

**SYMPOSIUM**

UNIVERSITY OF  
SAINT JOSEPH  
CONNECTICUT

**USJ**

**DAY**



1

# **28<sup>th</sup> Annual Symposium Day Abstracts**

**April 17, 2024**



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

# Table of Contents

| Discipline – Type of Presentation                        | Page Number |
|----------------------------------------------------------|-------------|
| Biology – Oral Presentations .....                       | 3           |
| Biology – Poster Presentations .....                     | 6           |
| Business Administration – Oral Presentations.....        | 11          |
| Chemistry – Oral Presentations .....                     | 13          |
| Chemistry – Poster Presentations.....                    | 18          |
| Child Study – Oral Presentation.....                     | 21          |
| Child Study – Poster Presentations .....                 | 23          |
| Counseling – Oral Presentation .....                     | 27          |
| History – Oral Presentations.....                        | 29          |
| History – Poster Presentation.....                       | 32          |
| Nursing – Oral Presentations.....                        | 34          |
| Nursing – Poster Presentations .....                     | 40          |
| Psychology – Oral Presentations .....                    | 57          |
| Psychology – Poster Presentations .....                  | 60          |
| Pharmacy – Oral Presentations .....                      | 62          |
| Pharmacy – Poster Presentations .....                    | 65          |
| Physician Assistant Studies – Poster Presentations ..... | 69          |
| Public Health – Oral Presentation.....                   | 76          |
| First Year Seminar – Poster Presentations .....          | 78          |

**Title**  
*Presenters*  
*Faculty Advisor*  
  
 Abstract



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Biology – Oral Presentations*

## **Antimicrobial Resistance in Gram-Negative Bacteria in the Scantic River: Impacts of the COVID-19 Pandemic**

*Hannah Fitzgerald*

*Faculty Advisor: Derek Dube*

Infection-related diseases lead to over 10 million deaths annually, a significant portion of which are associated with bacterial pathogens. Antimicrobial resistance (AMR) in bacterial pathogens limits the effectiveness of current treatments. A major contributor to AMR is the excessive use of antimicrobial disinfectant agents, which was enhanced during the COVID-19 pandemic. When overused or disposed of improperly, these agents can enter the environment, specifically the water system. In this study, we conducted monthly water surveillance to determine bacteria levels and species present in the Scantic River, as well as levels of antimicrobial agents using chlorine, peroxide, quaternary ammonium compounds (QAC), and peracetic acid test strips. Thereafter, we tested the growth kinetics of selected gram-negative bacteria from the river in the presence of these antimicrobial agents at various concentrations by OD600 spectrophotometry. Initial tests have been done on *Acinetobacter baumannii* isolated from the Scantic River in September of 2023. *A. baumannii* began to show growth at concentrations of 151.52 mg/L bleach (chlorine), 39.59 mg/L hydrogen peroxide, 2.20 mg/L cetyl trimethylammonium chloride (QAC) and 32.91 mg/L peracetic acid, but was unable to grow under any tested alkylbenzyltrimethylammonium chloride (QAC) concentrations. Based on these results, we plan to conduct further testing with additional gram-negative bacteria from the river isolated before, during, and after the COVID-19 pandemic. If a correlation is found between the chemical disinfectant's effectiveness and when it was collected relative to the COVID-19 pandemic, this would justify continuing studies on AMR as well as reevaluating the use of common chemical disinfectants.

## **Understanding the Role of GPR30 in Endometrial Cancer**

*Syed Ali*

*Faculty Advisor: Irene Reed*

Endometrial cancer (EC) is the most common gynecological cancer in women and is clinically classified as Type I or Type II. Type I EC expresses the estrogen receptor ER $\alpha$ , while Type II EC does not and is associated with a poorer prognosis. However, we found that both Type I (RL95-2) and Type II (KLE) EC cells respond to estrogen, suggesting that an alternative receptor may be responsible for estrogen signaling in Type II EC. Previous studies have shown that GPR30 can also modulate the physiological response to estrogen. GPR30 has also been implicated in epithelial-mesenchymal transition (EMT), which facilitates metastasis by inducing changes in cell characteristics. In this study, it was confirmed that KLE cells responded to estrogen and expressed GPR30. Inhibition of GPR30 in KLE cells decreased cell migration and viability. Furthermore, KLE cells expressed increased levels of vimentin and Snail compared to RL95-2 cells, which are associated with a mesenchymal phenotype. To demonstrate a direct connection between GPR30 and EMT, RL95-2 cells were treated with TGF $\beta$  to induce EMT, and levels of GPR30 increased. Understanding the role of GPR30 in Type II EC could lead to expanded therapy options, particularly for patients at risk for metastatic disease.

## **Investigating the Effect of Flavonoids on CYP1 Signaling Pathways in Breast and Endometrial Cancer**

*Sarah Sinsigalli*

*Faculty Advisor: Irene Reed*

Breast and endometrial cancer both pose significant health risks to women, prompting exploration into potential therapeutic avenues. Studies have shown that flavonoids, natural substances found in various foods, have been shown to exhibit anti-cancer properties. Flavonoids can signal through cytochrome P450 1 (CYP1) proteins that aid in metabolizing compounds involved in cancer progression. Although both breast and endometrial cancer rank among the most common female cancers, endometrial cancer remains relatively less studied compared to breast cancer. Conducting comparative research between high- and low-grade breast and endometrial cancer, which share clinical features, alongside investigating the effects of flavonoids on CYP1 proteins, could significantly contribute to bridging the knowledge gap and potentially lead to new treatment and preventative measures. First, CYP1 mRNA expression was verified in high- and low-grade breast and endometrial cancer cell lines using PCR. Cell viability assays were then conducted to test the effect of the flavonoid quercetin at various concentrations over 24 to 48 hours. The results revealed a significant decrease in cell viability following treatment with quercetin, with the most pronounced effects observed in the high-grade cell lines. This suggests that quercetin may have potent anti-cancer properties, particularly against aggressive forms of breast and endometrial cancer. Further research is needed to elucidate the mechanisms underlying the observed effects of flavonoids on cell viability, for instance by measuring CYP1 levels following treatment with quercetin or other flavonoid compounds. This investigation shows potential for identifying new therapeutic treatment for breast and endometrial cancer management.

## **Incidence of Long-COVID Associated Complications. Does Gender Impact It?**

*Katherine Sidwell*

*Faculty Advisor: Dalia Giedrimiene*

SARS-COVID-19 is a deadly disease that wreaked havoc on communities across the world. It is a respiratory virus that, in severe cases, can lead to respiratory or multi-system failure and death. Until recently, very little was known about the long-term effects and gender related differences of COVID-19. Literature and case studies have emerged about a condition called post-acute sequelae of COVID-19, or long-COVID. This occurs when symptoms of COVID continue for longer than expected or new symptoms appear after recovery due to the infection. Emerging research is starting to recognize how this presentation varies between men and women. Despite being less susceptible to severe COVID and hospitalization, a female COVID patient is more likely to be diagnosed with long COVID. A systematic review was done to analyze the literature and determine the risk of complications in long-COVID in relation to gender. Eight studies were chosen to be reviewed. The research confirmed that female long-COVID patients have a statistically significant increase in the risk of adverse events. Even after controlling for demographics and lifestyle factors, the women with long-COVID were at a higher risk than male patients. The severity of the illness and the need for hospitalization or ICU care compounded this. This data is important for clinicians in identifying long-COVID in their patients in order to achieve better outcomes, earlier diagnosis and more successful management of long-COVID



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Biology – Poster Presentations*

## **The Epigenetic Impact of Coronavirus NL-63 Infection**

*Stamatoula Kanellopoulos  
Faculty Advisor: Derek Dube*

While microscopically small, viruses have enormous impacts on human life, as evidenced through the COVID-19 pandemic. Viruses do this by infecting host cells and subverting their processes, to the benefit of viral replication. Some viruses even have the ability to alter the expression of their host's genes, by turning genes off or on through epigenetic changes such as histone acetylation and DNA methylation. NL-63 is a coronavirus that is less severe yet is foundationally related to the recent virus that caused COVID-19, SARS-CoV-2. In this study, NL-63 was examined to see how it affects the epigenome of cells it infects. This may help to better understand how COVID-19 affects host DNA after infection, and potentially shed light on aspects of "Long COVID". It was hypothesized that DNA methylation will decrease, and histone acetylation will increase with infection. To test this, LLC-MK2 cells were infected with the NL-63 virus for various lengths of time. The cellular DNA was isolated and DNA methylation status was analyzed to determine if there are changes in these levels with and during infection. Future experiments will be done to test histone acetylation levels as well. Knowing if and how NL-63 alters the epigenome, may speak more broadly to epigenetic changes induced by coronaviruses in general, like SARS-CoV-2, and could be an important steppingstone in understanding the mechanisms of disease and potential treatments.

## **The Conte Corner Project: Exhibit Enhancement Collaboration with the US Fish and Wildlife Service and Cabela's (East Hartford)**

*Crista Fiala, Chase Belisle, Sophia Penisse, & Amanda Hirst  
Faculty Advisor: Kirsten Martin*

The Conte Corner project is a collaboration between the US Fish and Wildlife Service, Cabela's, and USJ's Environmental Science program. The Conte Corner is a display space within the East Hartford, CT Cabela's store that highlights the biological and historical aspects of the Silvio O. Conte National Fish and Wildlife Refuge. Currently, the Conte Corner is located within the larger Natural History display area of the store, which features a variety of landscape displays, taxidermy, and minimal signage. A second display area in the store is an aquarium tunnel that features fish species found within the watershed. The overall purpose of the project is to develop concepts for educational enhancements (digital, visual, auditory, tactile), and informative scientific (and regionally appropriate) aesthetic additions to the two exhibit spaces.

## **Scantic River Stream Team: A Citizen Science Collaboration with the Somers High School Environmental Team**

*Somers High School  
Faculty Advisor: Kirsten Martin*

The Scantic River Stream Team is a collaborative project between Somers High School (Somers, CT), the Scantic River Watershed Association, and the USJ Environmental Science program. Beginning in spring of 2023, students and teachers from the Somers High School Environmental Team adopted a tributary of the Scantic River that runs through the school campus. Students received training and equipment from Dr. Kirsten Martin, then collected and tested water samples during the 2023-2024 academic year. This project represents the first time SHS students incorporated field-based environmental testing into their program, and the data was incorporated into the annual State of the Scantic report published by the Scantic River Watershed Association. The project received additional grant funding this year, and the environmental testing will be expanded to include other variables.

## **Determining Signaling Mechanisms Used by CXCL5 to Promote Epithelial-Mesenchymal Transition in Pancreatic Cancer**

*Jacob Krzeminski  
Faculty Advisor: Irene Reed*

Pancreatic cancer is a deadly cancer with an average 5-year mortality rate of 80%. Yet, the development of pancreatic cancer and how it advances to metastatic disease is not well understood. Once pancreatic cancer becomes metastatic, the 5-year survival rate drops from 20% to 3%. Epithelial-mesenchymal transition, better known as EMT, is a process signified by the transition of epithelial cells into mesenchymal cells, which become more invasive and promote metastasis. CXCL5 is a chemokine that binds to the receptor CXCR2, which is associated with EMT in multiple cancers such as colon, nasopharyngeal, and liver cancer. Overexpression of CXCL5 is linked to poor prognosis in pancreatic cancer, but the role of CXCL5 in EMT and the promotion of metastatic disease has not been investigated. The hypothesized connection between CXCL5 and EMT is through the PI3K/Akt or the ERK signaling pathways, which regulate the transcription factor Snail to promote EMT. The expression of CXCL5 mRNA has been confirmed in three pancreatic cancer cell lines via PCR, ASPC-1, HPAF, & PANC-1, and we are working to confirm CXCR2 expression in these cell lines. Future directions include using western blotting or immunofluorescence to confirm the presence of CXCL5 and CXCR2 proteins within the cells directly. Further plans also include looking at proteins within the PI3K/Akt and ERK pathways in these cell lines to determine which pathway CXCL5/CXCR2 are using to promote EMT. Understanding and learning how metastatic disease develops is the first step in a cure to this detrimental disease.

## **Learning and Memory in *Drosophila Melanogaster***

*Nicholas Pulcini*

*Faculty Advisor: Jesse Balaban-Feld*

When holometabolous insects like butterflies, moths, bees, and flies undergo metamorphosis from the larvae to adult phase, significant morphological changes occur. Currently, it is unknown how memories may be retained through metamorphosis in these organisms. In this study, we assess the ability for *D. melanogaster* (fruit flies) to learn as larvae and retain information as adults following metamorphosis. *D. melanogaster* larvae were trained on plates of agar; with one half of the plate containing agar mixed with apple juice and the other half containing agar and grape juice. For the larvae training, one side of the agar plate also contained quinine, a bitter additive meant to allow *D. melanogaster* larvae to learn to associate one of the juices (grape or apple) with the aversive chemical. Following training, larvae were allowed to metamorphose into adults. Adults were then tested for their preference for either apple or grape agar using the same type of agar plate containing half grape and half apple juices. During the adult testing phase, neither the grape nor apple side of the agar plate contained quinine. Data for this study is still under analysis and will quantify the behavior of both the larvae and adult flies. The data yet to be collected has the potential to determine how strongly learning as a larva may affect adult behaviors in *D. melanogaster*.

## **The Impact of RSV Infection on Calnexin and Calreticulin, Members of the Peptide Loading Complex**

*Paraskevi Kousournas and Maya Tomko*

*Faculty Advisor: Chadene Tremaglio*

Respiratory Syncytial Virus (RSV) is one of the most common causes of lower respiratory tract infections for both infants and the elderly community, causing 60,000 to 120,000 hospitalizations and deaths for those 65 years of age or older and 58,000 to 80,000 for infants annually in the US. On the cellular level, cells respond to viral infections by processing viral antigens via the peptide loading complex (PLC) and presenting them to immune cells on MHC-class I platforms. The PLC is composed of key proteins such as calnexin (CanX) and calreticulin (CaR), and other viruses have been shown to target these proteins to evade the immune response. Therefore, in this study we wanted to determine whether RSV alters the expression of CanX and CaR. Hep-2 cells were infected with RSV for 24 and 48 hours. Protein lysates were harvested and western blot was performed to determine whether CanX and CaR protein expression was altered by infection. CanX was downregulated during RSV infection at 24 hours post infection (hpi), as previously demonstrated. Conversely, CaR was found to be upregulated at 24 hpi. Expression of both proteins appears to return to control levels at 48 hpi. Immunofluorescence microscopy demonstrated upregulation of MHC-I on the surface of cells. Therefore, it can be concluded that RSV alters expression of proteins involved in the PLC and antigen presentation. Future studies will look at protein expression during early time points in expression, and qPCR will be performed to determine whether PLC gene expression is also altered.

# **Pharmacogenomic Considerations for the Improved Treatment of Depressive Disorders**

*Parker Jack*

*Faculty Advisor: Dalia Giedrimiene*

Even in the modern era of healthcare, with telehealth and electronic charting, some areas of healthcare remain slow-moving without significant changes to diagnostic testing and treatment. As symptoms and their associating diagnoses are increasingly understood, increasingly more etiological implications point towards genetic benefactors as some of the leading causes of psychiatric illness. With pharmacologic intervention as the status quo for treatment of psychiatric symptom presentation, including depressive disorders, pharmacokinetic and pharmacodynamic specificities between differing medications thread the needle between remission and inpatient admission. Prevention of readmission and a lasting treatment towards suppression of symptoms can be improved with the many available diagnostic breakthroughs that provide a never-before-seen perspective of specific medication functions. New understandings of the genetic linkage and individual responses allow for even further insight into optimization of psychopharmacological treatment methods. If more genetic counseling on patients experiencing treatment-resistance was performed, their individual genetic composition of target proteins relevant to their individual disorders would allow for a fine-tuned medication regimen. This genetic insight provides a solution to treatment that would otherwise take years of trial-and-error to potentially dial in, effectively treating a disorder with higher acuity in less time than ever perceived before in clinical practice



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

# *Business Administration – Oral Presentations*

## **Turf Fields and Sports Injuries in College Athletics**

*Samuel Barbetti*

*Faculty Advisor: Rammi Hazzaa*

In recent years, there has been growing concern and scrutiny surrounding the incidence and severity of sports injuries occurring on turf fields, prompting a re-evaluation of the safety and impact of these surfaces on athletes' physical health. This research investigates the relationship between turf fields and sports injuries, with a primary focus on how these surfaces affect players' physical well-being. The hypothesis driving this study is that turf fields contribute to a higher incidence of sports-related injuries compared to natural grass fields. The methodology involves a thorough review of existing literature, including academic journals, medical studies, and sports injury databases, to gather relevant evidence regarding injury types, severity, and frequency on both turf and natural grass surfaces. Initial findings suggest that turf fields may indeed pose a greater risk of certain types of injuries, such as ACL tears and ankle sprains, primarily in part due to their firmer and less forgiving playing surface. However, research also acknowledges conflicting evidence and the need for further investigation into specific factors influencing injury rates, such as field maintenance, player biomechanics, and sport-specific demands. Overall, this presentation aims to contribute to our understanding of sports field safety by providing insights into the relationship between turf surfaces and player injuries. The conclusions drawn from this research have potential future implications for field design, maintenance practices, and athlete training protocols aimed at mitigating injury risks associated with turf fields.

