7 RIVERS
UNDERGRADUATE
RESEARCH SYMPOSIUM

Viterbo University

Abstract Book

November 20th, 2026

Platinum Sponsor

VITERBO UNIVERSITY
D.B. REINHART
INSTITUTE

Schedule and locations

9am-10am Registration - FSPA lobby
10:10-11:05am Keynote Address - FSPA Lobby
11:15am-12:10pm Oral Presentations (BRC 122 and NRC 195)
12:20-1:15pm Lunch - FSPA Lobby
1:25-2:55 Oral Presentations (BRC 122 and NRC 195)
2:30-3:35 Poster Presentations - FSPA Lobby
3:45-4:30 Symposium Social - FSPA Lobby

Helpful Information

Schedules can be found on the 7 Rivers Research Symposium website or by using the QR codes located at the registration table and in each building.

Please visit our Exhibitors in the FSPA Lobby

Viterbo Graduate Programs
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Abstract book follows the oral and poster presentation schedules

Oral Presentations

Aging is Everyone's Future – Make it a Priority

Brophy (BRC) 122, 11:15AM

Name: Sonya Potthoff
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: An optimistic mindset is essential for the process of aging through enhancing the quality of life. An optimistic viewpoint upon life while dealing with complications in health can serve older adults' opportunities to remain active and social. Activities and socialization are two vital areas that older people may suffer or lack because of health complications or limitations in opportunities. However, the mind can change the quality of life through a positive outlook. The idea of obtaining an optimistic mindset throughout the later portions of life was generated through the Viterbo offered course of Geropsychology. Upon learning about various aging theories and discussing their implementation within society, my class had the opportunity to conduct qualitative research with local residents in our community. We crafted questions inspired by theories of aging to gain a better understanding for the reality of aging. The formulation of my research topic was detected through themes in my conversation with the local resident. After three sessions of interviewing with my resident, I noticed how her positive perspective has allowed activity levels and socialization to remain stable despite her health complications and changing environments. My resident's narrative and life experience were hugely accredited for the construction of my research and presentation. The qualitative research-based presentation will highlight the Activity Theory of aging, the impact of Modernization Theory for relationships, and the concept of a growth mindset. Additionally, the presentation will engage in studies of the improvements in cognition and physical levels with positive beliefs, and the power of grit in a growth mindset to serve as a psychological resource for later on in life. We can't control every aspect of aging, but we can control how we view situations and approach what life offers. The education upon the need for an optimistic view upon life allows individuals an opportunity to enhance the quality of their life, rather than settling in acceptance for the challenges of aging.

Seeing Ourselves: Cultural Representation and Its Role in Belonging

Brophy (BRC) 122, 11:30AM

Name: Isabella Britten
Institution: Viterbo University
Faculty Mentor: Dr. Andrew Hamilton
Discipline: History
Presentation Type: Oral Presentation

Abstract: This capstone project looks at how cultural representation works in La Crosse, Wisconsin, a city whose public identity has long been built around a narrow, Eurocentric story centered on its German roots and the annual Oktoberfest celebration. Through a series of interviews with community members including folks of Hmong, Latinx, Eastern European, Filipino, and Indigenous heritage, this study explores how people from different backgrounds experience visibility, belonging, and erasure in the city's cultural landscape. The research draws on critical race theory and cultural studies to unpack how dominant representations, especially the ones tied to tourism and municipal branding, can flatten complex histories into marketable stereotypes while pushing aside the lived experiences of many of the communities who call La Crosse home. The interviews reveal recurring themes of tokenism, the absence of minority voices in the community, and the emotional labor people of color have to carry just to advocate for their own representation. Building on those findings, this project offers community-driven recommendations for the city of La Crosse. The findings point toward a broader conclusion. Meaningful cultural representation asks more of a city than simply adding new voices to the same structures. It requires revisiting the stories that have shaped La Crosse's identity, asking whose experiences have been left out, and building civic spaces where those experiences are centered. When residents see themselves reflected in the place they call home, their connection to civic life deepens, milestones. My findings will provide support for the importance of staying active and maintaining relationships for survival among humanity.

