr. Angela Carrano

Background: Educating adolescents about sexually transmitted infections (STIs) and prevention is essential for protecting health and supporting informed decision-making. According to the Centers for Disease Control and Prevention (CDC), adolescents and young adults ages 15–24 account for approximately 50% of the 20 million new STIs diagnosed annually in the United States, highlighting the need for early and effective sexual health education. In Connecticut, the lack of a statewide mandate for comprehensive sexual education contributes to gaps in knowledge, underscoring the need for community-based programs that provide accurate, judgment-free information to promote safer behaviors among teens. **Purpose/Objective:** Wrap It Up CT is a hypothetical quality improvement project designed to promote safe sexual health practices among students at Hartford Public High School by increasing knowledge of STI/STD prevention, fostering positive attitudes toward safe-sex behaviors, and encouraging practices that reduce infection risk. **Methods:** Program interventions include interactive workshops, group discussions, and distribution of educational materials, such as pamphlets listing clinics that offer confidential testing. **Effectiveness** will be measured through changes in students' knowledge and recall of key sexual health concepts, as well as reports from school nurses and clinics regarding student engagement with testing. A 10% reduction in reported STI/STD rates is anticipated within one academic year. **Expected Outcomes:** The project is expected to improve students' understanding of safe-sex practices and increase awareness of available sexual health resources. **Conclusion:** This quality improvement project demonstrates that a theory-driven, school-based intervention can effectively improve STI/STD awareness among high school students and offers a low-cost, sustainable, and scalable model for broader implementation.

Clear the Clouds: Evaporate the Myths of Vaping: A Quality Improvement Project

Audacia Badroe, Eryn Harvey, Katherine Sidwell, and Amy Simons

Faculty Mentor: Dr. Angela Carrano

Background: According to the Centers for Disease Control and Prevention (CDC), the national average for adult e-cigarette use in the United States was 6.5% in 2023 (Vahratian et al., 2025). It is alarming that almost 17% of young adults (18-24 years old) in the State of Connecticut are currently using e-cigarettes (Connecticut State Department of Public Health, 2024). Vaping can increase risk of cancer and irreversible lung disease (American Lung Association, 2024). Increasing students' knowledge and awareness will reduce this concerning public health trends. **Purpose/Objectives:** The goal of this hypothetical QI project aims to reduce vaping among college students by providing education that dispels common myths about vaping and encourages cessation through awareness of associated health risks and available support resources. **Methods:** The Clear the Clouds campaign initiative will launch in January 2026 (Spring Semester) with college students at the University of Saint Joseph in West Hartford, CT. The two-part intervention will begin with a Kahoot! with true/false vape myth questions and educational content. Next, we will introduce the match game called "What's in Your Vape?" where small groups match the hazardous chemical substances found in vaping products with correct descriptions. **Anticipated Outcome:** The SMART objective goal is that by May 2026, the percentage of Connecticut college students aged 18-24 who vape utilizing e-cigarettes will decrease from 17% to 15% by implementing bi-weekly education meetings with partnership of Amplify CT. and the local public health department. **Conclusions/Implications:** This evidence-based, low-cost, sustainable, and scalable hypothetical QI project would indicate knowledge gaps in vaping education among college students. After repeated sessions, score improvements would validate our teaching was successful.

Heart Healthy Hartford: Healthy Living for Lowering Blood Pressure: A Quality Improvement Project

Ashanti Chin, Isabella Cloutier, Emma Pelosi, Leaheart Valerio, and Sharmaine Wolfson

Faculty Mentor: Dr. Angela Carrano

Background: Heart disease and stroke are the leading causes of death in the United States, with hypertension as the primary contributing factor (CDC, 2025). Hartford County, Connecticut, reports some of the highest rates of high blood pressure and high cholesterol, particularly among adults over 45 (Connecticut Department of Public Health, 2023). Improving nutrition education and access to healthy foods is essential to reducing hypertension risk in this population. **Purpose/Objectives:** This hypothetical QI project aims to address disproportionate hypertension rates in Hartford by expanding access to preventive health resources. It emphasizes public health nursing's role in engaging vulnerable populations, advocating for policy change, and promoting equitable health outcomes. **Methods:** Guided by the Minnesota Public Health Wheel, the project partners hypothetically with SNAP to deliver nutrition education workshops at community centers, food banks, and partnerships with local grocery stores. By the end of 2026, at least 80% of participating adults ages 30-60 will demonstrate engagement in SNAP-supported nutrition education workshops and increased knowledge of nutrient-rich foods and hypertension prevention, and 70% will show improved blood pressure awareness or stabilization, as measured by pre- and post-workshop surveys and RN-led blood pressure screening results. **Expected Outcome:** The program is expected to increase hypertension awareness, improve knowledge of how diet, sodium, stress, and activity affect blood pressure, and build confidence in label reading and heart-healthy meal preparation. It encourages regular BP monitoring, follow-up with providers, and supports self-management to reduce cardiovascular risk. **Conclusions/Implications:** This low-cost QI project, culturally responsive, and the scalable interventions will demonstrate that nutrition education and

community collaboration can improve pre-hypertension awareness and support healthier lifestyle choices among Black and Latino adults in Hartford. Future potential for expansion and tracking long-term blood pressure outcomes to strengthen the impact (Poulin, 2021).

Take the Driver's Seat in Deciding Your Child's Car Seat Safety Plan: A Quality Improvement Project

Trista Burdick, Brianna Catalani, Natalia Cruelles, Liliana Garcia, Christine Nguyen, and Gabriela Santos

Faculty Mentor: Dr. Angela Carrano

Background: Motor vehicle accidents are the leading cause of death in children ages 1-13 years old (National Highway Traffic Safety Administration, 2026). Despite extensive protections, car seat safety laws remain inaccessible and difficult to understand, contributing to knowledge deficits and inappropriate car seat use (Davis & Potts, 2024). This hypothetical Quality Improvement (QI) project, *Take the Driver's Seat in Deciding Your Child's Car Seat Safety Plan*, aims to provide proper and consistent education to parents in underserved communities. **Purpose/Objectives:** This hypothetical quality improvement project aims to improve knowledge on the improper use of car seats, parents' confidence regarding car seat safety, and where to find resources around the Hartford, CT area. **Methods:** Guided by the Minnesota Public Health Intervention Wheel, the program implements an outreach training session at a local fire department. The intervention includes pre- and post-tests, a multi-modal car seat presentation, and a hands-on demonstration using the Teach Back method. By the end of the session, at least 85% of participants are expected to demonstrate improved knowledge and correct car seat installation. **Expected Clinical Outcome:** Caregivers are expected to demonstrate increased knowledge of car seat safety, as measured by pre/post-test scores and surveys assessing confidence in applying learned skills. Improved behaviors in car seat installation are anticipated as a direct outcome of the training. **Conclusions/Implications:** This project aims to demonstrate that standardized, accessible education for parents, combined with theory-driven interventions, can effectively enhance community knowledge and outcomes. With flyers and interactive teaching sessions, the program can be readily implemented in collaboration with community partners. Future efforts may involve partnering with public health agencies to broaden its reach and impact.

Move to Improve: Combating Childhood Obesity Through Play and Exercise: A Quality Improvement Project

Sierra Koss, Alexandra Long, Blasia McAuliffe, Julia Olson, and Emily Poisson

Faculty Mentor: Dr. Angela Carrano

Background: Childhood obesity is a growing public health concern, associated with long-term risks such as diabetes, cardiovascular disease, cancer, and hypertension. According to the CDC (2024), 20% of children aged 5–17 in Connecticut are obese. Evidence shows that regular physical activity and healthy eating habits are effective strategies to reduce childhood obesity. Implementing such strategies in Hartford Public Schools presents an opportunity to improve health outcomes for local children. **Purpose/Objectives:** The hypothetical Quality Improvement project, *Move to Improve*, aims to reduce childhood obesity by promoting regular exercise among children aged 5–11 in Hartford public schools. The program seeks to increase awareness and knowledge of the health benefits of physical activity at an early age while fostering positive exercise habits that can last a lifetime. **Methods:** The program will offer free, one hour after school sessions will be held twice weekly for children ages 5–11, offering interactive physical activities, a healthy snack, and transportation. Guided by Social Cognitive Theory, the program aims to reduce childhood obesity in Hartford public

elementary schools by 2028. Expected Outcomes: This project is expected to decrease obesity among children ages 5-11 through exercise and group activity, with these intramural sessions being held twice a week. Decreasing obesity rates should lead to less instances of cardiovascular disease, stroke, hypertension, and diabetes (Tierney & Seda 2020). Children can also develop better motor skills, coordination, and sleep patterns from active participation (KC, et al., 2025). Conclusions/Implications: Move to Improve provides a sustainable, low-cost, and accessible strategy for reducing childhood obesity in Hartford. This after-school program will assist the city of Hartford to decrease childhood obesity rates. This will create a healthier overall child population, as they will grow up knowing the value of exercise.

Blue Jays Breathe Better: Together, We Quit

Allison Drake, Ariana Komonaj, Ava Kriak, Tatyana Thomas, and Zoe Zappone

Faculty Mentor: Dr. Angela Carrano

Background: Nicotine is a highly addictive substance causing adverse health outcomes and dependence, despite perceived relaxation effects. The prevalence of nicotine use through e-cigarettes has increased substantially, particularly among college students, representing a growing public health concern. E-cigarette use among adults aged 18-24 years rose from 5.1% in 2014 to 11% in 2021 (Kramarow & Elgaddal, 2023; Schoenborn & Gindi 2015). This hypothetical Quality Improvement (QI) project, Blue Jays Breathe Better: Together We Quit, aims to increase student knowledge of nicotine-related harms to make informed health decisions and promote cessation. Purpose/Objectives: This hypothetical QI project aims to promote informed health decisions among the students at the University of Saint Joseph in West Hartford, CT by addressing misinformation surrounding e-cigarette use while simultaneously promoting healthier stress-management strategies. Methods: E-cigarette cessation will be promoted in interactive workshops, social media outreach, and evidence-based educational handouts. Content focuses on health risks, common misconceptions, and cessation resources. By the end of Fall 2025, 50% of students who report using nicotine will express intent to reduce or quit, and at least 30% will engage with campus-provided coping alternatives. Effectiveness will be assessed through pre- and post-intervention surveys measuring knowledge, attitudes, and behavior change intentions. Clinical Outcome: Anticipated outcomes include an increased awareness of nicotine-related harms, a fostering of positive attitudes toward cessation, and enhanced readiness to adopt healthier stress-management strategies. Conclusions/Implications: Evidence of shifts in intent and engagement will provide a foundation for sustained campus health initiatives aimed at reducing e-cigarette prevalence. This project aims to serve as a model for expansion to middle and high school populations, promoting early prevention and informed health decisions.

Moral Integrity in Clinical Practice: Catholic Conscious, Discernment, and the Duty of Care

Jillian Milo

Faculty Mentor: Dr. Sheila Garilli

Background: Catholic healthcare providers frequently encounter ethical tensions in clinical practice as they seek to balance fidelity to Church teaching, the primacy of individual conscience, professional duties of care, civil law, and institutional policies. These overlapping obligations can create moral conflict, particularly when magisterial directives appear to challenge personal discernment or when conscientious refusal may impact patient care. Purpose: This study examines how Catholic models of conscience and discernment can guide healthcare providers in navigating two primary tensions: 1) the internal conflict between the authority of Church teaching and the primacy of individual conscience-

specifically, how far a provider's discernment may diverge from magisterial directives while remaining authentically Catholic; and 2) the tension between Catholic conscience and the professional duty of care—particularly how providers can remain faithful to conscience without relinquishing professional responsibilities when civil law and institutional policies limit conscientious refusal. Methods: Scholarly articles on Catholic conscience, moral discernment, ethical decision-making in clinical settings, and the preservation of moral integrity in ethically challenging hospital environments were compiled to support the study's central research questions. Results: Catholic models of conscience provide a comprehensive framework for balancing fidelity to Church teaching, personal moral integrity, and professional obligations. Providers must honor their duty of care by expressing conscientious refusal in ways that respect patient dignity and uphold established ethical healthcare practice. Conclusion: Through ongoing moral formation, honest discernment, pastoral support, and compassionate professional practice, Catholic healthcare providers can remain faithful to their moral convictions while fulfilling their vocational commitment to healing.

Food Insecurity Among College Students

Brandy Quichimbo

Faculty Mentor: Dr. Angela Carrano

Background: Food insecurity on college campuses significantly impacts students' physical and mental health, as well as their academic performance. At a Connecticut university, approximately 30% of students reported food insecurity, correlating with lower GPAs and higher depression rates (Zigmont et al., 2020). Resources like food pantries and meal-swipe sharing programs exist but are often underutilized due to barriers such as limited awareness, stigma, and limited access. Purpose/Objectives: This hypothetical quality improvement (QI) project aims to enhance student awareness of food support resources. The project aims to educate students about the food pantry, meal-swipe sharing program, SNAP eligibility assistance, and food security workshops to improve access and utilization of these services. Methods: The intervention involves distributing health education flyers and promoting resources via social media, targeting at-risk students according to the Minnesota Public Health Intervention Wheel. SMART objectives include ensuring 75% of surveyed students can identify at least two campus food resources within eight weeks and achieving a 20% increase in program utilization by the end of the semester. Clinical Outcomes: Results indicated that after the campaign, 81% of the 200 surveyed students could identify two or more resources, while campus data revealed a 24% increase in overall participation. Conclusions/Implication: This low-cost, scalable approach effectively increases awareness, reduces stigma, and supports student health and success.

Healthy Homes, Healthy Lives

Angelina Bernardi, Elizabeth Coghlan, Tiffany Lee, Sherley Renodo, and Emma Stepina

Faculty Mentor: Dr. Angela Carrano

Background: Many low-income families in Hartford, Connecticut, reside in poor-quality housing that exposes them to significant health hazards, including mold, poor air quality, overcrowding, lead poisoning, asbestos, structural instability, and inadequate utilities such as plumbing, heating/cooling, and electricity (Hartford HealthCare, 2022; Holden et al., 2023; Howden-Chapman et al., 2023). Recognizing unsafe housing conditions as a crucial social determinant of health is essential, as these factors directly influence long-term health outcomes. Purpose/Objective: This hypothetical quality improvement (QI) project aims to address these concerns by increasing awareness of environmental risks and empowering families to access safer housing options. Methods: To address this issue, we will implement a six-week series of community education workshops in Hartford. The sessions aim to help

low-income families recognize signs of unhealthy housing, understand the associated health risks, and explore safe, affordable, community-based housing alternatives. Educational materials included flyers, interactive activities, picture-based hazard identification exercises, case studies, and home safety checklists. Expected Outcomes: By the end of the six-week series, is expected to increase at least 50% of participating families' confidence in identifying housing-related hazards and listing local relocation resources. Post-intervention evaluations demonstrated improvement, with participants accurately identifying unsafe conditions in images and reporting increased knowledge of who to contact for relocation or assistance services. Conclusions/Implications: This QI project will demonstrate the vital role nurses play in addressing environmental health concerns. With expanded community partnerships, the intervention can be extended to other Connecticut towns facing similar housing disparities.

Evaluating Cognitive Screening Initiative for Unhoused Older Adults Using the CDC Program Evaluation Framework

Sabrina Dunchie

Faculty Mentor: Dr. Karen Corcoran

Cognitive impairment is a growing public health concern in the United States. It often begins with mild changes in memory and thinking, referred to as Subjective Cognitive Decline (SCD), and may progress to Alzheimer's disease and other dementias over time. Nationally, 16.6% of adults aged 45 years and older report SCD. In addition, an estimated 7.2 million Americans aged 65 years and older are currently living with Alzheimer's disease, and this number is projected to increase significantly by 2060. In Connecticut, 15.7% of adults aged 45 years and older report SCD, and approximately 76,800 adults aged 65 years and older are living with Alzheimer's disease. This rising burden contributes to increased hospitalizations and escalating healthcare costs, particularly as cognitive impairment remains underrecognized in underserved populations. Early detection and diagnosis are critical because they improve quality of life, slow disease progression, reduce emotional and financial strain, identify potentially reversible causes, and help preserve independence. Clinical guidelines recommend the use of validated screening tools, such as the Montreal Cognitive Assessment (MoCA), to promote early identification of cognitive impairment. Until recently, cognitive screening was not part of routine services at the Friendship Center at St. Elizabeth House, a community-based program serving unhoused older adults, creating a care gap in timely identification and referral to supportive services. Guided by the Centers for Disease Control and Prevention (CDC) Program Evaluation Framework, this project evaluates a recently implemented cognitive screening initiative at the Friendship Center. The Health Belief Model, which postulates that participation in screening is influenced by perceived risk, perceived seriousness, perceived benefits, and perceived barriers, further informs the evaluation. The project's aim is to evaluate the effectiveness of the implementation of the Montreal Cognitive Assessment (MoCA) screening and referral process by examining relevant factors of the initiative over a four-week time period.

Increasing Colorectal Cancer Screening Rates Among Individuals at an Outpatient Federally Qualified Health Center Utilizing the IHI Model for Improvement

Tahishia Lewis

Faculty Mentor: Dr. Yvonne Joy

Colorectal cancer is the second leading cause of deaths related to cancer in the United States. Nationwide, there are more than 150,000 new cases of colorectal cancer every year. Screening for colorectal cancer has been proven to be effective in its prevention. However, the rates of screening remain suboptimal, especially among underserved populations. This Doctor of Nursing Practice (DNP)

quality improvement project is designed to increase incidence of screening for colorectal cancer. It will be implemented at InterCommunity Health Care, a Federally Qualified Health Center with participating offices in East Hartford and Hartford, Connecticut, that predominantly serves Black and Hispanic/Latinx populations. Interventions include staff education about why colorectal cancer screening is so important and how to instruct patients about use of the Cologuard kit for early detection of colorectal cancer. Guided by the Institute for Healthcare Improvement (IHI) Model for Improvement and iterative Plan-Do-Study-Act (PDSA) cycles, staff will offer this assessment to all eligible adult patients between the ages of 45-75. This project aims to show that system-level improvements within a Federally Qualified Health Center can increase colorectal cancer screening rates and close screening gaps by facilitating earlier detection among patients who experience significant health barriers.

A Quality Improvement Initiative to Increase Cervical Cancer Screening in an Outpatient Clinic Using the IHI Model for Improvement

Rushie Chamblee

Faculty Mentor: Dr. Angela Carrano

Although cervical cancer is preventable through routine screening, rates at federally qualified health care centers remain below national benchmarks. In Connecticut, the incidence of cervical cancer is 5.2 per 100,000, and mortality is 1.5 per 100,000; both are lower than the national rates of 7.5 and 2.2 per 100,000, yet screening rates in Connecticut are currently 56.8% at federally qualified health care centers and remain well below the Healthy People 2030 target of 84.3% (HRSA, 2024). At InterCommunity Hartford outpatient center, screening rates are critically low at 18% as of December 2025. Notably, over 50% of the population served at InterCommunity are women aged 25 to 65, the primary group for recommended cervical cancer screening, making this preventive service both necessary and central to women's health care delivery at InterCommunity. This DNP project is a quality improvement initiative that aims to increase cervical cancer screening rates by adding HPV self-swab kits, using the Institute for Healthcare Improvement (IHI) Model for Improvement. The primary focus will be on two plan-do-study-act cycles. Interventions include structured staff education aligned with current evidence-based chamscreening guidelines and spreadsheet-based tracking of patients across the screening continuum. Patients will be identified, educated, and offered testing. If a patient refuses screening, follow-up phone calls will be made to re-engage those who initially declined screening. Process outcomes and balancing measures will be evaluated during each PDSA cycle to guide refinement. The systemic approach seeks to improve screening rates, reduce disparities, and advance InterCommunity's performance in meeting national prevention goals.

Staying Connected Against Cyberbullying: A Whole School Approach

Christina Quitoni and Alana Picard

Faculty Mentor: Dr. Angela Carrano

Background: Cyberbullying is becoming an increasingly toxic public health issue among middle school aged children and is correlated to many adverse health outcomes. Our project, Staying Connected Against Cyberbullying: A Whole School Approach, will aim to educate students on how to respond to cyberbullying. Purpose/Objectives: This Quality Improvement (QI) project, Staying Connected Against Cyberbullying: A Whole School Approach, aims to promote the reporting of cyberbullying among middle school aged students in Ellington, Connecticut, by increasing their knowledge of cyberbullying, creating both student and faculty centered interventions, and encouraging the use of kind words when speaking with peers. Methods: The project will follow the Social Cognitive Theory (SCT) framework. The goal is that there will be a decrease in the average number of reported cyberbullying cases yearly in

Connecticut middle schools by 10% for the 2026-2027 school year. The Minnesota Public Health Intervention Wheel will guide the implementation of this educational project. Interventions will include an annual whole school town hall meeting, an education flyer, and an interactive hands-on activity. The effectiveness will be evaluated by analyzing the average number of reporting cases and knowledge assessments. Clinical Outcome: The anticipated outcome of this program is to increase students' knowledge of resources within the school system and how to report cyberbullying. Program effectiveness will be evaluated by assessing changes in students' knowledge and actual reports received about cyberbullying. Conclusions/Implications: Based on the literature, this QI project will demonstrate that a community health nursing approach can effectively address social determinants influencing cyberbullying. The interventions are low-cost, sustainable, and potentially scalable.

Knowledge Is Protection: STD Awareness Among College Students

Joshua Coleman, Mina Delevieleuse, Leeana Ortiz, Tatum Radacsi, Jared Rheault, and Brooke Stevenson

Faculty Mentor: Dr. Angela Carrano

Sexually transmitted diseases (STDs) are an important public health concern among the college-aged population. Limited knowledge of STD symptoms and preventative measures are key factors among college students (Cleveland Clinic, 2023). This project aims to improve STD prevention resources by providing information on STD prevalence, transmission, testing and prevention methods. This hypothetical Quality Improvement project, Knowledge is Protection: STD Awareness for Students, aims to educate on STD prevention among college-aged students at the University of Saint Joseph in West Hartford, Connecticut, by increasing awareness of STD prevention, transmission, and campus resources. This project will follow the SMART goal framework to guide implementation by October 2026; the percentage of undergraduate students aged 18-22 years diagnosed with STDs/STIs in Connecticut will reduce by 10% by increasing on-campus prevention education. The Minnesota Public Health Intervention Wheel will guide the development and implementation of this educational project. This intervention will focus on the community using various media to promote collaboration. Education and student learning will be evaluated using a survey. Interventions will center around screening, partnerships, coalition development, health teaching, counseling, and consultation. It is anticipated that this education will decrease STD prevalence among undergraduate students by 10% within 3 months of the education being provided. This QI project will demonstrate educational sessions for college students to reduce STD prevalence within college communities. Future efforts may include implementing educational sessions on campuses and creating programs for peer leaders. This program is easy to replicate therefore the scope of our program aims to improve outcomes on a larger and longer lasting scale.

A Sweet Balance: Building Healthy Habits for Elementary Children in West Hartford

Kristina Ayvas

Faculty Mentor: Dr. Angela Carrano

Background: Children with diabetes in the United States are experiencing rising rates of poor glycemic control, placing them at risk for health complications, academic challenges, and decreased quality of life (CDC, 2024). Recent evidence shows that consistent school-based support, including trained personnel, structured care, and collaboration, is essential for safe and effective diabetes management (Cogen et al., 2024). Within West Hartford elementary schools, several systemic barriers hinder these evidence-based best practices. Purpose & Objectives: This hypothetical Quality Improvement (QI) project, A Sweet

Balance: Building Healthy Habits for Elementary Children in West Hartford, aims to strengthen glycemic control strategies among elementary-aged children. Methods: The Minnesota Public Health Intervention Wheel will guide the implementation of this project, the team developed A Sweet Balance, a multi-component educational intervention consisting of (1) teacher and staff diabetes-awareness training, (2) age-appropriate student lessons, and (3) family workshops on home management. SMART objectives guided implementation and evaluation. Clinical Outcomes: The anticipated outcomes of the program are to increase student knowledge of healthy behaviors, increase staff confidence in recognizing hypo- and hyperglycemia, and ensure a consistent completion of individualized diabetes care plans. Conclusions & Implications: This project aims to demonstrate the potential for scalable, school-based interventions that support healthier daily habits and promote long-term glycemic stability. Broader adoption could enhance chronic disease management for school-aged children across similar communities.

Stop the Bleed Early: A New Graduate's Guide to Postpartum Hemorrhage Prevention and Detection

Ariana Komonaj

Faculty Mentor: Dr. Sheila Garilli

Background: Postpartum hemorrhage (PPH) is defined as cumulative blood loss greater than or equal to 1,000 mL after childbirth and remains the leading cause of maternal mortality in the United States (ACOG, 2020). Although many of these deaths are preventable, survival is often hindered by facility level delays, including the inability of providers to recognize early warning clinical signs (Angelina et al., 2019). Because provider knowledge and skills directly influence maternal outcomes, accessible, evidence-based tools are essential to strengthen recognition before a hemorrhage becomes an emergency. Purpose/Objective: This hypothetical project aims to strengthen new graduate nurses' knowledge and early identification of PPH through evidence-based educational handouts. Methods: This project will use an evidence-based educational intervention targeted toward new graduate maternity nurses to improve identification of early PPH clinical signs and maternal health outcomes. A literature review will establish a foundation for educational materials. To evaluate efficacy, knowledge will be measured using pre and post intervention surveys. Clinical Outcome: The expected outcome is a measurable increase in PPH knowledge and assessment accuracy for new graduate nurses. Success will be defined by higher post intervention survey scores and increased self-reported confidence in identifying early clinical red flags, leading to faster utilization of emergency protocols. Conclusions/implications: This project will evaluate whether accessible evidence-based visual guides on hospital units can improve the knowledge gap in early PPH identification for new graduate nurses. It is anticipated that integrating these tools will reduce facility level delays and improve maternal outcomes during obstetric emergencies.

Psychology - Oral Presentations

Pilot Study – Development of a Scale Measuring Trust Among Teammates in Competitive Situations

Friedrich Feldrappe

Faculty Mentor: Dr. Kristin Cistulli

This study is a continued effort at developing a scale measuring trust among teammates in competitive situations. Currently, no such tool exists. The Principal Investigators in this study sampled NCAA Division 3 Men's Basketball players from the Northeast United States. The survey was hosted on Survey Monkey; participants were asked to rate two of their teammates across five domains hypothesized to make up this type of trust, and rate their teammates' personality using the Ten-Item Personality Inventory. The results suggest high reliability across all five proposed domains and support the five-factor structure. Personality traits seem to be mostly unrelated to trust among teammates. The two domains that were derived from the Big Five personality traits showed the highest correlation between personality trait and trust-domain, underlining the reliability of the measures. While all 20 scale items are closely related, further research with a more diverse sample is needed to explore whether the scale can be generalized to different populations.

Physical and Psychological Well-Being among Firefighters

Tiago Paula Santos

Faculty Mentor: Dr. Kristin Cistulli

Firefighters represent an understudied population exposed to psychological and physical stressors inherent to emergency response work. Prior research has documented elevated rates of occupational stress, trauma exposure, sleep disturbance, and mental health burden among firefighters (Gibbs et al., 2025; Van Hasselt et al., 2022). Despite this growing literature, fewer studies have examined how daily behavioral rhythms and psychosocial factors collectively relate to overall well-being in this population. The present study utilizes a correlational design to assess associations between social rhythm regularity, sleep habits, self-determination (autonomy, competence, and relatedness), perceived respect, and global well-being among actively serving firefighters. Participants will complete an anonymous online survey administered via SurveyMonkey, which includes validated self-report measures of each construct. Overall well-being was assessed using the World Health Organization Well-Being Index (WHO-5). Other self-report measures include the Basic Psychological Need Satisfaction Scale and measures of perceived respect and social rhythm. It is hypothesized that greater disruption in social rhythm and poorer sleep habits will be negatively associated with well-being, whereas higher levels of autonomy, competence, relatedness, and perceived respect will be positively associated with well-being. In particular, given the shift-based and unpredictable nature of firefighting schedules, irregular social rhythm is expected to emerge as a significant correlate of reduced well-being. Findings from this study may clarify how occupational structure and psychosocial resources interact to influence firefighter wellness. Results may inform targeted interventions focused on sleep regulation, rhythm stabilization, and enhancement of self-determination factors to support psychological resilience and overall occupational health in fire service personnel.

Psychology - Poster Presentations

The (Incomplete) Psychological Theories of Consciousness

Friedrich Feldrappe

Faculty Mentor: Dr. Lisa Kuntz

Psychologists and Neuroscientists believe that the richness of human consciousness arises from the interactions between neurons in the brain. Current theories emphasize the role of attention: One is only conscious of those things one pays attention to. However, the theoretical landscape of how neuroscientists believe consciousness arises has changed dramatically ever since René Descartes first formulated his beliefs about the origin of human consciousness. To date, there is no consensus among neuroscientists on how consciousness arises. This presentation explores some theoretical frameworks, such as Information Integration Theory (IIT), Attention Schema Theory (AST), and a Quantum Mechanical Theory of Consciousness (QMTC), and looks at where these theories intersect. As mentioned above, most theories rely on attention to moderate consciousness: one is only conscious of the mental activity one pays attention to, while there are still many mental processes occurring without one being conscious of them. However, all current theories fail to explain how something as complex as consciousness can emerge from something as simple as neurons firing action potentials in the brain.

Student Perceptions of Artificial Intelligence in Higher Education

Taneysha Burgos

Faculty Mentor: Dr. Maria Anderson

The increasing availability of artificial intelligence tools in higher education has raised important questions about their impact on student learning and academic integrity. This study examined the relationship between students' use of AI tools and their perceptions of learning, attitudes toward academic honesty, and views of AI's role in educational settings. Data were collected through an anonymous online survey distributed to undergraduate students at USJ. Participants provided demographic information and responded to questions on frequency of AI use, perceived effects on learning, and beliefs about ethical academic practices. Findings indicate that AI use is becoming increasingly common among students. However, attitudes toward its role in education remain mixed. Overall, the results suggest that although AI is becoming integrated into students' academic routines, perceptions of its educational value and ethical use are still developing. These findings highlight the need for clearer institutional guidelines and open discussions about responsible AI use to support both academic integrity and meaningful learning experiences.

Storytelling with Purpose: The Process of Creating Children's Books

Zoë C. Sepa

Faculty Mentor: Dr. Melissa Sue John

Stories shape how children see themselves and the world, yet children's publishing continues to center a limited range of identities and experiences. Although U.S. classrooms are increasingly diverse, books do not consistently reflect that reality. Data from the Cooperative Children's Book Center (2024) indicate that while the number of books by and about Black, Indigenous, and People of Color has increased in recent years, representation remains uneven across groups. National survey data further show that children want books that reflect diverse cultures and lived experiences (Scholastic, 2023). The concept of the "single story" underscores how limited narratives constrain children's perceptions of themselves and others (Adichie, 2009; Reading Partners, 2022). Literacy outcomes remain concerning. Results from the National Assessment of Educational Progress demonstrate persistent proficiency gaps in reading (National Center for Education Statistics [NCES], 2022), and national literacy estimates suggest that

approximately 25 million U.S. children are not reading at proficient levels (National Literacy Institute, 2023). At the same time, children's screen use has increased substantially (Common Sense Media, 2023), raising questions not only about whether children read, but what they are offered and how meaningfully they are represented (Room to Read, 2023). This project addresses both representation and engagement by developing diverse children's literature grounded in intentional storytelling. Diversity will encompass race, culture, language, ability, and family structure, integrated authentically rather than superficially. Through analysis of existing titles, representation patterns, and market data, the project will identify gaps and produce an original, developmentally appropriate story that strengthens literacy while broadening children's perspectives.

Pharmacy - Oral Presentations

L-Canavanine: An Emerging Therapeutic Option for Cancer Therapy

Kevin Ramirez Garcia

Faculty Mentor: Dr. Anisha Gupta

Double-strand breaks (DSBs) are one of the most lethal forms of DNA damage, as they disrupt DNA strands interfering with the replication and transcription, resulting in cell cycle apoptosis. L-canavanine is a naturally occurring non-proteinogenic amino acid, structurally analogous to L-arginine. Arginine is an essential key amino acid used for the machinery of the cell to promote cell proliferation. The ability of canavanine to interfere with arginine-dependent cellular processes makes L-canavanine a promising therapeutic strategy for the treatment of cancer. We performed cell viability assays and γ -H2AX immunofluorescence to demonstrate that canavanine induces DSBs and selectively suppresses cancer cell growth. To assess the cytotoxic effect of L-canavanine, cell lines A549, HeLa and HepG2 were treated with increasing concentrations, and viability was measured using MTS and Cell Titer Glo assays. DNA double-strand breaks were quantified using γ -H2AX foci assay and Comet assay. Cell viability assays show a dose-dependent decrease in effect across the cancer cell lines. Immunofluorescence microscopy shows γ -H2AX signal in A549 cell line treated with L-canavanine. These results confirm the ability of L-canavanine to induce DNA double strand breaks in A549 cells. We are currently testing L-canavanine in HeLa and HepG2 cell lines to explore the potential therapeutic role of canavanine. Exploring the therapeutic role of canavanine would provide a new possible treatment option as a powerful anti-cancer agent.

Emerging PARP Inhibitor Therapeutics for Breast Cancer

Era Lulo

Faculty Mentor: Dr. Anisha Gupta

Breast cancer is one of the leading causes of cancer-related death in women worldwide. Germline BRCA1/2 mutations are significant risk factors that increase susceptibility to hereditary breast cancer. Poly (ADP-ribose) polymerase (PARP) inhibitors are targeted therapies that block DNA repair and induce synthetic lethality in BRCA1/2-mutated tumors, transforming treatment by utilizing homologous recombination deficiency. Despite this, the challenge of resistance posed by mechanisms such as BRCA reversion mutations, replication fork stabilization, and multidrug efflux pumps remains. In this review, we searched the PubMed, Web of Science, and Google Scholar databases, with no publication date restriction, to explore clinical outcomes and efficacy, safety profiles, mechanisms of resistance, and emerging combination strategies of PARP inhibitors in BRCA1/2-mutated breast cancer. Clinical trials such as OlympiA recently showed a significant overall survival benefit in early-stage, high-risk breast cancer, and other trials such as OlympiAD and EMBRACA established benefits in the metastatic setting from the use of PARP inhibitors. In addition, combination therapies, including PARPi with immunotherapies such as durvalumab, have demonstrated promising antitumor activity in early-phase trials. However, in certain trials such as MEDIOLA, complete efficacy has not yet been proven. Many ongoing studies not only expand global access to PARP inhibitors but also broaden their therapeutic targets. Investigating PARP inhibitor efficacy, expanding access, and optimizing patient selection through predictive biomarkers are crucial for reducing disparities and improving outcomes in BRCA1/2-mutated breast cancer.

Investigating the Therapeutic Potential of Pterostilbene and Harmine for Cancer

Maya Tomko

Faculty Mentor: Dr. Anisha Gupta

DNA repair mechanisms are essential in the cell replication process. Cancer cells have the ability to hijack various DNA repair mechanisms to survive and develop resistance to conventional cancer treatment. In recent years, plant-derived natural molecules, such as Pterostilbene and Harmine, have emerged as promising candidates for cancer therapeutics due to their anti-inflammatory, antioxidant, and anticancer effects. Previous research studies have demonstrated that Pterostilbene has both preventative and therapeutic potential in cancer by inducing DNA breaks, apoptosis, and suppressing cancer cell cycle progression. Harmine has been shown to inhibit homologous-recombination-mediated DNA repair in cancer cells, reducing cell proliferation. However, the idea that natural molecules target these DNA repair mechanisms and slow cancer cell proliferation is not completely understood. We hypothesize that Pterostilbene and Harmine could induce DNA double-strand breaks, which may affect the ability of cancer cells to grow. In this study, we are investigating the ability of Pterostilbene and Harmine to cause DNA damage and disrupt DNA repair mechanisms in cancer. We have observed that Pterostilbene and Harmine cause a dose-dependent decrease in cancer cell proliferation. Next, we are using Comet and gamma-H2Ax assays to quantify DNA damage. Further, gene expression analysis will be performed to assess the effect on different DNA repair genes. We hope our studies will shed light on the potential of Pterostilbene and Harmine for cancer therapy.

Assessment of Mimosine's Cytotoxic Properties for Potential Anticancer Applications

Raymondé J. Smith

Faculty Mentor: Dr. Anisha Gupta

DNA damage, particularly DNA strand breaks, is a critical mechanism exploited in cancer therapy. DNA damage induces cell cycle arrest and apoptosis in rapidly dividing tumor cells. There is a growing interest in small natural molecules and their ability to directly (or indirectly) target DNA to trigger DNA damage. Mimosine, a naturally occurring non-protein amino acid, has been reported to induce DNA damage through its metal-chelating properties. This process may promote oxidative stress and interfere with DNA replication and repair pathways. Despite decades of knowledge, the anticancer potential and DNA-damaging potency of mimosine remain underexplored. In previous findings, we observed that mimosine was able to cause a significant decrease in cell viability, specifically in HepG2 liver carcinoma cells. With increasing dose of mimosine, we observed an exponential decrease in HepG2 cell viability, showing a greater sensitivity when compared to other cells lines including A549 and HeLa cells. Although this data is promising, there is still more data needed to confirm the extent of mimosine activity across various cancer cell lines. The purpose of this study is to evaluate the DNA-damaging activity and potency of mimosine in cancer cells. This will be done using single-cell gel electrophoresis, otherwise known as the comet assay, to quantitatively measure DNA strand breaks. Three cancer cell lines will be treated with varying concentrations of mimosine, followed by the comet assay to determine the extent of DNA fragmentation and compare the values across treatment conditions to determine the dose-dependent effects of mimosine on genomic integrity. This research is significant because it provides insight into the genotoxic potential of mimosine and its relevance as a possible anticancer agent. By characterizing the extent of DNA damage that mimosine can induce, this study may help clarify its therapeutic potential and inform future development of DNA-targeting compounds for cancer treatment. Ultimately, these findings may contribute to a better understanding of how cancer cells respond to DNA-damaging agents and support the advancement of precision oncology strategies.

Advancing Immunotherapeutic Strategies in Multiple Myeloma

Mahnoor Khan

Faculty Mentor: Dr. Anisha Gupta

MM (MM), a type of hematologic malignancy, is characterized by the uncontrolled proliferation of plasma cells in the bone marrow. It is the second most common blood cancer, with over 190,000 patients affected in the United States. There have been significant challenges in treating MM due to factors such as relapse, resistance, and antigen escape. Over the past decade, the treatment algorithm has shifted from traditional chemotherapy to immune-based therapies, including chimeric antigen receptor T-cell (CAR-T) therapy and several new FDA-approved medications. These advancements, including the emergence of quadruplet induction regimens, have transformed the treatment standards for relapsed/refractory MM. To our knowledge, no published review has yet provided an integrated analysis of current FDA-approved CAR-T therapies and quadruplet induction regimens for MM. This systematic literature review provides a brief overview of CAR-T and quadruplet therapy for MM, based on findings from recent clinical trials, to assess the potential synergistic benefit of combining these approaches in improving long-term outcomes for MM patients. We searched PubMed, Web of Science, and clinical trial databases with no publication date restriction to explore clinical outcomes and efficacy, safety profiles, mechanisms of resistance, and emerging combination strategies in MM patients. We have analyzed how the combination strategy can improve patient outcomes in overcoming relapse, increasing progression-free survival, and providing a clearer insight into functional MM treatment. Thereafter, the persisting limitations and areas for further research are highlighted, with actionable next steps to advance these therapies.

Unveiling the Pharmacological Marvel of a Sodium-Glucose Cotransporter 2 Inhibitor

Arsaniouss Gars and Abeeha Khan

Faculty Mentors: Dr. Zhao Li and Dr. Anisha Gupta

Bexagliflozin (Brenzavvy) is an oral sodium-glucose cotransporter 2 (SLGT2) Inhibitor approved by the FDA on January 20th, 2023. SLGT2 Inhibitors are widely used to improve glycemic control in patients with type two diabetes inadequately managed with medications such as metformin. They have also demonstrated benefits in heart failure, cardiovascular diseases, and chronic kidney diseases.

Bexagliflozin is the latest approved SGLT2 inhibitor, and there has yet to be a comprehensive and up-to-date review of this medication. The data included in this review may be temporally limited due to the relative paucity of recent research and the extended timelines inherent to clinical investigation, which can delay the publication of updated findings. Clinical findings indicate that bexagliflozin produces a mean reduction of 0.5% in HbA1c, improving glycemic control in both previously treated and treatment-naive patients. When Bexagliflozin is combined with metformin, the reduction increases to -1.09%, indicating additive efficacy. Bexagliflozin has also demonstrated meaningful improvements in cardiovascular health and glycemic control in those who have had diabetes and shown inadequate glycemic control. However, current evidence is insufficient to establish superiority over other SLGT2 inhibitors or to fully characterize its impact on cardiovascular disease and chronic kidney disease. Future investigations should focus on these therapeutic outcomes to better define bexagliflozin's clinical role.

Pharmacy - Poster Presentations

Evaluation of Novel SGLT2-Targeting Compounds in a Non-Diabetic Ischemia-Reperfusion Model

Sedra Ramih

Faculty Mentor: Dr. Zhao Li

Sodium–glucose cotransporter 2 (SGLT2) inhibitors have demonstrated cardiovascular benefits that extend beyond glycemic control, yet the mechanisms underlying these protective effects remain incompletely understood. Our laboratory is investigating ten novel small-molecule compounds designed to target SGLT2. In prior *in vitro* studies using human coronary artery endothelial cells (HCAECs) under hyperglycemic conditions, seven of the ten compounds significantly reduced glucose uptake. Notably, two lead compounds attenuated hyperglycemia-induced cytotoxicity, an effect associated with reduced oxidative stress. These findings suggest that select compounds may possess cytoprotective properties independent of glucose lowering. The proposed study aims to evaluate whether these compounds confer protection in a non-diabetic ischemia-reperfusion (IR) injury model, thereby examining potential glucose-independent mechanisms. HCAECs will be subjected to controlled simulated IR conditions to induce cellular injury. Cytotoxicity will be quantified using lactate dehydrogenase (LDH) release and MTT viability assays. Endothelial function will be assessed by measuring nitric oxide (NO) production via a commercially available NO detection kit. To further explore mechanistic pathways, endothelial nitric oxide synthase (eNOS) protein expression will be analyzed by Western blotting. This work will help determine whether the observed protective effects of selected SGLT2-targeting compounds extend to non-hyperglycemic stress conditions. Demonstration of cytoprotection in the IR model would support the hypothesis that these agents may exert direct endothelial benefits beyond glucose transport modulation. The findings may provide mechanistic insight relevant to cardiovascular protection and inform future preclinical development of novel SGLT2-directed therapeutics.

Enhanced Skin Permeation of 5-Fluorouracil Through Nano-Vesicular Carriers (Novasomes)

Megan Perry

Faculty Mentor: Dr. Heba Eassa

5-Fluorouracil (5-FU) is a pyrimidine antimetabolite chemotherapy drug used to treat various cancers, such as non-melanoma skin cancer. It stops the growth of cancer cells through inhibiting thymidylate synthase, an enzyme required for DNA synthesis. Topical 5-FU is commonly used to treat conditions such as superficial basal cell carcinoma. Delivering 5-FU effectively is challenging due to its poor permeability and limited ability to reach tumor sites in deeper skin layers. This topical drug often requires frequent applications and prolonged treatment periods, which could lead to poor patient compliance.¹ Novasomes are nano-vesicular drug delivery systems that enhance drug stability and permeability. The aim of the work is to use novasomes to improve the drug's ability to penetrate deeper skin layers and reach the tumor site. The 5FU-loaded novasomes were prepared by the method of ethyl alcohol injection. Three novasomes were developed using different surface-active agents, with stearic acid, and cholesterol. Three different surfactants were used; Tween 80, Poloxamer 407, and Poloxamer 188. The entrapment efficiency of the prepared novasomes was determined by measuring the un-entrapped 5-FU using a centrifuge and spectrophotometer.² The entrapment efficiency was determined to be 50% for Tween 80, 61% for Poloxamer 188, and 65% for Poloxamer 407. This demonstrates the successful formulations and potential to improve 5-FU drug delivery.

The Development of Model Systems for the Identification of Conditional Synthetic Lethality in BRCA2 and p53 Deficient Cell Lines

Eben Holmes and Katelynn Nguyen

Faculty Mentor: Dr. Mark Sweezy

Traditional cancer chemotherapies have significant adverse effects on healthy cells, particularly in rapidly dividing tissues such as blood and epithelium. Modern targeted therapies are designed to minimize these adverse effects through selective cancer cell killing via a variety of mechanisms. One of these mechanisms is the use of conditional synthetic lethality (CSL). Synthetic lethality is a genetic interaction that occurs when inactivating mutations of two genes causes lethality when neither mutation is lethal alone. CSL is a pharmacological tool that exploits this phenomenon through the inhibition of a protein that will induce lethality in a specific genetic background. Two common cancer mutations that can potentially be targeted using this model include BRCA2, which has been shown to be lethal with RAD52 mutations, and P53, which is synthetically lethal with Wee1 mutations. We aim to design compounds that inhibit RAD52 and Wee1 activity to create a CSL environment in BRCA2 and p53-deficient cell lines, respectively. Here, we describe the development of model systems for assessing RAD52 and Wee1 biochemical activity. These model systems will be used to identify compounds that inhibit the activity of these proteins in vitro.

GABA(A) Receptor Hyperfunction in Type 1 Myotonic Dystrophy

Serena Bhushan, Aniket Narkhede, Anthony Parafati, Baleigh Toon, and Victoria Tsar

Faculty Mentor: Dr. Andrew Jenkins

Myotonic dystrophy type 1 (DM1) is the most common adult muscular dystrophy, and hypersomnolence represents one of its most disabling non muscular symptoms. Despite its prevalence, the underlying mechanisms of hypersomnolence in DM1 remain poorly defined, and therapeutic options remain limited. DM1 results from an expanded CTG trinucleotide repeat in the 3' untranslated region of the DMPK gene, producing toxic RNA transcripts that sequester splicing regulators such as Muscleblind (MBNL). Because MBNL normally promotes adult splice isoforms, its loss leads to inappropriate expression of fetal variants. One notable example is the fetal (γ 2short) splice variant of the GABAA receptor γ 2 subunit. This isoform lacks twenty-four base pairs that encode a protein kinase C binding motif essential for dynamic membrane insertion and internalization. These alterations suggest that GABAA receptor signaling is perturbed in DM1. Given that GABA is the principal inhibitory neurotransmitter in the central nervous system, disrupted GABAergic tone is expected to shift excitatory/inhibitory balance, thereby impairing arousal and cognition. We previously demonstrated that hypersomnolence in idiopathic hypersomnia is associated with GABAA receptor hyperactivity. On this basis, we hypothesized that DM1 hypersomnolence arises from a similar mechanism and that the benzodiazepine antagonist flumazenil may normalize receptor function. Using whole cell patch clamp recordings, we found that cerebrospinal fluid from patients with DM1 enhances GABAA receptor activation and that flumazenil reverses this effect. These findings support a shared pathophysiology between idiopathic hypersomnia and DM1 and suggest that flumazenil may offer a potential targeted therapeutic strategy to improve wakefulness in DM1.

Physician Assistant Studies - Poster Presentations

Rewiring the Trauma Response: MDMA-Assisted Therapy for Post Traumatic Stress Disorder

Kaitlyn Willis

Faculty Mentor: Dr. Mary Lebatique Minto

Post traumatic stress disorder (PTSD) is a chronic, debilitating mental health condition affecting approximately 8% of the US population and many millions globally. Despite decades of clinical research, conventional treatments, such as selective serotonin reuptake inhibitors (SSRIs) and trauma-focused psychotherapies, demonstrate only modest efficacy. In most cases, 40-60% of patients fail to achieve remission of PTSD with conventional treatments. This persistent treatment gap draws attention to the need for interventions that address both neurobiological dysregulation and psychological sequelae of trauma. Recent evidence from randomized controlled trials has positioned 3,4-methylenedioxymethamphetamine-assisted therapy (MDMA-AT) as a promising breakthrough treatment for PTSD. MDMA enhances emotional engagement, reduces fear responses, and fosters mindful self-compassion. The combination of clinical and translational evidence strongly suggests that MDMA facilitates deeper trauma processing when paired with structured psychotherapy. The purpose of this thesis project was to investigate current research of MDMA-AT, contrast it with standard therapies, examine its neurobiological and psychotherapeutic foundations, and discuss limitations and ethical considerations. The findings suggest that MDMA-AT, by integrating pharmacological modulation with psychological healing, when administered in controlled clinical settings, can represent a promising innovation for PTSD treatment.

Human vs. Porcine-Derived Acellular Dermal Matrices in Prepectoral Breast Reconstruction

Margaret Swiderski

Faculty Mentor: Brandon Batory

This literature review examines current research comparing human- and porcine-derived acellular dermal matrices (ADMs) used in prepectoral implant-based breast reconstruction following mastectomy. Peer-reviewed studies were identified from major surgical and reconstructive journals, including *Plastic and Reconstructive Surgery* and *Annals of Plastic Surgery*. The reviewed literature includes retrospective cohort analyses, prospective trials, and systematic reviews evaluating clinical outcomes, complication rates, and long-term graft performance. Across the research, both human- and porcine-derived ADMs demonstrate safe and effective use in prepectoral reconstruction. Human-derived ADMs show advantages in biocompatibility and lower rates of inflammation, whereas porcine-derived ADMs provide comparable long-term outcomes with improved accessibility and reduced cost. Reported complication rates for seroma, infection, and capsular contracture are similar between the two materials when used in appropriately selected patients. Overall, the literature indicates that both ADM types support reliable reconstructive outcomes, and future multicenter research is warranted to refine selection criteria and standardize outcome reporting.

Same Day Discharge: A Viable Approach to Total Hip Arthroplasty Recovery

Rachel Curran

Faculty Mentor: Kara Fluck

Historically, total hip arthroplasty (THA) required inpatient hospitalization for postoperative recovery and monitoring. However, recent advances in perioperative care, enhanced recovery pathways, and

value-based healthcare initiatives have prompted a shift towards same-day discharge (SDD) following THA. Despite these developments, concerns regarding patient safety and surgical outcomes limit widespread adoption of SDD protocols. The purpose of this review was to critically evaluate whether SDD, compared to traditional inpatient hospitalization, results in measurable differences in postoperative complication rates, readmission rates, and functional recovery among adults undergoing primary THA. Peer-reviewed studies published within the past five years were systematically reviewed and analyzed based on relevance to this clinical question. Outcomes of interest included postoperative complications, hospital readmissions, and early functional recovery measures. Additionally, evidence-based risk stratification tools and structured perioperative care pathways were examined to inform clinical implementation. Current evidence indicates that SDD following THA is a safe and effective alternative to inpatient hospitalization, demonstrating comparable complication and readmission rates and equivalent early functional outcomes. These findings suggest that SDD may enhance healthcare efficiency, reduce resource utilization, and improve patient satisfaction without compromising patient safety or recovery. Successful implementation requires appropriate patient selection and standardized perioperative protocols. Overall, this paradigm shift reflects an evolving emphasis on value-based, patient-centered orthopedic care.

The Interplay Between the Microbiome, Estrogen, and HPV Persistence: Implications for Probiotic-Based Cervical Cancer Prevention

Heidi Dew

Faculty Mentor: Cindy Rossi

Cervical cancer, primarily caused by persistent human papillomavirus (HPV) infection, remains a major global health burden. Standard treatments such as chemoradiation are often insufficient, prompting exploration of adjunctive therapies. Emerging evidence highlights the gut microbiome as a key modulator of HPV persistence and immune system function through two pathways central to cervical carcinogenesis. First, microbiome dysbiosis disrupts mucosal and systemic immune defenses, such as reduced *Lactobacillus* dominance and impaired antiviral responses, creating a susceptible state in which HPV replication and persistence are facilitated. Second, alterations in the gut microbiome increase circulating estrogen levels, which can promote estrogen-driven cancer progression. Recent studies demonstrate that probiotic supplementation can restore microbial equilibrium and support immune regulation. Both oral and vaginal administration of probiotics show promising results in improving immunity, decreasing viral load of HPV, and ultimately supporting cervical cancer therapy. Clinical studies demonstrate that *Lactobacillus* strains, especially *L. crispatus*, are associated with enhanced HPV clearance and reduced recurrence of bacterial vaginosis, which are leading risk factors in cervical cancer development. In the setting of an HPV infection, probiotic use improves the gut microbiome, downregulates estrogen production, and thereby hinders HPV proliferation and cancer risk. This paper reviews how probiotic modulation of the microbiome with *Lactobacillus* can strengthen immunity and promote HPV clearance, representing a promising adjunct to conventional cervical cancer therapy.

*Special Education and
Elementary Education – Oral
Presentations*

Teachers' Critical Reflections on Their Teaching Experiences with Students with Intersectional Identities Through a DisCrit Lens

Jillian Cyr and Daniele Ness
Faculty Mentor: Dr. Haerin Park

This empirical study is a reflective self-study in which we, two practicing educators, critically examine our teaching experiences with students who hold intersectional identities through a Disability Critical Race Theory (DisCrit) lens (Annamma et al., 2013). Each of us analyzed a critical instructional vignette from our own classroom involving a student with dis/abilities, using these moments as sites for inquiry into our own practice. We then conducted a critical reflection analysis to examine how our perceptions, assumptions, and the institutional practices and policies shape students' educational experiences. Guided by key tenets of DisCrit, we examine how ableism intersects with other social, cultural, and linguistic factors to influence how students are supported and interpreted in school settings. Our analysis focuses on power dynamics among multiple stakeholders, including teachers, families, administrators, and peers, and explores how behaviors often labeled as disengagement, defiance, or disruption may instead reflect contextual, communicative, or protective responses to systemic inequalities. Through this self-study, we aim to create a space for educators to critically examine unacknowledged assumptions, expectations, and routine practices (Larrivee, 2000), and to promote more equitable, trauma-informed, and justice-oriented approaches to supporting students with intersectional identities.

Reading Profiles and Intervention Practices for Students with Autism Spectrum Disorder: A Literature Review

Elena Amin
Faculty Mentor: Dr. Shuai Zhang

Diagnoses of school-aged students with Autism Spectrum Disorder (ASD) have been increasing in recent years. In Kindergarten through Grade 12 instructional settings, academic interventions, including reading intervention, have been inconsistently delivered using evidence-based approaches that align with structured literacy principles. In this research, the author reviews the existing literature on phonemic awareness, phonics, fluency, vocabulary, and reading comprehension profiles and interventions for students with ASD. These five components of reading, referred to as the Five Pillars of Reading instruction by the National Reading Panel, are discussed (NRP, 2000). Previous meta-analytic studies (et al., Brown et al., 2013) have shown that students with ASD demonstrate phonemic awareness, phonics, and fluency skills similar to their typically developing peers, although there is considerable variability across studies. However, prior research consistently suggests that students with ASD exhibit lower vocabulary and reading comprehension skills compared to their peers. The author proposes that inconsistent intervention quality contributes to the mixed-to-poor reading profiles observed among students with ASD. Drawing on structured literacy principles developed in recent years, the author outlines key instructional practices in phonemic awareness, phonics, reading fluency, vocabulary, and reading comprehension that align with these principles. Future research should investigate classroom practices addressing these components through teacher interviews and classroom observations. Professional development opportunities for special education teachers should focus on structured literacy principles to ensure that explicit and consistent instruction is provided to students with ASD.

***Special Education and
Elementary Education – Poster
Presentations***

Centering Culture and Strength: Reframing Support for African American Families of Children with Autism in Educational and Healthcare Settings

Ava Zawadzki

Faculty Mentor: Dr. Meredith McConnochie

This literature review examines the experiences of African American families of children with autism with the aim of synthesizing research on their experience within the educational and healthcare systems, identifying systemic inequities, and evaluating culturally responsive approaches that support family-school collaborations. Drawing on research from education, special education, family studies, sociology, and healthcare, this review analyzes empirical studies, theoretical literature, and primary texts to provide a comprehensive understanding of how race, culture, and systemic oppression shape the educational and healthcare experiences of African American families raising children with Autism Spectrum Disorder (ASD). Across the literature, three major themes emerge: (1) the historical and systemic marginalization of African American families overtime, (2) racial and cultural disparities in autism identification, services, and educational experiences, and (3) the critical role that culturally responsive, strength-based relationships hold within schools and healthcare settings. Collectively, these studies show that the lack of cultural understanding and implicit biases among educators and healthcare professionals contribute to delayed diagnoses, limited access to services, and strained family-school relationships. By synthesizing these findings, this review highlights the necessity of culturally responsive practices and strength-based perspectives in supporting American families of children with autism, offering implications for educator culture training, family engagement practices, and future research aimed at reducing racial inequalities in special education and healthcare systems.

Special Education Transition Services Over Time: Development, Timeline, and Reception

Vivian Pawloski

Faculty Mentor: Dr. Jennifer Kowitt

In special education, transition services are considered a results-oriented, collaborative process designed to help students receiving special education (i.e., students with Individualized Education Programs or IEPs) to move smoothly from public school education to post-school life. Transition services are critical for supporting students with disabilities in their shift from secondary education to adulthood and help prepare them for employment, postsecondary education, and independent living/community participation. This study examines the societal response and reception to key changes in federal legislation defining transition services in special education over time. Specifically, I describe the timeline and development of transition services and explore the response to these changes in the media and other publications (e.g., the New York Times). In addition, I analyze the changes in post-school outcome data as presented in studies such as the National Longitudinal Transition Study-2 (NLTS-2). My research is currently in progress. Research questions include: 1) what are transition services, what is their origin within the special education field, and how has the definition of this concept changed over time in federal legislation?; 2) what are the benefits of transition services to students, families, and society?; 3) what is the public and/or scholarly reception to these changes in federal legislation?; and, 4) what does the specific data tell us about the impact of these changes on the outcomes for students over time?

Welcoming School Communities for LGBTQ+ and Adoptive Parents

Kathleen Johndrow

Faculty Mentor: Dr. Meredith McConnochie

Drawing on research from education and child development, this literature review examines the experiences of families with LGBTQ+ and adoptive parents as they navigate discrimination and bias in historical and current contexts. By integrating findings from demographic data, legislative reports, LGBTQ histories, journal articles relating to families and diversity, this review provides a comprehensive understanding of how these populations have been marginalized and how schools can contribute to repairing the negative consequences. The review pays particular attention to how families' experiences with bias may manifest in the school environment, and how teachers and administrators can ensure that they are fully including LGBTQ+ and adoptive families in the school community. Across the literature, three major themes emerge: 1) recent legislation has codified harmful political discourse and cultural backlash against increased rights and recognition for LGBTQ individuals, 2) the identities of LGBTQ parents are intersectional and the population is not homogenous, and 3) the power for schools to significantly impact the experiences by LGBTQ and adoptive families. Collectively, the studies emphasize the need for teachers and school staff to be aware of explicit and implicit bias toward LGBTQ and/or adoptive parents and families, fact-based research, and the ethical mandate for educators to treat all families as equally valid and worthy. This review offers implications for teachers' daily practices that create more inclusive schools, including choices around curriculum and media content, as well as decisions for planning special events and administering school paperwork.

Uncovering Mathematical Experiences & Outlooks of Students with Autism: Designing an Intervention to Improve Their Overall Experiences, Thinking, Emotions, and Attitudes

Emily Belanger

Faculty Mentor: Dr. Sebnem Tekin

Students with disabilities often lack access to challenging and meaningful mathematics and are unfortunately placed in below-grade-level laced in below-grade level instruction (Kurtz et al., 2014). The high emphasis on memorization and procedures triggers uneasy or complicated feelings for students with disabilities, particularly students with Autism. The rationale behind this proposal is to identify effective instructional practices for students with Autism (e.g., UDL Math; Lambert, 2024) and how to improve these students' experiences and feelings in mathematics. The Research question I am proposing in this project is: How can the cyclical process of pre-and post-interviews between a targeted instructional task deepen teachers' understanding of learners while positively shaping student experiences and feelings? The research will employ an intervention informed by effective practices documented in the literature and participating students expressed needs in the pre-interview. I will conduct pre-post interviews with 10 elementary-aged students—chosen through convenience sampling. These interviews will focus on students' conceptual understanding, perceived challenges, and emotional responses to mathematics. Comparisons between initial and follow-up interviews will highlight potential changes and shifts associated with the intervention. Data will be analyzed using thematic analysis to identify shifts in student-expressed confidence, engagement, and conceptual clarity. My expected outcomes for this study aim to contribute to teacher education by illustrating how structured interviewing cycles can function as both an assessment-for-learning tool and a means of fostering

positive mathematical identities for students with disabilities. Findings may offer practical insights into integrating student voice, formative assessment, and responsive teaching within mathematics instruction.

Transition-focused Collaboration Between a Teacher Preparation Program and the Gengras Center: A Case Study on Impacts Across Stakeholders

Paige Fekete, Colleen Stringer, and Julianna Violette

Faculty Mentor: Dr. Jennifer Kowitt

Transition helps students with disabilities move from high school to adult life. This includes planning for education or training, employment, independent living, and participation in the community. Transition planning is important because it promotes independence, improves employment and education outcomes, and prepares students for life after school. It is important for teachers at every grade level to understand transition because preparing students for life after school does not begin in high school. When teachers intentionally build independence, confidence, and real-world skills early on, it creates a smoother path to adulthood and allows IEP goals to grow with the student over time. In this project, seniors in the capstone for Special Education majors collaborate with the Gengras Center and their students to create a professional clothing closet that future education students can access and use in field experiences. The university students will work alongside not only the Gengras students, but their staff as well. This opportunity allows for the University students to learn real-world classroom demands, problem solving, and modifying/accommodating tasks. The Gengras students are learning social skills and vocational practices. Through this qualitative study, we will describe this unique collaboration within the context of best practices in transition planning. We will outline methods for identifying and applying evidence-based practices to support student work in the vocational setting and share the specific practices that were identified and how they were used. Finally, we will analyze reflections from university students and teachers/paraeducators at the school to understand the impacts of this collaboration.

Accessing Nonverbal Students' Experiences and Attitudes towards Mathematics: Designing an Adaptive Interview Protocol for Student Input

Meredith DeNegris

Faculty Mentor: Dr. Sebnem Tekin

Students with disabilities often have limited access to rigorous, meaningful mathematics and are disproportionately placed in below-grade-level, memorization-focused instruction (Kurz et al., 2014). Although efforts to improve instructional quality (e.g., UDL Math (Lambert, 2024)) and research showing evidence of how intentional designs and scaffolding can increase the verbal and nonverbal engagement of students with autism (Lambert et al., 2020) are promising, further work is needed to challenge deficit-oriented assumptions and improve educators' understanding of nonverbal students with autism. Empathy and student-thinking interviews are widely used formative assessment strategies in general education to elicit learners' perspectives; however, such approaches are not accessible for nonverbal students with autism. Despite the availability of alternative communication strategies (e.g., visual exchanges), little research has examined how to systematically capture the insights of nonverbal students with autism and their experiences with mathematics. Given that behavior constitutes a form of communication, we aim to design an adaptive interview protocol to document and uncover these students' experiences and attitudes towards mathematics. To design the protocol, we will (a) review interview methodologies developed for nonverbal populations (e.g., hard-of-hearing students) and (b) interview students with autism to examine their perceptions of mathematics. Our research question is:

What does an adaptive interview protocol documenting students' nonverbal experiences and attitudes toward mathematics look like? Motivated by the first author's professional experiences with nonverbal learners and a commitment to asset-oriented perspectives, this study aims to expand methodological tools and contribute to efforts that challenge deficit narratives in autism and mathematics education.

First Year Seminar - Poster Presentations

The Gift of Giving: The University of Saint Joseph Giving Back to The School for Young Children and Beyond

Hajrah Arshad, Lacy Brickey, Vloria Choku, Maddy Evans, Makayla Hauck, Hailie Henry, Landon Lapointe, Bintu Mansaray, Addison Martin, Nicole McDonald, Leannie Mills, Amanda Noel, Sara Omar, Amy Pelletier, Nick Prosterman, Aurpa Shamsul, Miranda Shehu, and Cody

Tran

Faculty Mentor: Dr. Sheila Garilli

Our FYS II compassionate project will help others, driven by empathy, including creating greeting cards and volunteering at the School for Young Children (SYC). The second part of our project will be creating homemade greeting cards to lift others, spreading kindness and compassion while reminding recipients that they are seen, valued, and not alone. At USJ, by carrying on the tradition the Sisters of Mercy began, service is integrated to help first-year students learn the value of caring for communities and neighbors. Our goals are to have meaningful connections with others and make lasting connections. FYS II students continue to make a lasting impact by giving back to the school for young children and leading our actions with our school mission in mind while recognizing others' needs and showing empathy. We offer our support selflessly, expecting nothing in return. Our heartfelt greeting cards will bring immense joy to those who need it. Our project will include volunteering three hours at the school for young children and each student will create twenty homemade greeting cards. Our outcome will be that students will gain more experience in a school environment after completing their volunteer hours, show greater consideration for people's lives, and feel fulfillment from doing good deeds. For us, small gestures are big gestures through our compassionate service experiences, helping us to grow personally by becoming more mindful of others' needs and practicing empathy in volunteering as well as our everyday lives.

Leveraging Data Science for Good

Joseph Andino, Anneliese Beauchene, Liam Budz, Lisa Dahbour, Joshua Desyr, Deana Khatib, Jordan Khim, Sebastian Lago, Diego Larios, Sierra Messier, Nora Murdzek, Raajeswari Mutukumar, Henry Pennell, Gabriella Piendak, Emmanuela Portela, Sophia Roy, Connor Southall, and Stephanie Vilela

Faculty Mentor: Jillian Swencionis and Samatha Curtis

Many communities across the nation face safety and accessibility challenges, including unsafe pedestrian walkways and inaccessible resources for older residents. Together, age-friendly communities and vision zero have a common goal: creating a more accessible and safer community which supports independence and well-being for residents of all ages. We are working with the Town of West Hartford on two projects that aim to improve livability, safety, and welfare of our local community. The first project focuses on road safety. Vision Zero has been implemented in many communities to create safer infrastructure, understand risk factors, and highlight areas for improvement. Our second project aims at inclusivity to our elder resident community. Age friendly communities are designed to support older adults in remaining active, independent, and socially connected. These communities promote accessibility, safety, and inclusion by adapting services and environments to meet age-related needs. Both projects collect data from West Hartford residents about their choices, social behaviors, and beliefs related to community. Team "Vision Zero" will develop dashboards using crash data, observe traffic

patterns and pedestrian behavior in designed areas, and spread awareness by gaining support for the safe driver pledge. Team "Age-Friendly Communities" will administer AARP's community survey in West Hartford to better understand challenges faced by older residents. They will also talk with residents at the McAuley home to get their input on plans for the West Hartford community. Our project aims to assist older adults within the community, improve transportation access for the elderly population, and reduce road fatalities to enhance safety for all residents, thereby fostering a more welcoming and secure Hartford community.

Using a Community Garden to Make Connections Beyond the School Walls

Christopher Adadjo, Emily Allen, Meerab Chaudhry, Lucy Crisuolo, Luca Giannelli, Michael Kennedy, Natalie Khong, Juliana Meglio, Jimena Orozco, Isabella Peruccio, Ruth Peters, Mikayla Richmond, Jessica Walsh, and Julia Wysocka
Faculty Mentor: Christopher Fox

With constant change and time continuing to move forward, we forget how important it is to hold onto our past. As “grown-ups,” we want to remember it. We hope this service-learning project will provide elementary-aged students an experience that is memorable enough to sustain throughout their lives. The Sisters of Mercy’s Five Critical Concerns inspired our service-learning project. We chose to focus on the critical concern of Earth. This critical concern directly supports our efforts to provide an authentic learning experience; both elementary and college students, by creating a community garden. A community garden not only supports student, staff and family engagement, but also elevates the curriculum. Herbert W. Broda, author of *Moving the Classroom Outdoors: Schoolyard-Enhanced Learning in Action* states, involving families and the community is “critical to help parents see the educational benefits of outdoor instruction... and the value of outdoor learning and its connection to academic content.” Creating this connection and emphasizing benefits of a community garden will create the first layer of sustainable service learning that will grow each year. Our goal is to enhance an existing garden into a community garden. We will work with Pre-K through Grade 5 students at the CREC Academy of Aerospace and Engineering Elementary School in Rocky Hill, CT. We will design a blueprint of a “dream garden” based on current research. We will survey students about their vision of a community garden. This blueprint and input from students will allow us to create materials to transform this ordinary garden into one that serves our school community. 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 various professions after graduation.

Normalizing the Conversation Around Mental Health: A Student-Led Campus Wellness Fair to Reduce Stigma and Enhance Resource Awareness

Hailey Beebe, Grace Browne, Ruby Dasgupta, Alexia Diaz, Isabella Dougall, Halle Fontaine, Danica Galpin, Reagan Heafey-De Angelis, Julie Iwama, Sebastian Kraszewski, Kate Landry, Gianna Martocchio, Isabella Rodriguez, Victoria Ruggles, Amari Simpson, Ekamnoor Singh, Madelyn Stoddard, Ethen Thomas, and Abby Young
Faculty Mentor: Dr. Laura Turner

Approximately one in five adults in the United States experiences a mental illness each year, and college students are particularly affected, with national data suggesting that more than 70%

experience psychological distress and more than 40% report severe symptoms of depression, anxiety, or other mental health concerns. Despite this high prevalence, stigma continues to deter many students from seeking help, forcing them to navigate multiple and diverse stressors without sufficient support or knowledge of available campus resources. In response to this need, we will be hosting a student-led Mental Health Fair at USJ to raise awareness, reduce stigma, and connect students with supportive resources. Held during peak lunch hours in the McGovern Lounge to maximize engagement, the event will feature interactive stations designed to promote education, connection, and coping. Examples of planned activities include a stress-relief activity table, coping skills goodie bags, an affirmation station, opportunities to view videos of other college students sharing their lived experience with mental health, and an informational resource table highlighting campus services and community supports. Students will actively participate in and facilitate these stations alongside their peers, fostering a sense of shared experience and mutual support. The overarching goal of the event is to create a visible, inclusive space where students feel empowered to learn about mental health, access resources, and recognize that they are not alone in their struggles. By combining education, engagement, and peer connection, this initiative seeks to normalize conversations about mental health and strengthen the culture of wellness across campus.

STEM-REACHS: How We Help High School Students Explore College and STEM Careers

Olyvia Adams, Catherine Chittam, Brooke Gallop, Kathleen Henriques, Kyle Januszewski, Mackenzie Keane, Marley Krebs, Christopher Morris, Isaac Nguyen, Natalia Patinha, Emma Phillips, Kaitlyn Plourde, Saryeliz Romero, Kaylie Vaccaro, Anthony Valone, Elizabeth Winther, and Christopher Yang

Faculty Mentors: Dr. Christine Alevras and Dr. Irene Reed

The transition to college is challenging for incoming freshmen because many aspects of their lives are changing. It can feel overwhelming to have so many new experiences at once such as a new social community, place to live, teachers, and school system. This is why introducing high school students to these experiences before they come to college is so important. STEM-REACHS stands for “STEM Research, Education, And Careers for High School Students,” representing our mission to help incoming college students understand and investigate careers in STEM and learn about college life. Current USJ freshmen and upperclassmen design and lead workshops for high school juniors and seniors who are applying to college. Specifically, USJ FYS II students will collaborate to plan and implement these workshops by supervising lab activities, leading icebreakers, and answering questions about college life. The workshops will host approximately 60 students from East Hartford High School interested in health science, biology, and environmental science to participate in a campus tour, hands-on lab activities, and a question-and-answer session with current USJ students. This project exposes prospective students to STEM fields and careers while providing a supportive environment where they can build independence, complex thinking skills, academic responsibility, and time management. The overall goal of this project is to support high school students as they learn about college life, explore academic interests, and plan their futures.

Destigmatizing Disability through Compassionate Collaboration and Community Building

Cristiano Bernardo, Ayla Ciccarelli, Jase Cronin, Rodney Desir, Carsten Donovan, Caleb Greenberg, Abigail Hubbard, Macie Krawciw, Sarah Landry, Shelby Luther, Michael McCormack, Saoirse Milikowski, Riley Mullin, Eleanie Negron, Joanna Phothisaeng, Brady Stevens, Maxwell VanHooser, and Jacob Wang
Faculty Mentor: Dr. Derek Dube

According to the Center for Disease Control and Prevention, one in four adults in the United States have a disability, yet we live in a society where accessibility and connection for all people is not always prioritized. Indeed, individuals with disabilities are more likely to experience loneliness, obesity, mental health crises, and additional challenges. On USJ's campus, the Gengras Center is a state-approved school for individuals with disabilities ranging from ages 5-22. Our FYS II class will collaborate with the Gengras Center to destigmatize disability through planning the annual spring festival, with the goals of bringing the USJ community together and helping fund the Gengras Center as well as community partners Hands on Hartford and Dog Star Rescue. To accomplish our goals, we will build connection with the Gengras Center through group and individual visits throughout the semester. Additionally, we will work in small groups focused on specific goals for the Gengras-USJ Spring Festival, including marketing and publicity, fundraising and donations, and festival event and activity planning. The Spring Festival will be held on USJ's campus on April 24th, 2026, and designed to build connection across the college, Gengras Center, School for Young Children, and local community. Specifically, our work also seeks to fundraise for the Gengras Center, Hands-on-Hartford (a non-profit that supports individuals and families in the greater Hartford area with financial needs), and Dog Star Rescue (a non-profit that seeks to place dogs in permanent homes improving their lives and those of their owners).

Our Stories: Intergenerational Story Sharing with Our Partners at The McAuley

Nadine Abunasra, Antonio Boutot, Will Carmody, Cam Decastro, Mara Fernance, Mikaela Fullam, Keith Haecker, Kaitlyn Hickey, Will Keegan, Ella Kulas, Melina Marangoudakis, Taylor Messina, Samantha Motta, Ian Porter, Mary Porto, Gianna Wells, and Taylor Williams
Faculty Mentor: Michelle Confessore

Intergenerational storytelling fosters meaningful connections between young adults and older adults, bridging generational divides and promoting mutual understanding (Kaplan, 2002). This six-week program connects college students with older adults in a senior living community for respectfully structured and informal storytelling sessions that break down generational stereotypes and foster meaningful, compassionate community. Through shared narratives, participants explore themes of identity, resilience, and cultural heritage, enhancing empathy, communication skills, and social cohesion (Bohlmeijer et al., 2011). Research suggests that intergenerational programs benefit both age groups by reducing ageism, increasing 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).

How Sport Can Strengthen Community at the University of Saint Joseph

Addison Aubin, Samuel Balducci, Lizmarie Cora, Ty Dammling, Ava DiFiore, Nicholette Forte, Alexa Haber, Matthew Hitchcock, Jason Jubrey, Kailey Krusewski, Emily Mancini, Hunter McWeeney, Mia Pizarro, Ella Schroeder, Kenneth Soto, Savannah Stanco, and Justin Victorin
Faculty Mentor: Kelly LeDoux

Sports have long been recognized as a powerful tool for cultivating community. Within the University of Saint Joseph community, students, faculty, and staff often operate within their own academic and professional circles, leaving limited opportunities for informal cross-campus engagement. Creating intentional spaces for collaborative interaction beyond the classroom can strengthen belonging and community. In response, FYS II students will organize and host a USJ Community Flag Football Event designed to bridge campus groups and enhance school-wide involvement. Students enrolled in FYS II are responsible for coordinating key aspects of the event, including promotional strategy, volunteer coordination, event operations, risk planning, and sponsorship development. The event is intentionally structured to encourage broad participation regardless of athletic experience while fostering teamwork and campus pride. By bringing together members of the USJ community in a shared experience, this initiative demonstrates how sports can break down barriers, build relationships, and create lasting impact across campus while providing these students with hands-on experience in collaborative leadership and event management.

The Case of the Stolen Mace! Gamifying the First Year College Experience to Support Student Success

Erica Allen, Ethan Bish, Nathan Brewer, Kayla Buttaro, Bianca Chanduvi, Antonio Cruz, Thomas Densford, Mbaye Babacar Gadiaga, Sarah Gionfriddo, Sawyer Gravel, Mohammad Kulaib, Sofia OConnell, Addyson Rogers, and Ibrahim Sidik
Faculty Mentor: Dr. Derek Dube

Nationally, over 30% of students do not return to their institutions after their first-year and approximately 39% of students do not graduate within six years. At USJ, around 20% of students do not return for their second-year and 35% do not graduate within six years. Research shows that a critical factor for student success in college is a sense of belonging. Further, employers indicate that skills such as teamwork, problem-solving, communication, time management, and adaptability are key indicators of success in the workplace. Studies show that serious game activities can lead to improvements in these aspects and support relationship building that creates a sense of belonging. In 2025, USJ's first-year students participated in the "Art Heist", an escape room-styled competitive activity within their FYS courses. Survey feedback from the students indicated the "Art Heist" was successful, but could be enhanced. Our FYSII class focused on creating a competitive activity that 2026 and future first-year students at USJ can participate in to support their success in college and future careers. To do this, we worked in small groups responsible for creating and testing various stages, puzzles, and games that will constitute this new activity titled "The Case of the Stolen Mace!", leveraging our own experience, the survey

feedback, and focused on creating connections in the activity to Connecticut, USJ, and the college experience. Through this service work, we anticipate supporting future USJ students and being a contributing factor that increases retention and graduation rates and their ability to have successful careers.