## **Examining Social Media Activity and Engagement with Fans of the Women's National Basketball Association**

*Kerry Turecek*

*Faculty Advisor: Rammi Hazzaa*

The increase in popularity of women's professional sports has attracted a growing number of fans. Sport organizations' use of social media has become a critical strategy in the coverage and promotion of sport. Specifically, Instagram and TikTok are two of the most popular social media platforms that have been used as key tools in connecting players, teams, and fans to one another. Although research has been done on the success of social media campaigns for men's professional sports, little is known about the impact in women's professional sports. To better explore reasons for why fans engage with their favorite Women's National Basketball Association (WNBA) teams and players, this study attempts to examine the social media activity and engagement with fans of the WNBA. In order to address this purpose, this research project will obtain public information through the WNBA's social media accounts and examine the content from both TikTok and Instagram. The findings of this project will shed light on the ways the WNBA engages their fans through the use of these platforms. Further practical recommendations will be covered in the presentation.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Chemistry – Oral Presentations*

## **Conformer Analysis of SGLT2 Binding Molecules**

*Jarrit Romanik*

*Faculty Advisor: Asher Brandt*

Type 2 Diabetes is a disease that is on the rise in the United States, with around 3,000,000 cases per year. Diabetes Mellitus Type 2 occurs when the body can't properly use glucose, whether that is due to the body becoming resistant to insulin, or the body not making enough insulin. Diabetes Mellitus Type 2 can cause many harmful side effects if left untreated such as Cardiovascular Conditions, Nerve damage, and Kidney damage. Computation chemistry can be employed to help combat this growing illness. By specifically targeting the G-Protein Coupled Receptor, Sodium Glucose Cotransporter Type 2 (SGLT2), which is located in the Proximal Convolute Tubule (PCT), the first place in which blood filtrates (soon to be urine) pass through, within the nephron. In an active state, SGLT2 helps the body retain glucose and sodium bound to be excreted. Inhibitors of this protein block glucose and sodium from re-entering the bloodstream and forcing them to be excreted by the body. This release of glucose from the bloodstream helps the patient to manage their Blood Sugar levels better, making managing their Diabetes Mellitus Type 2 symptoms much easier to manage. Using computational methods and preliminary research, we found 10 molecules that bind to and inhibit SGLT2. Currently, we're running those molecules and their stereochemical varieties to understand their conformational energy, so we can explain how effective they are at inhibiting the receptor's active site.

## **Using an AI Generated Structure of the 5-HT<sub>2A</sub> Receptor to Find Novel Psychedelics**

*Isabelle Schoenborn*

*Faculty Advisor: Asher Brandt*

The serotonin 2A receptor (5-HT<sub>2A</sub>) is a receptor localized to the brain that has been linked to the expression of mood, learning, and cognition. Research has shown promising results that hallucinogenic agonists of this receptor such as psilocin and LSD can be used to treat mental health concerns including depression, schizophrenia, and post-traumatic stress disorder (PTSD). This study aimed to identify new molecules that could be used to treat these mental health concerns. Prior to 2020's DeepMind project, a protein's three-dimensional folding pattern was extremely challenging to predict. This DeepMind project used AI to predict the folding pattern of proteins given their primary sequence. In this study, an AI-generated protein structure of the 5-HT<sub>2A</sub> receptor and molecular docking software were used to analyze twelve million molecules' binding affinity to the protein. By filtering the molecules against known agonists, the twelve million structures were narrowed down to twelve molecules that have high therapeutic potential in treating mental illness. These twelve molecules had molecular weights between 250-500amu. Each structure contains a protonated nitrogen group and many were found to include a 1,3-dioxolane group similar to that found in MDMA.

## **High Throughput Virtual Screening for Cannabinoid Type 2 Receptor Ligands**

*Jose Garcia-Martin*

*Faculty Advisor: Asher Brandt*

Prediction of three-dimensional protein structures remains a major challenge to modern molecular biology and the inherent difficulties in solving protein's tertiary structure only amplify the problem. Whereas it takes hours to determine an amino acid sequence, determining its 3D shape can take months. However, a recent study using the Serotonin 2A receptor showed that the structure provided by the program Alpha fold produced better ligand affinity through High Throughput Virtual Screening (HTVS) than the experimentally determined cryo-em structure. This study aims to identify possible drugs, originally screened from 14 million compounds, that could bind to the orthosteric site of the Cannabinoid Type 2 Receptor (CB2R) a receptor apart of the ECS that has shown promise in treating neuropathic pain and Alzheimer's disease. The performance of this study is possible because CB2R, like Serotonin 2A, is a GPCR. The 14 million compounds were taken from the Zinc20 database and went through a three-step filtering process: HTVS, Glide XP and Glide SP, providing the Docking score which is a proxy for the binding affinity of the compounds. After comparing the Docking score to that of the control compound CP-55940 the number was reduced to 500 compounds. Preliminary results showed that the compounds didn't exceed 700 amu and a CNS value between 0 and -2. These findings may provide insight into the potential of HTVS studies of new drug targets.

## **Using High-Throughput Virtual Screening to Identify TAAR1 Receptor Agonist for Anti-Schizophrenic Drug Discovery**

*Madisyn Sadecki*

*Faculty Advisor: Asher Brandt*

Trace Amine amine-associated receptor 1 is a GPCR-coupled receptor primarily located in the CNS. TAAR1 has a high capacity for the binding of trace amine and psychoactive compounds. TAAR1 is expressed in areas of the brain that have dopaminergic, serotonergic, and glutamatergic neurons, which play a vital role in reward circuits, mood regulation, and cognitive processing abilities. The intertwining of this receptor with vital psychological functions along with its high capacity for binding makes it valuable in the realm of drug discovery. Specifically, TAAR1 is associated with mental illnesses like schizophrenia and opioid addiction. This research involved discovering agonistic ligands to bind and activate TAAR1 to be further used in drug discovery. The method primarily used in this research is High-Throughput Virtual Screening technology to test 211 million potential molecules against one form of the TAAR1 receptor. Ligands were determined based on their charge and the ability to form a salt bridge in the binding pocket. Therefore, ligands have either a +1 or +2 charge, with one or more protonated nitrogen molecules to allow for a salt bridge. This type of interaction gives a tighter and more stable binding site. No specific results can be discussed at this time because the molecules have not finished running, but with such a large sample size, there is strong potential for significant results. These results are important for the future involvement of the TAAR1 receptor in anti-schizophrenia drug development.

## **Reductive Amination as a Means for the Synthesis of Ligands Believed to Interact with and Elicit an Effect from the GABAA Receptor**

*Gavin Cabral*

*Faculty Advisor: Asher Brandt*

Gamma Aminobutyric Acid (GABA) is the most common inhibitory neurotransmitter of the human central nervous system. When bound to Gamma Aminobutyric Acid A receptors (GABAAR), GABA has a calming effect that can slow down neural activity. In turn, GABA is often studied and targeted so that new drugs and treatments can be developed to combat anxiety and stress-based disorders. GABA Receptors are typically ion channels that are composed of two alpha, two beta, and one gamma subunit. GABA Receptors are believed to have five binding sites that are located between adjacent pairs of these five subunits. GABA is known to bind to at least three of these sites and it is believed that each GABA bound to the receptor amplifies its effect on the Central Nervous system. Previous computational studies have found six ligands which are predicted to bind to two or more of GABAAR's binding sites. These ligands are predicted to behave in a manner similar to that of GABA so that the magnitude of effect they will elicit is dependent on the number of sites they are bound to. These ligands exhibit many similar characteristics, the most prominent of which being that each one is nitrogenous and falls between 300 and 325 Daltons in size. The aim of this study was to synthesize the ligands discovered in our past studies so that an assay can be ran using a GABAAR cell line in the future. Over the course of this study reductive amination reactions were utilized to attempt to synthesize these ligands from more simple starting materials. While several of these reactions required more than one step, the overall mechanism used for the synthesis of each of these ligands was similar. Computational work was also done over the course of this research to try and determine each ligands' most favorable confirmation and prepare for future studies.

## **Decoding Memory: Investigating Naphthoxazine Compounds as Potential Acetylcholinesterase Inhibitors in Alzheimer's Disease**

*McKenna Gibson*

*Faculty Advisor: Sarah Zingales*

Alzheimer's disease (AD) is a neurodegenerative illness affiliated with damage to the cholinergic system in the brain. AD is characterized by progressive memory loss, with a decline in language and eventually control of bodily functions. Currently, only symptomatic treatments are available for AD. One mechanism to improve cognitive function and memory is to increase the levels of acetylcholine in the cholinergic synapses in the brain by inhibiting acetylcholinesterase (AChE). Our goal is to develop novel therapeutics that can mitigate the cognitive decline associated with AD. Naphthoxazines are a family of organic molecules that have a variety of biological properties including inhibiting AChE activity. We have synthesized new naphthoxazine analogs and evaluated their efficacy as AChE inhibitors.

## **EF24 Analogues & Their Tubulin Binding Affinities in Relation to Cancer**

*Katelynn Nguyen*

*Faculty Advisor: Sarah Zingales*

Cancer is one of the most significant global health challenges and affects millions of people worldwide. As a result, the development of anti-cancer drugs is crucial for advancing treatment options and improving outcomes for cancer patients. New therapeutics are continuously being developed to target specific molecular pathways and enhance efficacy in the fight against cancer. Bis-chalcones, which are a class of compounds known for their diverse pharmacological properties, have recently been researched and studied as potential candidates for cancer treatment due to their ability to disrupt tubulin polymerization. Tubulin polymerization is a crucial process for cell division, and by binding to the colchicine-binding site on tubulin, bis-chalcones prevent microtubule assembly which leads to cell cycle arrest and ultimately apoptosis in cancer cells. EF24 is a specific compound that has been derived from curcumin and has been studied to have anti-cancer properties. Consequently, the goal of this research is to synthesize and create a library of EF24 analog derivatives and investigate their biological properties. A tubulin polymerization assay is then used to test the derivatives' potential as anti-cancer drugs and compare the compounds' biological properties through a structure-activity relationship analysis.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Chemistry – Poster Presentations*

## **Investigation of T3P as a Catalyst for Synthesis of Asymmetric Bis-Chalcones**

*Dylan Levesque*

*Faculty Advisor: Sarah Zingales*

Chalcones are natural compounds commonly found in plants that are known for their antioxidant, anti-cancer, and anti-microbial effects. EF-24 is a bis-chalcone that has been shown in studies to inhibit the growth of breast cancer. The Zingales lab is focused on creating asymmetrical EF-24 analogs that have side groups with different degrees of electron donating and electron withdrawing abilities. In the past, our lab has had difficulty synthesizing EF-24 analogs that have electron withdrawing groups using sodium hydroxide (NaOH). We are currently investigating if n-propanephosphonic acid anhydride (T3P) can be used as a catalyst to drive the synthesis of asymmetric bis-chalcones with electron-withdrawing side groups. This stepwise synthesis of the bis-chalcones will be accomplished by first making a half-chalcone using N-BOC-4-piperidone, morpholino, benzaldehyde, cyclohexane, and p-toluenesulfonic acid (PTSA) in an enamine reaction. Next, the half-chalcone will be reacted with various aldehydes under basic conditions to investigate the electron donating and withdrawing effects. The half-chalcone will then be reacted with the same aldehydes and T3P to compare the reaction outcome of the two conditions. Preliminary results will be presented on the poster.

## **The Synthesis of Modified Calix[4]Arene Compounds for the Detection of Aromatic Carboxylates**

*Eben Holmes*

*Faculty Advisor: Nicola Edwards*

The detection and quantification of anions play important roles in industry, particularly in the quality control of products. This is due to anions having toxicities at certain dosages, which require regulation by organizations such as the FDA. Benzoate, commonly used as sodium benzoate, is an anion that is largely found in agricultural sectors due to its antimicrobial abilities. It is also used in processed foods and drinks as a preservative. Though safe by the FDA has a limit on its concentration in foods by a weight of 0.1%. This benzoate concentration is still deemed largely toxic to infants. The goal of this study is to develop sensors to detect aromatic carboxylates such as benzoate. These sensors are composed of receptors (for anion binding) and signaling units (for detecting changes in color or fluorescence). This presentation will describe the synthesis, characterization, and detection studies for benzoate. The sensors are composed of a calix[4]arene core and decorated with amide and ester moieties. These sensors were synthesized in two steps, from commercially-available compounds. Characterization of the sensors was done by <sup>1</sup>H NMR spectroscopy, and the anion detection capabilities of the sensors were evaluated via <sup>1</sup>H NMR, fluorescence and UV-Vis spectroscopy.

## **Development of a New Water Hardness Experiment for use in the General Chemistry Laboratory**

*Stephanie Walkley*

*Faculty Advisor: Nicola Edwards*

Water hardness is a measure of the dissolved calcium and magnesium ions that are present in a sample. This is commonly expressed in the units of parts per million (ppm) or grams per gallon (gpg). Soap and other cleaning agents lose their efficacy when they are used with hard water. The calcium and magnesium ions in the water interact with the soap molecules, forming a solid (precipitate). This precipitate can damage plumbing and the items that are being washed. The existing methods of determining water hardness involve performing EDTA Titrations as well as using test strips or an Atomic Absorption Spectrophotometer. This presentation will detail the results of a CHEM 295 independent study in which a new water hardness experiment was developed. This experiment is based on measuring the turbidity (due to precipitation in the presence of soap) of water samples with known measures of water hardness. A calibration curve was then generated and used to determine the water hardness in test samples. A second method was then developed for determining water hardness for use in "at home" experiments. This involved correlating the precipitation with soap with RGB values from two apps (What a Color and Color Name AR). This experiment will serve as an excellent pedagogical tool in general chemistry given its applicability in the real-world and that it can be used to teach and reinforce topics such as precipitation, metal-ligand complexation, and organic structures. Future work on this project will involve the development of a method of determining water hardness involving dyes



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Child Study – Oral Presentation*

## **How Non-Profits Foster Self Reliance and Resilience for Children and Families**

*Alessandra Grignano*

*Faculty Advisor: Katharine Ann Buck*

When children and families go through crisis or hardship, many choose to rely on nonprofit services. Nonprofits assist families in need, not only by providing food, clothes and shelter, but by fostering resilience, independence, and self-reliance so families can thrive. Working with schools, medical staff, and directly with families, nonprofits assess what families need most to move forward, even after crisis or ongoing hardship has occurred. Independence and resilience promote self-motivation, to essentially achieve anything they may desire. These qualities are crucial in day-to-day aspects of life. Our project examines practices that nonprofit organizations implement when providing services to children and families in need. Our research question is, ‘What are the best practices to establish more self-reliant families and children in order to promote independence and resilience?’ We will use a survey on resilience building strategies and distribute it to nonprofit employees to collect data. Conclusions from this project will help families and children grow socially. The results can also provide insight to nonprofits regarding which strategies and practices are most effective.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Child Study – Poster Presentations*

## **The Impact of Classroom Design on Student Engagement**

*Angelica Frigo, Makayla Bunker and Emily Messier*

*Faculty Advisor: Katharine Ann Buck*

Universal Design for Learning (UDL) is a framework based on the principle that designing instruction to be inclusive of learners with needs for accommodation will benefit learners with and without accommodation needs. This includes planning for learners with disabilities, English-language learners, gifted learners, and those from diverse cultural and socioeconomic backgrounds among others. This project will focus on how different classroom layouts, seating arrangements, and decor affect students' attention, participation, and overall learning experience. The research question is, how does the implementation of Universal Design for Learning (UDL) principles in classroom design contribute to and influence student engagement across diverse learning environments? Previous research has found that UDL enables educators to design a supportive learning environment that allows all children access to activities and materials, to be socially accepted as a community member, and to have choices to demonstrate what they have learned. To gather relevant data, we plan to administer a survey containing both open-ended and multiple-choice questions to collaborating teachers. Through this survey, we anticipate that teachers will provide valuable insights into the reasons behind their chosen classroom setups and the associated benefits.

## **An Examination of How Creating a Safe & Healthy Environment Encourages Students' Growth and Development**

*Alyssa Giancarli, Kelsey Fernandez, and Taylor Griffith*

*Faculty Advisor: Katharine Ann Buck*

The purpose of our proposed research problem is to address the question, how does creating a safe and healthy environment encourage students' growth and development? The current state of scholarly knowledge in this area is that building relationships is an important component to student learning and trusting adults. According to a peer-reviewed research study, researchers found that when students felt safe and supported at school, they had an increase in motivation, improved study habits, regular completion of homework, spent more time reading and writing, a greater ability to engage in class discussions, and increased focus. The social significance of our potential findings is to determine how effective our internship placements are in reaching their mission of creating a safe environment for children. Through our research, we hope to identify what practices the staff at our internship placements use to promote a safe environment that affects student growth and learning. The social significance of this research project is to determine what practices the staff are using and if they are building rapport with students to promote student growth. We will be conducting this research project through an anonymous survey sent out to the staff of each of our internship placements. From the survey responses, we will share our findings of practices that benefit the students for others to learn from.

## **Gender Socialization in Preschoolers Learned from Parents and Teachers**

*Angelica Pelaez*

*Faculty Advisor: Katharine Ann Buck*

Around three to five years, children begin to explore their gender identity. This change is evident during play, as children comprehend and imitate the behaviors exhibited by teachers and parents in their life. A child's choice of toy, the role they take in dramatic play and whether they gravitate towards same or opposite-sex interactions significantly contribute to their social and cognitive development. This research focused on the question: "Are preschoolers' socialization and free choice affected by the possible gender roles that their parents and teachers may be encouraging?" A 26 and 30 item survey was administered to gauge traditional or gender-neutral views in teachers and parents. Two classroom observations of twenty boys and seven girls total were performed to determine any adherence to traditional or gender-neutral behavior during playtime. This took place at the School for Young Children, West Hartford, CT. Four parents and two teachers were found to encourage a gender-neutral approach. Children followed a mix of both traditional and non-traditional gender roles during their free choice play and socialization. The sample size was too small to directly correlate parents and children. However, the results suggest that parents and teachers can provide preschoolers with an inclusive and supportive environment to explore their gender identity.

## **Implementation of Effective Behavioral Management Strategies in Early Childhood Classrooms**

*Natalie Garcia and Hanna Rundstrom*

*Faculty Advisor: Katharine Buck*

The purpose of this action research study is to determine the most effective behavioral management strategies that teachers should implement into their classrooms. Effective classroom management is crucial for creating a conducive learning environment and fostering positive student outcomes. Through a comprehensive review of existing literature and empirical studies, this paper identifies and evaluates key behavioral management strategies utilized by educators. Strategies explored include proactive approaches such as establishing clear expectations, implementing consistent routines, and building positive teacher-student relationships, as well as reactive strategies like employing consequences and redirection techniques

## **How Non-Profits Foster Self Reliance and Resilience for Children and Families**

*Alessandra Grignano*

*Faculty Advisor: Katherine Ann Buck*

When children and families go through crisis or hardship, many choose to rely on nonprofit services. Nonprofits assist families in need, not only by providing food, clothes and shelter, but by fostering resilience, independence, and self-reliance so families can thrive. Working with schools, medical staff, and directly with families, nonprofits assess what families need most to move forward, even after crisis or ongoing hardship has occurred. Independence and resilience promote self-motivation, to essentially achieve anything they may desire. These qualities are crucial in day-to-day aspects of life. Our project examines practices that nonprofit organizations implement when providing services to children and families in need. Our research question is, ‘What are the best practices to establish more self-reliant families and children in order to promote independence and resilience?’ We will use a survey on resilience building strategies and distribute it to nonprofit employees to collect data. Conclusions from this project will help families and children grow socially. The results can also provide insight to nonprofits regarding which strategies and practices are most effective.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Counseling – Oral Presentation*

# **Technology Addiction in Adolescents: Intervention and Education**

*Shamar Johnson*

*Faculty Advisor: Jessica Banik*

This presentation explores the impact of technology addiction on adolescents exposed to more digital media than previous generations. The presentation examines research on how technology addiction affects psychological and physical development, as well as behavior and mental health. The presenter will review the literature on the prevalence and causes of technology addiction and the possible interventions to prevent or treat it. The presentation will report on direct strategies clinicians and helping professions can utilize moving forward and raise awareness of the issue and provide recommendations for future studies. Lastly, the presentation will outline a proposed methodology section for an independent research project.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *History – Oral Presentations*

## **Learning from the Germans: How Germany Teaches the Next Generation About the Holocaust-- Lessons the U.S. Might Adopt On Confronting Injustices of The Past**

*Brianna Lally*

*Faculty Advisor: Kevin Callahan*

This thesis examines Germany's efforts to educate its citizens about the Holocaust and acknowledges historical wrongdoings. By delving into the German government's guidelines for Holocaust education and exploring effective teaching methodologies and curriculum frameworks, this research highlights the importance of embracing a nuanced understanding of the past to the next generation. Drawing parallels between Germany's approach and the United States' own approach to its historical reckonings, this thesis argues for the adoption of similar German educational strategies in American schools. By following Germany's lead, the United States can cultivate a better informed and empathetic citizenry-- one capable of confronting the darker chapters of its own history.

## **Never Again: An Analysis of the Response to Human Rights Violations in Germany and America**

*Lucille Hardee*

*Faculty Advisor: Jennifer Cote*

The words “never again” are carved out on a large sculpture within the memorial site of the Dachau Concentration Camp in Dachau, Germany. The message is a vow that a major human rights violation like the Holocaust will never happen again. Germany has remained dedicated to this vow through the creation of human rights laws, the formation of memorials, and the education of young people regarding the Holocaust. In contrast, America has failed to acknowledge and resolve the lasting consequences of past human rights violations such as slavery, as Confederate soldier statues still stand and the debate about whether slavery should be taught in schools continues to drag on. While America prides itself on being ‘the land of the free,’ the country as a whole has failed to rectify the lasting consequences of widespread human rights atrocities that marked slavery and needs to implement the kind of effective corrective measures seen in Germany’s response to the Holocaust. To make any progress, the country must ratify the United Nations human rights treaties, respect and memorialize the location and history of slave plantations, take down Confederate statues, and create a nationwide mandatory curriculum in schools that properly educates young people about slavery. Although it will be difficult, America should follow in Germany’s footsteps to secure human rights for all and respectfully acknowledge the country’s shameful history.

# **The Overvaluation of Eugenics in the Late 19th and Early 20th Century America**

*Hannah Fitzgerald*

*Faculty Advisor: Jennifer Cote*

In the late nineteenth century, eugenicists grounded their movement in the idea that society could be improved through selective breeding and that human nature revolved around family traits—genetics. Many of the individuals who upheld these ideals were wealthy white individuals driven by capitalism and its demands. Amid the second Industrial Revolution, the elite American class applied eugenics directly to material worth and productivity and pathologized those who were seen as “unfit” in society which included criminals, “paupers,” or those who were considered “feebleminded.” Those deemed “unfit” were often excluded from employment, were forced into institutions segregated away from the rest of society and or were taken away the ability to reproduce. As businesses were granted more autonomy under the principle of laissez-faire capitalism and more and more people came into the cities seeking work, this combination created an avenue for major corporate and political leaders to exploit the working and lower classes to yield higher economic productivity and wealth. The elite leveraged eugenics to argue that their wealth and success came from differences of biological merit. Modern day beliefs of meritocracy in America center around equal opportunity for all, but in the peak of the American eugenics movement we see an interplay between this dangerous pseudo-science and politics that aided in forming cultural hegemony wherein the ruling class dominated society in terms of beliefs, worldviews, expectations, morals, and values, which allowed them to gain further wealth and power over the working-class majority.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *History – Poster Presentation*

## **Power of the Paper: The USJ News Nest**

*Crista Fiala, Genia Clarke, Nadia Krill, and Samuel Turgeon*  
*Faculty Advisor: Jennifer Cote*

The USJ News Nest, newly founded in 2023, is the independently run student newspaper at the University of Saint Joseph. As this poster demonstrates, its primary goal is to give a voice to USJ's students and provide opportunities to write, edit, and learn various technologies through managing the entire website. Reporters tackle a range of topics, from hard-hitting stories on student concerns to captivating coverage of campus events. Some articles feature student opinions on culturally significant films. Others divulge the occasional ghost story. With its own logo, the [usjnewsnest.com](http://usjnewsnest.com) website has several tabs – features, arts, sports, campus events, and opinions and editorials – for its audience to explore. Members of the USJ community can also find pamphlets and physical newspapers all over campus. Students oversee all steps of the publication process: researching, writing, editing, and managing the entire website. The USJ News Nest aims to ensure the entire community has access to its reporting. No campus should be without proper student representation.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Nursing – Oral Presentations*

## **Utilizing a Teaching Module to Increase Nurse Practitioner Intent to Open a Private Practice**

*Camylle Appiahene*

*Faculty Advisor: Yvonne Joy*

Inadequate healthcare is characterized by limited access to healthcare resources, ethnic discrimination, and the high cost of care. Due to population growth and aging, there is a shortage of primary care providers available to care for patients. Nursing is the number one trusted profession in the United States, and allows nurse practitioners to bring their unique ways of providing patient care. Nurse practitioners with an entrepreneurial spirit are eager to leave traditional clinical roles to help patients in their community by opening private practices to change the way patients receive care. Increasing the number of private practices by nurse practitioners helps to decrease the healthcare workforce shortages and increase access to healthcare. This scholarly project will evaluate the effectiveness of a teaching module on nurse practitioner's intent to open a private practice. The adult learning theory, developed by Malcolm Knowles, provides the theoretical framework for this project as it directly relates to how adults learn new information. This project aims to implement a 60-minute teaching module session for participants via a live webinar that covers business plan development, market research, business structure, business operations, vendors, business credit, furniture and equipment, insurance credentialing, branding, and tax/legal considerations. The expected outcomes of this project are to see an increase in nurse practitioner entrepreneurial intent and nurse practitioner knowledge on how to open a private practice. The methods used to obtain this data are participant pre-test and post-test scores of the entrepreneurial intention questionnaire.

## **Improving Nurses' Self-Efficacy Regarding Breastfeeding Education**

*Michelle Marie King*

*Faculty Advisor: Mary Peterson*

The 2022 World Health Organization (WHO) guidelines recommend infants should be exclusively breastfed for the first six months of life to achieve optimal health. According to the Centers for Disease Control and Prevention (CDC), 75.1% of infants are not exclusively breastfed at six months of age in the United States. Initiation of breastfeeding during the postpartum period and proper patient education are instrumental in supporting the continuation of breastfeeding. Bedside nurses are the primary educators for patients in the postpartum period. This evidence-based practice DNP project implemented an educational program for labor and delivery registered nurses to improve their self-efficacy in teaching patients the fundamentals of breastfeeding. This project was implemented at a local community teaching hospital and offered to all the nurses in the labor and delivery department. A pre-test and post-test were administered to the nurses before and after the educational program, measuring their self-efficacy in breastfeeding education for patients. The project sought to address what the influence of the educational program would be on the nurses' ratings of self-efficacy. A statistically significant improvement of nurses' self-efficacy was found between the pre-test and the post-test. They also rated the program satisfactorily. The results of this project provided evidence that supports continued breastfeeding education for nurses.

## **Implementing Comprehensive Foot Exams to Improve Long-Term Diabetic Complications in Urban Community Health Centers**

*Helen Kato*

*Faculty Advisor: Christina Mukon*

Implementing Comprehensive Foot Exams to Improve Long-term Diabetic Complications in Urban Community Health Centers. This project addresses the pressing issue of long-term diabetic complications within urban communities by implementing comprehensive foot exams in community health centers. Diabetes poses a significant health burden, and foot complications are a common and debilitating consequence. Despite their preventable nature, these complications often lead to severe consequences, including amputations and reduced quality of life. One of the most devastating complications from diabetes is lower extremity amputations (LEAs), which can be due to several factors caused by poor management of diabetes, including peripheral artery disease (PAD) and diabetic foot ulcers (DFU). Both PAD and DFU can progress to chronic limb-threatening ischemia that results in amputations. Early foot care screening can help prevent DFU, amputations, and other complications such as skin injuries, burns, falls, infection, and peripheral arterial disease. Interventions that have been shown to improve the identification of diabetes foot complications include staff education, comprehensive screening and assessment, monofilament, tuning fork for diabetic foot assessment, patient education/ self-care, standardization, and electronic medical records (EMR)/electronic reminders. The poster will present a DNP project to implement a diabetic standard of care in urban community health centers. The project will include a process for comprehensive foot exams and screening to enhance early detection, patient education, and care coordination.

## **Increasing Cardiac Rehabilitation Referral Rates in The Acute Care Setting**

*Violet Kaman*

*Faculty Advisor: Lynne Benjamin*

Heart disease is the leading cause of morbidity and mortality in Connecticut and the United States, affecting over 18 million adults. The economic impact of heart disease is estimated at \$219 billion each year when considering the costs of health care, medications, and untimely deaths. Following an acute cardiac event, the American Heart Association and the American College of Cardiologists strongly advocate for patients to enroll and participate in cardiac rehabilitation. Referral to these programs is recommended to be placed at the time of discharge. The rate of cardiac rehabilitation referrals at discharge is 37.5% at UConn Health John Dempsey Hospital. An elevation in cardiac rehabilitation referrals is intrinsic to optimizing patient outcomes and fostering the realization of therapeutic benefits inherent in these programs. This quality improvement project aims to increase the cardiac rehabilitation referral rate to 70% in 8 weeks. The project intends to use three rapid, 2-week Plan Do Study Act cycles during which nursing education on cardiac rehabilitation will be provided to educate the patient and modify how the patient is identified in the electronic medical record system. Nursing facilitates cardiac rehab referrals by assessing patients' needs, providing education and support, coordinating care, and advocating for their holistic well-being.

## **Utilization of a Standardized EMR-based Template to Monitor Medication Adherence in Elders in Primary Care: A Quality Improvement Project**

*Jacqueline Deane Hall*

*Faculty Advisor: Theodora Sirota*

Annually, in the United States, medication nonadherence accounts for 125,000 deaths, 11% of hospitalizations, and \$100 billion dollars in medication spending, with elders accounting for large proportion of nonadherence deaths. Compared to younger adults, elders have a higher risk of polypharmacy due to their comorbidities, and their risk of nonadherence to medications. At Valley Medical, elders are seen within seven days of hospital discharge, but their ongoing medication adherence is not closely followed. The attitude of leadership is positive and energetic about improving medication monitoring for elders at Valley Medical. AIM: The aim of this quality improvement project was to assist providers at Valley Medical to better monitor and ensure medication adherence behaviors in elders, using a validated instrument. METHOD: After providers (N=9) attended a medication adherence educational session, their elder patients (N= 130) filled out the brief medication questionnaire (BMQ), either electronically or by hand, prior to regular visits with them. Providers then reviewed this information with the patients and counseled them accordingly. Providers also completed a pre- and post-intervention survey about their satisfaction with patient medication adherence and the use of the BMQ. RESULTS: 90% of providers gave positive feedback, stating that they gained greater knowledge and understanding about their patients' current medication literacy and adherence by utilizing the BMQ. CONCLUSION: As leaders, advanced practice nurses are responsible to assist and advocate for medication adherence in elders. The BMQ was effective in enhancing providers' knowledge about their patients' medication adherence, potentially leading to improvements in their health.

## **Ultrasound-Guided Peripheral Intravenous Insertion: An Alternative Approach to Reducing the Use of Central Venous Catheters**

*Nancy Hemingway*

*Faculty Advisor: Janet Knecht*

Central line-associated bloodstream infections (CLABSI) are a significant cause of mortality in the adult ICU population. Two hundred fifty thousand bloodstream infections occur annually due to central venous catheters. One contributing factor, difficult vascular access, sometimes leads to unnecessary central line use. CLABSI are a preventable cause of death. Strategies to reduce unnecessary central line use include CLABSI prevention interventions and ultrasound-guided peripheral insertions. Objectives: Assess ICU nurses' confidence level using ultrasound guidance for peripheral intravenous cannulation to reduce the use of central venous catheters and CLABSI rates. Methods: This quality improvement design uses pre/post-test methodology. David Kolb's Experiential Learning Cycle provided simulation-based education in ultrasound-guided peripheral intravenous instruction. Twenty ICU nurses from a medical ICU participated in this DNP project. The project intervention included a 30-minute PowerPoint presentation and an hour of skills application. IRB approval was sought; it was deemed a quality improvement project and approved by the community hospital committee. Results: The Wilcoxon Signed Rank Test compared the nurses' confidence levels pre- and post-training with ultrasound education. Eighty-five percent of ICU nurses were more confident post-training than

pretraining. A p-value of  $<0.001$  determined that the results were statistically significant. Discussion: The project demonstrated that ICU nurses who participated in education and simulation training could successfully learn ultrasound-guided peripheral training. The small sample limits the broad application of the project results. This DNP project's data is consistent with evidence-based literature that ultrasound use improves peripheral intravenous venipuncture success rates and increases ICU nurses' confidence levels.

## **Evaluating the Efficacy of a Delirium Educational Program for Medical-Surgical Nurses**

*Shedeen Stephens-Bacon*

*Faculty Advisor: Karen Myrick*

The prevalence of delirium in general medical settings varies between 23% and 42%. The populations at significant risk for delirium include hospitalized adults 65 years and older. Delirium is associated with falls, functional decline, cognitive impairment, and high medical costs. A SWOT (strengths, weaknesses, opportunities, and threats) analysis of Vassar Brothers Medical Center's strengths found a Short-CAM delirium screening tool and zero physical restraints for patients at risk for delirium. However, delirium remained underrecognized. Nurses have a significantly higher rate of patient interaction than any other healthcare professional. A literature review found nurses lacked theoretical knowledge of delirium, and multimodal education effectively increased knowledge, using the IOWA model framework due to its practicality and adaptability in the practice setting. A practice change design consisting of a pre-and post-assessment was developed for thirty seasoned and novice nurses on the 30-bed neuroscience medical-surgical unit, including a 50-minute web-based module sent via email and 10-minute in-person sessions. The goals were to improve nurses' knowledge of delirium and improve nurses' recognition of delirium risk factors by 20% within five weeks. Results: Statistical significance with an increase in mean percentage scores from the pre-assessment to the post-assessment surveys ( $t=-3.137$ ,  $p=.003$ ). Findings: Nurses had a significant lack of knowledge of the definition of delirium, tools used for delirium assessments, and recognition of delirium risk factors. Limitation: Small sample size of ( $n=22$ ) participants. Conclusion: Delirium education should be part of practicing nurses' annual education and available to new nurses during orientation.

## **Implementation of the Patient Health Questionnaire - 9 Modified for Adolescents (PHQ-9A) into a Pediatric Neurology Outpatient Clinic to Improve the Screening and Identification of Depression**

*Constandina Conley*

*Faculty Advisor: Kimberly Joerg*

Adolescent depression is a serious public health concern in the United States, affecting 20% of adolescents, with nearly 75% going undiagnosed by pediatricians. Failure to identify, intervene, and treat is a significant issue in adolescent mental health, despite existing guidelines. Connecticut Children's has been treating kids for over 25 years and recognizes this gap. This site was an ideal setting to implement a practice change. Nurse practitioners are crucial in recognizing symptoms, screening for depression, and delivering evidence-based treatment. The Patient Health Questionnaire-9 modified for Adolescents,

is endorsed by the American Academy of Pediatrics and the United States Preventive Services Task Force and is a validated tool for depression screening. Specialty clinics are the ideal setting to screen for depression, especially for adolescents without regular pediatric visits. Employing the model for improvement, the project had two goals: implementing multimodal education for clinicians and initiating a practice change. The expected outcome was 100% of adolescents screened for depression would receive the appropriate intervention, documentation, billing and coding. This quality improvement project utilized Plan-Do-Study-Act cycles and involved twelve clinicians. Multimodal education is an effective strategy in enhancing clinicians' knowledge and practices. The multimodal education was comprised of four different modes of education. Over six weeks, 100% of patients received the depression screening and 100% received the appropriate interventions. However, 91.5% of the interventions were completed by clinicians and 8.5% was completed by the project investigator. Completing depression screenings in a specialty clinic is a key aspect of adolescent health care.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Nursing – Poster Presentations*

## **Depression: A Global Epidemic and a Time to Change**

*Alexus Trudeau*

*Faculty Advisor: Christina Mukon*

The prevalence of depression has been respectively increasing and solid underlying cause of depression stems from the lack of social health detriments. This makes it an important time to address the issue so that interventions can be put in place. Depression is one of the most common mental health illnesses in the United States. Statistics show climbing rates of depression in the Hartford area. The social determinants of health include economic stability, neighborhood and built community, and healthcare access and quality. mini mental health pop up clinics in Hartford could help decrease the rate of depression. A solid underlying cause of depression stems from the lack of social health detriments. With the lack of social determinants of health, the Hartford community is negatively impacted and at greater risk of mental illness. To better the people in the community, key informants and stakeholders work together to address the issues and ensure that all community residents have an equal ability to live a healthy lifestyle. Finding ways to catch mental health and depression upstream will lessen the number of people with these illnesses and ease the work for healthcare providers before it becomes a downstream issue. This project presents a proposed population health intervention using the PDSA model to address mental health disorders in Hartford CT. It incorporates considerations of social determinants of health to determine the intervention.

## **Impact of Asthma Education on a Community**

*Victoria Richards, Kathleen Gilland, Adelina Marcille, and Aisha Perry*

*Faculty Advisor: Christina Mukon*

Asthma is defined as persistent breathing difficulties caused by airway inflammation and bronchoconstriction. Common symptoms of asthma include wheezing, dyspnea, coughing, and a feeling of chest tightness. This can cause fear in patients as they start to feel the sensation of being at a loss for easily accessible air. Currently, the disease affects all people, no matter age, gender, or race, however, disparities lie within the treatment currently available. Hartford has had a high rate of asthma when compared to other cities in America. Hartford, Connecticut has a population of almost 121,054 with 16% of that population diagnosed with asthma. To further elaborate, that is 300,900 people 18 and older and 61,200 children under 18 have asthma as of 2021. This poster will present a proposed community health intervention to address Asthma in Hartford, Connecticut using the PDSA model. The integration of healthcare workers into the community will provide high-quality care for Hartford residents. Hartford residents would not have to worry about transportation or childcare. The implementation of community healthcare workers in the community has been tough. The community is receiving care, but high costs and an inconsistent schedule are causing issues. This project's focus is preventative care and changing the relationship between healthcare workers and the community. The intervention's goal is to provide preventative care by creating a community-based asthma educational program.

## **Increasing Awareness of Diabetic Education in Pediatric Populations**

*Ananya Srivatsav*

*Faculty Advisor: Sheila Garilli*

Type 1 diabetes is prevalent throughout the United States and greater in childhood. This poster presentation will present a hypothetical community health intervention to improve education for children who are living with type 1 diabetes. During school, children may not be getting the proper nutrition needed in order to keep their blood sugar levels stable. Additionally, they do not always have the accurate education on what types of food they consume. At times, children are not proactive with knowing what types of food would influence their blood sugar levels, both positively and negatively. Children may not understand the influences on their food choices and the consequence that comes with making them. This project uses educational resources to provide education to the children and their families within the community. The project focuses on educational interventions in the form of nutritional pamphlets for children living with type 1 diabetes. The pamphlets will provide information on the types of nutritious food, how much each age group should consume and additional interventions to keep blood sugars stable.

## **A Proposed Population Health Intervention for Diabetes Management Amongst Low-Income Adults in the Hartford Community**

*Ashley Watson, Anthonia Tucker and Natali Murillo*

*Faculty Advisor: Christina Mukon*

According to the American Diabetes Association (ADA), Diabetes causes more deaths than breast cancer and AIDS combined, over 37 million Americans have diabetes and another 96 million have pre-diabetes. According to the U.S. Census Bureau, 11.4 percent of adults in Hartford who are 18 years of age or older have diabetes. Low-income adults may have limited access to healthcare services, making it difficult to receive proper diabetes management and treatment. Many also struggle to afford medications, glucose monitoring devices, and healthy food options essential for managing diabetes effectively. Having a healthy diet includes having a calorie intake that is in alignment with the calorie requirements of the body. People with lower socioeconomic status have greater rates of chronic disease mortality and morbidity and are less likely to participate in preventative activities. The community of Hartford has a diverse population with many minorities and varied social determinants of health. Furthermore, poorly managed diabetes is the leading cause of kidney failure lower-limb amputations, and adult blindness, and can also lead to serious health issues such as stroke and heart disease. Our poster presentation is a proposed population health intervention to address diabetes in Hartford using the PDSA model to educate low-income adults. We did so by discussing problems associated with diabetes including risk factors, options for treatment, and access to a healthy lifestyle. Utilizing tools such as the epidemiological triangle, web of causation, and The Missouri Public Health Wheel, we were able to construct an educative initiative toward our chosen health concern.

## **Implementation of a Palliative Care Referral Best Practice Advisory for COPD Patients**

*Brigitte Heleniak*

*Faculty Advisor: Yvonne Joy*

Implementation of a Palliative Care Referral Best Practice Advisory for COPD Patients. The goal for this Doctor of Nursing Practice quality improvement project is to implement a best practice advisory for chronic obstructive pulmonary disease (COPD) patients on a medical and surgical intermediate care unit. There are three expected outcomes. The first is to increase the identification of COPD patients with palliative care needs. The second outcome is to increase the number of palliative care referral orders. The third is to increase the amount of palliative care consults formally completed. To achieve these outcomes, the IOWA Implementation for Sustainability Framework will be used as the project design and method with a four-phase procedure model. Phase one is to create awareness and interest of the project topic, which includes staff meetings to measure compatibility and identify priorities, and unit announcements by newsletter and email. Phase two is to build knowledge and commitment, which will be accomplished with a gap analysis, staff education using a multimodal approach, and by obtaining clinician input. Phase three is to promote action and adoption, which includes training staff, trailing the change, incorporating a change champion, and relying on interprofessional discussions. Finally, phase four is to pursue integration of the change for sustained use, with the goal of a new organizational policy implemented into practice.

## **A View into Self-Defense Classes Impacting Obesity in Hartford Adults**

*Emily Breault, Brooke Siani, Mikayla Murphy and Amy Michaud*

*Faculty Advisor: Christina Mukon*

The obesity epidemic has impacted the state of Connecticut, including Hartford, Connecticut's state capital. Hartford has a total population of 120,576 citizens with a 33.3% obesity prevalence rate. Obesity is primarily associated with behavioral risk factors including smoking, alcohol use, lack of physical activity, and poor diet choices, which can lead to many comorbidities. These include diabetes, heart attack, stroke, blood clots, and much more. Consequently, obesity drastically increases mortality rates. Obesity is also affected by social risk factors, outlined in the social determinants of health. In Hartford, the assault rate is 334.3 victims per 100,000 residents compared to the National rate of 282.7. This risk factor can lead to citizens who are unable to afford a gym membership hesitate to exercise outdoors in their hometown, fearing for their safety. This poster will present a proposed population health intervention to improve obesity rates through activity in the city of Hartford by providing self-defense classes. The chosen intervention is to provide self-defense classes for Hartford adults struggling with obesity. This project explores the impact of self-defense classes on the participants, with hopes to lower participants' weights and the obesity prevalence rate. An additional benefit includes learning new self-defense techniques and how to develop a safe and healthy lifestyle.

## **Mitigating Non-Urgent Emergency Room Use Through Patient Education and Enhanced Access**

*Emily Palinkos*

*Faculty Advisor: Lynne Benjamin*

In the United States, there are over 350 million emergency room visits yearly, and this number continues to increase. Unfortunately, nearly 20% of these visits in 2010 were unnecessary and could have been treated outside of the emergency room, resulting in \$65 billion in unnecessary healthcare costs. When non-urgent cases are treated in the emergency room, overcrowding is exacerbated, patient satisfaction is reduced, and costs become higher compared to other available options. Due to the lack of access to a comprehensive medical history and the inability to guarantee follow-up care, treatment is often sporadic and disjointed, leading to less effective care. Uninsured individuals frequently turn to emergency departments for basic healthcare needs, increasing non-emergency visits and resulting in a 20% to 40% rate of inappropriate ER visits worldwide. Patients often struggle to determine whether their health issues warrant emergency care, which adds to the problem. Overcrowding in the emergency room strains staff and ultimately endangers patients by reducing the quality of care and increasing the risk of adverse effects. Nurses need to take a leadership role in addressing overcrowding in emergency rooms by actively working to reduce the number of non-urgent visits. Research has shown that patient education and better accessibility to primary care can significantly lower the frequency of non-urgent visits to the emergency room. Therefore, this quality improvement project aims to reduce emergency room overcrowding by minimizing the number of non-urgent visits.

## **Implicit Bias Training is Necessary to Address Health**

*Fatmata Williams*

*Faculty Advisor: Mary Peterson*

Non-Hispanic Black U.S. women die at disparate rates compared to Caucasian women, and their maternal death rate has not improved even when the overall U.S. maternal death rate has improved. Black maternal mortality is a public health crisis with significant trauma and financial impact on communities of Color and the U.S. healthcare system. Implicit bias rooted in systemic and structural racism is a key contributing factor to Black maternal deaths. The plan is to implement implicit bias training for Connecticut Medicaid women's health providers to increase awareness about implicit bias. A significant strength is that the women's health providers requested implicit bias training as part of a new maternal health payment policy. This public health crisis is significant to nursing practice because nurses are the core of the U.S. healthcare system, and the ethical principles underpins nursing practice. Nurses who apply these ethical principles must be concerned by the increased Black maternal deaths and must exercise nursing knowledge to understand the issue, including the interdisciplinary and multifaceted interventions required to address this public health crisis. The literature review yielded robust evidence to substantiate the need for implicit bias training because of how non-Hispanic Black women are treated during health encounters. The treatments range from obstetrics racism to complete disregard with the potential for adverse outcomes for mom and baby. This author will use the Plan Do Study Act (PDSA) to implement this project because it allows for diligent planning, implementing, and refining the training based on preliminary findings.

## **The Importance of Understanding Ableism in Healthcare**

*Jeslyn Dinowitz*

*Faculty Advisor: Yvonne Joy*

As of September 2020, 26% of adults in the United States, or about 61 million people, have a disability. People with disabilities have poorer health outcomes including increased rates of early death and chronic diseases. This poster will address background information and significance to nursing regarding the clinical problem ableism for my research project. In 2022, the World Health Organization identified ableism as an important structural factor and clinical problem that contributes to health inequities for persons with disabilities. Ableism is prejudice, discrimination, and social oppression toward people with disabilities. In 2022, the World Health Organization released the Global Report on Health Equity for Persons with Disabilities to address the systemic health inequities for people with disabilities. Understanding disability and the barriers to quality health care that persons with disabilities face are important to address to reduce disparities. Contributing factors of ableism in healthcare include lack of knowledge among health professionals about differences among people with disabilities, inaccessible or unavailable healthcare facilities and healthcare equipment, transportation difficulties, and high rate of poverty of people with disabilities. The scope of the clinical problem of ableism impacts not only patients with disabilities but also the healthcare workforce, as people with disabilities are underrepresented in the healthcare workforce. Ableism in health care impacts the economy, morbidity, mortality, and quality of life. Nurses and nurse practitioners have a critical role in achieving health equity for persons with disabilities as important access points to care for people with disabilities.

## **Implementing a Diabetes Self Management Education Referral Program in a Primary Care Clinic**

*Genevieve Ufongene*

*Faculty Advisor: Christina Mukon*

Implementing a Diabetes Self-Management Education Referral Protocol in a Primary Care. Setting. Diabetes mellitus presents a significant public health challenge in the United States, affecting approximately 34.2 million individuals, yet many struggle to access the necessary education and support for effective management. Diabetes Self-Management Education (DSME) programs offer vital resources for navigating the complexities of diabetes care. However, time constraints often hinder referral rates from primary care offices like Shifa Clinic during patient visits. Despite this, numerous studies demonstrate the effectiveness of DSME in improving diabetes management outcomes, highlighting its significance in nursing practice for promoting patient empowerment and enhancing overall care quality. While Shifa Clinic has established patient relationships and multidisciplinary teams, challenges such as limited awareness, limited resources, and patient barriers impede DSME program referral. To address this, the DNP project will leverage the IOWA Model of Evidence-Based Practice to design and implement a standardized DSME program referral protocol to improve access to DSME programs and enhance patients' self-care knowledge and glycemic control, ultimately reducing the risk of complications. Through this systematic approach, the project seeks to bridge the gap in DSME referrals and improve diabetes management outcomes at the Shifa clinic.

## **Implementing Comprehensive Foot Exams to Improve Long-Term Diabetic Complications in Urban Community Health Centers**

*Hellen Kato*

*Faculty Advisor: Christina Mukon*

Implementing Comprehensive Foot Exams to Improve Long-term Diabetic Complications in Urban Community Health Centers. This project addresses the pressing issue of long-term diabetic complications within urban communities by implementing comprehensive foot exams in community health centers. Diabetes poses a significant health burden, and foot complications are a common and debilitating consequence. Despite their preventable nature, these complications often lead to severe consequences, including amputations and reduced quality of life. One of the most devastating complications from diabetes is lower extremity amputations (LEAs), which can be due to several factors caused by poor management of diabetes, including peripheral artery disease (PAD) and diabetic foot ulcers (DFU). Both PAD and DFU can progress to chronic limb-threatening ischemia that results in amputations. Early foot care screening can help prevent DFU, amputations, and other complications such as skin injuries, burns, falls, infection, and peripheral arterial disease. Interventions that have been shown to improve the identification of diabetes foot complications include staff education, comprehensive screening and assessment, monofilament, tuning fork for diabetic foot assessment, patient education/ self-care, standardization, and electronic medical records (EMR)/electronic reminders. The poster will present a DNP project to implement a diabetic standard of care in urban community health centers. The project will include a process for comprehensive foot exams and screening to enhance early detection, patient education, and care coordination.

## **Nutritional Education for Adults in Hartford Around the Topic of Obesity**

*Isabella Belanger, Isabella Belanger, Joshua Doncet, Kinella Exantus, and Timothy Magill*

*Faculty Advisor: Christina Mukon*

Obesity is a complex chronic disease influenced by factors such as environment, genetics, socioeconomic status, overall health, and lifestyle choices. It leads to an accumulation of excessive body fat, significantly impacting both mental and physical health and increasing the risk of conditions like hypertension, type two diabetes, and depression. Treatment options for obesity encompass diet, exercise, mental health counseling, and medical interventions. Given Hartford's cultural diversity and issues of food insecurity, this project focuses on nutrition as a critical aspect. This poster presents a proposed population health intervention to address obesity in Hartford. As obesity rates continue to rise in Hartford, addressing this issue becomes paramount. The proposed project adopts the Plan-Do-Study-Act (PDSA) model to promote healthier living by educating the population on the significance of quality nutrition in combating obesity. The intervention involves creating an educational pamphlet emphasizing the importance of a well-balanced diet, to be distributed in doctors' offices, clinics, and local hospitals throughout Hartford. To assess the intervention's effectiveness, a survey will be circulated to gather feedback on the educational pamphlet. The survey will inquire about the usefulness of the information provided and whether individuals are applying it to enhance their nutrition and overall health. The goal of this intervention is to educate the public on nutrition, aiming to reduce the prevalence of obesity in Hartford and promote a healthier way of living.

## **Providing Education on Asthma Management to the City of Hartford**

*Honora Dalamagas, Nicole Kopec, Isabella Maranchie, and Brianna Viens*

*Faculty Advisor: Christina Mukon*

Asthma is a prevalent chronic disease affecting many individuals in the city of Hartford. This condition affects millions of individuals of all ages in all different parts of the world. Asthma specifically burdens a significant portion of adults in the Hartford metropolitan area. A risk of developing asthma is the surrounding environmental factors that many people cannot avoid. Unavoidable triggers of asthma such as allergens like dust and pollen, which naturally occur in the air, can exacerbate asthma and put people in life-threatening situations. However, avoidable triggers like smoking, can also exacerbate asthma. Asthma exacerbation can present as wheezing, shortness of breath and uncontrollable coughing which leaves the patient without adequate gas exchange and can be fatal. Education on ways and reasons to avoid asthma triggers and ultimately exacerbations is crucial to the population of Hartford, as well as proper inhaler use. Of all the residents in the Hartford community, the average highest educational attainment was less than ninth grade, depicting a need for educational intervention. This poster presents a hypothetical population health intervention using the PDSA methodology to address asthma in Hartford. The educational program will address proper maintenance of asthma, as well as avoidable risks and triggers to prevent exacerbations. This program will be open to the residents of Hartford in order to increase understanding and awareness of the importance of asthma management. Using public health analysis tools such as the epidemiological triangle, factors that contribute to asthma are represented, as well as further analysis of the potential intervention.

## **Moral Distress in Emergency Room Nurses**

*Janine Warren*

*Faculty Advisor: Mary Peterson*

Moral distress has become an important issue that nurses face while caring for patients. Many studies report the regularity and severity of moral distress in nurses that work in the ICU. There is currently less literature on moral distress in Emergency Department Nurses. Moral distress and/or burnout plays a major part in why nurses are becoming desensitized, depersonalized, unhappy with their roles and careers. This in turn leads to a negative impact on patient care, high turnover rates for employers, and an overall increase in costs of healthcare. Additionally, moral distress may also lead to medical errors resulting in poor patient satisfaction and health outcomes. Highlighting moral distress in emergency room nurses brings attention to the need for conceptualizing the impact it has on how nurses work with each other, other disciplines, their patients and how we address, intervene, and prevent moral distress from occurring. The purpose of this poster is to address a review of the literature on moral distress in emergency department nurses.

## **Comprehensive Literature Review of the Xylazine Rash and Subsequent Dermatological Treatment**

*Iseabal Turner*

*Faculty Advisor: Angela Carrano*

Xylazine is an alpha-2 adrenergic receptor agonist drug originally intended for veterinary usage. In recent years, this drug has become increasingly popular among substance abusers as an alternative to Fentanyl or Heroin. In fact, research demonstrated that Xylazine was found in over a quarter of all drug overdoses in Philadelphia in 2020. This drug, sometimes referred to as “Tranq,” can produce effects of bradycardia, hypotension, and respiratory depression among its users. The manifestation focused on for this project is the “xylazine rash,” a development of skin ulcers and abscesses after IV injection of the drug due to vasoconstriction and decreased skin perfusion. Individuals may present with necrosis of subcutaneous tissue accompanied by purulent drainage and foul odor. Treatment options for the “xylazine rash” are currently being examined for their effectiveness. This is a literature review of current published works related to managing wounds obtained from injectable drug use. Healthcare professionals possess a high degree of influence on identifying rashes that may be related to illegal substance use and administering subsequent dermatological treatment to prevent further complications. Previous research done regarding wound care for people who inject drugs like Heroin may also be applied to those who use Xylazine. This literature review will explore the best dermatological approaches to wound care treatment which may be applied to the “xylazine rash”.

## **Proposed Health Intervention of Maternal Mortality**

*Ananya Srivatsav, Lauren Costa, Amelia Chokas, and Hannah Brown*

*Faculty Advisor: Christina Mukon*

Maternal mortality in postpartum women is prevalent throughout the United States. However, the state of Connecticut displays especially alarming rates of postpartum mortality. During pregnancy and in the postpartum time frame, women are facing challenges that ultimately put their life and their child’s life on the line. This poster presentation will present a hypothetical community health intervention to improve maternal mortality in Connecticut. This project utilizes public health tools as a means to educate the community. In terms of causative agents, there are three common factors that correlate with maternal mortality. Those factors include hemorrhage, infection and cardiovascular disease. If women were more informed of these risks, then they could ultimately be prevented or treated early on. The project explored four potential interventions, but the one that was selected was deemed to have the greatest impact. The chosen intervention includes offering educational resources on the factors of maternal mortality for perinatal and postpartum women. This poster uses public health tools and frameworks to explore the clinical background of maternal mortality in Connecticut, an educational program to improve maternal mortality, and assessment protocols of the intervention.

## **Burnout Reduction in Hemodialysis Nurses**

*Jacob Vicente*

*Faculty Advisor: Theodora Sirota*

Burnout is an emotional or physical response caused by extreme workplace stress, elicited under situations that push people outside their comfort zone. Dialysis nurses are exposed to unique stressors as they provide routine and acute renal replacement therapy and emotional support, over an extended period, for patients with kidney failure and their families. This situation often results in high levels of burnout with many nurses leaving the profession. There is a need to help dialysis nurses manage the stress that is leading to burnout to maintain adequate, competent staffing and enhance job satisfaction for the nurses. Aim: This quality improvement project aims to reduce burnout among hemodialysis nurses by providing them with a weekly mindfulness module through a phone-based application designed to reduce workplace stressors that are leading to burnout. This intervention will be applied within a large dialysis organization providing hospital-based services in the northeast. Method: Participants will take a pre-intervention survey measuring their burnout scores, followed by an intervention over six weeks consisting of a mindfulness module. They will complete a post-intervention burnout survey after completion of the intervention. Burnout scores pre-intervention and post-intervention will be compared using appropriate statistical methods. Results: Results from pre-intervention and post-intervention surveys will show potential differences in levels of experienced burnout among hemodialysis nurses. An expected outcome of this project is reduced burnout among hemodialysis nurses after utilizing mindfulness intervention. Conclusion: Utilizing mindfulness practice interventions for nurses working in hemodialysis has the potential to decrease burnout among these healthcare providers.

## **Breast Cancer Screening Decisions in Minority Community**

*Wazida Tabassum*

*Faculty Advisor: Mary Peterson*

Breast cancer screening (BCS) has been recommended to women by healthcare providers and the American Breast Cancer Society for many years. There has been a debate about the actual benefits and harms of breast cancer screening with mammography. A significant benefit is that BCS leads to early diagnosis and better outcomes. Some of the harm includes overdiagnosis, over-treatment, and mandated screening that might not align with the personal values of women. Research has shown there is a lack of knowledge regarding breast cancer awareness and screening among minority groups such as Muslim women. This project will evaluate the Farmington Valley Muslim Community women over 40 for personal value and preference-based educational needs about BCS. In this project, a clinical practice decision aid will be used by a community-based convenience sample of women from ages 40-69. The goal of this project is to enhance knowledge about the benefits of breast cancer screening among women in the Muslim community. The purpose of this poster is to provide the background on the importance of BCS education to Muslim women in the Farmington Valley Muslim Community.

## **A Proposed Intervention for Type 2 Diabetes in Hartford**

*Katelyn Malinis, Sandra Arhin, Ashley Beslanga and Lanayia Llewellyn*

*Faculty Advisor: Christina Mukon*

Type 2 Diabetes (T2DM) is a chronic disease that affects how your body produces and uses insulin. With this condition, the body cannot make enough insulin or use it as it is supposed to, which can cause blood sugar levels to be elevated. Type 2 diabetes has become prevalent across the United States and impacts of the disease can be examined locally, like in the city of Hartford, Connecticut. Type 2 diabetes can cause further, serious health complications if not treated properly, such as putting patients at risk for a stroke, renal problems, and even death. By implementing interventions aimed towards the community with type 2 diabetes, it can aid in the prevention of the disease or from further complications occurring in patients. This poster presentation discusses a proposed public health intervention process for DM education among older adults in Hartford, Connecticut. The principles of epidemiology, the PDSA model, and public health tools will be utilized to help guide this project. The proposed intervention encompasses an educational health program for patients with type 2 diabetes, which includes a pre-program survey to determine patient's prior knowledge about their disease, and a post-program survey to determine if the program did help in educating patients. This program would include general information on type 2 diabetes, disease maintenance, importance of medication adherence, and resources to help patients with positive lifestyle changes (which include diet and exercise). Based on survey results, different changes can be made to the proposed intervention for future action and implementation.

## **Implementing Weekly Patient Oral Assessments Education for Nursing Staff in Long-Term Care: A Quality Improved Project**

*Lisa M Boye*

*Faculty Advisor: Mary Peterson*

Poor oral health is highly prevalent among nursing home residents, negatively impacting nutrition, function, dignity, and quality of life. Background analysis revealed most residents experience poor oral hygiene and untreated dental issues due to dependence on staff and a lack of staff education on best practices. This project aims to improve oral care delivery through an evidence-based educational intervention for nurses (RNs and LPNs) and CNAs at Vantage Health and Rehab of Hampden. The clinical question examines how providing training on weekly oral assessments affects care provision and dentist referrals over 6–8 weeks. The significance for nursing includes addressing knowledge deficits to enhance assessment competence and skills in utilizing evidence-based protocols related to oral health. The project exemplifies AACN Essentials domains, including quality and safety, population health, and systems-based practice. Methods will include the development of an oral health curriculum, training workshops, the implementation of weekly assessments using a standardized tool, and the analysis of care documentation, referrals, and staff knowledge. Expected outcomes are increased staff knowledge, improved oral care provisions, and increased dentist referrals leading to a better quality of life for residents. This project can serve as a model for integrating evidence-based oral health promotion in long-term care settings.

## **Improving End of Life Communication Knowledge in Inpatient Oncology Nurses**

*Marcela Nelson*

*Faculty Advisor: Mary Peterson*

Each year, 56.8 million people worldwide need palliative care. Of these, 25.7 million people are in their last year of life. There is a lack of quality palliative and end-of-life care despite the large need. One of the main barriers to quality care is ineffective communication surrounding end-of-life. End-of-life communication is cited as a vital competency for bedside nurses to provide management of symptoms and psychosocial support. Patient centered communication increases satisfaction, reduces costly and futile medical treatments, alleviates bereavement experiences, and improves patients' quality of life and dignified death. Nurses are the main clinicians providing end of life care, but many feel under qualified and uncomfortable in communicating with patients and families. This scholarly project will assess the impact of the End-of-Life Nursing Education Consortium (ELNEC) Communication module on nurses' knowledge of end-of-life communication. It will be completed on a medical oncology floor at Yale New Haven Hospital. Research supports educational interventions given to nurses improve end-of-life care knowledge and comfort. The ELNEC is a national program that provides a curriculum to teach nurses end-of-life care. The project will follow a quality improvement design using the IOWA model. Two sixty minute live virtual trainings will be held. A validated tool measuring end of life care knowledge will be used to assess improvement in educational needs. The expected outcomes of this project are to increase knowledge of end-of-life communication.

## **Improving Nursing Self-Efficacy in Providing Patient Education on Maternal Morbidity and Mortality**

*Amber Augenstein*

*Faculty Advisor: Jeffrey Fouche-Camargo*

Maternal morbidity and mortality (MMM) rates in the U. S. have been significantly rising over the last five years, negatively impacting patients and their families. Negative patient consequences of severe maternal morbidity include renal failure, sepsis, eclampsia, and more. Several factors have been identified that contribute to MMM, including a lack of inpatient nurse knowledge related to identifying and responding to warning signs. Improving MMM has the potential to mitigate the financial impact that it has on the healthcare system and positively impact the physical and mental well-being of obstetric patients. It may also impact obstetric nurses by decreasing burnout, improving their physical and mental well-being, and positively influencing their practice. This DNP project aims to implement educational sessions for labor, delivery, recovery, and postpartum (LDRP) nurses with a pre- and post-test at Midstate Medical Center's Family Birthing Center to improve nursing self-efficacy in providing patient education on the signs and symptoms of MMM. Although the project site staffs many experienced nurses who provide support for new staff, the unit has recently experienced an increased turnover of nurses, leaving the unit with many new staff who lack self-efficacy related to essential elements of maternal care. This project's design and methodology were chosen based on a review of the literature, which revealed that the use of standardized multimodal education has the potential to positively impact self-efficacy. Albert Bandura's Theory of Self-Efficacy provided the theoretical framework for this project, as it is known to be effective in impacting self-efficacy across multiple disciplines.

## **Nadie Sabe Lo Que Va A Pasar Mañana : An Advanced Care Planning Literature Review**

*Orlando Carter*

*Faculty Advisor: Mary Peterson*

Death and dying is an unfortunate reality as we begin to age and develop health-related or unanticipated complications. However, this reality is now an afterthought, given the advancement of modern medicine, as new technologies can prolong the deterioration associated with complex co-morbidities. For example, the University of Michigan's 2021 National Poll of Healthy Aging revealed that over 53% of adults 50-80 do not have any form of advanced care planning (ACP) established. The absence of ACP can result in adverse outcomes when newly appointed caregivers request aggressive therapies and invasive procedures that bear no clinical merit or appreciable outcomes. Such interventions are known as futile care. This poster aims to present a literature review of futile care, examine and assess current ACP best practices, conduct a comparative analysis of qualitative and quantitative ACP studies, and evaluate existing disparities within ACP and upstream approaches to streamline sustainable practices. Research methods included evaluation, inclusion, and exclusion criteria, utilization of a reference manager, and appraisal of research discoveries. According to literature findings, preemptive arrangements, such as ACP, have demonstrated statistically significant findings. For instance, caregiver burden and providers' moral distress decreased drastically with the completion of an ACP. Furthermore, collaboration between patient and provider aids in ensuring patient-centered care congruent with their wishes. Conversely, individuals without an ACP in place contribute to the likelihood of caregiver burnout, provider morale distress, and skyrocketing hospital costs, which all contribute to increasing the risk of complicated grief and further convoluting the death and dying process.

## **Reducing Depression in the Community of Hartford**

*Rachelle Bully and Michaela Scully*

*Faculty Advisor: Christina Mukon*

Depression (also known as Major Depression, Major Depressive Disorder, or Clinical Depression) is a common mental health disorder marked by persistent depressive moods lasting at least two weeks. An episode of depression can last up to six months. It usually begins with a single occurrence and may increase over time. Depression starts in the brain and then affects thoughts, moods, feelings, and behaviors. Our intervention is to reduce the prevalence of Major Depression in adults (aged 18-65) in Hartford by 20% over the next five years starting April 2024. This intervention can be achieved by implementing mental health programs and telehealth services throughout the community. In addition, launching public campaigns' education every two months to educate the community about mental health issues. Also, collaborating with other mental health providers to educate the public on the early signs of depression and how to seek help. Lastly, education seminars will be held to provide information on the signs and symptoms of depression. This poster will present a proposed public health intervention to improve depression in the city of Hartford using the PDSA model. It will include a review of the social

determinants of health in Hartford, the clinical background of depression, and public health tools for the implementation of improvement strategies.

### **Utilizing a Multimodal Approach to Educate Healthcare Workers on Workplace Violence Prevention in an Acute Care Setting**

*Alyson Saperstein*

*Faculty Advisor: Mary Peterson*

Healthcare workers are frequently exposed to type II workplace violence. The Centers for Disease Control and Prevention (CDC) defines this type of violence as an individual (i.e., patient, visitor) who has a relationship with a business (i.e., hospital) and becomes violent while receiving services. The healthcare workers who encounter this type of violence is not limited to the people providing care to the sick, such as nurses, physicians, and aides, but it also includes laboratory technicians, administrative assistants, and medical waste handlers. Furthermore, many healthcare professionals are not required to undergo training or education on preventing workplace violence. When healthcare professionals do undergo training, it is presented as a one-time occurrence with lack of follow up and continued education. The multimodal learning approach provides information through multiple platforms. Providing information in many different settings has been shown to have beneficial learning outcomes. The purpose of this poster is to discuss utilizing the multimodal learning approach in an acute care setting to educate healthcare providers on workplace violence prevention. With adequate knowledge and information, healthcare workers would be more prepared to handle incidents of type II workplace violence.

### **A Proposed Population Health Intervention on Substance Use Disorder Among High School Students**

*Rachel DuPont, Olivia Bedlack, Karoline Gawron, Alexis MacNeil, Marivic Ostheimer,*

*Nayelis Sanchez, and Iseabal Turner*

*Faculty Advisor: Christina Mukon*

While substance use disorders are treatable health conditions, awareness of the dangers of the misuse of substances needs to be addressed. What has seemingly been a smaller issue in the past to some, has become an increasingly dangerous impact on individuals in the Hartford, Connecticut community with the misuse of substances and the lack of knowledge regarding it. Bringing about change and awareness of socially toxic environments, and how they contribute to substance use vulnerability can lead to a positive impact on the health and well-being of populations. This poster presentation highlights a proposed educational public health intervention about substance abuse among high school students in Connecticut using the PDSA model of quality improvements. This project gives the background of relevant planning components of the PDSA model including statistical facts to encourage reflection about the status of substance abuse in high schoolers (grades 9-12) in Connecticut, the epidemiological triangle and web of causation. These tools are used to highlight the current concern for the health of high school students using substances. The proposed intervention is an educational session and a post-evaluation survey. The intervention is aimed at prevention, treatment, and access to supportive recovery services, which can aid in preventing and reversing the increasing trends of substance use disorders.

## **Promoting Heart Healthy Lifestyles to Low Income Families**

*Maxine Muscatello, Nayeli Torres, Christine Vittner, and Taylor Crutchfield*  
*Faculty Advisor: Christina Mukon*

Cardiovascular diseases stand as one of the most prevalent health concerns worldwide and the prevalence only continues to increase over time. As of 2023, globally, there are around 550 million people living with cardiovascular disease. With cardiovascular morbidity and mortality rates on the rise, it is essential to bridge the gap between proven prevention measures and effective ways to implement them in clinical practice and public health. These measures include engaging in physical activity, maintaining a healthy weight, implementing a healthy diet, avoiding substance use, and stress management. The gap remains because preventative measures are not adhered to due to lack of education, financial stability, and healthcare availability. This poster presentation proposes a quality improvement project using the PDSA model to address the high rate of cardiovascular disease cases amongst low-income families in the city of Hartford. This project utilizes the social determinants of health and principles of epidemiology to guide our interventions to address the needs of our target population. The proposed intervention involves providing free healthcare screening clinics with informational brochures that identify risks and educate heart healthy lifestyles. To evaluate this intervention, a follow-up survey will be provided to all patients to gather feedback on the care provided and if/how these strategies were implemented in their lifestyles. The goal of the intervention is to educate and raise awareness on the importance of heart health to ensure quality of life.

## **A Proposed Population Health Intervention of Mental Health Support Groups in Hartford, Connecticut**

*Vanessa Cortez, Salena Santos, Jazlynn Villanueva, and Ana Barrios*  
*Faculty Advisor: Christina Mukon*

Mental health disorders can affect everyone regardless of race, ethnicity, gender, economic status, environment, and lifestyle. Mental health disorders include, but are not limited to; depression, anxiety, PTSD, schizophrenia, bipolar disorder, etc. Mental health affects mood, behavior, thinking skills, and many aspects of life. Our project focused on the Hartford, Connecticut population. Within this specific population, mental health disorders have increased over the past couple of years. Education about mental health, access to mental health services, and the overall well-being of this community are all relevant factors when discussing mental health in Hartford. In response to the pressing need for mental health support in Hartford, three potential interventions using public health tools and epidemiological principles were utilized to better understand the health concern. The proposed intervention was to hold free support groups for community members who are experiencing various types of abuse, such as physical, sexual, substance abuse, etc, to attend and share their experiences. Fliers would be distributed to local colleges, hospitals, businesses, and shelters to spread information and details about the support groups. To evaluate the effectiveness of this intervention, surveys would be sent out to every attendee, designed to gather feedback on how helpful the support groups were. The goal of this intervention would be to promote support for mental health and bring awareness to survivors of abuse.

## **Community Public Health Intervention: Implementing Educational Support Groups to provide resources for mental health in Hartford, CT**

*Victoria Isokpehi, Anisa Choku, Paige Bancroft, and Alicia Smith*

*Faculty Advisor: Christina Mukon*

Mental health plays a significant role in the emotional and physical well-being of a person; therefore, it is important to provide support for people who struggle with mental illness. The population in Hartford, Connecticut consists of vulnerable individuals struggling with their mental well-being. Mental health disparities within these vulnerable people are associated with a lack of healthcare access and education within the community. This poster presentation proposes the use of educational support groups using the PDSA model to create a public health intervention to target mental health disparities in Hartford Connecticut. This project utilizes information gathered from multiple public health sites to assess possible interventions to improve the mental well-being of individuals living within the Hartford community. The proposed intervention is to implement educational support groups throughout the city to improve the population's mental well-being. The goal of the educational support groups is to inform people of the risks of mental illness, and the signs to look for, provide therapeutic approaches to talk about their lived experiences, and provide resources such as treatment and medication. To evaluate the effectiveness of the educational support groups, surveys will be conducted prior to and after group meetings to determine satisfaction, as well as trending of mental well-being throughout the Hartford community in conjunction with the Department of Public Health. Providing the community with this intervention can positively impact the mental health and well-beings of individuals.

## **Increasing Hypertension Control Rates at a Primary Care Clinic Using Nursing-Led Follow-Ups**

*Philip Ennin*

*Faculty Advisor: Karen Myrick*

Hypertension, characterized by persistent elevation of blood pressure, presents a critical global health challenge with far-reaching implications for individual well-being and healthcare systems. This abstract explores the significance, scope, magnitude, contributing factors, and impact of hypertension, emphasizing its multifaceted nature. The prevalence of hypertension necessitates a comprehensive approach. Early detection and intervention are crucial due to hypertension's often silent development. The multidimensional challenges arise from the strain elevated blood pressure imposes on vital organs, leading to severe health issues if untreated. Recognizing the diverse affected population, including specific ethnic and racial groups, is essential for tailored interventions. The staggering global statistics underscore hypertension's magnitude, with economic, morbidity, and mortality implications. Economic burdens span individual healthcare costs, healthcare system allocations, and societal productivity losses. Morbidity and mortality rates are substantial, emphasizing the need for comprehensive prevention and management strategies. Hypertension's impact extends to the quality of life, affecting physical, emotional, and social well-being. A gap analysis at Intercommunity Healthcare Center reveals strengths in serving a diverse demographic but highlights opportunities for improvement in nurse follow-up effectiveness, medication adherence, and organizational strategies. A literature review explores evidence supporting nurse-led interventions, medication adherence challenges, and holistic approaches. The

Institute for Healthcare Improvement Model will guide this project as a theoretical framework for systematic and evidence-based improvement in hypertension management. Hypertension's significance lies in its pervasive impact on individuals and healthcare systems. Addressing this complex issue requires a multidimensional and person-centered approach, leveraging evidence-based interventions and continuous quality improvement methodologies.

.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Psychology – Oral Presentations*

## **Consensus in Self-Other Personality Assessment among Student Athletes**

*Friedrich Feldrappe*

*Faculty Advisor: Kristin Cistulli*

In person-perception studies, participants rate themselves and each other on a personality index. When participants are previously acquainted, if self- and other-rating display high levels of consensus, it can be concluded that the participant accurately assesses their own personality. One of social psychology's main findings has been a high level of consensus between self and other ratings. However, the personality profile of athletes may differ from that of non-athletes, the personality profile between men and women may differ, and lastly, the personality profile between team-sport athletes and individual-sport athletes may also differ. This study seeks to explore the extent to which self-other agreement is different across men's and women's athletic teams, and the extent to which self-other agreement is different for team sports and individual sports. For the current study, student-athletes will be recruited in groups of four from the varsity sports teams at USJ. The participants will first rate their personality on a shortened version of the Big Five Index, and then the personalities of their group members using the same scale in a paper-and-pen study. Afterward, statistical analyses will reveal the level of agreement between self-rating and other rating. The researchers hypothesize that there will be no differences between the men's and women's teams, but that team sports may show more self-other agreement than individual sports.

## **The Interplay Between Continued Climate Change and Individuals Living with Type 2 Diabetes**

*Syed Ali*

*Faculty Advisor: Nancy Billias*

This literature review explores the intricate relationship between climate change and Type 2 Diabetes Mellitus (T2DM), emphasizing its implications for individual health and healthcare systems. As global climate patterns continue to shift, the impact on T2DM incidence, progression, and management becomes increasingly evident. T2DM, already a significant global health burden, faces new challenges in the context of changing environmental conditions. Among the myriad health challenges affected by climate change, the landscape of chronic diseases, particularly Type 2 Diabetes Mellitus (T2DM), faces an evolving and intricate relationship with the shifting climate patterns and further projects a critical concern for the outlook individual health and the dynamic between projections for healthcare needs. T2DM, characterized by insulin resistance and impaired glucose regulation, already presents a substantial health burden worldwide as its prevalence has surged in recent decades, escalating into a global epidemic that impacts millions of lives annually. However, the convergence of climate change and the complexities of managing T2DM heralds a new era of challenges, necessitating a comprehensive examination of its multifaceted implications. Individuals in health and biological sciences are especially implicated in these challenges considering their future careers as healthcare providers that would be involved in managing and mitigating T2DM in the face of continued climate change. By synthesizing current research findings, this review underscores the urgent need for interdisciplinary collaboration and proactive measures to address the dual challenges of climate change and chronic diseases. Insights from this review can inform healthcare providers, policymakers, and researchers in developing strategies to mitigate the impact of climate change on T2DM and promote health equity in a rapidly changing world.

## **The Effects of Climate Change in Wildland Firefighter Well-Being**

*Nicholas Pulcini*

*Faculty Advisor: Nancy Billias*

Climate change is becoming an increasing challenge in the lives of many people all over the globe, but no more than for wildland firefighters. Over the last decades fires have trended to be larger and have burned more violently, with some estimates putting the fire season to last nearly the entire calendar year by the end of the 20th century. The change in wildfires brought on by climate change has affected the mental health, physical health, and many other critical aspects for the well-being of wildland firefighters. A review of existing scientific literature was conducted to first establish a link between a worsening fire season and climate change. With this confirmed link, the mental health, risk for cancer, metabolic needs, and sleep were explored in the wildland fire community in the United States, Canada, and Australia. It was unfortunately confirmed that all aspects reviewed over the course of this research have experienced considerable detriments over the last few decades and will continue to worsen with time. In short, we are heading for catastrophe, the well-being of those in the wildland fire community is worsening with every season, and serious change must take place in order to retain current wildland fire suppression capabilities.

## **The Effects of Wildfires on Respiratory Health in the Pediatric Population**

*Julia Szymanski*

*Faculty Advisor: Nancy Billias*

An average of 6.9 million acres of land are being burned annually in the U.S. alone. Climate change is rapidly increasing and is getting worse year after year. There are increases in greenhouse gas concentrations in the atmosphere, surface temperatures, ecological degradation, and wildfire rates. Wildfires are increasing in frequency and intensity which is devastating for the environment and puts human health at risk. Smoke from wildfires worsens the air quality since it contains particulate matter, pollutants, and gases. These components are very toxic and hazardous and should not be inhaled by humans. Children are especially vulnerable since their respiratory system and immune system are immature and still developing. This puts them at a higher risk for infection and disease. Therefore, with increasing rates of wildfires, it is likely that they contribute to declining respiratory health in the pediatric population. The purpose of this paper is to answer the question: "What are some of the ways that wildfires negatively impact respiratory health in the pediatric population?". The articles being discussed in this paper seek to show the correlation between wildfire smoke exposure and certain negative respiratory health effects specifically in the pediatric population. This paper aims to investigate the global impact of wildfires by exploring studies done in various countries. It will also provide potential solutions and changes that can be made to reduce the human impact on climate change.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Psychology – Poster Presentations*

## **Benefits of Horticultural Therapy for Incarcerated Individuals and the Climate**

*Callie Barto*

*Faculty Advisor: Nancy Billias*

Gardening programs and horticultural therapy have been shown to help to improve mental health in incarcerated individuals. With horticultural therapy, patients are able to grow produce while also gaining beneficial physical and mental skills. In institutions such as prisons, growing their own food and plants may also help reduce the carbon footprint being put out into the climate. Focusing on prisons, where inmates can actively contribute to food production, this project investigates the dual benefits of enhancing mental well-being and reducing the carbon footprint within correctional facilities. The research question can be applied globally, emphasizing the need to understand the diverse effects of gardening programs on inmates in different geographical environments. The hypothesis speculates that these programs not only aid in inmate rehabilitation and reduce recidivism but also contribute to the goal of reducing food waste. This study addresses the gap in research on horticultural therapy specifically for incarcerated individuals. Additionally, this research aligns with the critical concerns of the Sisters of Mercy, emphasizing connections with Earth and Non-Violence. By examining the reviewed articles through these lenses, this project demonstrates how reducing violence and supporting environmental sustainability are intertwined goals that can be addressed through horticultural therapy programs.

## **Social Well-Being in Students With and Without Special Education Support Needs**

*Julia Martocchio*

*Faculty Advisor: Kristin Cistulli*

This study explored differences in social wellness for Connecticut students (grades K-8) who do and do not receive special education services as reported by their caregivers. Variables include social wellness, support needs, parent concerns, and experiences with extracurricular activities. Although there are differences, children in both groups report overall social wellness and look forward to going to school. Areas of concern include significant differences in children wanting more friends and struggling with self-confidence.

## **When You Need a Hand: Perceptions of Counseling Services on College Campuses**

*Julia Rostkowski*

*Faculty Advisor: Kristin Cistulli*

The purpose of this study was to determine the extent to which college students anticipate stigma from their family, friends, and peers because of seeking counseling services and the extent to which they value privacy and convenience of counseling. Participants anticipated less stigma from friends than from peers or family. They also indicated that they valued privacy and convenience of counseling services, even though they generally preferred in-person counseling services.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Pharmacy – Oral Presentations*

## **Evaluating Oncogenic Noncoding RNA Gene Expression in Diverse Cancer Cell Lines Using RT-PCR.**

*Caleigh Dodge*

*Faculty Advisor: Anisha Gupta*

Non-coding RNAs play an important role in diverse cancers. In particular, microRNAs or miRs are ~20-25 nucleotide long non-coding RNAs, which regulate post-transcriptional gene expression. MiRs regulate the expression of > 50% of all mRNAs in humans; hence, miRs are essential for fundamental biological processes. The dysregulation of miRs, either upregulation (oncomiRs) or downregulation, plays a pivotal role in cancer pathogenesis. Multiple studies have reported aberration in miR expression levels in cancer patients, leading to poor prognosis and overall survival. Among these miRs, miR-17-92 are highly upregulated oncomiRs contributing towards cancer progression and are promising therapeutic targets for cancer therapy. However, the miR-17-92 expression can vary among different cancer cell lines. It is important to find the gene expression level of miR-17-92 among various cancer cell lines ranging from adherent to non-adherent cell lines. This information will be informative in determining the experimental workflow and dose-dependence of novel microRNA inhibitors for different cancer cell lines. The objective of this study is to culture diverse cancer cell lines: lung, liver, blood, lymphoma, and brain cancer cells, and evaluate the miR-17-92 gene expression levels at various times (24, 48, and 72 hours) via real-time-polymerase chain reaction (RT-PCR). Further, we plan to assess the miR-17-92 levels using RT-PCR in the RNA samples acquired from the different cancer cell lines derived from mouse xenografts. Overall, this project aims to provide the necessary information regarding molecular targets in a wide spectrum of cancer cell lines to determine diverse therapeutic regimens using novel inhibitors. The initial step will involve optimizing RT-PCR, followed by the analysis of RNA gene expression in several cancer cell lines as part of the research.

## **The Confusing Correlation Between UTIs and Delirium/Dementia in Elderly Patients**

*Eva Michalik*

*Faculty Advisor: Jennifer Podoloff*

Urinary tract infections (UTIs) are common in the elderly population. Symptoms of UTIs in older adults are atypical and are often associated with complications such as delirium and dementia. The goal of this research is to review the literature and evaluate existing studies to determine the correlation between UTIs and the onset or exacerbation of delirium or dementia in elderly patients. The review employs a systematic approach, searching databases, including PubMed, for relevant articles. Eligible studies are assessed for their methodological quality and relevance to the research question. Data extraction focuses on key findings regarding the association between UTIs and delirium or dementia, including potential mechanisms underlying this relationship. The findings of this review will inform healthcare professionals about the importance of early detection and management of UTIs in preventing or mitigating delirium and dementia in elderly patients, thereby improving their overall quality of life and reducing healthcare burden.

## **Antisense Strategies Targeting AKT for Breast Cancer Therapy**

*Mahnoor Khan*

*Faculty Advisor: Anisha Gupta*

Breast cancer accounts for 12.5% of all new annual cancer cases worldwide, making it the most commonly diagnosed cancer in women. To resolve the global issue of breast cancer, there is an urgency for more effective treatments and strategies. Protein kinase B known as AKT, is a class of genes that has potential to turn into oncogene once mutated. The AKT serine/threonine kinase family is made up of three isoforms - AKT1, AKT2, and AKT3. Activation of the AKT signaling pathway, especially AKT1 and AKT2 regulates cancer cell proliferation, survival, migration and metastasis in the breast cancer. Hence, inhibiting AKT1 and AKT2 at genetic level can be a promising therapeutic tool for treating breast cancer. Our study is centered on applying antisense oligonucleotide (ASO) based therapeutics to inhibit the translation of oncogenic AKT mRNA to treat breast cancer. Our ASO design incorporates three 2'-O-methyl modifications on both ends and at alternate positions are phosphorothioate modifications in the sequence. These modifications enhance the enzymatic stability of ASOs. For our study, we have also used ASO based oncogenic AKT gene inhibition in combination with Proteolysis Targeting Chimeras (PROTACs) to target AKT protein for effective cancer therapeutics. To test the effectiveness of our designed AKT inhibitors, we have used RTPCR based gene expression analysis and cell viability assays in different breast cancer cell lines. We hope that our study will provide new avenues for the breast cancer therapeutics based on targeting AKT inhibition and can treat millions of patients suffering from this dreadful disease.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Pharmacy – Poster Presentations*

## **From Diversity to Delivery: Evaluating a Curriculum on Culture and Health Beliefs**

*Briana Gamache*

*Faculty Advisor: Heba Eassa and Zhao Li*

To evaluate the effectiveness and impact of an elective “Culture and Health Beliefs in Pharmacy Practice course” offered to PharmD students. Method: The students enrolled in the elective were given a pre-course survey instrument including 16 questions assessing their knowledge about cultural differences. A post course survey was conducted for comparison. Mean scores for pre- and post-course cultural self-assessment surveys were compared. The survey instruments were designed to measure change in the students’ perceived knowledge and understanding regarding cultural, competencies and health related practice. The cultural assessment survey instrument was an evaluation tool comprised of 16 questions developed by the National Center for Culture Competence. It covers the 6 components of cultural competency (ie, cultural awareness, cultural knowledge, cultural skills, cultural encounters, cultural desire, and cultural empathy). Results: Compared to pre-course survey, post-course survey indicated a higher level of confidence in all areas. The greatest improvements were seen in “The influence of conscious and unconscious (implicit) bias and assumptions on individuals and organizations.” (3+4, pre-course survey vs post-course survey, 66% vs 92%), “accurately list and describe elements of culturally competent health care” (3+4, pre-course survey vs post-course survey, 59% vs 91%). Conclusions: Findings suggest that the course successfully addresses key aspects of cultural competence and sensitivity relevant to pharmacy practice. It raised students' awareness of biases and assumptions and enhanced their understanding of culturally competent healthcare practices.

## **Nutraceuticals' Bioavailability: Impact of Endogenous and Exogenous Factors**

*Andrea Pezzullo*

*Faculty Advisor: Heba Eassa*

DeFelice defined nutraceutical as a food or part of it that has medical or health benefits, including disease prevention and/or treatment. As consumers seek more natural ways to achieve therapeutic and health benefits, nutraceuticals are becoming more popular. Regulatory agencies in the United States and the European Union view nutraceuticals within the context of supplements. When considering nutraceuticals, it is important to evaluate both bioavailability and bioaccessibility. The former refers to the amount of the ingested nutraceutical reaching the systemic circulation. Bioaccessibility is the amount of ingested nutraceuticals available for absorption from the digestive tract following digestion. Similar to medications, the effectiveness of nutraceuticals is related to their oral bioavailability. However, the bioavailability of these compounds can vary greatly depending on different endogenous and exogenous factors. Endogenous factors include liberation from food matrices, dissolution, interaction with gastric content, absorption, and metabolism. Among exogenous factors, physicochemical properties, nature of the matrix, and processing are the most important factors affecting nutraceuticals’ bioavailability. In the book chapter, we discuss the main factors that affect nutraceuticals’ bioavailability. Moreover, we highlight the classification system proposed based on factors influencing nutraceuticals’ oral bioavailability. Besides, various strategies to enhance nutraceutical bioavailability, such as the use of delivery systems, processing techniques, and dietary modifications, are briefly discussed.

## **Investigating the Pharmacological Profiles of Ten Potential SGLT2 Inhibitors**

*Gabriela DeMatteo*

*Faculty Advisor: Zhao Li*

The sodium-glucose cotransporter-2 (SGLT2) inhibitor class demonstrates efficacy in reducing cardiovascular (CV) risks in type 2 diabetes (T2DM) patients. With the rising prevalence of T2DM, there's a demand for innovative treatments. We are investigating 10 novel compounds for their glucose transportation inhibition akin to empagliflozin, their potential in reducing ischemia/reperfusion-induced cardiac injury, and the mechanisms involved in their cardiac protection. The capacity of the 10 novel compounds to inhibit glucose transportation was evaluated utilizing Human Coronary Artery Endothelia Cells (HCAEC). Glucose uptake was measured using Cayman's Glucose Uptake Cell-based Assay Kit. Cardioprotective effects were evaluated by subjecting cells to ischemia/reperfusion injury. Cells were treated as control or the novel compounds and/or expose to ischemia/reperfusion injury. Ischemia/reperfusion injury was induced by placing the cells in a nitrogen tank for 1hr followed by 24hrs reperfusion in normal cell culture environment. Previous data from our lab suggests that improved nitric oxide release and reduced oxidative stress are related to cardioprotective effects of empagliflozin. LDH assay measured cellular damage, while eNOS expression and oxidative stress were analyzed via western blot and assay kits, respectively. Results showed all compounds, except #3, reduced glucose uptake. Compounds #3, #5, and #9 significantly decreased LDH compared to the ischemia/reperfusion group. In conclusion, these compounds exhibit potential as SGLT2 inhibitors, suggesting promise in treating glucose-related conditions like diabetes. LDH assay results indicate a potential protective effect for three compounds. Continued research is vital to unravel their mechanisms and assess preclinical efficacy and safety.

## **Application of Antisense Therapeutics in Multiple Myeloma**

*Nikki Truong and Suela Resuli*

*Faculty Advisor: Anisha Gupta*

Multiple myeloma (MM) is a blood cancer characterized by excessive growth of plasma cells in the bone marrow, leading to immunodeficiency, kidney problems, bone damage, and high levels of immunoglobulins (IgG and IgA). Given a five-year survival rate of 59.8%, the prognosis for patients with MM is poor. Despite the availability of several treatment options for MM, there are limitations with current FDA-approved therapies. For example, MM patients may have differing responses to small molecule or monoclonal antibody agents, leading to poor outcomes. Antisense oligonucleotide (ASO) based therapies offer another attractive approach to target MM disease. ASOs, an emerging area in drug therapy, are single stranded DNA or RNA analogs that bind to RNA sequence specifically and modulate protein expression. Several gene targets and microRNAs play a strong role in the progression of the MM disease. In this review, we systemically discuss the role of different miRNA and gene targets in tumor growth and bone disease in MM, while discussing ASO based approaches. We hope, that our comprehensive review helps to shed light on several miRNA and gene targets that can be exploited by ASOs to individualize MM therapy leading to better patient outcomes.

## **Implementation and Outcomes of Switching from AUC to Trough Vancomycin Dosing in Hospitals**

*Timothy Moy*

*Faculty Advisor: Allissa Long*

Vancomycin is a glycopeptide antibiotic that is often prescribed in hospitals as a bactericidal agent to treat methicillin-resistant staphylococcus aureus (MRSA) infections. MRSA is a major concern in hospitals as this is an antibiotic-resistant infection that limits treatment options. One of the medications of choice for MRSA is vancomycin, emphasizing the importance of optimal dosing. Most hospitals dose vancomycin based on trough levels. This has been used as a quick and simple method to determine the dose required to reach target efficacy and safety ranges in serious infections, however many patients are at a higher risk of nephrotoxicity. It has been demonstrated that dosing vancomycin on area under the curve (AUC) and minimum inhibitory concentration (MIC) reduces the risk of nephrotoxicity and improves patient outcomes. However, implementing AUC: MIC dosing can be a challenge due to updating institutional guidelines, implementing systems to perform AUC calculations, and additional costs and training. This research project will evaluate the implementation and outcomes between AUC and trough vancomycin dosing in hospitals. This will be accomplished via a literature review to determine best practices that could be used in the transition to AUC vancomycin dosing in hospitals.

## **Evaluation of Step-Down from Intravenous to Oral Antibiotic Therapy in Patients with Uncomplicated Gram-Negative Bacteremia in a Community Teaching Hospital**

*Cleveland Ridley*

*Faculty Advisor: Tiffany Tsai*

Gram-negative bloodstream (GNB) infections present challenges due to their impact on mortality and economic burden. Clinical guidelines lack definitive recommendations on optimal antibiotic administration route in GNB infections, yet current practice typically involves prolonged intravenous therapy. However, research provides supportive evidence in favor of transitioning patients with GNB infections to oral antibiotics after achieving source control and clinical response. Oral therapy enhances quality of life by reducing hospitalization length, health care costs, and catheter-associated complications. This study aims to assess intravenous-to-oral antibiotic transition for GNB infections in a community teaching hospital, leading to development of a pharmacist managed step-down guide.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

## *Physician Assistant Studies – Poster Presentations*

---

## **Meeting the Demands of the Opioid Epidemic: The Need for Dedicated Buprenorphine Education for Physician Assistant Students**

*Abigail Leander*

*Faculty Advisor: Susan Curilla*

There is a continued need for improved access to medications for opioid use disorders to address the dynamic opioid epidemic. Although federal laws have changed to de-regulate buprenorphine prescribing, educational standards for physician assistant (PA) students remain unchanged and continue to produce suboptimal outcomes. This paper reviews current literature and explores the outcomes of integrating buprenorphine education into both medical school and PA school curricula. Students were receptive to the inclusion of buprenorphine training into their pre-licensure curriculum and preferred formats that were in-person, interactive, and included clinical application. There was no clear preference about the timing of training in regard to it occurring in the didactic or clinical portion of schooling. Most importantly, educational interventions produced significant changes in knowledge about opioid use disorder, buprenorphine, and students' self-reported intention to prescribe. Integrating buprenorphine education into PA programs' curricula is an effective and feasible intervention to reduce educational barriers to prescribing buprenorphine.

## **No Pain, More Gain: Improving Pain Management During IUD Insertion**

*Ruqayah Mohammed*

*Faculty Advisor: Patricia Marriott*

Contraception is an essential part of healthcare that is utilized by 1.1 billion people worldwide. Intrauterine devices (IUDs) are an effective method of contraception; less than 1 in 100 patients using an IUD get pregnant within the first year. While an IUD is a long term, reversible, and effective option for contraception, not even 1/5 of the population utilizes it. A reason for this is the negative attitudes surrounding IUD insertion and the expectation of high levels of pain by the patients, often fueled by anecdotes from previous patients who have undergone the procedure and had a negative experience. There is currently no standard of care for pain management during this procedure. While it is common to recommend the patient take ibuprofen or other over the counter pain medications before the procedure to mitigate discomfort, there are no official recommendations for how to manage pain in the setting of IUD insertion. This literary analysis reviews research regarding attitudes towards the procedure, the efficacy of various forms of analgesia, and comparison of IUD insertion methods in an attempt to develop a standard of care for IUD insertion that mitigates pain as much as possible. Pain management is an essential part of treating patients, improving patient outcomes, and maintaining the patient-provider relationship and should be made a priority in the setting of IUD insertion.

## **Aerobic Exercise Improves Symptom Control and Recovery Time in Adolescents with Post-Concussion Syndrome**

*Daniel Amuso*

*Faculty Advisor: Kara Fluck*

Concussions, also known as mild traumatic brain injuries (mTBIs), contribute to the morbidity and mortality of adolescents. Adolescents may experience post-concussion syndrome (PCS), which is the experience of persistent symptoms longer than one month after the initial injury. This impacts the quality of life of adolescents by affecting their daily activities and overall health for an extended period. For years, the standard of care for concussions established by past research consisted of prescribed rest. Based on recent research, treatment for concussions shifted to a gradual introduction of exercise. The use of early aerobic exercise has also demonstrated benefit in symptom control and recovery time in adolescents with PCS. Despite this change in the standard of care for acute concussion management, the universal recommendations for treatment of adolescents with PCS are lacking and remain controversial. Individualized sub-threshold aerobic exercise should be included in the standard of care for adolescents with PCS. More research is needed to fully understand how early aerobic exercise improves adolescents with PCS and what dosage is best for exercise prescriptions.

## **Urgent or Emergent? The Gap in Patient Education on Determining Appropriate Levels of Care for Non-Emergent Conditions for Improved Outcomes**

*Kristen Shubert*

*Faculty Advisor: Colleen Chappell*

Emergency departments are overcrowded, as volumes have increased by 18.4% from 2006 to 2014. This leads to delayed initiation of treatment, prolonged waiting times, increased length of stay, and poor satisfaction ratings. While emergency department visits cost more, there is a 60-75% overlap between diagnoses made in urgent care centers and emergency departments, demonstrating that urgent care centers are an appropriate alternative for non-emergent conditions. The use of urgent care centers for non-emergent visits, rather than the emergency department, allows for decreased volume at emergency departments. Optimization of urgent care centers would help ease the burden of overcrowding in the emergency department, having the potential to improve time to initiation of treatment and decrease emergency department wait times, while also decreasing costs and wait times for patients with non-emergent complaints. However, there is a current lack of unbiased, widely accepted, and accessible resources for both providers and patients regarding how patients can seek an appropriate level of care when experiencing symptoms. Because of this, there are no available, universally accepted materials for providers to proactively educate patients on this topic as part of preventative care, creating a gap in patient education. Overall, further research is needed to create appropriate, unbiased, and accessible resources to facilitate provider-based patient education.

## **Mood-lifting Magic Mushrooms: The Therapeutic Potential of Psilocybin in the Treatment of Major Depressive Disorder**

*Kristen Swanson*

*Faculty Advisor: Patricia Marriott*

Major depressive disorder (MDD) is a highly prevalent, often disabling disease, that leads to significant morbidity and mortality worldwide. In spite of many available therapeutics, patients may fail to achieve remission or suffer intolerable side effects after multiple treatment trials, highlighting the need for new treatment options. Psilocybin, a classic psychedelic with a favorable safety and side effect profile, significantly decreased depression scores and helped participants achieve remission in recent open label and Phase II clinical trials. Antidepressant effects are likely mediated through 5-HT<sub>2A</sub> receptor agonism, which dissociates neural connectivity and promotes neuroplasticity. During accompanying psychotherapy, psilocybin-mediated cognitive flexibility allows reframing of negative ruminations associated with depression. Psilocybin therefore represents a promising therapeutic when compared to the mediocre efficacy and significant side effect profile of current medications. Accordingly, it has been heralded as a paradigm-shifting treatment by various media outlets. The goal of this research is to analyze current clinical trials studying psilocybin in the therapeutic context and evaluate whether the cultural and media enthusiasm regarding psilocybin is substantiated by published research. In spite of promising safety and efficacy data, the preliminary nature of research and presence of methodological limitations in current trials precludes the approval of psilocybin by the U.S. Food and Drug Administration. Legal and regulatory barriers must also be removed to allow implementation into clinical depression treatment protocols. Research that addresses these concerns must be performed before psilocybin can be validated as a new, paradigm-shifting therapeutic for MDD.

## **Depression Management and Its Effects on Effective Contraception Use**

*Carla Altema*

*Faculty Advisor: Brian Munday*

Almost half of pregnancies in the United States are unplanned. Despite the awareness of available contraceptive methods, the problem continues to persist with limited research that focuses on finding the root of inconsistent contraception use. Most of the research shows social determinants of health are the main factors limiting the effectiveness of contraceptive use. When comparing income, education level, and race, the data revealed unplanned pregnancies were more common amongst women of low income, lower education levels, and of minority race. Newer studies show struggling with depression can greatly impact whether contraception is used efficiently. Depression continued to be a significant factor when evaluated independent of socioeconomic status, education, and ethnicity. Studies have shown having high self-efficacy has been shown to promote more effective use of contraception. However, for women struggling with depression, self-efficacy is extremely limited by lack of motivation, indecisiveness, and impaired cognitive functioning. Managing depressive symptoms can reduce the burden of disease and improve decision-making skills, leading to more efficient use of contraception.

## **Minimizing Risk of Female Breast Cancer Secondary to Ionizing Radiation Exposure**

*Krysten Goossens*

*Faculty Advisor: Patricia Marriott*

Breast cancer is the most common cancer diagnosis received. Approximately 240,000 cases of female breast cancer and 2,800 cases of male breast cancer are diagnosed annually in the United States. Of those diagnosed with female breast cancer, roughly 42,000 cases are fatal. Individuals who work in close proximity to ionizing radiation, an established breast cancer risk factor, may be exposed to high doses of occupational radiation which increases the risk of developing a malignancy. In the healthcare setting, ionizing radiation exposure occurs routinely in the radiology department, as well as the procedure and surgical suites where imaging is utilized for guidance. One risk mitigation strategy to reduce exposure is the use of personal protective equipment. Radiation protection guidelines recommend that all healthcare workers (HCW) use lead vests to shield radiosensitive areas of the body, including the breast. Women have an increased amount of radiosensitive tissue when compared to their male counterparts and are not adequately protected by the standard lead vests that are often issued to medical staff by employers. Standard lead vests leave the upper outer quadrant of the breast exposed, leading to an increased relative risk of breast cancer in female healthcare workers. In conjunction with generalized measures to decrease the amount of occupational radiation exposure to the female HCW's body as a whole, augmenting typical protective vests with lead sleeves, wings, or axillary supplements may help to further shield the entirety of the female breast.

## **The Use of Lithium Chloride as An Emerging Alternative in the Management of Osteoporosis**

*Marisa Matthews*

*Faculty Advisor: Patricia Marriott*

In the United States, osteoporosis affects approximately 10.2 million people over 50. This is all due to an imbalance of osteoclast and osteoblast activity. Several pathways in our body are regulators for osteoblasts and osteoclasts. However, manipulation of the canonical Wnt signaling pathway could lead to the most effective osteoporosis management available. Based on current management, bisphosphonates have been the mainstay treatment but come with several potential side effects and questionable efficacy. Some of the side effects patients on bisphosphonates can suffer from are osteonecrosis of the jaw, atrial fibrillation, and atypical femoral fractures. Recently, a novel treatment utilizing lithium, a well-known mood stabilizer for bipolar disorder, has shown promising results in increasing bone density and repairing bone fractures at faster rates than bisphosphonates when used at low doses. Lithium increases osteoblast function while decreasing osteoclast function, effecting the activity of both cells whereas bisphosphonates effect solely osteoclast function. In addition, lithium has shown a better side effect profile. This paper explores the use of lithium as an effective alternative treatment in the management of osteoporosis and the barriers to the implementation of this novel, yet effective approach.

## **Cryocompression Therapy Safely Reduces the Incidence and Severity of Taxane-Induced Peripheral Neuropathy**

*Olivia Kilbourne*

*Faculty Advisor: Kelley Piechowicz*

Peripheral neuropathy is one of the most common and debilitating side effects among patients receiving taxane-based chemotherapy. With minimal options available to treat chemotherapy-induced peripheral neuropathy (CIPN), focus has turned to interventions that may play a role in preventing it. Several studies have been conducted looking into cryotherapy, continuous limb hypothermia, and compression therapy as potential approaches due to their vasoconstrictive properties. While evidence is limited, several studies have shown these interventions to be efficacious. Therefore, there is thought that combining these techniques, a concept called cryocompression, may yield even more beneficial results. Although the data is just starting to emerge, there seems to be clear benefit to cryocompression in the prevention of CIPN. There are several clinical trials currently being conducted to help build the body of evidence supporting cryocompression therapy. In turn, the growing evidence may help break down the barriers preventing cryocompression from being implemented into practice. This literature review aims to show that cryocompression therapy safely reduces the incidence and severity of taxane-induced peripheral neuropathy.

## **Assessing the Impact of CGRP Monoclonal Antibodies in the Treatment of Chronic Migraines**

*Kassandra Rajha*

*Faculty Advisor: Mary Minto*

Migraine is a debilitating neurologic disorder that affects over one billion people globally. Migraine is the second leading cause of disability in adults of all ages worldwide, and it is the leading cause of years lost to disability in those aged 15-49. Chronic migraine causes significant economic burden, with increased indirect and direct costs, more days missed at work, and lower productivity. Individuals who endure chronic migraines are thought to endure more profound personal and socioeconomic hardships, leading to increased rates of anxiety, depression, and suicidal ideation. Current preventative treatments have not been specifically formulated for migraine prophylaxis and are associated with intolerable side-effect profiles that drive patients to discontinue treatments. Calcitonin gene-related peptide (CGRP) is an amino acid that has been implicated in the pathogenesis of migraine. CGRP monoclonal antibodies are a novel migraine prophylactic therapy that targets calcitonin gene-related peptide and its receptors. In adults with chronic migraines, the use of CGRP monoclonal antibodies effectively reduces the frequency of migraine episodes and the economic burden of migraines.

## **Spironolactone as Monotherapy for Acne Vulgaris in Adult Females: A Safe and Effective Systemic Alternative**

*Paige Lea*

*Faculty Advisor: Patricia Marriott*

Acne vulgaris is a vastly prevalent disease that disproportionately affects post-adolescent women compared to post-adolescent men. Despite this, there is a limited number of treatment modalities targeting the predominate pathogenesis of acne vulgaris in adult females, hormonal factors. Spironolactone provides an effective systemic alternative that mitigates the emergence of antimicrobial resistance, with research regarding its safety in adult female patients dating back to the 1990s. Unlike oral and topical antibiotics, spironolactone does not alter the skin's microbiome, and similar to the mechanism of action of oral contraceptive pills (OCPs), it works to reduce acne lesions through inhibition of androgen receptors on sebocytes. In turn, through the inhibition of androgen receptors, spironolactone effectively reduces sebum production and targets hormonal triggers of acne vulgaris. Despite its extensive history of use, spironolactone remains classified as an intermediate or adjunct option, with no FDA approval for its use in acne vulgaris. After extensive review of the literature, it was determined that in adult females dealing with persistent acne, spironolactone as monotherapy offers a longer-term solution compared to systemic alternatives like isotretinoin and oral antibiotics. In women with hormonal acne that persists despite adequate topical treatment, systemic spironolactone is a safe and effective option with the potential to aid in significantly reducing long-term oral antibiotic prescribing. In the age of increasing antimicrobial resistance and fewer women choosing to take OCPs for various reasons, oral spironolactone as monotherapy is an attractive alternative that should be considered a mainstay of systemic adult female acne vulgaris treatment.

## **Low Dose Naltrexone is an Effective Treatment for Chronic Pain Secondary to Fibromyalgia**

*Paige Tambling*

*Faculty Advisor: Patricia Marriott*

Fibromyalgia is a common rheumatologic disorder composed of chronic pain, depression, fatigue, and sleep disturbances. Current treatment options include antidepressants like duloxetine and anticonvulsants like pregabalin, which demonstrate inconsistent and limited efficacy, along with numerous side effects (Fattah & Elnemr, 2020). Opioids will sometimes be utilized in chronic pain, though they are known to be addictive and contribute to the ongoing opioid epidemic in the United States. Naltrexone, a mu and delta opioid antagonist, is a medication that is commonly utilized in the management of alcohol and opioid addiction. However, it has recently been found to demonstrate an analgesic effect at low doses and has been investigated in the treatment of multiple sclerosis, Crohn's disease, neuropathic pain conditions, and even some cancers. Though the exact mechanism is unknown, current studies have demonstrated low dose naltrexone to be effective in reducing pain in fibromyalgia. Additionally, less severe side effects are associated with its use. Only a few studies have demonstrated this beneficial effect so further research is required, but low dose naltrexone appears to be a safe, low-cost, and effective treatment option for the management of chronic pain secondary to fibromyalgia. Key Words: fibromyalgia, neuropathic pain, low dose naltrexone, analgesic, opioids.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

# *Public Health – Oral Presentation*

# **The Impact of COVID-19 on Afro-Caribbean Women's Cognitive Appraisal and Coping: Exploring Resilience and Strategies for Wellness**

*Lavar Johnson*

*Faculty Advisor: Kaydian Reid*

Women, especially Black women, experienced a disproportionate burden of COVID-19 stressors. For U.S. Afro-Caribbean Women, limited research exists on how they cognitively appraise and cope during stressful events. The study aimed to ascertain how Afro-Caribbean women appraised and cope during the COVID-19 pandemic. Study Design: The study design was a cross-sectional qualitative study conducted during the COVID-19 pandemic using a combination of sampling methods. Participants completed a socio-demographic survey, which informed the focus groups. We conducted three one-hour focus groups of 8 mixed nativity participants via Zoom. After verbatim transcription of the focus group, we uploaded de-identified transcripts into DEDOOSE, a Qualitative Analysis Software. We used Braun & Clarke's (2006) six-phase framework for a theoretical thematic analysis. Lazarus and Folkman's transactional model of stress and coping was used to understand how Afro-Caribbean Women cognitively appraised and coped with COVID-19-related stressors. Population Studied: We recruited 24 self-identified Afro-Caribbean women who were 18 and older and who were born in or had at least one parent from English-speaking Caribbean nations (e.g., Antigua, Barbados, and Jamaica). Principal Findings: Of the 24 self-identified Afro-Caribbean female participants, 42% were U.S.-born with an average age of 37 years old, while 58% were foreign-born with an average age of 34 y/o. For foreign-born people, the average age of migration was 11 years of age. More than 85% of the women rated their health status as good. The source of COVID-related stressors differed by nativity status: US-born stemmed from school-related adjustment, and foreign-born were work-related. COVID-related stressors, cognitive appraisal, and coping themes emerged. Afro-Caribbean women identified what was at stake as a result (i.e., primary cognitive appraisal) of COVID-19-related stressors. Lately, they assessed how they would cope given the limited resources during the pandemic. They implemented active coping strategies ranging from physical activity and community engagement in a virtual capacity, religious practices and spirituality (e.g., prayer and church attendance), virtual social support, and home wellness practices to therapy. However, there was a difference in therapy-seeking behavior, with U.S.-born participants being more likely to pursue therapy compared to their foreign-born counterparts. Conclusion: The findings highlight the resilience of Afro-Caribbean women in navigating the challenges brought about by the COVID-19 pandemic. Adopting a range of active coping strategies allowed them to maintain their well-being and find ways to address stressors despite limited resources. Implications for Policy and Practice: Understanding U.S. Afro-Caribbean women's coping behaviors during stressful events can inform the development of tailored and culturally responsive interventions and support systems tailored to the specific needs of Afro-Caribbean women facing similar challenges in the future.



UNIVERSITY OF  
SAINT JOSEPH  

---

CONNECTICUT

# *First Year Seminar – Poster Presentations*

## **Happiness Through Random Acts of Kindness**

*Alec Ash, Luke Banach, Madison Corcoran, Gabriella Delsanto, Jaci Felix, Nate Gabriel, Sergio Garre Guzman, Shaye Harris, Dylan Hood, Jordan Kates, Brooke Landry, Lily Lombardo, Mia Maignan, Aliyannah Makein, Jacqueline Thibodeau, Zachary Thielen, Blessyn Thomas, & Sofia Weiss*

*Faculty Sponsor: Beverly Salzman*

In our first-year seminar class, we practiced compassionate service by doing small tasks to make people's day. Compassionate service is a practice that involves selflessly helping other people with love, empathy, and kindness. By practicing compassionate service, we are addressing a variety of societal issues, such as social isolation and loneliness. The specific goal of our service project is to spread kindness and joy in hopes of making people's day better and inspire others to do acts of kindness. The projects conducted throughout the semester each have a specific role each student will play. Each student present helped with each of the random acts of kindness conducted such as writing kind notes around campus, helping PE and art in the Gengras Center, sending notes of gratitude to someone special, organizing chairs in empty classrooms, and assisting the biology department. The future of this project is one that is not necessarily a tangible outcome, but instead the creation of an ongoing culture that revolves around engaging in acts of kindness around the University of Saint Joseph. This goal is for this culture to be a perpetual tradition within the school that allows students to strive towards kindness in everything they do, whether it be a simple act like we have done so far or a widespread service project.

## **Building Community and Destigmatizing Disability Through Collaboration**

*Gabriella Borruso, Lauryn Budaj, Brianna Cannon, Isabella Castrillo, Lorraine Cloutier, Audrey Cox, Katrina Drouin, Analise Escarraman, Sophia Gallo, Kira Geiger, Judith Gomez Vera, Emmalena Hansted, Alison Hensel, Brian Ingraham, Patrick Kapusta, Taylor Lambert, Amarta Marku, & Vivian Pawloski*

*Faculty Sponsor: Derek Dube*

Up to 1 in 4 adults in the United States have a disability. Disability is a commonly misunderstood issue in today's society leading to inappropriate stigma, associating it with disease and helplessness. Further, individuals with disabilities have been found to be at an increased risk of loneliness. The University of Saint Joseph (USJ) provides individuals with disabilities of age 5-to-22 academic and vocational training through the Gengras Center. To strengthen the USJ community and decrease stigma around disability, our First-Year Seminar (FYS) II class is working with the Gengras Center during the Spring 2024 semester. FYSII students will engage with Gengras staff and students through whole class and small group visits throughout the semester, and collaborate on planning and implementing a community event to be held on April 26th, 2024. This event will consist of a Marathon as well as a festival-component, which allows for building connection between the USJ college, Gengras, and School for Young Children. Further, a goal of this event and semester is to support a local non-profit, specifically Hands-on-Hartford, an organization that helps individuals in the Hartford community struggling with housing, food, and health. Through our engagement with the Gengras Center this semester, we anticipate destigmatizing disability in our class population and USJ community at-large, and decreasing potential feelings of isolation and loneliness for all involved. Moreover, our work will be of service to the greater community, by generating funds and potentially donations for Hands-on-Hartford, showing the strength of collaboration across our USJ populations.

## **Intergenerational Service: Storytelling with McAuley Residents**

*Jada Blocker, Adriana Correa Berly, Ruairi Cronin, Joseph-Diego DeNicola-Rakvin, Karla Flores, Felicia Goodwin, Ashlyn Gordon, Craig Huffman, Alexandra Kwas, Alyssa Murray, Luca Muscarella, Taigan Parent, Riley Piechowicz, Brenna Plaziak, Julia Roy, Ethan Slowik, Daniela Tavares, Adrian Tran, & Hailey Wieczorek*

*Faculty Sponsor: Kristin Cistulli*

In previous research examining the experiences of older adults, results have shown that older adults living in care homes experienced much higher rates of severe loneliness (42%) than older adults living in other settings (22%; Schofield, 2021). Furthermore, other studies have demonstrated that the nature of social relationships in older adults is important for preventing loneliness, with more meaningful social relationships resulting in better outcomes (Simard & Volicer, 2020). Intergenerational relationship building is one possible way to improve outcomes in older adults, resulting in improved physical health, psychosocial health, cognitive function, and overall well-being (Zhong et al., 2020). To begin this project, students in this First Year Seminar met in small groups with residents from the McAuley to get a general sense of what the residents of the McAuley wanted from the project. After the initial brainstorming meeting, consistent small groups were established at mutually agreeable meeting times, with three meetings scheduled across three months. The class established questions to ask the residents of the McAuley to prompt storytelling and relationship building, such as questions about educational and career experiences, advice that they would give to younger generations, and their experiences growing up. This project is intended to promote meaningful connections between older and younger generations, connect the past to the present, and provide opportunities for both students and residents to expand their social circles to people they would not have otherwise met.

## **Providing Equity in Education Through S.T.E.M.**

*Keilany Acevedo, Christopher Brown, Celine Campbell, Natalie Capodanno, Neveah Craddock, Ryan Dattilo, Carly Demers, Griffin Dodder, Joseph Fritz, Thomas Grubbs, Rachel Jurkowski, Emma Mancini, Alexa Maser, Kaia Michaud, Breanna Perusse, Ne-Nubari Poi, Samantha Sacco, & Tyler Slack*

*Faculty Sponsor: Christopher Fox*

Today's education system continues to grow and change; both in positive and negative ways. In 1954, the United States Supreme Court declared "that separating children in public schools on the basis of race was unconstitutional" through its Brown vs. Board of Education decision (National Archives). The court intended for this decision to provide an equal and equitable education for all students. Decades later, students and families across the country continue to fight for educational rights. The goal of our service-learning project was to combat these racial disparities by providing students a chance to participate in activities based on science, technology, engineering and mathematics or S.T.E.M. Research conducted by Christopher Emdin, author of STEM, STEAM, Make Dream: Reimagining the Culture of Science, Technology, Engineering, and Mathematics, states that "we have a distinct culture, and we enact particular cultural norms that reinforce the exclusivity of the subjects and the ostracization of those whom society sees as not belonging." This "ostracization" affects school systems with higher populations of minority students the most. As a class, we learned what S.T.E.M. is, gained background knowledge of society's perception of S.T.E.M., and participated in a whole- class activity. This activity became a model for smaller activities developed for a diverse group of students in grades Pre-K through Grade 5. I hope students in the class increase their confidence when it comes to working, engaging, and communicating with children. I also hope students can continue to follow trends in education focused on equity and continue to raise awareness in whatever professional setting they choose in the future.

## **Empowering Meaningful Connections with the Elderly**

*Tony Acevedo, Sasha Aguirre, Jennifer Antonowicz, Benjamin Bausch, Steven Blazuk, Ryan Clarke, Aidan Cooke, Jaizalee Gonzales, Jodie Hammond, Lloyd Haynes, Ella Joslin, Christian Kaverud, Mohammed Khan, Alyssa Milligan, Henna Noori, Emily Piendak, Keila Sharofi, Lila Ward, Kalee Xiong, & Natalia Zappone*

*Faculty Sponsor: Kathleen Harding*

Students worked collaboratively to research and discuss potential engagement strategies to work with elderly religious (mostly Sisters of Mercy) living in Saint Mary's Skilled Nursing Facility. Students have developed activities and exercises, as well as, scripts to facilitate conversation and engagement that is open, inclusive, and encourages discussion of life history. The students are all working to determine the most efficient way to document the living history of the Sisters of Mercy and to glean knowledge and wisdom from the residents they meet with. The students have developed different themes based on their interactions with residents and their interview of key staff to create a "playbook" for facilitating compelling conversations with the elderly. The goal of these exchanges is to create a meaningful connection with residents while also documenting history that may be lost as the sister's age. Sample dialogue includes questions about childhood, memorable historic events, decisions to enter the convent, early religious life, challenges of religious life, family balance, and other information related to the lives of those who chose a religious life. The poster will present the themes developed, responses from residents, tips from students and knowledge and lessons gained about commitment to service, mercy values, and putting learning into practice.

## **How Serving our Kid Neighbors Strengthens the University of Saint Joseph (USJ) First-Year Students' Engagement**

*Mela Alikavazovic, Avril Benoy, Kate Costa, Karina Deros, Sheila Diaz, Kylea Garthwait, Adam Gauvin, Gianna Griswold, Juliette Lemieux, Chase Leonard, Annica Manglona, Kaden McCullough-Murphy, Hannah Morelli, Naiya Rawlins, Lorenzo Rivera, Sydney Robison, Kiara Rondon, & Brenden Tedeschi*

*Faculty Sponsor: Sheila Garilli*

School for Young Children (SYC) is one of the two laboratory schools at USJ. The partnership, created in the spring of 2023, continues with a second First Year Students (FYS) II class. SYC is a preschool for three to five-year-olds. Students will volunteer four hours between February and April, which fits the needs of the SYC community and falls under the meaning of compassionate service. The student's goals are to maintain a relationship with SYC, build USJ students' character, and develop a deeper connection with the youth while inspiring them. The students would like to assist with the needs of our community and the continued engagement of SYC by having them be part of the main campus culture. Students have been volunteering to complete tasks of organizing the library, craft closet, and classroom bookshelves, cutting easel paper, collecting trash outside, cleaning yoga mats and cutting stickers for future crafts, rearranging items in the kitchen, letting teachers out for bathroom breaks, and cleaning the chairs from paint and other stickiness. This compassionate service activity fosters a break from academic stress and workloads and offers personal and emotional fulfillment to the students of USJ. Engaging and contributing with the preschoolers and staff will expand our perspectives with new skill sets that will continue our relationship with SYC. Partaking in this service benefits both the students of SYC and USJ by bringing our community closer together.

## **Compiling Instructional Materials for Theater Community Discussions: An FYS Service Project**

*Daynah Echevarria, Jashawn Gee, Noah Isleib, Myles McDuffie, Jackson McEachern, Gjamory'a McTier, Jillian Milo, Jovany Montano, Abbas Noori, Ariela Pistov, Ryan Riviezzo, Jaylen Ruff, Naydariell Saldana, Thanushra Avinash Samaratunga, Gabriela Soderberg, Owen Stuart, Karolina Suscal, Paul Winslow, & Joseph Woszczyna*

*Faculty Sponsor: Madeline Perez De Jesus*

Theater is more than entertainment. It serves as a teaching tool to allow audience members to make broader meaning on themes from their own lived experience or imagine what it would be like to live under different circumstances. Examples of techniques used to integrate theater as a vehicle for reflection include Augusto Boal's "Theater of the Oppressed" model in which spectators become participants of the performance (Giesler, 2017), creating "Interdisciplinary Role Play" between students in theater and social work (Dennison, 2011), and using improvisation with youth clients in agencies (Chang, 2021). For the past 20 years, USJ has hosted Capital Classics Theater Company to perform Shakespeare plays. FYS students will embark on a service project to expand these performances to create intentional teachable moments with the community. Students will identify and collect "instructional materials" to serve as prompts for facilitators to support audience members' understanding of key themes in a theatrical performance. Instructional materials are defined as "alternative channels of communication, which {a facilitator} can use to concretize a concept during the teaching and learning process (Amadioha, 2009, p. 61). Students will be contributing to audience interactions regarding two plays: Hamlet and The Taming of the Shrew. The goal of this service project is to aid FYS students and audience members in finding the relevance of Shakespeare's work to current day circumstances. While this project will focus on live audience interaction, future directions include developing a countdown to performances with on-line discussion posts, blogs, and use of social media.

## **Media Literacy & Creative Expression: Creating Global Solidarity Messages**

*John Boateng, Alaina Charette, Julia Ann Freimuth, Jayden Gist, Jalen Holmes, John Lago, Julianna Lapointe, Alijah Lovelace, Oliver Low, Sara Noble, Kate Ostrowski, Eraan Qureshi, Paige Rieger, & Lilianne Rojek*

*Faculty Sponsor: Enitzaida Rodriguez*

Grounded in the course, "Media Literacy and Creative Expression: Creating Global Solidarity Messages," our service project will examine the impact of media on shaping perceptions, behaviors, and societal narratives. Recognizing the critical importance of media literacy in today's interconnected world. Our service project seeks to raise awareness about the effects of social media on society. We specifically intend to share our message with a high school Girl Scouts troop in Hartford, CT. Our goal is to equip and empower the Girl Scouts with tools in navigating the digital landscape. Through a series of media literacy activities, we will actively document our experiences with an in-class painting process, we will create a 3–5-minute educational presentation, craft symposium posters, and prepare for the USJ Symposium. By collaborating and engaging with diverse perspectives, our aim is to amplify our collective insights and stimulate meaningful dialogue on media literacy and global solidarity. Upon Project completion, we anticipate a shift in attitudes towards social media, with participants feeling less defined and overwhelmed by its influence. Our hope is that individuals will emerge with a renewed sense of agency, viewing social media as a positive tool for communication and self-expression rather than a source of anxiety or self-definition. As we continue to advocate for media literacy and creative expression our commitment to fostering global solidarity messages remains unwavering driving future directions for advocacy and action

## **Understanding How to Create a Welcoming, Supportive, and Encouraging Environment through the FYS Program for Incoming Freshmen**

*Vincenzo Addabbo, Benjamin Balducci, Tyler Carlstrom, Michael Decker, Charlotte Dunleavy, Angelina Fasci, Alexia Grech, Angela Ho, Christian Juvencio, Anna Legault, Dylan Meyer, Alexander Milne, Brandon Nagle, Vincent Pusateri, Sara Ross, Gabrielle Thompson, Jenna Topper, & Matthew Wurszt*

*Faculty Sponsor: Sheila Garilli*

Transitioning from high school to college can be intimidating for most first-year college students. FYS classes are helpful and comforting for transitioning students. Examining FYS class concepts and reviewing the purpose of FYS classes at USJ can help us better understand the support that first-year students might need. FYS classes provide opportunities for first-year students to become familiar with available resources on campus, such as the Center for Academic Excellence (CAE), financial services, and wellness programs. Incorporating student opinions, thoughts, and voices on what they want to learn in the classroom for future FYS courses could positively impact future classes. Professors could potentially create additional content that might benefit the entire class. The expected outcome is to help create innovative FYS content where students learn the necessary skills to thrive in college and outside of school. The idea is to ensure that the transition into college is well supported within this class and not see it as tedious and time-consuming in the first-year curriculum.

## **The Role for Art in Times of Crisis: A Service Project**

*De'geal Davis, David Findley, Nina Gardella, Rachael Jopeck, Matthew Ory, Adam Pelletier, Natalia Penkiewicz, Evelyn Sanchez, Eh K'lu Soe, Kristina Topper, Faith Vibberts, & Erin Webster*

*Faculty Sponsor: Derek Dube*

Throughout history, art has been used as a way to navigate times of crisis. In the Great Depression, the US government funded female artists to depict the struggles experienced, creating jobs for women and a historical record of the times. In 2020, in situ artwork was created in communities affected by the killing of George Floyd, speaking to racism and systemic inequalities. And in a situation of personal loss, Naomi Shihab Nye created the poem “Making a Fist” to cope with the loss of her own mother. The goal of our service project was to increase awareness of how art can be used in times of crisis as a tool to share experiences, express emotions, relate to and inspire others, and cope with traumas. To accomplish our goals, our FYSII class conducted research on how art has been used in these ways during past and current crises, at the global, community, and personal level. We then collaboratively created a resource that can be used to educate about the use of art in the time of crisis and as a tool for those experiencing crisis. This resource was shared by the class members through informal conversations and social media interactions and provided to the USJ Center for Wellness Development. We anticipate that this service project will help individuals in our USJ community and personal spheres of connection by providing an additional tool that can be used to navigate whatever crises they may encounter in their lives.