Overcoming Life

Brophy (BRC) 122, 11:45AM

Name: Jomar Guzman Huerta
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: This research is based on a Geropsychology class where we talk about how changes in society have changed the way we treat elders. For it, our professor assigned us to visit residents at an assisted living facility. We were selected by our residents, by making our own biographies to send over, that way they knew a bit about us before we got there. This is Interview style research where we sit down with our resident and get to know them while asking questions and making them feel comfortable at the same time. I have enjoyed my time meeting Debbie and can't wait to do my exposition about her life.

Masters, Servants, and Salesmen: An Intertextual Analysis of Leo Tolstoy and Arthur Miller

Brophy (BRC) 122, 12:00 PM

Name: Corbin Frydenlund
Institution: Viterbo University

Faculty Mentor: Dr. Alexander Ashland
Discipline: English
Presentation Type: Oral Presentation

Abstract: In this presentation, I argue that the plays of Miller and Tolstoy can be read intertextually. Research shows that Miller's work was profoundly affected by Tolstoy's writings, and this research claims to make that tie through an examination of two Miller plays: Death of a Salesman and The Crucible, and two of Miller's non-fiction texts: Collected Essays and Timebends, in which Miller cites Tolstoy as a guiding star for his work. The research uses two plays by Tolstoy: *The Live Corpse* and *The Power of Darkness*. The findings provided a way of showing the intertextual conversation happening through the use of "The Tragic Hero," themes of evil, money, secrecy, and corruption. I explore the effects of Russian literature on mid-twentieth-century American realist plays. In doing so, I look at how Miller used Russian literature to redefine the genre of Realism. Tolstoy's work is fundamental to this project, and without it, Miller could not have written refined works like *The Crucible* and *Death of a Salesman*.

An Overview of China's Second Demographic Transition

Brophy (BRC) 122, 12:15PM

Name: Kai Hirata
Institution: University of Wisconsin -Eau Claire
Faculty Mentor: Dr. Jianjun Ji
Discipline: Sociology, Demography
Presentation Type: Oral Presentation

Abstract: Data shows that China's total fertility rate (TFR) declined from 2.51 in 1990 to 1.93 in 1991, which was the first time in China's history that the TFR dropped below the replacement level of 2.1. Since then, fertility has continued to decline, to 1.56 in 2001, to 1.12 in 2021, and even further down to 1.00 in 2023. This suggests that China has entered its Second Demographic Transition (SDT). The dramatic decline in fertility and the advent of the SDT raised serious concern among the Chinese government and demographers. What is the driving force that contributed to this low fertility? What challenges would this pose for contemporary Chinese society? This study answers these questions by examining the dynamics of fertility in history and exploring the various contributing factors. It is argued that if such low fertility trends continue, there would be unprecedented social consequences in terms of age and sex structure, family composition, labor force, as well as challenges in elderly-care mechanisms and social resources — this study explores these consequences and challenges. Policy implications are addressed.

Repurposing FDA-Approved Drug to Investigate Anticancer Effects: Colchicine on Melanoma Cells

Nursing Center (NRC) 195, 11:15 AM

Name: Ella Krautkremer

Institution: Saint Mary's University of Minnesota
Faculty Mentor: Dr. Megan Girtman
Discipline: Biology
Presentation Type: Oral Presentation

Abstract: Melanoma is an aggressive form of skin cancer associated with increasing incidence and significant treatment challenges, including drug resistance. This study investigated the potential of repurposing colchicine which is an already FDA-approved drug for the treatment of melanoma. An in vitro model of melanoma was used to evaluate the effects of colchicine on cancer cell viability. Colchicine disrupts microtubule polymerization, interfering with cell division and potentially limiting cancer cell proliferation. The results from trials 1 and 2 showed a decrease in cell viability in B16F10 mouse melanoma cells. Increasing the colchicine concentration corresponded with a decrease in cell viability suggesting colchicine as a potential treatment for melanoma cancer patients. Repurposing an existing FDA-approved medication is a more cost-efficient and time-effective option compared to developing an entirely new drug. These preliminary findings support further investigation in colchicine's effects on melanoma cells and its role in future therapeutic research.

Automated Bio-acoustic Identification of Anuran Species Via Spectrogram Convolutional Neural Networks

Nursing Center (NRC) 195, 11:30 AM

Name: Samantha Ugarte Hopkins
Institution: Viterbo University
Faculty Mentor: Dr. Ted Wilson, Dr. Eric Weinberg
Discipline: Biology
Presentation Type: Oral Presentation

Abstract: Global anuran population declines have highlighted the urgent need for scalable biological monitoring, as amphibians serve as critical ecological indicators. While passive acoustic monitoring (PAM) using autonomous recording units (ARUs) allows continuous, non-invasive soundscape collection, manual audio inspection creates a severe analysis bottleneck. The solution for this bottleneck is an automatic identification system for the data obtained from the ARU's. Using human-annotated ARU field soundscapes from National Park Service (NPS) and United States Geological Survey (USGS) monitoring networks, we extracted audio clips across species found in the Midwest region. These clips were converted into Mel spectrograms, and the manually annotated files were used to train a Convolutional Neural Network (CNN) to recognize the differences between frog species and background soundscapes. Research has not been completed and is still ongoing, but findings have been promising. So far, this study confirms the viability of Mel spectrogram CNNs for eliminating manual bio-acoustic bottlenecks, establishing a reliable baseline for transitioning toward continuous sliding-window detection and multi-label modeling. In partnership with the NPS and USGS, this automated framework currently supports ecological restoration assessments in coastal wetlands at Indiana Dunes National Park, enabling pre- vs. post-conservation

comparison trials and spatial GIS occupancy mapping to evaluate habitat recovery. In the future this model could automatically analyze and compile anuran species risk profiles and identify where conservation efforts should be implemented.

Do Preventive Use and Canine Characteristics Influence Tick-Borne Disease Screening Results in Dogs?

Nursing Center (NRC) 195, 11:45 AM

Name: Alyssa Kuffel
Institution: Saint Mary's University of Minnesota
Faculty Mentor: Dr. Benjamin Pauli
Discipline: Biology
Presentation Type: Oral Presentation

Abstract: Vector-borne diseases are a major health concern in dogs because infections can go undetected when symptoms are mild or absent, potentially delaying treatment and allowing serious complications to develop. Preventive products may reduce exposure to infected ticks while individual characteristics such as age and body size may be associated with differences in disease risk. This study examined how the use of preventives and canine characteristics related to screening outcomes for Lyme disease, anaplasmosis, and ehrlichiosis in dogs. Data were collected from dogs undergoing routine screening at Cameron Veterinary Clinic in Wisconsin from June 1 through August 31, 2026. For each dog the age, breed, sex, weight, preventive type, preventive schedule, and Lyme vaccination status were recorded. Stepwise linear modeling was used to evaluate relationships between these variables and screening scores for each of the three tick-borne diseases. Higher body weight was associated with higher Lyme disease and anaplasmosis scores while older age was associated with higher ehrlichiosis scores. Lyme-vaccinated dogs had lower Lyme disease scores and differences in Lyme disease scores were also associated with whether dogs were on schedule for preventive doses and the type of preventive used. These findings suggest that canine characteristics and preventive practices may help explain variation in screening outcomes in clinical settings. These findings support further research on how tick exposure, consistency of preventive use, and vaccination history contribute to differences in screening scores among dogs of different ages and body sizes.

Expression of TBX2 Sensitized the BxPC-3 Cell Line to Gemcitabine

Nursing Center (NRC) 195, 12:00 PM

Name: Eleanor Renze
Institution: Saint Mary's University of Minnesota
Faculty Mentor: Dr. Matt Rowley
Discipline: Biology
Presentation Type: Oral Presentation

Abstract: Cancer is one of the leading causes of death worldwide and is becoming an increasingly prevalent health condition. Pancreatic cancer has the highest mortality rate of all

cancers, with the five-year survival rate at 10-12%. Two common chemotherapy drugs used to treat pancreatic cancer are gemcitabine and nab-paclitaxel, which are found to be most effective when used in combination. Transcription box factor 2 (TBX2) is a transcription factor that represses expression of certain tumor suppressing genes. TBX2 overexpression has been found in cases of pancreatic cancer and linked to chemotherapy drugs being less effective. The goal of this study was to test the effects of the presence of the TBX2 transcription factor in the BxPC-3 pancreatic cell line when treated with gemcitabine and paclitaxel. Each drug was used separately on BxPC-3 cells to find the concentration that kills 50% of the cells. These concentrations of the drugs were then combined and tested on the BxPC-3 cell line with and without TBX2. Cells that expressed TBX2 and were treated with gemcitabine demonstrated a lower relative cell survival compared to control cells. Ther was no difference between GFP and TBX2 cells when treated with paclitaxel.

Scat for Science-Sourcing Antibiotics from the Gut Microbiota

Nursing Center (NRC) 195, 12:15 PM

Name: Quinn Larsen
Institution: Viterbo University
Faculty Mentor: Dr. Luke Bussiere
Discipline: Microbiology
Presentation Type: Oral Presentation

Abstract: Antibiotic resistance has become a major global health crisis, with both the CDC and World Health Organization (WHO) declaring the situation dire. Nearly all existing antibiotics now face resistant strains of bacteria, creating an urgent need for new antibiotics. Antibiotics are typically found produced by microbes in environments with high competition. Even some strains of bacteria generate antibiotics as a defense mechanism against other bacteria. Historically, many antibiotics were discovered from soil bacteria, but the gut microbiota, another diverse microbial environment, remains largely unexplored as a potential source. This study aimed to identify novel antibiotic-producing bacteria from the gut microbiota of mammals. Fecal samples from dogs, cats and rabbits were plated on nutrient agar infused with fecal matter and tested for antibiotic activity using an adapted Waksman method after a five-month incubation period. Bacteria that exhibited zones of inhibition (ZOI) on plates with *E. coli*, *P. aeruginosa*, or *S. epidermidis* were considered potential antibiotic producers and were further investigated. Antibiotic-producing bacteria QL-2 and QL-3 were identified through biochemical testing and 16s rRNA sequencing. Using 16s rRNA sequencing allowed for identification at the genus, but not species level for each organism. It is hypothesized that QL-2 and QL-3 are of the genus *Bacillus* and *Rossellomorea*, respectively. Both QL-2 and QL-3 exhibited zones of inhibition on plates infused with either *S.epidermidis* or *E.coli*. An antibiotic from QL-2 was extracted and purified. Antibiotic QL-2 exhibited clear zones of inhibition on plates infused with *S. epidermidis* but further testing must be done to confirm antibiotic activity against *E.coli*. Future examinations can explore these antibiotic properties more extensively, identify the bacterial species, and isolate the antibiotic itself. The results of this study confirm the gut microbiota as a viable source for antibiotic discovery. By

expanding antibiotic sourcing beyond soil this research contributes to the global effort to combat antibiotic resistance and supports the development of new treatments for drug-resistant infections.

Efficacious Spirit in Use of Interpersonal Exegetical Study

Brophy (BRC) 122, 1:25PM

Name: Jude Wagner
Institution: Viterbo University
Faculty Mentor: Dr. Sean Martin, Dr. Emily Dykman
Discipline: Religious Studies
Presentation Type: Oral Presentation

Abstract: Ceremony and religion are deeply personally impactful elements of human experience. Faith can offer community in an era of increasing social isolation, under ceremony we are given the means to explore how this can be done based on the efficacious first. The history of the sacramental has shown the value of a more pragmatic approach. God is an unknowable factor whereas humans are knowable, which means using this pragmatic approach asks us to engage more with the latter. Ceremony remains meaningful to people in the way it is presently. Any means altering core sacrament is deeply problematic without an intensive review, far beyond this scope. That is why the focus has fallen on the informal "bible study". Offering a structure that could take into account varied ideas for suggestions in form of how this may be used as a low-stakes religious engagement that can be altered with minimal issue.

Roger That!

Brophy (BRC) 122, 1:40PM

Name: Julia Steinfeldt
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: I am presenting my research on aging of the mind and body. How do we appreciate life through aging?

The Strength Behind the Smile

Brophy (BRC) 122, 1:55PM

Name: Erin Brooks
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: Understanding older adults' experiences is important for recognizing how individuals adapt to aging, maintain relationships, and find meaning in later life. This project explores the lived experience of aging through conversations with an older adult resident, focusing on independence, relationships, and emotional well-being. To examine these experiences, I asked questions about the resident's life, relationships, community, and perspectives on aging. I analyzed the responses using two theories of aging: Socioemotional Selectivity Theory and Continuity Theory. The resident's responses highlighted the importance of meaningful relationships, maintaining a sense of independence, and balancing social connections with personal time. These experiences connect to Socioemotional Selectivity Theory, which explains how older adults prioritize emotionally meaningful relationships, and Continuity Theory, which suggests that individuals maintain familiar behaviors, values, and relationships as they age. Overall, this project demonstrates how aging is shaped by personal experiences, relationships, and individual choices. Connecting real-life experiences with theories of aging provides a deeper understanding of the emotional and social aspects of later adulthood and highlights the importance of recognizing each older adult's unique experience.

Are State Socioeconomic Factors an Accurate Predictor of Presidential Election Outcomes?

Brophy (BRC) 122, 2:10PM

Name: Matthew Burnett
Institution: University of Wisconsin – La Crosse
Faculty Mentor: Dr. Kristina LaPlant
Discipline: Political Science
Presentation Type: Oral Presentation

Abstract: The famous line from Bill Clinton's 1992 presidential campaign of "it's the economy, stupid," rings truer and truer every day. Obviously, the economy is always a cause for concern for American voters, but how accurate are economic factors to determine the election or reelection of a president or party for that matter? In my study, I utilized economic factors of all 50 states to determine whether poor economic conditions directly result in the losing of an election for a president or their party. Specifically, I examined the 2024 election and, separately, the 2020 election and what my results show is that there is a very strong correlation between economic conditions and a political party's electoral success, vindicating economic voting theories that illustrate that voters tend to vote from their kitchen table and their wallets. Rather than using national economic data, state economic factors were utilized to create a large enough sample size for research purposes, and other factors other than economic were taken into account as well such as foreign-born citizens, GOP representation in state legislatures, and new cancer cases. I also acknowledge in my research that given the state of partisanship in the country, the research, much like the election, truly boils down to a select few swing states to act as the bellwether for how independent voters feel, as independent voters are the ones who will be voting based on circumstance, and not out of ideological loyalty. The implications of my research only further affirm a long history of

economic voting theories in suggesting that barring a national emergency that overrides voters' concerns of the economy, the state of the economy will determine the election outcomes every time.

Spirited Senescence: Staying Engaged Late in Life

Brophy (BRC) 122, 2:25PM

Name: Ryan Swiggum
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation
Abstract: My research investigates aging gracefully through the eyes and life experience of one local assisted living resident of Springbrook Village Assisted Living in Onalaska, WI. We as people all grow old with each passing day and wish to thrive and remain healthy during the aging process. Through the lens of the Activity, Continuity and Cognitive theories of Gerontology Psychology, my research sheds light on practical ways to increase health span during the unavoidable aging process in everyone's lifespan, with the intention of limiting and mitigating the biophysical changes described in the aging Wear-and-Tear theory. I will include results from three interviews with my resident and from the analysis of the non-fiction biography *Tuesdays with Morrie*, by Mitch Albom, a first-person perspective of the last years and physical decline of Morrie Schwartz, Albom's former Brandeis University sociology professor. I will share my findings to shed light on improvements that can be made in the lives of our elders to increase the quality of life in the later years of physical and mental health spans.

Sessions with Stella

Brophy (BRC) 122, 2:40PM

Name: Ashley Tulley
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: This Oral Presentation will talk about the life of a current 73-year-old women who has gone through enormous obstacles in her life to make it where she is today. For my 320 Geropsychology class we were all tasked with creating a bio of ourselves and letting senior citizens at a local nursing home choose which one of us they would like to chat with and get to know. I got matched with Stella and have learned an incredible amount about her life through our sessions. We met once as a big group for my university course and two other times individually to really dive deep into her life and see how far she has come. Our Psychology class has emphasized the importance of social connection and the importance of active life reflection to help build a better sense of meaning and well-being in the senior citizens we were assigned to get to know. It has been amazing sitting at the feet of someone who is 73

years old and hearing her tell me about her life and everything she has went through to get where she is and be who she is today. I hope you enjoy my presentation today and you can learn about her life and care for her as much as I do.

Catching Up with Karen: A lifetime in Three Moments

Nursing Center (NRC) 195, 1:25PM

Name: Dacotah Bjorlo
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: This phenomenological study explores the experiences of a 79-year-old woman at an assisted living facility while focusing on how aging has shaped her sense of identity, personal relationships, and outlook on life. Following three interviews, the main themes that emerged from this research include adapting to life changes, resilience throughout hardship, and finding purpose through meaningful relationships and social enrichment. Her experiences also reflect the activity, continuity, and disengagement theories of aging, as she acknowledges the inherent need to find personal fulfillment at all stages of the lifespan while also respecting society's natural aging timeline. Despite the significant challenge of becoming a young widow, she has been successful in maintaining her independence, autonomy, and overall sense of self. The value she places in family connections, friendships, and social ties in general demonstrates her desire to maintain happiness and find meaning throughout the aging process. Ultimately, her story challenges common misconceptions of older adulthood, highlighting how aging not only involves adversity but personal growth and satisfaction.

A Lot to Have Done

Nursing (NRC) 195, 1:40PM

Name: Luke Johnson
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: The goal of our research was to better understand the process of aging. We used a qualitative approach, interviewing older adults about their lives to hear their story of how getting older affected them personally. The life course perspective of aging is the idea that instead of aging being one district period of a person's life, it is the result of all the person's experiences. I had the opportunity, through interviewing one resident, to learn of many unique experiences he lived through. Knowing about these experiences and how he viewed them, gave me a perspective of how these experiences shape the person that he is now. I have organized what I learned into meaning earlier on in his life, the change in life later on, and meaning he finds in life now. This research not only gives perspective on older adults in our community, but also to prepare ourselves to make sense of our own lives as we get older.

An Exegetical Study on Catholic End of Life Care and Bioethics

Nursing (NRC) 195, 1:55PM

Name: Lillia Chvatal
Institution: Viterbo University
Faculty Mentor: Dr. Emily Dykman
Discipline: Religious Studies
Presentation Type: Oral Presentation

Abstract: This research examines the Catholic commitments to end-of-life care and bioethics through an exegetical study of scripture and biblical commentaries. It explores the Christian understanding of humanity using the DELTA framework: a framework presented by the Institute for Ethics and the Common Good at Notre Dame University. This framework describes humanity using five categories: dignity, embodiment, love, transcendence, and agency. This project considers how the uniqueness of humanity and foundational Christian principles apply to contemporary bioethical questions including euthanasia, physician-assisted suicide, and palliative care. Ultimately, this research demonstrates that end-of-life care measures must uphold the inherent dignity of every person.

Understanding Aging with Kathy

Nursing (NRC) 195, 2:10PM

Name: Sophia Johnson
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation
Abstract: Aging is inevitable to the human body and mind. Many factors come in to play with one’s situation in aging toward the end of their lives. My research is exploring the feelings, thoughts, challenges, joys and more of an elder in their later stages of life. With more understanding of the limits of elders, we can become more versatile to how we handle and care. By interviewing Kathy, a resident of Springbrook nursing home, I became able to apply the theories I learned in class and have a larger understanding of the feelings or challenges she would face. Through my collective findings I formed a presentation on Kathy's life and the theories she represented. I discovered results of patterns seen in many other elders’ lives, shedding light on everyone’s inevitable, but singling out Kathys story.

Roger that, Loud and Clear!

Nursing (NRC) 195, 2:25PM

Name: Brody Dunlap
Institution: Viterbo University
Faculty Mentor: Dr. Tamera Hill
Discipline: Psychology
Presentation Type: Oral Presentation

Abstract: My research is on a resident (Roger) at the Seven Rivers facility. I have examined my work through interviewing Roger with questions based on theories of aging and wellbeing. My presentation will show some of the comparisons with Roger's experience and the theories of aging, such as wear and tear theory, cells and tissues have start to wear out with regulating age. Roger experiences arthritis at a constant level, effecting his ability to stand or walk for long periods of time. He also has to have the use of a walker to freely move around the facility. Another theory may be the continuity theory of aging, as people grow older, they have an inclination to maintain those habits over time. Roger has always used sugary drinks such as Mountain Dew, but as his health declines, much of his family and physicians believe he should start drinking diet. The result will be a true lived experience because of the direct interactions Roger has had when aging. I was fortunate enough to interview Roger three different times in order to gain the information I needed.

Poverty, Humility, and Creation in the Writings of Saint Francis of Assisi: A Thematic Literary Review

Nursing (NRC) 195, 2:40PM

Name: Jerrod Osterkamp
Institution: Viterbo University
Faculty Mentor: Dr. Emily Dykman
Discipline: Theology
Presentation Type: Oral Presentation

Abstract: This literary review examines the connected themes of poverty, simplicity, humility, service, creation, and relationship with God. In the writings of Saint Francis of Assisi. My thesis is that Francis's understanding of poverty cannot be separated from humility, community, or creation. Bonaventure develops these themes through a theological account of the soul's movement toward God, while contemporary Franciscan scholars place Francis within the historical development of the Franciscan movement and its modernization. The review argues that Francis's lasting significance comes from the way these themes work together rather than existing as separate ideas.

Poster Presentations (FSPA Lobby)

1. *Stopping Slime with Spice: Evaluating Food-Grade Cinnamon as a Biofilm Inhibitor*

Name: Lilly Aleckson
Institution: Viterbo University
Faculty Mentor: Dr. Luke Bussiere
Discipline: Biology
Presentation Type: Poster Presentation

Abstract: Biofilms are structured microbial communities that adhere to surfaces and exhibit increased resistance to disinfectants and antimicrobial agents, making them difficult to control in water distribution systems. Cinnamon contains naturally occurring antimicrobial compounds that may offer an alternative approach to biofilm management. This study evaluated the effects of food-grade cinnamon bark and leaf oils on biofilm formation and established biofilms produced by *Pseudomonas aeruginosa, Escherichia coli*, and *Staphylococcus epidermidis*. Bacterial cultures were grown to the exponential phase and exposed to cinnamon oil treatments in 96-well microplates. Biofilm biomass was quantified using crystal violet staining and absorbance measurements, while viable bacterial counts were used to assess treatment effects on bacterial growth. In the biofilm prevention assay, *E. coli* and *S. epidermidis* exhibited significant differences in biofilm biomass among treatments, whereas *P. aeruginosa* did not. Preliminary viable cell count results showed treatment-related differences for *P. aeruginosa*, but no significant differences for *E. coli* or *S. epidermidis*. In the biofilm disruption assay, significant differences in biofilm biomass were observed for *E. coli* and *S. epidermidis*, but not *P. aeruginosa*. These findings suggest that cinnamon oil effects vary depending on bacterial species and treatment conditions. