HONORS PROGRAM
SPRING 2025 SHOWCASE

APRIL 8-11, 2025 / 9 AM-3 PM
HONORS PROGRAM CLASSROOM (LB 211)

To attend the Showcase virtually, please scan the QR code below

PURDUE UNIVERSITY FORT WAYNE | Honors Program

Tuesday, April 8, 2025

9:00 am **Welcome Reception**

9:20 am **Opening Remarks, Farah Combs, Honors Program Director**

9:30 am **CARINA WILJER**
"Effects of Nordihydroguaiaretic Acid and Shikonin on Antibiotic Tolerance, Biofilm Formation and Cell Surface Properties of Mycobacterium abscessus"
Major: Biology (Microbiology and Immunology)
Minors: Music and German
Associate: Chemical Methods
Certificates: Biology Research; Honors
Faculty Mentor: Dr. Jaiyanth Daniel (Biology)

10:00 am **GWENNA LEHMANN**
"The stigma of homelessness: The role of mental health status"
Major: Psychology
Certificates: Death Education; Honors
Faculty Mentor: Dr. Jay Jackson (Psychology)

10:30 am **MANAL ALI**
"Effect of Aquaponic Formulated Feed on Nile Tilapia (Oreochromis niloticus) and Nutrient Composition Analysis of Thai Basil"
Majors: Biology (Microbiology and Immunology); Psychology
Associate: Chemical Methods
Certificates: Biology Research; Honors
Faculty Mentor: Dr. Ahmed Mustafa (Biology)

11:00am **ASHLEY (Ash) BISHOP**
"The Effect of Fetal Alcohol Spectrum Disorders on N-Cadherins in the Hippocampus"
Major: Biology (Microbiology and Immunology)
Minor: Psychology
Certificate: Honors
Faculty Mentor: Dr. Rebecca Palu (Biology)

11:30-12:50pm **BREAK**

1:00 pm **SARAH CISZ**
"The Effect of Cortisol Concentrations on Blood Parameters of Nile Tilapia"
Majors: Biology (Microbiology and Immunology); Psychology
Associate: Chemical Methods
Certificate: Honors
Faculty Mentor: Dr. Ahmed Mustafa (Biology)

1:30 pm **RIN ULICK**
"John Proctor is the Villain: Stepping into the Past"
Major: Theatre
Certificate: Honors
Faculty Mentor: Dr. Austin M. Rausch (Theatre)

2:00 pm **BREANNA HUNT**
"Healthcare Students' Perceptions & Knowledge of Aphasia"
Major: Communication Sciences and Disorders
Minors: Spanish; Psychology
Certificates: Gerontology; Honors
Faculty Mentor: Dr. Christopher Grindrod (Communication Sciences and Disorders)

2:30 pm **AUDREY BROWN**
"The effects of generic product branding and handedness on consideration set formation"
Major: Psychology
Minor: Criminal Justice
Certificate: Honors
Faculty Mentor: Dr. Raymond Voss (Psychology)

Carina Wiljer
"Effects of Nordihydroguaiaretic Acid and Shikonin on Antibiotic Tolerance, Biofilm Formation and Cell Surface Properties of Mycobacterium abscessus."

Major: Biology (Microbiology and Immunology)
Associate: Chemical Methods
Minors: Music; German
Certificate: Biology Research
Faculty Mentor: Dr. Jaiyanth Daniel (Biology)

Abstract

Mycobacterium abscessus is a non-tuberculous mycobacterium and emerging pathogen, most often affecting immunosuppressed patients and children with cystic fibrosis. It is extremely antibiotic-resistant and forms biofilms causing the bacteria to be long-lasting and difficult to treat, which poses a serious health concern. It is necessary to target *M. abscessus* biofilms to treat infections. Biofilms form due to the involvement of bacterial efflux pumps. By targeting efflux pumps, it may be possible to decrease biofilm formation and thereby treat infections more effectively using antibiotics. Nordihydroguaiaretic acid (NDGA) is a compound from the plant *Larrea tridentata*, that may function as an efflux pump inhibitor. This plant is commonly used in Mexican traditional medicine and NDGA has previously been observed to inhibit E. coli biofilms. Shikonin is a compound from the plant *Lithospermum erythrorhizion*. It has been observed to inhibit *C. acnes* and *S. aureus* biofilms and may also function as an efflux pump inhibitor.
We postulated that NDGA and shikonin might inhibit viability and biofilm formation of *M. abscessus*. Resazurin cell viability assays and crystal violet assays were performed to observe the effects on cell viability and biofilm formation. Checkerboard assays were performed to investigate potential synergistic effects between NDGA and the antibiotics ciprofloxacin, clarithromycin, amikacin, and cefoxitin which are used to treat *M. abscessus* infections. We determined minimum inhibitory concentrations, minimum bactericidal concentrations, minimum biofilm inhibitory concentrations (MICs) and minimum biofilm eradication concentrations for NDGA and shikonin against *M. abscessus*. We also investigated the effects of NDGA on the cell surface properties of *M. abscessus*. We observed that NDGA decreased the MICs of the antibiotics by 2.5 to 4-fold but did not show synergistic effects. We determined that NDGA and shikonin inhibit *M. abscessus* cell viability and biofilm formation and also disperse preformed biofilm in a dose-dependent manner. Our findings are significant and indicate that NDGA and shikonin may be potential therapeutic options for treating *M. abscessus* infections.

Biography

Carina Wiljer is graduating in May with a B.S. in Biology with a Concentration in Microbiology and Immunology, an A.S. in Chemical Methods, minors in both Music and German, as well a Biology Research Certificate. She has been in Dr. Jaiyanth Daniel's research lab for the past two years working on microbiology research. She has presented her research at the PFW Student Research and Creative Endeavors Symposium, as well as the Indiana Branch of American Society for Microbiology Conference in Indianapolis. She has worked at the Helmke Library for all four years during her undergraduate degree and is an officer in both the Microbiology and Tri-beta club at PFW. Outside of biology, she plays the cello in her free time and has performed in solo recitals and played in the PFW Orchestra. She also learns German and is currently studying for a German certification exam. In her free time, she likes to hike and explore State Parks with friends. She also enjoys sewing and has volunteered at local theaters making costumes. After graduating she plans to attend graduate school for microbiology to continue research with a focus on infectious diseases and bacteria. She hopes to continue doing research and to work in an industry or research lab.

Gwenna Lehmann
"The stigma of homelessness: The role of mental health status"

Major: Psychology
Certificates: Death Education; Honors
Faculty Mentor: Dr. Jay Jackson (Psychology)

Abstract

Homelessness is a growing and pervasive issue that affects millions of people around the world with widespread consequences for the individuals experiencing it. To better understand the nature of this social issue, some researchers have studied how homeless individuals tend to differ from the general population. One clear distinction that has been identified in multiple studies is the overlap between homelessness and poor mental health. As this vulnerable population experiences the challenges of homelessness as well as the effects of mental illness, societal perceptions of homeless individuals experiencing mental illness are critically important. The purpose of this study to fill this gap by exploring how the intersection of homelessness and mental illness influences public attitudes and stigma toward this group.

This study explores how mental health status influences public perceptions, focusing on dehumanization. The dual model of dehumanization (Haslam, 2006) suggests that stigma may manifest in two ways: the denial of an individual's human uniqueness (animalistic dehumanization) or human nature (mechanistic dehumanization). Given that serious mental illnesses often involve cognitive impairment and behavioral dysregulation, homeless individuals with a mental illness may be more likely to experience animalistic dehumanization. I hypothesize that homeless individuals with a mental illness will be dehumanized to a greater extent compared to those without a mental illness. This degree of dehumanization will in turn predict higher levels of stigmatizing attitudes. Results of this study indicate that dehumanization predicted greater negativity toward individuals when they are described as both homeless and/or experiencing mental illness. There was a significant effect when the target person was homeless and mentally ill, homeless and physically ill, and mentally ill alone. This effect was not significant when the target person was described as neither homeless nor mentally ill. The overall analysis highlights the role of dehumanization in stigma, particularly at the intersection of homelessness and mental illness.

Understanding stigma is crucial as it serves as a significant barrier to employment, healthcare, and housing for this population. By examining the intersection of homelessness and mental illness, this research provides insight into public perceptions of homelessness that can inform advocates working to reduce stigma and improve support systems for homeless individuals with a mental illness.

Biography

Gwenna Lehmann is graduating this May with a B.A. in Psychology and a Death Education Certificate. For the past three years, she has worked under the mentorship of Dr. Jackson as an undergraduate research assistant (RA), leading projects on Personality, Imagined Contact, and Health Stigmas, which she presented at the Midwestern Psychological Association (MPA) conference. She has also conducted independent research as an honors student on the Perceptions of Homeless Individuals with Serious Mental Illness, presenting this work at the PFW Student Research and Creative Endeavors Symposium.

In addition, Gwenna has worked as an RA in Dr. Voss's lab, where she contributed to research on Extending Attribute Framing to Names of Objects, also presented at MPA. Beyond research, she has served as a teaching assistant for Dr. Vartanian and played an active role in psychology education by organizing an educational event on death, dying, and grief. She has also worked as a psychology tutor, facilitating discussions and helping psychology students succeed academically.

Gwenna's deep engagement in community advocacy and leadership has earned her recognition through multiple honors, including the Junior Excellence Award in Psychology, Senior Excellence Award in Psychology, and being named one of PFW's Top 50 Students. As President of Active Minds, she organized peer support groups to foster conversations about mental health among students and hosted De-Stress Fest, a campus-wide event providing stress-relief activities and mental health resources. In her role as Vice President of Psi Chi, she has worked to promote student involvement in the Department of Psychology and supported professional development. In recognition of her contributions, she received the Building Block Award from the Student Government Association.

Her commitment to service and behavioral health extends beyond research and advocacy on campus, applying psychological principles to real-world social issues. Gwenna has volunteered at the Fort Wayne Rescue Mission, providing aid to individuals experiencing homelessness, and participated in a service-learning trip to Kilimanjaro, Tanzania, engaging in community-based health initiatives. She has also worked as a Behavioral Health Technician, supporting individuals in clinical settings who are struggling with mental health and substance use challenges. With aspirations of pursuing a Ph.D. in Clinical Psychology, Gwenna aims to continue her research on homelessness, mental illness, and stigma reduction, integrating both research and clinical practice to drive meaningful change.

Beyond her academic and professional pursuits, Gwenna has a variety of personal interests that keep her grounded and inspired. In her downtime, she enjoys reading and spending quality time with family and friends. Gwenna loves exploring new places to get coffee and indulge in delicious food, always on the lookout for the next hidden gem. She is also passionate about creating art in various forms, using different methods to express herself and spark creativity. These activities provide her with balance and help her stay connected to the world around her.

Manal Youssouf Ali

"Effect of Aquaponic Formulated Feed on Nile Tilapia (Oreochromis niloticus) and Nutrient Composition Analysis of Thai Basil"

Majors: Biology (Microbiology and Immunology) & Psychology
Associate: Chemical Methods
Certificate: Biology Research
Faculty Mentor: Dr. Ahmed Mustafa (Biology)

Abstract

Aquaculture is one of the most rapidly growing fields in the world due to their significant economic, social, and scientific implications. In this billion-dollar industry, it is crucial to understand various mechanisms that work best to optimize production without compromising the quality of the fish. Additionally, utilizing fish within an aquaculture system will aid us in opting for non-drug alternatives for the betterment of the fish, as well as the individuals around the world who consume the fish grown in aquaculture setting. Aquaponics, the use of farming fish and plants simultaneously, has been successfully used to produce more agriculture and aquaculture when used separately. Aquaponics systems are strategically organized in a way to maximize production as well as reduce chemical treatments. Specific aquaponic formulated feed has been produced to increase various nutrients to supplement those that are not as dense in an aquaponics system. Some nutrients that are deficient within an aquaponic system include phosphorus, iron, and potassium. The fish waste circulating through the system and water column will aid in supplementing the nutrients. This study aims to investigate the potential of aquaponic formulated feed within an aquaponics system utilizing Nile tilapia (*Oreochromis niloticus*) as the model organism. Utilizing two different experimental periods, the health of the fish and nutrient composition and density of basil will be observed. Using two different experimental periods and feed types, this experiment will help us in understanding which feed had the greatest effects on growth parameters and overall health of the fish. The feed types that will be used are Optimal Fish Food's Optimal Aquaponic feed and Purina Promax Fingerling Starter 300. Length, weight, blood glucose, packed cell volume, lysozyme, and plasma protein will be measured. Plants will be sent to A&L Great Lakes Laboratories for nutrient testing to evaluate nutrient density and composition. Total harvest wet and sample dry weight will be obtained as well.

Biography

Manal Ali is an honors student, double majoring in Psychology and Biology with a concentration in microbiology and immunology as well as obtaining an associate's in Chemical Methods and a Biology Research Certificate. Manal is very active on campus and has been the president of PFW's MEDLIFE Chapter for 2 years aiding in medical service-learning trips to Ecuador and Tanzania. Not only that, but Manal is president of the Pre-Medical Club, president of the Biology Club, is 1 of 4 student representatives on the College of Science Diversity, Equity, and Inclusion Committee, secretary of Beta Beta Beta Biological honor society, and is part of 3 research labs. Manal works in Dr. Michelle Drouin's lab where she studies sexuality/interactions with artificial intelligence, Dr. Jay Jackson's social psychology lab working on an individual study investigating racial factors in healthcare, and Dr. Ahmed Mustafa's stress physiology lab studying the relationship of drug alternatives utilizing an aquaponic system. Manal has also been an undergraduate teaching assistant for both biology and psychology courses. Outside of school, Manal works as a behavioral health technician at a drug and alcohol detox center and is an undergraduate informatics research intern at Parkview Regional Medical Mirro Center. Manal also volunteers at Black Pine Animal Sanctuary, Matthew 25, and is a teacher every Sunday teaching children Islamic history, Quran, and Arabic. Manal has also been inducted into Psi Chi's Psychological Honor Society and was chosen to participate in the selective Research Education for Undergraduate College Students at Indiana University School of Medicine. Manal has also been awarded the Dr. Beaumont S. Cornell Scholarship, Psychology Junior and Senior Excellence Award, and was a Top 50 student inductee. Manal plans to attend medical school, continue research, as well as become an immunology professor at a medical school.

Ashley (Ash) Bishop
"The Effect of Fetal Alcohol Spectrum Disorders on N-Cadherins in the Hippocampus"

Major: Biology (Microbiology and Immunology)
Minor: Psychology
Faculty Mentor: Dr. Rebecca Palu (Biology)

Abstract

Alcohol consumption during pregnancy is linked to changes in sensory processing, intellectual disabilities, developmental delays, cognitive impairments, and, in severe cases, facial dysmorphology in children (Khalifa et al., 2024). Fetal alcohol spectrum disorders (FASDs) encompass a range of symptoms resulting from alcohol exposure in utero. There is speculation that this spectrum of disorders impacts the dopaminergic pathway, particularly within the hippocampus. The hippocampus is the brain region responsible for memory and learning in individuals without these disorders. It is located in the left and right hemispheres of the temporal lobe and plays a key role in converting short- term memories into long- term ones, as well as in storing and retrieving verbal, spatial, and declarative memories (the recall of facts and events). Studies indicate that the hippocampus is a crucial site for alcohol- related changes. N- Cadherin, a conserved transmembrane cell- cell adhesion molecule, is an essential protein found in the hippocampus, vital for maintaining homeostasis and tissue development. The formation of spines and synapses depends on the trisynaptic adhesion complex formed by N- cadherins and β-catenins. The hippocampus- dependent memory for spatial episodes in adult mice was found to be severely compromised in the absence of N- cadherins. Thus, the N- cadherin/- catenin complex is thought to be crucial for controlling the ionotropic receptor composition of excitatory synapses. The right ratio of excitatory and inhibitory synaptic proteins is required to maintain the cerebral circuitry necessary for producing adaptable yet durable cognitive and synaptic functions (Nikitczuk et al., 2016). Cadherins regulate both cell signaling and cell- to- cell adhesion.

Furthermore, cells utilize cadherins to mediate signals that can control cell polarity, proliferation, and future specifications (Maître & Heisenberg, 2013). Fetal alcohol spectrum disorders (FASDs) influence synaptic plasticity and gene expression in the hippocampus, with significant downregulation of N- cadherin observed. Nonetheless, this has minimal influence on impulsivity, as the rats did not experience difficulty with learning or memory retention. Overall, understanding the complexities of FASDs in relation to N- cadherin downregulation could clarify changes within the brain and their resulting behaviors. This insight may also illuminate the mechanisms underlying these changes and inform targeted therapies. This will be crucial for our comprehension of the FASD spectrum of illnesses as we continue to investigate the effects of N- cadherin downregulation.

Biography

Born and raised in Fort Wayne, Indiana, Ash spent their early years singing and dancing in show choir as a valued member of both Allure and Charisma at Northrop High School. They started college as a psychology major but discovered a passion for biology after taking Anatomy 203. The following semester, they switched to a biology major and began their journey in the field. Although both paths pointed toward medical school, they found their true passion in biology, particularly in genetics and immunology, leading to a concentration in microbiology and immunology. Outside of college, they operate their own Etsy shop selling crocheted items and spend quality time with their incredibly supportive partner, Kelly. They have devoted much of their time to caring for their ill grandmother, Diane, who has been their number-one supporter throughout their life. They have dedicated their honors project to their grandmother, who is unable to attend due to her illness.

Ash spends summers in Indianapolis working with Eskenazi Health through the Gregory S. Fehribach Center, which helps college students with disabilities gain paid experience in their fields of study. This internship has allowed them to acquire experience in a clinical setting, collaborating with doctors, nurses, and social workers. They will continue their work in a hospital setting this summer. Ash has a hearing disability, but they do not let that stop them from pursuing every dream and goal. It has, however, sparked an interest in ENT (Ear, Nose, and Throat) medicine. They are open to various experiences and want to try different rotations before choosing a concentration. They've been accepted into the 4 + 1 program at PFW and will begin their master's degree in biology this upcoming fall. They are taking the MCAT in August and will apply to DO programs next school year, aiming to start in the fall of 2026.

SARAH CISZ

"The Effect of Cortisol Concentrations on Blood Parameters of Nile Tilapia"

Majors: Biology (Microbiology and Immunology); Psychology
Associate: Chemical Methods
Faculty Mentor: Dr. Ahmed Mustafa (Biology)

Abstract

Stress, which is a strained state triggered by external or internal factors and disrupts homeostasis, results in a variety of responses. In fish, stress can lead to decreased growth rate, increased enzymatic activity, weakened immune systems, and other issues. Studying stress is therefore important for improved fish aquaculture, as high stress can lead to a reduction in both quantity and quality of farmed fish. Cortisol is a hormone released by the adrenal gland in response to stress to maintain homeostasis. Higher stress conditions are directly correlated with higher cortisol concentrations. Due to this, cortisol is often used as a measurement of stress in research. Cortisol is only one aspect of stress response – investigating the effect of cortisol-induced stress alone would therefore be useful in seeing how it affects fish physiology.

This study investigated the effects of different concentrations of cortisol on the blood parameters of Nile tilapia over a period of 72 hours. Nile tilapia were chosen as the experimental model due to their economic importance, use in research and nutritional value. Fish were sampled every 12 hours. Parameters measured were blood glucose concentration, packed cell volume (PCV), and plasma protein. These parameters are often used as stress and health indicators, and they play a role in immunological processes. Results indicated that blood glucose and plasma protein indicated increased stress at increase cortisol concentration. For plasma protein, stress also appeared to increase with time. PCV did not drastically change between experimental groups or with time. When measuring cortisol-induced stress, blood glucose and plasma protein would be more useful blood indicators than PCV.

Biography

Sarah Cisz is a 22-year-old student at Purdue University Fort Wayne who was born and raised in Fort Wayne. She is an honors student, as well as Chapman Scholar and a recipient of the Top 50 award. At the end of this semester, she will be receiving her B.S. in Biology and Psychology, as well as her A.S. in Chemical Methods. Sarah is a part of Dr. Ahmed Mustafa's research team, which focuses on stress and aquaculture. She is also a part of Dr. Jody Ross's and Dr. Jimmy Yen's research teams, which focus on intimate partner violence and neurodegenerative diseases, respectively. By participating in these research labs, she has been lucky enough to have the opportunity to attend and present at conferences in Chicago and New Orleans. Outside of class, she participates in several clubs and organizations and is an officer for Microbiology Club, Premedical Club, Environmental Club, and Beta Beta Beta Biological Honor Society, as well as the Production Editor for the Summit City Journal. In her free time, Sarah enjoys spending time with friends, volunteering at Soarin' Hawk Raptor Rehabilitation, collecting records, and reading. She ultimately plans on applying to medical school in order to pursue psychiatry.

RIN ULICK

"John Proctor is the Villain: Stepping into the Past"

Major: Theatre
Faculty Mentor: Dr. Austin M. Rausch (Theatre)

Abstract

John Proctor is the Villain: Stepping into the Past Revisiting high school is a concept that many people would tremble at the thought of. This play is a reflection of reality that incorporates the intersection of feminism and misogyny, toxic gender norms, and silencing of women all through the voices of teenagers. *John Proctor is the Villain,* by Kimberly Belflower (2018), studies the complexity of high school relationships and small-town scandals. As a costume design and technology concentration in the Department of Theatre, it is a requirement to synthesize and apply course learning outcomes into a pre-professional design project. The costume design for *John Proctor is the Villain* is the culmination of all the classes I've taken, teaching me to navigate script analysis, research, communication and collaboration with a design team, costume sourcing, costume fitting, and finally rehearsal and show time.

First step of the costume design process is script analysis. The designer must read through the show several times. Making characters recognizable to an audience is important. Research for the costumes consisted of selfies from my sophomore and junior year of high school, influencer outfits, and Pinterest trends that me and my friends saved while we were teenagers. The primary focus is on designing costumes that reflect the characters' personalities, motivations, and relationships while emphasizing the contrast between social masks and true identities. Each character had a costume plot that reflected their emotional evolution over the course of the play. For example: the protagonist, Shelby's costumes transition throughout the show to reflect her growing empowerment while other characters (such as Mr. Smith) maintain their statements through convention. It is crucial to collaborate with the production team to ensure each element from lighting to set design blends together in harmony and matches the director's vision. Once each design is solidified, I am able to begin visualizing them through costume renderings that reflect the realism of the research I gather. Renderings inform the sourcing process i.e. pulling from our existing costume stockroom, purchasing from local vendors such as Plato's Closet. Fittings are the next crucial phase of the process, where the costumes are altered based on the actor's feedback, ensuring functionality all while maintaining visual storytelling. I engaged with the actors to coordinate costumes that matched the renderings and costume plot for their characters. Observing dress rehearsals helps communicate elements that cannot be foreseen before the costumes are put on stage. Some choices that were made weren't right, based on new information from the director and actors. It is vital to remain flexible and pivot when needed, as telling the story is more important than personal preference. When a show opens for an audience, the costumes transform from concept to reality. Components like color palettes, and textures aid the story in its effect.

Overall, through the elaborate process including collaboration, analysis, research, sourcing, fittings, and realization,, the costume design for *John Proctor is the Villain* serves as a fundamental visual component that enhances the play's exploration of feminism, victimization, and redemption.

Biography

Rin Ulick is a senior Theatre Major with a concentration in costume design and technology. She was most recently the costume designer John Proctor is the Villain here at Purdue Fort Wayne. Before that, Rin could be seen crewing for shows, or even acting in productions like The Tempest, Puffs! and Eleemosynary. Headed towards graduate school, it is Rin's goal to one day be a professor of costume design and pass their passion on to others.

Breanna Hunt
"Healthcare Students' Perceptions & Knowledge of Aphasia"

Major: Communication Sciences and Disorders
Minors: Spanish; Psychology
Certificates: Gerontology; Honors
Faculty Mentor: Dr. Christopher Grindrod (Communication Sciences and Disorders)

Abstract

Aphasia is an acquired language disorder with one of the highest prevalence rates among other neurological disorders. Aphasia often occurs due to damage to the left hemisphere of the brain and typically results in difficulties with language production and comprehension. These communication impairments are likely to have a significant impact on the quality of life of people with aphasia (PWA). Current research suggests that PWA are more likely to experience longer hospital stays, an increased likelihood of complications, and poorer health outcomes overall. Additionally, aphasia is perceived as having a much larger negative impact on overall health status, even when compared to more well-known health conditions including cancer and Alzheimer's disease.

Previous research has shown that the public does not have much knowledge of aphasia, despite reporting that they have heard of this disorder. In addition, research has shown that certain demographic characteristics, such as gender and occupation, impact one's knowledge of aphasia. Based on previous findings, there seems to be a lack of knowledge, understanding, or training in the healthcare field regarding aphasia. To further explore this issue, we have decided to assess knowledge of aphasia in healthcare students as they are the next generation of healthcare providers and may play an essential role in caring for PWA.

The overall goal of this project is to explore differences in knowledge and perceptions of aphasia among undergraduate students in various healthcare fields such as nursing, occupational therapy, and communication sciences and disorders via a web-based survey. Participants were asked questions about characteristics and quality of life of people with aphasia. Preliminary data collection began in Fall 2024 and is still ongoing. Based on the results, suggestions for how to plan public awareness campaigns about aphasia and how to increase media coverage will be discussed.

Biography

Breanna Hunt is graduating this May with a BS in Communication Sciences and Disorders. She is minoring in Psychology and Spanish, and receiving additional certifications for both Honors and Gerontology. For nearly three years, she has been working with Dr. Christopher Grindrod on a variety of research and educational endeavors.

Breanna is a driven individual with a passion for knowledge, service, and education. She has received many awards recognizing her achievements, including being named a Chapman Scholar. Breanna has presented at the Student Research and Creative Endeavors Symposium, highlighting recent research and on-campus initiatives she developed to assess and increase aphasia awareness. She has also served as a teaching assistant for two semesters. These passions extend outside of school; Breanna currently works as a patient care technician and is responsible for orienting all oncoming hires.

In her free time, Breanna enjoys baking, spending time with her friends and family, and volunteering at local organizations. Breanna plans to continue her education by pursuing a BS in Nursing.

AUDREY BROWN
"The effects of generic product branding and handedness on consideration set formation"

Major: Psychology
Minor: Criminal Justice
Certificate: Honors
Faculty Mentor: Dr. Raymond Voss (Psychology)

Abstract

The function of human decision-making is a largely overlooked cognitive process utilized by every individual every day. Decision-making is an essential cognitive process involving the selection of actions from multiple alternatives. This process is influenced by individual preferences, external stimuli, and unconscious biases. A key aspect is the role of unconscious judgments, shaped by experiences, cultural norms, and marketing strategies.
Additionally, handedness impacts decision-making; studies suggest that left-handed individuals may exhibit more cautious and exclusionary choices; the presented research seeks to either confirm or disprove this theory. Understanding these dynamics enhances our knowledge of human behavior and has practical applications in areas such as marketing, psychology, and cognitive science.
Extensive research has explored decision-making and the factors influencing unconscious choices. This study specifically examines the impact of marketing and unconscious internal judgments on consumer choices and preferences. The experiment investigated how subconscious marketing, familiarity, and handedness influence conscious decision-making. This was achieved experimentally through a behavioral observational study, asking participants to determine which products they would purchase from a combination of name-brand, similarly labeled generic brand, and uniquely labeled generic brand product picture cards.
The hypothesis of this study is that participants would typically choose to buy generic products that looked more similar to name-brand products over generic products with a unique and unfamiliar label. The study was conducted with both an inclusion and exclusion condition, and asked demographic questions to account for handedness, education level, and age.
This experiment's results offer a detailed view of how external factors affect human behavior and decisions. Future research could explore specific decision-making factors or examine how ambidexterity influences decisions.

Biography

Audrey Brown is a senior at Purdue University Fort Wayne, graduating this May with a Bachelor of Science in Psychology with a minor in Criminal Justice while completing a pre-Physician Assistant track. Audrey spent two semesters in Dr. Voss's research lab, working with eye-tracking technology, participants in decision-making studies, and investigating the impact of face masks on unconscious cognitive judgments.

Audrey has demonstrated commitment to her studies, winning the Top 50 Student Award and consistently being on the Dean's List. She switched from forensic psychology to pre-PA in her second year of college due to an interest in medical education. Her experiences include shadowing a general surgery PA and extended observation of intake, testing, and diagnosis at the Fort Wayne Neuropsychology Clinic.

Audrey volunteers in her community and engages in extracurricular activities such as volleyball, piano, guitar, music, singing, hiking, camping, and family time. She plans to pursue a Masters in Physician Assistant Studies with the goal of working in a surgical field.

Wednesday, April 9, 2025

9:15 am **Opening Remarks, Chancellor Ronald Elsenbaumer**

9:30 am **LAUREN CLARK**
"An Analysis of How Morality Affects Judgments"
Major: Psychology
Minor: Spanish
Certificate: Death Education; Honors
Faculty Mentor: Dr. Raymond Voss (Psychology)

10:00 am **MaeAnna MARTEEN**
"The Arc of Joan: A Modern Reimagining of Joan of Arc"
Major: Theatre
Concentration: Design and Technology
Minors: Psychology; Women's Studies
Certificate: Honors
Faculty Mentor: Professor Jeanne Pendleton (Theatre)

10:30 am **SAMIYA QASMI**
"Drag & Drop Digital Logic Simulator"
Major: Computer Engineering
Minors: Computer Science; Mathematics
Certificate: Honors
Faculty Mentor: Dr. Claudio de Freitas (Electrical and Computer Engineering)

11:00 am **CHARLES CLEM and KYLER KELLOGG**
"Leak detection and Environmental Prognostics Through a Battery-Powered Sensor Design"

Charles Clem
Major: Electrical Engineering
Minors: Mathematics; Spanish
Certificate: Honors

Kyler Kellogg
Major: Electrical Engineering, Computer Engineering, Mathematics
Certificate: SolidWorks Associate; Honors

Faculty Mentor: Dr. Elizabeth Thompson (Electrical and Computer Engineering)

11:30-12:50 PM **BREAK**

1:00 pm **JACK OBERLEY**
"The Intersection of Music, Sound, and Computer Science in the Video Game Industry"
Majors: B.M. Music Technology, B.M. Music Performance
Concentration: Vocal Performance
Certificate: Honors Certificate
Faculty Mentors: Dr. John Romey (Music), Professor John Buteyn (Music)

1:30 pm **MARISSA VAN DE WEG**
"Speech-Language Pathologists' Experiences with Nursing Diet Modification Practices"
Major: Communication Sciences & Disorders
Minors: Linguistics; Art & Design
Certificate: Honors
Faculty Mentor: Dr. Naomi Gurevich (Communication Sciences and Disorders)

2:00 pm **EMERSON STOBBE**
"Immersion Tester for Passivation"
Major: Electrical Engineering (Industrial Electrical Systems)
Minor: Mathematics
Certificate: Honors
Faculty Mentor: Dr. Guoping Wang (Electrical and Computer Engineering)

2:30 pm **KALEIGH MAYS**
"Managing Conflict in the HR Environment"
Majors: Business in Management; Marketing; Economics
Certificates: Professional Sales; Honors
Faculty Mentor: Dr. Elva A. Resendez (Management and Marketing)

Lauren Clark

"An Analysis of How Morality Affects Judgments"

Major: Psychology
Minor: Spanish
Certificate: Death Education; Honors
Faculty Mentor: Dr. Raymond Voss (Psychology)

Abstract

People make judgments of others every single day. A common question that can arise from humans' common habit of judging is, "Why?" Why do people make the judgements that they do? This study specifically explores how perceived morality of an individual's actions impact judgements of that person. Is an individual more likely to make excuses for negative outcomes from a behavior if that individual themself performs the behavior and does not perceive it as immoral? Does an individual chastise another more vehemently for negative consequences from a behavior that the individual deems to be immoral or morally repugnant? How does empathy play a role in judgement of negative actions that are considered to be immoral?

This study utilizes a vignette with various variables changed. One variable involves the type of action that has a negative consequence, whether the action is socially accepted or socially immoral. The other variable is whether the individual's actions will impact their family or not. Judgements could be more negative for an individual who is considered "vital" to a society such as a caregiver. The vignette replicates the circumstances in which many people make judgements about others in modern times such as through social media or texting. Many people make judgments of others from small stories and snippets from their lives; therefore, a vignette with various details changed specifically to focus on factors that play into moral judgement is a natural way to analyze how variables connected to morality affect judgment today.

This kind of research is important because it can shine light on the factors that play into the judgement of morality. While the specific factors analyzed in this study may not be verified, their analysis can lead to further exploration into other variables that affect the judgement of morality. This kind of study can also help point to hypocrisy in human judgement and decision making, leading to more research into these kinds of cognitive inconsistencies. Research into these factors or moral judgement can lead to research into how to increase empathy within moral judgement.

Biography

Lauren Clark is a 20-year-old student at Purdue Fort Wayne. She graduated from Bishop Dwenger High School in 2022 and is now a third-year senior here at Purdue Fort Wayne. She was born and raised in Fort Wayne and hopes to be impacting on her community through her growth in knowledge and skills for years to come. At the time of her graduation, she will have an honors certificate, death education certificate, minor in Spanish, and bachelor's degree in psychology. In her college career, she had the wonderful opportunity to study in Valparaiso, Chile. She plans to take those language, social, and cultural skills and experiences forward into her therapy practice and life. She plans to become a mental health counselor and become fluent in Spanish along with its many diverse dialects. She hopes to do therapy in English and Spanish to create the most comfortable counseling environment for her patients. Her goal is to be able to help people from any stage in life from childhood to death. She is very excited for her career in therapy, getting to know people, and exploring what it means to help people in the near future.

She is grateful for all of the opportunities and professionals that have helped her along the way. She is grateful to Dr. Raymond Voss for mentoring her in this Honors Project involving judgment and morality. She is grateful to Dr. Lesa Rae Vartanian for her guidance through the Death Education certificate. She is grateful to Professor Karla Zepeda-Wenger and all her other past Spanish professors for helping her grow in her fluency and understanding of Spanish. She is grateful to have had the opportunity to study abroad and to all those who made that time possible. She is grateful to the Honors College, Purdue Fort Wayne, and all other academic professionals she encountered for providing academic challenges and opportunities.

MaeAnna Marteen

"The Arc of Joan: A Modern Reimagining of Joan of Arc"

Major: Theatre
Concentration: Design and Technology
Minors: Psychology; Women's Studies
Certificate: Honors
Faculty Mentor: Professor Jeanne Pendleton (Theatre)

Abstract

The story of Joan of Arc is famous across the world. She was a French heroine guided by God to take back France from England and crown King Charles VII. After a successful run as a military general, she was burnt at the stake for wearing men's clothing. We do not know how Joan identified and terms such as "non-binary" were not coined until much later. Joan's clothing expression was determined to be subversive and dangerous enough to kill her is what is known.

In the play I, Joan by playwright Charlie Josephine, Joan is reimagined as an assigned female at birth (AFAB) non-binary character. The play has the attitude of "f*** historical accuracy," which is a line from the text. History told in the Western world has been primarily written by cisgender, heterosexual white men. The nuances of queerness may have been lost to time. They may not have had the language, but queer audiences today connect with Joan's story.

Creating a costume for Joan in this piece creates a challenge to symbolize their queerness as both an identity and political statement. Their identity involves a non-binary gender and an attraction to women. Queerness does not only refer to identity, such as self-identifying as a lesbian, gay, bisexual, transgender, or queer (LGBTQ+), but it can refer to openly displaying a difference in society. Many LGBTQ+ individuals do not do this, so they may identify as queer but are not socially or politically queer. Joan is politically queer. They openly push against gendered expectations for women/AFAB people by leading an army, not marrying, and preferring death over dressing in feminine clothing.

The most impactful garment Joan has, both historically and within the play, is their armor. The armor I will create is inspired by Christian historical armor that incorporates elements interpreted as masculine and elements interpreted as feminine, along with artwork made by a transmasculine (people who are AFAB and identify as men or as masculine presenting) artist. This will allow the historical foundation of the character to shine through while giving a queer interpretation of the character that the play text demands. Building armor and costumes is important to create a more inclusive space within film, theatre, and musical performance. An increasing number of actors identify as non-binary, so farther representation and research promoting inclusivity in the field is important.

Biography

MaeAnna Marteen is graduating with a BA in Theatre with a concentration in Design and Technology, the honors certificate, and minors in Psychology and Women's Studies. For her academic and campus involvement she was awarded the Top 50 award twice. She was also inducted into Iota Iota Iota, the national Women's Studies Honors society. Her primary focus during her time at PFW has been on combining feminist scholarship with theatrical costuming. This has taken the form of research on gender expression in the 19th and 20th century which she presented at the Research and Creative Endeavors Symposium in 2024.

Much of MaeAnna's time has been focused on beyond the classroom. As a theatre student, she kept busy working backstage on most the theatre productions done on campus during her undergrad. Some of her favorite productions she worked on was as the assistant costume shop manager for Cabaret, stage manager for Urinetown, and assistant stage manager for Puffs, or Seven Increasingly Eventful Years at a Certain School of Magic and Magic, and prop master for Eleemosynary. She was one of the founders of the Tabletop Roleplaying Games Club (TTRPG Club) during her sophomore year. This student organization rapidly grew to be one of the largest on campus. It was awarded the Building Block award during its first year for being a new organization that benefits the campus community. She was also involved with OUTspoken, the student organization dedicated to LGBTQ+ activism and community building.

Samiya Qasmi

"Drag & Drop Digital Logic Simulator"

Major: Computer Engineering
Minors: Computer Science; Mathematics
Faculty Mentor: Dr. Claudio de Freitas (Electrical and Computer Engineering)

Abstract

This project aims to develop an interactive Drag & Drop Digital Logic Simulator to enhance the learning experience of first-year engineering students at Purdue University Fort Wayne. The simulator serves as a virtual extension of the existing Portable Experimenter Engineering Board (PEEB) kit currently used in the Engineering Fundamentals course (ENGR 12800). Research has shown that hands-on activities significantly improve student performance through active learning. Building upon preliminary data and the PEEB technology, this project creates a virtual laboratory that seamlessly extends the physical engineering kit's capabilities into the digital domain.

The simulator will be integrated into the CREATE platform, which was originally developed as a user interface for the PEEB kit. This new addition will specifically replicate the electronics layer of the PEEB kit, focusing on digital logic gate circuits. First-year students enrolled in ENGR12800, which introduces Electrical and Computer Engineering concepts, will use this simulator in the studio component of their course. The virtual environment provides them with the opportunity to understand and experiment with boolean algebra and its application in digital logic before working with actual hardware components.

The python based simulator will allow students to drag input wires to various digital gates (such as AND, NOT, and OR) and connect them to desired outputs (like LEDs or buzzers) to create functional circuits. The interactive nature of the software enables immediate visual feedback on circuit functionality, reinforcing theoretical concepts through practical application.

The development process involves replicating components from the physical PEEB kit in software, defining their individual functions, and adding interactive elements like buttons for inputs and wires for connections. The code will be modular and parameterized to ensure ease of debugging and future enhancements.

Upon completion, this simulator will provide a valuable tool for first-year engineering students to explore digital logic in a risk-free, experimental environment. It supports both in-person and remote learning scenarios, making engineering education more accessible and engaging. The project contributes to the broader goal of bridging theoretical knowledge with practical application in engineering education, while enhancing the developer's skills in programming interactive graphical user interfaces.

Biography

Samiya Qasmi is a Computer Engineering student at Purdue University Fort Wayne, currently pursuing dual minors in Computer Science and Mathematics graduating in May 2025. Her academic and research focus lies at the intersection of hardware and software and creating cyber-physical interfaces.

As an undergraduate researcher, working with Dr. Freitas, she has contributed to the Portable Experimenter Engineering Board (PEEB) for the university's first-year engineering program. This work extends to the software interface for PEEB, which integrates physical and virtual components for engineering education. Her current honors project involves creating a Drag and Drop Digital Logic Simulator using Python and Qt Creator, designed to help students visualize Boolean algebra concepts before working with hardware components.

Samiya has presented her research in the 27th and 28th Annual Student Research and Creative Symposium, and her work on PEEB was accepted to be presented in the EDUNINE 2025 conference. She served as a Student Representative on the International Education Advisory Board and as Dean's Ambassador for the College of Engineering, Technology, and Computer Science. Previously, she held positions as Vice President of the Society of Women Engineers chapter and as Senator in the Student Government Association.

Fluent in English, Urdu, and Hindi, she has assisted over 300 international students as an Orientation Leader, providing resource guidance and facilitating university acclimation.

Charles Clem

"Leak detection and Environmental Prognostics Through a Battery-Powered Sensor Design"

Major: Electrical Engineering
Minors: Mathematics; Spanish
Faculty Mentor: Dr. Elizabeth Thompson (Electrical and Computer Engineering)
Project Teammate: Kyler Kellogg

Abstract

Franklin Electric (FE) is a local company which develops electric water pumps for commercial and residential applications. Water leaks are a reoccurring issue that can come with either pumps or the piping which distributes the water they draw. Franklin currently sells a wired leak detection sensor with a 10-foot range. This existing product is manufactured by another company, and its construction is widely unknown by the FE team. As FE continues to push more of their products onto an Internet of Things (IoT) network of smart devices, they have asked that their existing sensor be replaced and given increased functionality. In response, Charles Clem and Kyler Kellogg, along with a third partner, have developed a battery powered sensor that incorporates leak detection, temperature sensing, pump-knock sensing, and disconnect alerting with communication over Wi-Fi and Bluetooth protocols. This product will directly interface with Franklin Electric's existing app, FE Connect.

The presentation on product development will be broken into a research and planning portion, as well as a physical execution portion, each of which will be covered primarily by Charles and Kyler respectively. The research and planning portion will focus on background research of the circuitry needed to develop the product, determining functional requirements based on conversations with the FE team, and the materials needed to create the device. It will also cover initial design stages and product verification planning, which eventually led to the execution timeline which was utilized starting in December of 2024. The physical execution portion will cover software interfacing, hardware layouts, and solid shell modeling of the product. This will move into a description of integrating each of these separate subsystems, along with the challenges that came with this. A demonstration based on current prototype capabilities will be given, and remarks on shortcomings and areas of focus for future project development will be covered to end the presentation.

Biography

Charles Clem is a senior in electrical engineering from Brownsburg, Indiana. He joined Purdue Fort Wayne as a member of the Chapman Scholars Program, which keeps him engaged both on campus and in civic events throughout the Fort Wayne community. Clem is currently enrolled and is pursuing a master's degree in electrical engineering with a focus on multi-agent robotic systems as a part of the 4+1 combined bachelor's and master's degree program. He serves as one of the Dean's Ambassadors for the college of Engineering, Technology and Computer Science (ETCS), where he engages with events on campus to help promote ETCS enrollment. He also serves as a Co-Head of the LEAD Peer Mentor Program, which helps connect first-year students in the college of ETCS with mentor students to aid in social, academic, and professional development. Finally, Clem serves as the president and founder of Purdue FIRST Programs Fort Wayne chapter, an alumni group for FIRST robotics that volunteers at local events and helps in mentorship and connecting with local FIRST teams on other needs.

Outside of campus, Clem has spent the past two summers working in wireless consumer electronics focusing on system verification and commercial product management. Clem additionally serves as a mentor for FIRST Robotics Competition team 9119, the Iron Legends of North Side High School. In this role, he teaches students safe power tool use, mechanical design concepts, and power system management and routing. He also serves as the team's drive coach during competition, teaching game strategy and fast paced decision making in match. Clem hopes in his role as a mentor to inspire other students towards a path in engineering like he was by the same program. Following his time at Purdue Fort Wayne, Clem hopes to find a career in electromechanical systems, with plans to continue mentoring FIRST Robotics team when he has a stable career.

Kyler Kellogg

"Leak detection and Environmental Prognostics Through a Battery-Powered Sensor Design"

Major: Electrical Engineering, Computer Engineering, Mathematics
Certificate: SolidWorks Associate
Faculty Mentor: Elizabeth Thompson (Electrical and Computer Engineering)
Project Teammate: Charles Clem

Abstract

Franklin Electric (FE) is a local company which develops electric water pumps for commercial and residential applications. Water leaks are a reoccurring issue that can come with either pumps or the piping which distributes the water they draw. Franklin currently sells a wired leak detection sensor with a 10-foot range. This existing product is manufactured by another company, and its construction is widely unknown by the FE team. As FE continues to push more of their products onto an Internet of Things (IoT) network of smart devices, they have asked that their existing sensor be replaced and given increased functionality. In response, Charles Clem and Kyler Kellogg, along with a third partner, have developed a battery powered sensor that incorporates leak detection, temperature sensing, pump-knock sensing, and disconnect alerting with communication over Wi-Fi and Bluetooth protocols. This product will directly interface with Franklin Electric's existing app, FE Connect.

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Biography

Kyler Kellogg is a senior pursuing a triple major in Electrical Engineering, Computer Engineering, and Mathematics. Originally from Fort Wayne, Indiana, he joined Purdue Fort Wayne with the support of the 21st Century Scholarship program. He is serving his fourth year as President of Chi Alpha PFW, a campus ministry focused on creating an encouraging community of Christians on campus. He has also served as the Treasurer of the Pi Math Club. He also enjoys taking other classes for fun, taking classes like Solid Modeling (ME 160) and Machine Learning (ECE 44901) for his own benefit rather than for credit for a major. Alongside his three majors, he has also earned a SolidWorks Associate Certification, showing that he is trained in 3D CAD modeling. He will be pursuing a Master's in Computer Engineering starting in Fall 2025 while working full time.

Kyler comes from a unique background. As the oldest of 16 children, he acts as an example for all his younger siblings. He's the first person in his family to pursue a degree in engineering. He was homeschooled through high school and did some dual credit classes at Indiana Tech to get ahead on college. He was raised Christian and puts the just as much focus into that part of his life as he does with his schooling, leading a guys' Bible study and volunteering at his church. He's also taken two international missions trips, one to help refurbish a school for the Deaf and do some local outreach in Bogota, Colombia and one to help do some upgrades to a local church in Tsukuba, Japan.

Kyler has been working towards a future career in Engineering by doing internships. His first internship was at Franklin Electric, where he worked on embedded programming for new products in development and application design. Currently he interns at General Dynamics Mission Systems as an Embedded Software Engineer working on Software Defined Radios (SDRs), and he hopes to receive a job offer upon graduation.

Jack Oberley
"The Intersection of Music, Sound, and Computer Science in the Video Game Industry"

Majors: Music Technology; Music Performance
Concentration: Vocal Performance
Faculty Mentor: Dr. John Romey (Music)
Course Instructor/Secondary Mentor: Prof. John Buteyn (Music)

Abstract

Anthropologists and philosophers distinguish humans to be storytelling creatures—an attribute that seems to make them unique as an animal species. These stories are passed down through a variety of mediums: oral, artistic, musical, dramatic, ludic (pertaining to games), and combinations therein. Each medium carries with it different genres, conventions, expectations, possibilities, and strengths that become evident over time. Moreover, the existence of mixed media storytelling appears to expand the possibilities while combining strengths and creating new associations and expectations. Scholars analyze mixed media stories to attempt to isolate how the mediums work together to different effects, why they do, and to gleam something deeper about the mediums or humanity from it. The past fifty years have seen a new storytelling medium rise to the zeitgeist: video games. Video games are interdisciplinary mediums that are only possible with modern computational technology, combining elements of games with visual art, animation, design, music, sound effects, narrative writing/worldbuilding, and programming. This combination of many disparate crafts and fields of study makes video games challenging but rewarding to study.
Ignoring their combination in the virtual world, music and games already have much in common. They both take the verb "to play" in English. They both require interfaces and predetermined methods or conventions for use: think about how the design of the piano keyboard or guitar fretboard conveys the intended ways of interaction in the same way that the design of a Rubik's cube or chess board does.

These comparisons may seem superficial; however, the similarities between music performance and gameplay are important and become more so when considering audio and music in the digital landscape of video games. Video game sounds might be triggered by a player interacting with the game—after all without someone to play the video game, no music can exist let alone change or progress. This fact makes video games a unique medium where the audience does not simply interact with the story but takes an authorial role in how the story, music, and audio play out. The emerging field of ludomusicology has risen in the past twenty years to dissect this—combining the parent fields of ludology (the study of games/play) and musicology (the research-based study of music). My aim in this project is not just to compile the current academic consensus and findings of the ludomusicological field but also to put this into practice to deepen my understanding and skills as a composer of music for media. For this purpose, I will a) read the foundational texts and articles of ludomusicology and b) teach myself skills in coding and using industry-standard software to implement static, interactive, adaptive, and dynamic audio into a playable environment.

Biography

Jack Oberley is a multifaceted musician from Fort Wayne, Indiana. In his time at Purdue University Fort Wayne, he has accomplished much—from musical pursuits to academic pursuits. As a vocalist, Jack has sung in six operas, achieved third place in the Indiana Chapter of the National Association of Teachers of Singing voice competition, completed two recitals under guidance of Dr. William Sauerland, and performed a variety of other solo and small ensemble roles in different settings. As a student, Jack has spent his honors career working to deepen his understanding of music particularly with respect to composition and secondary media. Projects to this end have had to do with exploring racial stereotyping in music and media, transcribing a medieval chant and composing in historical forms based off it, studying Romantic-era operatic compositional techniques, analyzing the music of the modern horror film using Ari Aster's *Midsommar* as a case study and applying discoveries to his own score for a horror short film, and now researching the field of ludomusicology to teach himself about composing scores for video games.

While making these strides as a singer and scholar, Jack has been furthering his career and working himself through university. He assisted and served his fellow students both as a music tutor—teaching piano, sight singing, and music theory—and a resident assistant with PFW housing—overseeing over 80 students at an off-campus housing site, organizing events, providing information, ensuring safety, and mediating conflict. Jack has also worked at two different high schools providing piano accompaniment for their show choirs, at First Wayne Street United Methodist Church as a choral scholar, and as a freelance musician gigging at places such as the Foellinger-Freimann Botanical Conservatory and in fellow students recording studio sessions. In the future, Jack hopes to continue his academic career by pursuing a master's degree in music composition with the goals of teaching as a professor, writing music as a professional composer/songwriter, and continuing to gig as a freelance musician with voice, piano, and guitar.

MARISSA VAN DE WEG
"Speech-Language Pathologists' Experiences with Nursing Diet Modification Practices"

Major: Communication Sciences & Disorders
Minors: Linguistics; Art & Design
Faculty Mentor: Dr. Naomi Gurevich (Communication Sciences and Disorders)

Abstract

Speech-language pathologists (SLPs) play a primary role in evaluating and treating dysphagia and may implement treatment approaches intended to improve function or reduce its impact on nutritional intake and quality of life. For some patients, a dysphagia diet that involves modified consistency of solids and viscosity of fluids can help sustain safe nutrition and hydration (American Speech-Language-Hearing Association (ASHA), 2019; Garcia et al., 2005). Optimal dysphagia management requires a multidisciplinary approach that involves nursing staff (Heritage, 2001; Lancaster, 2015).

The purpose of texture-modified diets (TMDs) is to help compensate for swallowing dysfunction by providing a safer consistency for the individual with dysphagia (Cichero et al., 2017; Logemann et al., 2008). Solids range from regular consistency to pureed to compensate for a variety of dysfunctions related to oral preparatory and oral transfer stages of the swallow. Liquids range from thin (unmodified), to progressively thicker (nectar, honey, pudding), and can help slow down the pharyngeal transit to compensate for slowed structural protection of the airways (Kuhlemeier et al., 2001; Logemann et al., 2008).

Downgrading a diet makes it more restrictive. In the case of liquids, a more restrictive thicker consistency can potentially pose a greater risk to some individuals, e.g. patients with reduced tongue strength. If thicker viscosity does not compensate for dysfunction and bolus is aspirated, the thicker bolus is more difficult to clear from the lungs. More "downgraded" honey thick liquids have also been associated with a higher incidence of pneumonia (Robbins et al., 2008), dehydration (Finestone et al., 2001; Steele, 2006), and additional adverse effects for people with dementia (Flynn et al., 2018). SLPs are trained to determine whether thickening liquid is appropriate compensation for individual patients on a case-by-case basis.

Patients in healthcare facilities typically receive around the clock nursing care. Nurses administer medications that require swallowing, and may help with feeding. They are often the first line of defense in recognizing swallowing difficulties and referring to SLPs (Lancaster, 2015). Although an extensive literature search of relevant databases (EBSCO, MEDLINE and PubMed) produced no documentation of formal recommendation to support this practice, nurses regularly cite permission to downgrade TMDs without SLP consult (Hirzel et al., 2020).

The quantitative branch of our research included surveying medical SLPs (N=503) in 2019 and 2023 to gain insight into their experiences with nurses' diet modification practices pattern in a variety of healthcare settings (Osmelak, et al., 2023; Van De Weg et al., 2024). Overall, 78.9% of respondents had directly encountered the nursing initiated TMD practice, with an additional 10% having heard of it. Early career clinicians (n=104) had an even higher direct encounter rate at 87.5%. As a follow-up to our cross-sectional survey findings, we further explored medical SLPs' experiences with TMDs and nurses' TMD practices patterns via semi structured interviews (n=10). The purpose of the thematic analysis is to help enhance the discussion on how to support SLPs working alongside nurses in healthcare through clinical guidelines and improve their ability to provide safe and effective patient care.

Biography

Marissa Van De Weg is a senior at Purdue University Fort Wayne. She will earn her Bachelor of Science this spring with a major in Communication Sciences & Disorders and minors in Linguistics and Art & Design. Upon graduation, Marissa plans to pursue a graduate degree in Speech-Language Pathology. With this degree, she hopes to one day work as a pediatric speech-language pathologist.

Despite having an interest in speech-language pathology for the younger population, Marissa is also interested in speech-language pathology for the older population, reflected in the research she has done pertaining to dysphagia and speech-language pathology in the healthcare setting. She has presented this research alongside faculty mentors Dr. Naomi Gurevich and Dr. Danielle Osmelak on various occasions including the American Speech-Language Hearing Association Convention in 2023, the Indiana Speech-Language Hearing Association Convention in 2024 and 2025, and the Illinois Speech-Language Hearing Association Convention in 2025.

During her undergraduate studies, Marissa has been involved on campus as a member of the Purdue University Fort Wayne track and field team, a member of the National Student Speech-Language Hearing Association, a resident assistant for Purdue University Fort Wayne student housing, and through the Honors Program. She plans to continue her education at Purdue University Fort Wayne, beginning graduate school this summer.

Emerson Stobbe

"Immersion Tester for Passivation"

Major: Electrical Engineering
Concentration: Industrial Electrical Systems
Minor: Mathematics
Faculty Mentor: Dr. Guoping Wang (Electrical and Computer Engineering)

Abstract

The immersion tester for passivation (PIT) is a senior design project for the Purdue Fort Wayne (PFW) electrical and computer engineering (ECE) department and sponsored by the local Fort Wayne defense contractor, Bowmar LLC. The PIT project involves adapting the previous PIT senior design initiative by completely redesigning the prior build to meet industrial standards. The process of immersion testing is a means of testing and evaluating the effectiveness and quality of passivation for corrosion-resistant metals (such as stainless steel). It begins with subjecting corrosion-resistant metals to repeated cycles of distilled water submersion for one hour and air drying for another hour. After a twenty-four (24) hour period of repeated submersion and drying cycles, the immersion testing will reveal whether or not the passivation process successfully removed anodic surface contamination (such as rust) ensuring the material being tested is corrosion resistant.

The PIT project consists of five testing tanks that will house the passivated components during the immersion testing process. Each tank is flush mounted to the top level of a modified, two-level utility cart. The distilled water used to fill each testing tank is stored in a larger plastic cistern tank, located on the lower level of the utility cart. Five identical diaphragm pumps are utilized to move the distilled water from the cistern tank to the testing tanks. After each cycle of distilled water submersion, the used (gray) water will be drained into an identical large, plastic cistern tank located on the lower level of the utility cart. The force of gravity and a singular normally open (NO) solenoid valve are used with each test tank for the draining process. A solenoid valve is an electrically controlled valve used to close or open pipes. When the draining process begins for a testing tank, its respective fan will be powered on for fifteen minutes to dry the component inside the testing tank. The state of each testing tank will be made known with three different colored pilot lights: a green pilot light for indicating the testing tank is available, a red pilot light for indicating the testing tank is currently in use, and an orange pilot light for indicating an issue has occurred in the test tank.

The PIT process is facilitated by programmable logic controller (PLC) working in conjunction with a touchscreen human-machine interface (HMI). A PLC is a ruggedized computer designed to control machines and processes in factories, buildings, and other automated systems. It is essentially the brain of the PIT project. An HMI screen is a control panel for a machine or system. It allows the operator to see data, control equipment, and interact with the PIT. With the HMI and PLC, an operator from Bowmar LLC will interact with the HMI screen to control the immersion testing of passivated components in the five test tanks on the PIT machine.

Biography

Emerson Stobbe is an honors student and Chapman Scholar in his senior year of Electrical Engineering at Purdue University Fort Wayne (PFW). He plans to graduate in the spring semester of 2025 with a Bachelor of Science in Electrical Engineering and a minor in Mathematics. Over his four years at PFW, he has had three separate internships involving industrial environments in Northwest Indiana, which have shaped his passion for electrical engineering in large-scale facilities.

His first internship was with an electrical contracting company, Continental Electric Co. Inc., in Gary, Indiana, where he gained hands-on experience in electrical design and installation in residential and commercial facilities. His second internship was with United States Steel at the largest steel mill in North America, USS Gary Works. There, he developed a deeper understanding of electrical systems in massive industrial operations and grew to appreciate the complexity of maintaining and improving these essential infrastructures. For his third and final internship, he worked with British Petroleum (bp) as an electrical, instrumentation, and controls engineer at their largest refinery in the world, located in Whiting, Indiana. This experience solidified his love for electrical systems in large, industrial environments and ultimately led to him receiving a return offer as an early careers electrical engineer at the Whiting Refinery beginning in June of 2025.

Emerson grew up in Porter, Indiana, near Indiana Dunes National Park, where he spent much of his childhood exploring the outdoors. He attended Chesterton Senior High School, graduating in the top twenty in his class of over five hundred students. He comes from a loving family, including his supportive parents, his brother, and his girlfriend, who have been his biggest supporters throughout his academic and professional career. Outside of school and work, Emerson enjoys listening to classic rock, going to the gym, hiking, playing the guitar, kayaking, longboarding, and spending summers at the beach. His passion for both technical problem-solving and the outdoors makes him a well-rounded individual, always eager to take on new challenges and experiences.

Kaleigh Mays

"Managing Conflict in the HR Environment"

Majors: Business in Management; Marketing; Economics
Certificates: Professional Sales; Honors
Faculty Mentor: Dr. Elva A. Resendez (Management and Marketing)

Abstract

Managing Conflict is a difficult task many managers, supervisors and administrators are faced with on common occasion. The key to effective management of conflict is to collaborate with all parties involved to create the most effective and positive resolution possible. My research specifically goes further to examine how organizational HR professionals regularly address conflict in their respective organizations. Beyond the average everyday issues such as incorrect pay stubs or scheduling conflicts, how do HR professionals respond to different types of conflicts brought to them by personnel.
After beginning to examine the traditional HR environment for initiatives, successes and well-being during Fall 2024, we now, Spring 2025, specifically focus on conflict management in the modern HR environment in several industries. After contacting and recruiting HR professionals through snowball sampling in the NE Indiana region (100 miles), information on HR and more specifically, conflict management was received and manually coded, March 2025,by the researchers to identify common themes.
Healthcare, Higher Education, Trade and Manufacturing industries are commonly found in NE Indiana and represent much of the workforce. Individuals in the above industries were asked to describe the types of conflicts/resolutions most prevalent in their respective industries. The findings present current, relevant strategies to maintain employee engagement in conflict resolution as well as the tasks/activities of HR professionals.

Biography

Kaleigh Mays was born and raised in Fort Wayne, IN. She is graduating with Honors this May from the Doermer School of Business at Purdue University Fort Wayne with a Bachelor of Science in Business with majors in Management, Marketing and Economics and a Professional Sales Certificate.

Throughout her college career, Kaleigh has taken on a variety of leadership and academic opportunities. She joined the National Society of Leadership and Success in 2023 and was named to the 2024 Class of Top 50 Students. She has consistently challenged herself academically, taking 20–24 credit hours during her junior and senior years, and received her Honors Pin in January 2025.

Kaleigh has also been a dedicated member of the Purdue Fort Wayne cheer team for four years, serving as co-captain for the past two seasons. In 2022, she helped revitalize the program and was awarded MVP during the 2022–2023 season. In addition to cheer, she has contributed to student life by supporting campus events, promoting school spirit, and encouraging involvement across campus organizations.

Community service is another area Kaleigh is passionate about. She has volunteered with multiple local initiatives, including the Walk to End Alzheimer's, Fort4Fitness, the Buddy Walk, Breast Cancer Awareness events, and Fragile X Syndrome Awareness. These experiences have allowed her to connect with the Fort Wayne community and represent Purdue Fort Wayne in a meaningful way.

Thursday, April 10, 2025

10:00 am **SAMMIE MILLER**
"Pumping Precision: The Role of NIBP Pumps in Regulating MAP"

Majors: Mechanical Engineering; Biological Sciences
Concentration: Marine
Minor: Mathematics
Certificates: Biomechanical; Biology ; Honors
Faculty Mentor: Dr. Donald Mueller (Civil and Mechanical Engineering)

10:30 am **ELISE HUHN**
"Machine Learning Models to Predict Mental Health Disorders"

Major: Data Science and Applied Statistics
Minors: Actuarial Science, Psychology, Spanish
Certificate: Honors
Faculty Mentor: Dr. Yvonne Zubovic (Mathematics)

11:00 am **VICTORIA PERKINS**
"A Survey of Ojibwe Fiction"

Major: English
Concentration: Literature
Minors: Anthropology; Spanish
Certificate: Honors
Faculty Mentor: Dr. Troy Bassett (English & Linguistics)

11:30-12:50 PM **BREAK**

1:00 pm **BENJAMIN BURKLE**
" Fort Wayne: A Polished Place in the Rust Belt"

Majors: Political Science; History
Minor: Business Studies
Certificates: Civic Education & Public Advocacy, International Studies, Honors
Faculty Mentor: Dr. David G. Schuster (History)

1:30 pm **NICOLE BOSSERMAN**
"Man's (New) Best Friend?: How Character AI Impacts Human Sociality"

Major: Anthropology
Certificate: Honors
Faculty Mentor: Dr. Jon Rusert (Computer Science)

2:00 pm **ALEXANDRA A. PODA**
"Populism and the Past: The Political Afterlife of Communism in Eastern Europe"

Major: Political Science
Concentration: International Relations and Eastern European Politics
Minor: History
Certificates: International Studies Certificate; Honors
Faculty Mentor: Dr. Michael Wolf (Political Science)

2:30 PM **MARTEN SLAGER**
"Establishing an Independent Music Industry Business"

Majors: Music Industry and Popular Music
Concentration: Recording
Certificate: Honors
Minor: Business
Faculty Mentor: Professor Jason Lundgren (Music)

Sammie Miller
"Pumping Precision: The Role of NIBP Pumps in Regulating MAP"

Majors: Mechanical Engineering; Biological Sciences
Concentration: Marine
Minor: Mathematics
Certificate: Biomechanical; Biology
Faculty Mentor: Dr. Donald Mueller (Civil and Mechanical Engineering)

Abstract

Non-invasive blood pressure pumps are recommended as the primary form of acquiring patient blood pressure [1]. In this study, the performance of six pumps were considered prior to calibration and after calibration to determine if calibration was directly correlated to the accuracy
of each device. The aggregation of pumps includes the Philips IntelliVue Patient Monitor MP5,
the Philips SureSigns VS4/VS3 Vital Signs Monitor, the Philips EarlyVue VS30 Vital Signs
Monitor, the Philips IntelliVue Patent Monitor MP2/X2, the Philips IntelliVue Patent Monitor
MMS, and the Philips IntelliVue Patent Monitor MP3/X3. As for the conditions of the experiment, it was important to establish a control condition. The control conditions that were tested include the expected blood pressure values found in patients who are considered to have hypotension, normal blood pressure, and hypertension. The control condition for hypotension was 95/55 (68) mmHg, normal blood pressure was 120/80 (93) mmHg, and hypertension was 155/85 (108) mmHg [2]. The order of values is arrayed according to diastolic, systolic, and mean arterial pressure [3]. No inferential difference between the calibrated and uncalibrated results are graphically apparent regarding the average blood pressure measurement detected by each device and its respective standard deviation. Furthermore, an uncertainty analysis was conducted to determine the relative uncertainty of each device for each condition.

To do this, the systolic uncertainty and the diastolic uncertainty were determined as a precursor to the relative uncertainty of the mean arterial pressure since the mean arterial pressure was dependent on these factors. The results demonstrated that the relative uncertainty between calibrated and uncalibrated devices was equivalent. These values included 0.32%, 0.38%, and 0.51% for hypotension, normal blood pressure, and hypertension respectively. The devices with the greatest deviation in variance were the Philips IntelliVue Patient Monitor MP5 and X2, while the smallest deviation in variance was the Philips IntelliVue Patient Monitor VS3/4. Also, the relative uncertainty with respect to the expected value was negligible. Further experimentation is encouraged to collect a larger sample size to complete hypothes is testing and compare results to the industrial quality control of Philips.

Biography

Sammie Miller (she/her) is an ardent student pursuing dual degrees in Mechanical Engineering and Biological Sciences at Purdue University Fort Wayne, along with certifications in Biomechanical Engineering and Biology. As an academic honors student and a 2024 Purdue Top 50 Student, she has demonstrated excellence in both research and leadership. Her award-winning research, presented at the United States Aquaculture Society Global Conference, focuses on chemical mitigation strategies in aquaculture industries, reinforcing her commitment to sustainable solutions in water management and food production.

Currently, Sammie serves as a hydrological engineering co-op at Fort Wayne City Utilities, where she designs and implements strategies to enhance stormwater infrastructure, reduce contamination, and improve water quality. Her work has contributed to environmental rehabilitation efforts aimed at protecting local waterways and mitigating flooding risks, particularly in underserved communities. Her commitment to municipal resource improvement has been recognized with prestigious awards, including the Greg Main Memorial Award and the INAFSM Excellence in Stormwater Management Award.

Looking ahead, Sammie aspires to earn her Fundamentals of Engineering (FE) license and later pursue a Principles and Practice of Engineering (PE) license in thermal and fluid systems. Her long-term goal is to specialize in stormwater and floodplain management, developing sustainable, data-driven solutions for communities facing water-related challenges. With expertise in both hydrology and biomechanical engineering, she hopes to bridge the seemingly dichotomous water resource management and environmental conservation, ensuring resilient infrastructure and sustainable aquaponics systems for future generations.

Beyond her academic and professional pursuits, Sammie is a dedicated mentor, educator, and advocate for STEM outreach. As an active member in the Society of Women Engineers (SWE), she actively works to empower and support aspiring female engineers, organizing workshops and mentorship programs to encourage diversity and inclusion in STEM fields. Additionally, her involvement with Big Brothers Big Sisters allows her to inspire young minds through tutoring and hands-on STEM education.

Outside of her studies and professional work, Sammie enjoys longboarding, rowing, and environmental exploration, which complement her passion for sustainability and outdoor adventure. Whether she's working on stormwater solutions, researching aquaculture sustainability, or mentoring the next generation of engineers, she remains passionate about passion for hands-on sustainability and engineering innovation.

Elise Huhn
"Machine Learning Models to Predict Mental Health Disorders"

Major: Data Science and Applied Statistics
Minors: Actuarial Science; Psychology; Spanish
Faculty Mentor: Dr. Yvonne Zubovic (Mathematics)

Abstract

Clinical psychology is the field of psychology focused on the assessment and treatment of mental health disorders. In the practice of clinical psychology, it is important that psychologists properly diagnose their patients with an accurate mental health disorder diagnosis. The given diagnosis determines what type of treatment is appropriate for each patient, like the type of medication given and what type of therapy the patient will undergo. In order to try to enhance the validity of the diagnoses, clinical psychologists often incorporate a type of reliability, called inter-rater reliability, into their practice. Inter-rater reliability refers to when at least two psychologists interview a single patient at different times using a common set of questions (referred to as a structured interview). After the interviews, the psychologists compare their findings and evaluate if they all produced the same diagnosis for the individual. The use of data science can also be used to provide an accurate and instant form of inter-rater reliability through the use of predictive modeling.

The goal of this project is to use a data set to create a machine learning model that accurately predicts people's mental health disorders given their unique characteristics. The data set contains observations from 637 people with mental health disorders. The columns of the data set represent the people's characteristics such as age, energy level, and mental health disorder diagnoses. The column that specified the type of disorder that each person had was used as the dependent variable which the machine learning models were programed to predict. There were twelve different disorders included in the data set. The observations from the data set were fitted to several machine learning models such as decision tree, random forest, Bayesian network, and k-nearest neighbors. The predictive accuracy of the different models was compared in order to determine the final and most accurate model. The findings from this project could have positive implications in the field of clinical psychology by facilitating a rapid way to assess inter-rater reliability. To implement this, the psychologist must ask the patient the specific questions that are incorporated into the model. For future studies, a data set with a broader range of mental health disorders can be considered.

Biography

Elise is graduating in May with a Bachelor of Science in Data Science and Applied Statistics and minors in Actuarial Science, Psychology, and Spanish. After graduating from PFW, she plans to attend graduate school to pursue a master's degree in Data Science. She has not yet decided what graduate program she will attend, but she has been accepted to Purdue University, Indiana University, and the University of Michigan.

Elise has enjoyed sharing her passion for data science with others through her position as the president of the Data Hub Club for the past two years. The faculty advisor for the club, Dr. Zubovic, is also the faculty mentor for her honors project. Elise and Dr. Zubovic have worked together to support the Data Hub Club for the past three years. Some of Elise's other academic interests include Spanish and psychology, which is why she selected them as minors. Her minor in Spanish allowed her to study abroad in Granada, Spain for six weeks during the summer before her junior year. And her minor in psychology prompted her to select mental health disorders as the subject of her honors project.

Aside from academics, Elise is involved on the PFW campus through working at the Fitness Center and working as a resident assistant for the Housing Department. She has worked at the Fitness Center since her freshman year and as a resident assistant since her junior year. Elise's dedication to her academics and involvement on campus has allowed her to be named a recipient of the PFW Top 50 award this year.

Outside of campus, she works part-time at Shambaugh and Son doing data entry. Some of her hobbies include weightlifting, reading, watching movies, and teaching herself to play the piano. She is very grateful to her family, friends, and professors for their continued encouragement and guidance which has facilitated her success in all her endeavors.

Victoria Perkins
"A Survey of Ojibwe Fiction"

Major: English
Concentration: Literature
Minors: Anthropology; Spanish
Faculty Mentor: Dr. Troy Bassett (English & Linguistics)

Abstract

For many years, Native American literature has been looked over and seen as a historical or anthropological series of texts. However, since the Native American Renaissance in 1968, Native American literature has been gaining more recognition as an actual, contemporary literary genre, rather than solely a piece of the past. A new issue, however, arises with this literary genre. In the United States, there are 574 federally recognized American Indian tribes, and all of these tribes fit under the same genre, despite there being differences from tribe to tribe that can be seen throughout the different pieces of Native American literature. One of these tribes is the Ojibwe, sometimes spelled as Ojibwa, and also known sometimes as the Anishinaabe or Chippewa. The Ojibwe reside primarily in the Great Lakes region in the United States, and they are one of the largest tribes in America.
This paper/project consists of an annotated bibliography of 74 different titles from 22 different Ojibwe-enrolled authors. These novels are all fictional, and they are also all either young adult or adult fiction. This bibliography provides more of an insight on Native American literature, specifically the Ojibwe tribe. Along with a bibliography, there is an introductory paper discussing important observations found through the research in the process of this bibliography, such as the author who has published the most novels, that author being Louise Erdrich. The goal of this project is to discover and compile an organized list of fictional novels from the Ojibwe tribe. Another goal of this project is to bring more awareness to the Native American literary genre, because even though this genre has gained more popularity since the Native American Renaissance, it is still constantly looked over.

Biography

Victoria Perkins is graduating in May with a Bachelor of Arts in English, concentrating in literature, as well as with minors in Spanish and Anthropology. During her time at PFW, some of Victoria's favorite literary genres to study have been Native American literature, children's literature, and detective literature.
Outside of school, Victoria participates in the pep band here at PFW as a flute player. She is also involved in theater with the company Excelsior in Auburn, Indiana. She enjoys spending time with friends, family, and her cats. She also greatly enjoys collecting manga and Legos.

Victoria also greatly enjoys traveling, and she has had the opportunity to study abroad twice with classes at Purdue Fort Wayne. Her first experience was going to Florence, Italy for an art history course in the summer of 2023, and her second study abroad experience was going to Split and Dubrovnik, Croatia this most recent spring break of 2025 for a class about the history and culture of Croatia.
After graduation, Victoria plans to further her education by getting her Master's in English: Literature in order to continue learning more about different literary genres. Once she receives her master's, Victoria is hoping to work as an editor or continue her education even further to eventually become an English professor.

BENJAMIN BURKLE
"Fort Wayne: A Polished Place in the Rust Belt"

Majors: Political Science; History
Minor: Business Studies
Certificates: Civic Education & Public Advocacy, International Studies, Honors
Faculty Mentor: Dr. David G. Schuster (History)

Abstract

American cities, particularly in the Midwest and Great Lakes region, underwent deindustrialization in the latter half of the twentieth century as global trade opened up and manufacturing moved away from this area now known as the "Rust Belt." This was a difficult transformation for many communities, and once-bustling metropolises such as Toledo, Buffalo, and Gary had their economies stall to a halt. The city of Fort Wayne, Indiana put forth many economic and community development plans in the 1970s and 1980s in order to reignite the city after deindustrialization, including plans for the central business district, for urban neighborhoods, and for the city's manufacturing industry. While these plans did not instantaneously revive Fort Wayne's economy, they proved to be successful over time, especially as northeast Indiana transitioned into the twenty-first century.

The purpose of this research is to determine the extent of success Fort Wayne had in its recovery from deindustrialization in the late twentieth century compared to other Rust Belt metropolitan areas. Fort Wayne's various socioeconomic development plans are primary sources that are analyzed in order to both understand what the plans accomplished and how they affected the city's rebound in the late twentieth century and into the twenty-first. Secondary sources established in the twenty-first century are additionally analyzed to provide an accurate look back on the results and impacts of these plans. Furthermore, data on Fort Wayne's population is comprehended and compared to that of other Rust Belt communities in order to provide concrete evidence of the comparative success of Fort Wayne's post-deindustrialization economic development projects.

This project adds to the field of history by providing a more acute understanding of Fort Wayne's socioeconomic progress after deindustrialization swept the nation in the late twentieth century. Furthermore, by making connections between Fort Wayne's relative success through its economic development plans compared to other deindustrialized Midwestern metropolises, this study may prove to be a beneficial "road map" for Rust Belt cities during future large-scale socioeconomic transitions.

Biography

Benjamin Burkle is a senior double majoring in political science and history with a minor in business studies and certificates in civic education and international studies alongside his Honors certificate. Passionate about the Mastodon community, Ben has served as the College of Liberal Arts-appointed Senator for PFW's Student Government Association for three years and has been the chair of the organization's Public Relations and Ways & Means committees in previous semesters. He thoroughly enjoys being an involved student, as it allows for him to meet new friends, have unique experiences, and further cultivate the exciting PFW campus.

During his tenure at Purdue Fort Wayne, Ben has been inducted into the National Society for Leadership and Success and the American Political Science Association's Honor Society: Pi Sigma Alpha in addition to making the Dean's List every year he has been enrolled. He is a two-time winner of the Ulmschneider Prize in Political Science, was awarded the Thomas J. Wyss Scholarship in 2023, and became a Top 50 recipient in 2024. Currently, he is very grateful to be nominated for Student Leader of the Year and SGA Member of the Year in the 2025 Student Leader Awards. He is incredibly thankful for all of these significant honors, and greatly appreciates the PFW community for all the opportunities it has granted him.

Outside of his studies, Ben's hobbies include collecting music, traveling across the country, and cooking. A lifelong resident of Fort Wayne, Ben wants to dedicate his career to lifting up his northeast Indiana neighbors, and last August he started an exciting internship in economic development at Greater Fort Wayne, Inc. where he can do just that. Ben is no stranger to presenting his research, having done so twice before at PFW in 2024 at the Student Research Symposium and the History Undergraduate Conference. He is proud to be a Mastodon Honors student and is thrilled to share his findings on local history and what makes our community so resilient through his Honors showcase presentation!

Nicole Bosserman
"Man's (New) Best Friend?: How Character AI Impacts Human Sociality"

Major: Anthropology
Faculty Mentor: Dr. Jon Rusert (Computer Science)

Abstract

Since the first ChatGPT model released in November 2022, artificial intelligence (AI) tools have integrated into social media, search engines, phone operating systems, business software, and more. Now, the AI chatbot Character AI allows millions of users to engage in text or voice chats with a character based on a fictional story or historical figure. This service is free and essentially unlimited, allowing users to interact with the chatbots through the Character AI cell phone app or via their computer's web browser. While these chatbots are a simple source of amusement for some users, other users experience a greater emotional investment in their AI companions. This study aims to better understand how people are interacting with, thinking about, and connecting with Character AI chatbots by analyzing the content of social media posts in the Character AI subreddit on the social media platform Reddit.

The data for this content analysis was collected from freely available social media posts on Reddit. The Character AI subreddit is a lively community focused on Character AI and boasts more than 2.5 million members with a daily average of about 75 posts per day. Two hundred and eighty posts were collected from the subreddit between February 17th and March 17th. The posts selected for inclusion in the content analysis were those with the highest engagement during that timeframe. By focusing on posts with high engagement, we ensure that the content being analyzed resonates with other people in the Character AI community.

The collected Reddit posts were analyzed using content analysis techniques and categorized based on level of engagement, revealing what topics and types of interaction were most important to users regarding Character AI. A content analysis codebook was created for the study that focused on fifteen common emotional themes found in posts on the Character AI subreddit. Each post was coded with up to three of these emotional themes. Preliminary findings show that while some users focus on the humor found in chatbot interaction, there is also significant emotional investment as shown in posts that feature anger, sadness, or shame. There are some gaps in this research protocol, such as "troll" posts that are not actually indicative of a user's feelings. Future avenues of research could include social media posts from other platforms, a greater time range for content collection, a focus on different AI chatbots, and a larger data set.

Biography

After a lifelong fascination with history, culture, and science, Nicole Bosserman was stunned to discover she could pursue her curiosity as a career. She returned to college at Purdue University – Fort Wayne in 2023 to pursue a degree in Anthropology and hasn't looked back.

Nicole completed two previous degrees at the University of Findlay. During her time there, she spent six days a week working with horses in addition to her classes and part-time jobs. She won the Innovation Competition twice in the business proposal and leadership categories, and in 2019 she was awarded the Equine Business Management Leadership Award. She graduated Magna Cum Laude with a BS in Equine Business Management and an AA in English Equestrian Studies.

After graduation, Nicole began a successful career in human resources at a large international company. She started as an HR Administrator before being promoted to HR Generalist, where she led multiple projects to improve employee retention, hiring practices, and communication. In 2022, she was nominated for a Local Change and Communication Lead role for a multi-hundred-million-dollar software improvement project, which she held until the project was completed at the end of 2024. She continues to work at the same company, now as a Senior HR Professional. In addition to her workplace responsibilities, she also co-leads the company United Way team which allows her to plan and run fundraising events for various charity organizations in Van Wert County, Ohio.

Nicole will graduate this spring with a BA in Anthropology, and she plans to continue her education in graduate school. She is a semi-finalist for a Fulbright U.S. Student Award for graduate studies in Greece, and she has been accepted to the MA program in Anthropology at the George Washington University in Washington, D.C. In the future, she plans to earn a doctorate and continue researching how new technology changes what it means to be human. In her scant free time, you can find her in Indianapolis where she participates in sport sabre and historic longsword fencing competitions.

ALEXANDRA A. PODA
"Populism and the Past: The Political Afterlife of Communism in Eastern Europe"

Major: Political Science
Concentration: International Relations and Eastern European Politics
Minor: History
Certificate: International Studies Certificate
Faculty Mentor: Dr. Michael Wolf (Political Science)

Abstract

This research explores how historical legacies of communist regimes shape the current appeal of populist leadership in post-communist societies, focusing primarily on Poland and Hungary while contrasting their trajectories with the Czech Republic, which has thus far followed a different path. By examining transitions from authoritarian rule to democracy—and later shifts toward populism—the study hypothesizes that unresolved historical grievances and perceived shortcomings of post-communist reforms create fertile ground for populist appeals. Populist leaders in these contexts often draw upon national sovereignty themes and critiques of past injustices, resonating with citizens who recall the social upheavals of communist rule.

In contrast, the Czech experience suggests that not all post-communist states undergo the same populist turn. Identifying what sets the Czech Republic apart—whether more robust democratic institutions, distinct cultural attitudes, or alternative avenues for political dissent—will be key to understanding how some countries resist the lure of populism. This inquiry also examines whether grievances spring primarily from grassroots communities or are cultivated by elites seeking "means, motive, and opportunity" to galvanize political support.

A comparative, empirical approach will guide the research, integrating historical analysis, rhetorical examinations of leaders' speeches, and polling data to determine how these factors contribute to shifting voter preferences. By juxtaposing multiple post-communist nations, the project aims to clarify why certain populations gravitate toward populist politics, while others do not. These findings will add depth to ongoing debates about the roots of populism by highlighting the diverse outcomes of post-communist transitions, while also acknowledging the interplay of cultural and economic variables.

Ultimately, this study illustrates how the collective memory of communism, and the subsequent pursuit of national autonomy, can influence present-day political alignment in Poland and Hungary, in contrast with the comparatively different outcome in the Czech Republic. Offering a broader lens for analogous post-communist contexts, the project sheds light on the ways historical legacies, strategic elites, and socio-political conditions converge to shape a nation's receptivity to populist appeals.

Biography

Alexandra Poda is an Honors student at Purdue University Fort Wayne, pursuing a Bachelor of Arts in Political Science with a minor in History and working toward an International Studies Certificate. Born in Russia, she developed an early curiosity about how governance, culture, and historical contexts intersect globally. Her academic interests focus on understanding the legacies of communism, authoritarian regimes, and evolving global dynamics.

As part of her academic jorney, Alexandra conducted research for the 2024 Russian Imperialism Co-Lab, examining Kazakhstan's linguistic transformation efforts to reduce Russian influence. She presented her findings at the 2024 History Undergraduate Conference, where she also explored the intricacies of the Jewish Anti-Fascist Committee and its closure in the Soviet Union. Beyond these projects, she currently serves as President of the PFW Model UN Club, leading discussions and simulations that encourage critical thinking about international affairs. Her dedication to academic excellence and leadership has earned her a place in this year's Top 50 class at Purdue Fort Wayne, as well as induction into Pi Sigma Alpha, the American Political Science Association's National Honor Society.

In addition to her academic pursuits, Alexandra is deeply committed to restorative justice. She interned with the California Reentry Institute, working alongside formerly incarcerated individuals to support their reintegration into society, and volunteered with the Compassion Prison Project, advocating empathy-driven solutions within the criminal justice system. Through these experiences, she has witnessed the transformative power of focusing on healing and rehabilitation, rather than punishment alone.

Looking ahead, Alexandra plans to attend law school, aiming to merge her global perspective with rigorous legal training. Ultimately, she envisions building more equitable systems that bridge cultural divides and promote collaboration. By combining her fascination with Eastern Europe, her background in political science and history, and her passion for restorative justice, Alexandra aspires to contribute to frameworks that respect historical complexity while creating inclusive, forward-looking solutions.

Marten Slager
"Establishing an Independent Music Industry Business"

Majors: Music Industry; Popular Music
Concentration: Recording
Minor: Business
Faculty Mentor: Professor Jason Lundgren (Music)

Abstract

As a Music Industry major, I have been learning about business practices and legal issues. I have also taken classes focusing on recording, production, and performance for my second major, Popular Music. The goal of my project was to combine academic work with practical experience. The objective for this project was to effectively utilize my classwork and studio work to (1) explore the process of establishing an independent recording label/artist agency company and (2) record other music majors for a prospective compilation album. The methodology was two-pronged requiring preparation of a business plan and recording/producing artists.

I began by writing a mission statement, then considering five-year goals. I researched how to incorporate a business in Indiana, and the costs associated with starting a business. I also researched the costs of setting up and maintaining a website, recording, legal, marketing and publishing costs. I researched recording studios, artist agencies and independent music labels in Indiana to determine costs and explore business practices. There are also sample contracts available, with multiple complex issues to consider involving licensing of cover songs, royalties for songwriting and music performances. I also learned about the myriad ways to promote artists on the varied streaming services and through events. I spoke with other students about the recording project prior to proposing it. When I sent out the original request via snapchat, I got three immediate responses and scheduled recording sessions for those students. As the semester progressed, more messages about the project were sent out via Snapchat and Slack. I also spoke in person again with others who had originally shown an interest but had not yet responded to the scheduling request.

Obstacles encountered with recording students included difficulty in coordinating scheduling and follow-through on commitment to recording sessions. Work and class schedules had to be taken into consideration along with studio time availability. Going forward, asking people for their time availability via a short survey would be more efficient. Improvements to this process would include speaking with more members of the music faculty about the project initially and asking them to mention it in class. Having a document describing the project to distribute via e-mail would have made the scope of the project clearer. Promoting this as an opportunity for students to develop their own portfolio of performances might have produced more participation.

Through the process I gained practical experience in (1) the process of starting a business in general and an artist agency in particular by completing a business plan, and (2) the process of recruiting and recording artists. This project enabled me to use and expand my recording and production skills, and to build on information I had learned in the classroom and in my internship experience.

Biography

Marten Slager is currently a senior at Purdue Fort Wayne, majoring in Music Industry and Popular Music. The Slager family moved to Fort Wayne from Hobart, Indiana in 2004. Marten attended Lafayette Meadows, Summit Middle School and Homestead High School. He plays electric and classical acoustic guitar and played tuba in the middle school band. In high school, he became especially interested in the Heavy Metal genre, in particular Iron Maiden and took guitar class his senior year. He was also a member of the Homestead Academic Decathlon team and the Academic Super Bowl team. During his senior year, Marten discovered the Music Industry major at PFW, which provided career direction for his passion for music. After several years of learning about the business, recording and production aspects of the music industry, he added the Popular Music major to his academic plan to gain more experience in solo and ensemble performance.

In March, 2024, he participated in a Study Abroad week with other Music Industry students in London, England, which included master classes at recording studios as well as a concert at the Royal Albert Hall, This gave him the opportunity to meet people from a different country who were interested in similar concepts, businesses, and music. He developed new recording ideas, and the trip gave him a new drive to do more with recording and production. Marten has worked as a member of the operations team responsible for presenting summer concerts at the Sweetwater Pavillion for three seasons. He also served an internship at SilverBirch Studios, a locally owned recording studio in Fort Wayne that emphasizes caring for artists and nurturing them in a substance-free environment. He observed and participated in set-ups and technical procedures. Marten's honors project enabled him to combine this academic work with practical experience. The objective for this project was to effectively utilize classwork and studio work to explore the process of establishing an independent recording label/artist agency and to record artists with a variety of music styles. Through the process he gained practical experience which he plans to use in future career pursuits.

Friday, April 11, 2025

9:30 am **VIRIDIANA DIAZ MARTINEZ**
"The Stigma of Mental Illness in Latino Communities"
Major: Psychology
Minors: Spanish, Human Services; Art & Design
Certificate: Honors
Faculty Mentor: Dr. Jay Jackson (Psychology)

10:00 am **ZACHARY MACKE**
"Fort Wayne Connect: Walkable Graphic Design"
Major: Graphic Design
Certificate: Honors
Faculty Mentor: Professor Jim Gabbard (Art and Design)

10:30 am **IVONNE RUIZ**
"Navigating the Judicial System in Fort Wayne"
Major: Human Services
Concentration: Family, Diversity
Certificate: Honors
Faculty Mentor: Dr. Julie Hill Lauer (Human Services)

11:00 pm **NEAL BIRCHFIELD**
"MastodonCTF: An Educational Cybersecurity Event"

Majors: Computer Science; Data Science; Applied Statistics
Concentration: Software Engineering
Minor: Actuarial Science
Certificate: Honors
Faculty Mentor: Dr. Zesheng Chen (Computer Science)

11:50-12:50 PM **BREAK**

1:00 pm **EMILY DOCTOR**
"Let Him Be a Heathen Man: An Early American Analysis of Quaker Discipline and Disownment"

Majors: Anthropology; History
Minor: Women's Studies
Certificates: Cultural Resource Management; Honors
Faculty Mentor: Dr. Stevie Scheurich (Interdisciplinary Studies)

1:30 pm **THAYLEA PIERCE**
"The Public History of the Vietnam Veterans Memorial and American Identity"
Majors: Political Science; Secondary Education
Minor: Economics
Certificate: Honors
Faculty Mentor: Professor Deanna Wooley (History)

2:00 pm **MAXWELL JOSEPH**
"DOE Analysis of the Effect of Different Printing Parameters on FDM 3D Prints"
Major: Mechanical Engineering Technology
Certificate: Honors
Faculty Mentor: Professor Jonathan Hall (School of Polytechnic)

2:30 PM **RANA SEYAM**
"The Continuing Story of COVID-19"
Major: Biology (Microbiology and Immunology)
Certificates: Research Certificate at IU School of Medicine; Honors
Faculty Mentor: Dr. Curtis Nash (English & Linguistics)

Viridiana Diaz Martinez
"The Stigma of Mental Illness in Latino Communities"

Major: Psychology
Minor: Spanish, Human Services, Art & Design
Faculty Mentor: Dr. Jay Jackson (Psychology)

Abstract

Stigma on mental illness is a term that does not have a clear-cut definition, however mental health stigma is defined as the beliefs and stereotypes that have a negative impact on how individuals with mental illnesses are viewed. These negative views can impact if an individual decides to seek treatment for their mental illness or not. For the Latino community, that stigma that surrounds mental illness has made the Latino community that least likely to seek mental health treatment compared to other communities. Latinos experience many challenges unique to their community such as discrimination, inequality, language barriers, poverty and mental and physical wellness. Their mental health is what is often ignored. Contributing factors such as insurance, language barriers, fear of deportation, inability to acculturate, or stigma can have a negative impact on mental health. This project focuses on the stigma on mental illnesses in the Latino community and what contributes to that stigma.

The goal of this project is to look at the different circumstances that may lead to stigma in the Latino community as well as to understand why the Latino community may not look for treatment or avoid treatment. This project dives into the different areas that contribute to stigma such as limited knowledge, language barriers, religion, family, gender and perception of other and oneself. This project also looks at how each of these areas play a part that contributes to stigma towards mental illness. Although there is limited research that specifically focuses on what leads to the stigma in mental illness and how it is measured in the Latino community, highlighting the research that is available and what is lacking in that research can help spread awareness and educate both the Latino community and other minorities as well as mental health professional helping these communities.

Biography

Viridiana Diaz is graduating this May with a Bachelor of Arts in Psychology and three minors in Spanish, Human Services, and Art & Design. She is a first-generation Latina. Viridiana has always been fascinated by science as well as driven to help others. Psychology offered this being a social science that could be applied academically and by experience. Additionally, her education is Spanish and Human Services has provided her with background to serve others especially in the Latino community while her education in Art has allowed her to appreciate and view the world in a different light.

Viridiana has immersed herself in many different groups at Purdue University Fort Wayne that has connected her with others as well as found community in. She is a TRIO-SSS student in which she attends workshops and received a Trio Leaders Award. She also participates in Hispanos Unidos a community for Hispanic and Latino PFW students. She is part of Active Minds where she attends peer support group. Additionally, she participates in Book Club and Bible Study once a week. Viridiana also became the president of the K-pop Club in where she plans and organizes events for this club.

Outside of school Viridiana enjoys art such as drawing and painting as well as journaling, reading, and crocheting. She also spends her time choreographing dances for Quinceaneras and volunteering at her parish. Viridiana plans to take a gap year to gain experience and network then pursue a PhD in Clinical Psychology with the hopes of focusing her working in helping Latino and minority children and families as well to spread mental health awareness in these communities.

Zachary Macke
"Fort Wayne Connect: Walkable Graphic Design"

Major: Graphic Design
Certificate: Honors
Faculty Mentor: Professor Jim Gabbard (Art and Design)

Abstract

While the city of Fort Wayne has been making recent strides in improving walking conditions in the city, my research into the matter showed that there is a lack of advertising/awareness of the topic on the city's part. In that regard, this project, Fort Wayne Connect, is intended to make up for that shortcoming by making a mock marketing campaign. By designing a full set display comprised of engaging and interactive graphic design pieces, Fort Wayne Connect promotes walking, walkability, and the various walkable destinations in and around Fort Wayne. The display includes an intensive range of design collaterals meant to connect with viewers on several fronts. By doing so, the project will get viewers excited and interested in how walking can better help forge connections between people, businesses, and activities in Fort Wayne.

The Fort Wayne Connect project is on display in the Blue Jacket Inc. gallery space as part of the Spring 2025 Senior B.F.A. Exhibition. For the exhibition, there are several design pieces that come together to form the full display. This involved designing the full identity and branding for the campaign and then applying that to each design piece in the display. Each piece was designed with the physical layout of the gallery space in mind, ensuring that everything is visually clear and appealing to the gallery visitors.

Not only is the goal of this project to promote walkability and walkable destinations in Fort Wayne, but it is also showcases the skills I have developed as a graphic designer and student at Purdue Fort Wayne. As such, the focus of my project is how these two goals intersect, and how good design can help elevate a great cause. There is an insight to be gained into how people engage with city efforts, such as Fort Wayne's efforts to improve walkability in the city. In conclusion, along with getting people to think about walkability in Fort Wayne, this project will get viewers thinking about how making a campaign more appealing to the public can make a campaign more successful as a whole. This project will be on display in the Blue Jacket Inc. gallery space from April 10th through May 4th.

Biography

Zachary Macke was born and raised in the small city of Decatur, Indiana. After being the top of his small high school graduating class of 157 students, Zach sought a less conventional field of study in Art and Design. Motivated by his own hobbies and interests at the time, and partly inspired by his hometown's recent efforts to support the arts, Zach went to Purdue Fort Wayne to study graphic design. Though he was relatively unexperienced in the field compared to his classmates who had been practicing in the arts much earlier than him, Zach kept working hard in his classes until he was accepted into the B.F.A. program for graphic design.

In the four years he's been at PFW, Zach has earned a spot on the Dean's List every semester from Fall 2021 through Fall 2024. He has had seven total pieces of artwork accepted into the Annual Student Juried Exhibition at PFW from 2022-2025 combined. He has been active around campus and has been a member of the PFW TTRPG club since January 2023. During his last two years at PFW, he worked in Student Housing as a desk assistant. It was through that job and interacting with all of the students that he was inspired to make his project centered around all of the connections available in Fort Wayne via walking. After hearing the phrase, "there's nothing to do in Fort Wayne", one too many times, Zach realized that what was lacking wasn't the city itself, but the awareness surrounding the destinations involved. And thus, the project came to life.

Zach plans to graduate in May 2025 with his Bachelor of Fine Arts in Graphic Design. He will continue his current graphic design internship at Elevatus Architecture through graduation. After which, he plans to get a full-time position as a graphic designer.

Ivonne Ruiz
"Navigating the Judicial System in Fort Wayne"

Major: Human Services
Concentration: Family, Diversity
Faculty Mentor: Dr. Julie Hill Lauer (Human Services)

Abstract

Within the human services field, there will be opportunities to advocate for those who seek help, or for those who want to improve their lives in a new environment. In one organization, there has been many people who have shown confusion about the judicial system, or even about what courts are here in Fort Wayne. Not knowing what they are, what they do, or where they are located can be frustrating and makes it hard to navigate a court case or to file any type of report. It also creates a sense of fear to ask for help because not knowing what to do or how to communicate with law enforcement can create that barrier that many are afraid to cross. And there is also the language barrier that has prevented many to not start or continue a process that involves the law. To help reduce that frustration and fear, a guide was created that illustrates and explains the system, the different courts, other topics that have been brought up by clients in the organization, and the guide will be available in different languages.

To be able to provide proper information, research was done on each topic that has been brought up by clients. The main topic is about the courts, but there is information about other topics and where to get certain information, like police reports, or about constitutional rights. Pictures will be provided of each court to help clients see what they look like and where they can park. The organization will also help to provide the guide in other languages to clients in hopes to help as many of them as possible. The goal of this guide is to help clients be able to become comfortable in navigating the system with little to no help from their case workers and to help them have a sense of control of their lives and be able to feel at home here in Fort Wayne.

Biography

Ivonne Ruiz will be graduating with a bachelor's degree from the Human Services program. The concentrations she focused on are both on family and diversity because there were what she was interested in when she started this major. In this program, she has been given the opportunity to do two internships in two different organizations to expand her knowledge and her experience in the field. Being in both internships, she has been able to explore different sides of the human services field and created a picture of what work she would like to do once she graduates.

At the start of the program, she was uncertain if this was the right path for her, but as the years passed and as she met people, her future has started to take form. She is interested in advocating and interpreting. In her internship, she has been able to learn more about advocating and the need for it in our community. Ivonne comes from a Spanish speaking household, so the way that interpreting works is known to her, but being in her internship has made this interest even stronger. Seeing how there is a lack of interpreters in many languages and seeing how many are not able to properly relay the client's message to the other party, makes it hard to ignore the need for more interpreters. To this day, she is unsure of what will happen in the future, but she hopes to achieve all her goals.

Outside of her school life, she loves to take time for herself and work on her self- care. She likes to watch her favorite shows and read whenever she can as she believes that breaks are important to hopefully prevent burnout later in her career. Her future will always be uncertain because she is unsure of what steps to take next, as in further her career, or stay as is, but either way, she wants to be able to help as much as she can no matter where she ends up. We all have uncertain futures, but she wants to live her life to the fullest, with no regrets.

Neal Birchfield
"MastodonCTF: An Educational Cybersecurity Event"

Majors: Computer Science; Data Science; Applied Statistics
Concentration: Software Engineering
Minor: Actuarial Science
Certificate: Honors
Faculty Mentor: Dr. Zesheng Chen (Computer Science)

Abstract

In the digital era, cybersecurity is a rapidly evolving field that many students are curious about. This is especially true at PFW, where students have nationally ranked in the National Cyber League for the past three semesters. What this project proposes is a jeopardy style educational event designed to promote a safe and collaborative team environment for students to explore various cybersecurity concepts. This way students can work through challenges that build on each other. This project combines cybersecurity and game design as each challenge will introduce a base concept and then provide a more difficult 'test'. This will emphasize why a concept is important and show how the concept would be encountered in a real-life scenario; the students will be able to better understand the concept and gain confidence in their skills. Additionally, these concepts and challenges can be adapted to better suit the understanding of various age groups, be it K-12 or higher education. To better suit the lifestyle of many people and schools, the event will be hosted on a cloud-based application, accessible anytime and anywhere the students are.
At its core, this project aims to give students and faculty an opportunity to gain experience collaborating with individuals of different skill levels, skill sets, and backgrounds in cybersecurity. As the first event of many to come, this event will consist of 27 challenges created for higher education students exploring concepts that a cybersecurity professional would have experience with: be it gathering information about common tactics, techniques, and procedures of cybercriminals, to scan for vulnerabilities on a client's website. By providing a safe learning environment to explore cybersecurity concepts in a collaborative way, people of all skillsets at PFW and the region at large will be better prepared to enter this high demand field.

Biography

Neal Birchfield is a Computer Science and Data Science dual degree student with a concentration in software engineering and an actuarial science minor. He is an active member of the PFW campus community, being on the officer committee of five student organizations. As an officer of PFW Association for Computing Machinery, he has helped organize three Global Game Jams and eight cybersecurity events. He has nationally ranked three times, and his teams have ranked in the top fifty multiple times. In addition to organizing multi-day events, he has led interactive lectures on a variety of topics, with a focus on game design and cybersecurity. For his work with PFW Association for Computing Machinery, he was awarded the Student Organization Officer of the Year Award in Spring 2024.
With a strong entrepreneur streak, he plans on integrating his passions for education, cybersecurity, and game design by creating approachable educational material that is fun both in and out of the classroom.

Emily Doctor

"Let Him Be a Heathen Man: An Early American Analysis of Quaker Discipline and Disownment"

Majors: Anthropology & History
Minor: Women's Studies
Certificate: Cultural Resource Management
Faculty Mentor: Dr. Stevie Scheurich (Interdisciplinary Studies)

Abstract

This project uses primary and secondary source research to examine Quaker practices of discipline and disownment in the context of early America. Specifically, the project seeks to question the purpose of disownment in this era, since disownment is no longer practiced among Quakers today. After Quakerism crossed the Atlantic in the mid-seventeenth century, Quakers suffered from persecution from Puritans and those who did not understand Quakers' religious principles. Quakers differed from their contemporaneous counterparts in believing that each person contained an inner light that connects them to God without the need of a mediator. Pennsylvania, originally conceived as a Quaker colony in 1681, quickly grew to become one of the most diverse places in the world, exposing Quakers to differing values. In response, Pennsylvania Quakers published the *Rules of Discipline*, a rule book detailing Quaker beliefs and the proper behavior in various scenarios. Violation of these proper behaviors could lead one to face discipline or even disownment from their meeting in extreme cases. Quaker disownment, different from excommunication, involved a long disciplinary process that went through several channels before the ultimate verdict. Disownment was not taken lightly and was pursued only as a last resort for serious offenders. By far, the most common reasons for disownment involved marriage and sexual misconduct, including such violations as marrying outside of meeting, premarital pregnancy, fornication, and incest. The era also created a unique situation that led to the disownment of hundreds of Quakers. These were Quakers that participated in the American Revolution through direct fighting or the paying of wartime taxes. While sexual misconduct and the American Revolution produced the most disownments in the latter half of the eighteenth century, there were many other violations that led to disownment, such as drunkenness, profanity, improper dress or speech, heresy, and more. The project analyzes these cases of disownment for how they violated Quaker values as presented in the *Rules of Discipline*. Amid the evidence, the project concludes that disownment worked as a tool to promote a homogenous Quaker community in the face of unique surroundings that challenged central Quaker values.

Biography

Emily Doctor is graduating this May with a BA and majors in Anthropology and History, a minor in Women's Studies, and a certificate in Cultural Resource Management. She was selected as the 2025 Exemplar for the College of Liberal Arts, an award presented to a graduating student who has shown excellence in their field. In 2025, Emily also received the Judie and Ralph Violette History Scholarship, the Outstanding Senior Award, the Achievements in Public History Award, and the Franz Boas Award for Academic Excellence in Anthropology. She was previously named a Top 50 student in 2024.

Emily has always had a passion for history, which she has demonstrated throughout her college career. She specializes in United States history, especially of the 18th and 19th centuries. Emily has done specific research on historical sex work and venereal disease in Early Republic America, Quakers during the American Revolution, and early explorers' writings on Haudenosaunee women. One of her favorite things to do is to talk about her research. Emily previously presented papers at the History Undergraduate Conference in 2023 and 2024, and presented a poster at the Student Research and Creative Endeavors Symposium in 2022. Alongside her honors project, Emily is currently writing a periodic history of the women's studies program at (I)PFW and its roots in the Fort Wayne community. Emily has also worked in the Tutoring Center for two years tutoring history and anthropology. Last summer, Emily worked as an archaeologist excavating colonial artifacts from an eighteenth-century merchant's house while educating the public at Colonial Michilimackinac in Mackinaw City, Michigan. She gained further museum experience in her internship at the Diocesan Museum last semester, where she helped bring a new exhibit on Central Catholic High School to fruition.

Outside of school, Emily enjoys painting, cross stitching, and spending time with her cat Bella. After graduation, Emily plans to work in cultural resource management to build off her experience in field school and her archaeological work on and off campus. She later plans to pursue a master's degree in historical archaeology, history, or a related field.

Thaylea Pierce
"The Public History of the Vietnam Veterans Memorial and American Identity"

Major: Political Science and Secondary Education
Minor(s): Economics
Faculty Mentor: Professor Deanna Wooley (History)

Abstract

This project examines the public history of the Vietnam Veterans Memorial in Washington, D.C., focusing on its role in shaping American identity and addressing national denial. Designed by Maya Lin, the Memorial diverges from traditional war monuments by eschewing glorification of victory and instead compelling visitors to confront the profound loss and sacrifice of the Vietnam War. This study will analyze the Memorial's impact on American collective memory, identity, and historical reckoning, exploring how it challenges conventional narratives of heroism and war remembrance while fostering national introspection. Through historical analysis, public reactions, and scholarly discourse, this project will investigate how the Memorial negotiates themes of national guilt, denial, and commemoration. By serving as a site of contested memory, the Vietnam Veterans Memorial provides an opportunity to understand how public history shapes collective identity and facilitates reconciliation with difficult pasts. The research will contribute to public history scholarship by demonstrating the ways in which memorials function as spaces of both commemoration and contestation.

The methodology for this project includes four primary components: (1) a literature review of scholarly works on war memorials, public history, and collective memory, particularly those centered on the Vietnam Veterans Memorial; (2) archival research, utilizing sources such as the Vietnam Veterans Memorial Fund records and the National Archives to analyze original documents, debates, and public reactions surrounding the Memorial's development and dedication; (3) interviews and public engagement, where feasible, to gather perspectives from veterans, visitors, and historians on the Memorial's influence on American history and identity; and (4) a comparative analysis of the Vietnam Veterans Memorial alongside other war memorials, such as the World War II Memorial and the Korean War Veterans Memorial, to highlight its unique approach to remembrance.

Potential obstacles to this research include limited access to archival materials, necessitating reliance on digital sources or secondary analyses; logistical and ethical challenges in conducting interviews with veterans and visitors; and the inherent subjectivity involved in interpreting public reactions, requiring careful contextual analysis to mitigate bias.
The anticipated findings of this project suggest that the Vietnam Veterans Memorial functions as a powerful counter-narrative to traditional war memorials, compelling the nation to engage in historical reckoning rather than celebration. By redefining patriotism through acknowledgment of sacrifice rather than military triumph, the Memorial encourages a critical reassessment of the Vietnam War and its broader implications for American identity. Additionally, the research will contribute to wider discussions on how nations commemorate difficult histories and the role of public history in shaping collective memory.

The project's significance lies in its exploration of how the Vietnam Veterans Memorial navigates themes of sacrifice, loss, and national identity, offering a model for understanding how memorials serve as dynamic sites of public history. By analyzing the Memorial's lasting impact, this study will provide insights into the ways in which societies confront and memorialize complex historical legacies, deepening our understanding of the intersection between memory, identity, and historical consciousness.

Biography

From an early age, a focus on education defined their academic trajectory. Early engagement with pre-kindergarten learning books and independent reading fostered strong literacy skills.

For primary education, they attended a Lutheran school affiliated with their church, despite initial preferences for a public school setting. This environment provided a foundation in Christian ethics and long-term social connections. Growing up in southeast Fort Wayne, a diverse community, they were exposed to multiple cultural perspectives, which contributed to a broader understanding of social dynamics.

The transition to high school presented a different experience. While remaining in a Lutheran institution, the student body was more homogenous, with a strong conservative presence. Social structures were rigid, making extracurricular participation difficult without prior associations. Art classes became an outlet for creative expression and engagement.

The events of 2020, including the COVID-19 pandemic, the murder of George Floyd, and the presidential election, further influenced their sociopolitical perspective. Institutional responses to the Black Lives Matter movement were dismissive, with restrictions on political expression selectively enforced. A social justice club was formed to promote cultural inclusivity, though administrative resistance limited its impact. Broader policies within the Lutheran Church Missouri Synod, particularly opposition to Critical Race Theory, reflected institutional reluctance to address structural inequalities.

Academic coursework emphasized critical analysis. Literature studies introduced themes of class disparity and anti-consumerism. Government and theological ethics classes highlighted contradictions between doctrine and institutional practices. Exposure to economic inequality through coursework and media, such as Robert Reich's "Inequality for All," led to further inquiry into alternative economic systems. These experiences fostered a commitment to examining systemic structures and advocating for informed, critical perspectives on social and political issues.

Maxwell Joseph
"DOE Analysis of the Effect of Different Printing Parameters on FDM 3D Prints"

Major: Mechanical Engineering Technology
Faculty Mentor: Professor Jonathan Hall (School of Polytechnic)

Abstract

3D printing is an intriguing technology that still has advancements every year. With all the different materials, print settings, and printer types it's hard to know exactly what you need to do to get the best result. The strength of a print is the most important factor in an industrial environment where reducing the risk of breakage is imperative. This study aims to demystify some of the options you can choose from when 3D printing. How do the material selection, fan speed, and wall thickness affect the tensile strength of 3D printed parts? These were the questions first posed in the early stages of the project. As the production of the samples began there were notable problems getting parts to print without failing. This caused some major shifts in the project. The amount of testing variables has been shrunk and the variables that are getting tested have been changed. Now cooling rate and printing temperature will be the variables looked at, each with a high and low challenge level. This will result in four combinations of print settings that will each have five replicates. This makes the total sample count 20. If time permits an additional material will be tested raising the count to 40.

This project is still ongoing, but validation activities surrounding the final testing machine show that print temperature could significantly affect final properties. The results produced at the end of this study will help engineers better understand how the factors they choose will affect the strength of their prints. Printing stronger prints early in the design process will lower the total amount of print you have to produce to get a final part. This saves time and money leading to positive downstream effects for companies.

Biography

Maxwell Joseph is a driven student at Purdue University Fort Wayne. He started his studies in Mechanical Engineering Technology in the Fall of 2021 after graduating from Columbia City High School. He will graduate in Spring 2025. He joined the honors program in his junior year to give himself a challenge and a goal to reach by the end of graduation. This decision helped him gain a deeper understanding of the more advanced classes he was taking. He also was able to spend a lot of time in the engineering materials lab working with the equipment during his senior year. Maxwell joined the ETCS Deans Envoy program his last semester to help give back to the community and foster the next generation of engineering students.

In his spare time, Maxwell enjoys making 3D models and 3D printing them at home. His favorite print so far has been printing an M180 Bolt (7" diameter) and a nut to go with it. This was an intensive print and took 25 hours to complete and a whole spool of printing filament. This print now takes up space on his desk. This hobby led him to be interested in computer programming and networking to streamline the process of going from the idea to the physical part. This interest in computers allowed him to recover family photos from a broken computer. Besides working on things at home he enjoys traveling with his lovely girlfriend. Their favorite place so far has been Rome. They hope to visit every national park in the United States.

Rana Seyam
"The Continuing Story of COVID-19"

Major: Biology (Microbiology and Immunology)
Certificate: Research Certificate at IU School of Medicine.
Faculty Mentor: Dr. Curtis Nash (English & Linguistics)

Abstract

COVID-19 has revealed a stark mystery in the global distribution of its impact. COVID-19 made all cities full of life became ghost cities, and people voluntarily chose to stick to their homes for fear of infection. In this project, current socialistic problems and mystery has been analyzed. This project addresses the ongoing story of COVID-19, which is a significant social problem, and it impacts people globally. The purpose of this project is to explore whether COVID-19 will remain a permanent issue or eventually fade away as if nothing happened and discuss the continuing story of COVID-19. This mystery has been further complicated by questions surrounding early containment efforts, hidden data, and the global response. It is important to raise awareness to the community and address an important issue that needs attention. This project belongs to mystery genres, and the truth has not been explored yet. COVID-19 mystery is leaving both scientists and the public grappling with unanswered questions. This is the 5-year anniversary of the pandemic quarantine going into effect. The analysis included personal interviews within the community and the Allen County Department of Health, academic articles, cases reports, and historical documents. We draw a comparison between COVID-19 pandemic and other pandemic, such as the Spanish flu. Based on everything happened, we concluded that pandemic disease events were still largely uncontrolled and COVID-19 is expected to stay forever. COVID-19 still cause many negative consequences in these days, and the world changed significantly after COVID-19 appeared. Our understanding of the COVID-19 has rapidly improved and attention is shifting toward the finding long-term control strategies for people who are at risk. We need to defeat the virus and not let the virus defeat us, and we need to be prepared and educated to assume the worst case to not be locked down again.

Biography

Rana will graduate with a Bachelor of Science in Biology from Purdue University Fort Wayne in Spring 2025. She is currently in her final semester of undergraduate studies. In addition to participating in the honors program, she has been involved in research at the IU School of Medicine and several projects at PFW. Her research experience spans various fields, including stress physiology, microbiology, and immunology. Rana has also engaged in numerous volunteering and leadership activities, holding multiple club positions. She has served as the president of the Arabic Language and Culture Club for two years, the secretary of the Every Campus is a Refuge Club, and the treasurer of the AMSA Premedical Club. She introduced Arabic culture and civilization to the campus and created unique cultural events. Rana developed a passion for genetics in high school when she first learned how to draw Punnett squares. She has earned Dean's List and Semester Honors recognition for her academic achievements. Rana is eager to apply the knowledge she gained during her time at Purdue. Throughout her studies, Rana also took international communication and language courses. She is fluent in three languages: English, Arabic, and French. Outside of academics, Rana enjoys swimming, playing the piano and flute, painting portraits, and playing basketball. She is a self-taught pianist and took lessons at PFW. Rana performed in multiple concerts during high school, and in her free time, she plays masterpieces by Chopin, Beethoven, and Richard Clayderman. Additionally, she enjoys riding jet skis. Rana excels in math and physics and enjoys solving related problems. She has a variety of hobbies, including repairing laptops of her own and her family's. She loves solving boot-up issues. Rana has received several prestigious awards, including the Scholastic Art & Writing Award from the Fort Wayne Museum of Art, the ISSMA Solo Medal Award, and the ISSMA Ensemble Medal Award.

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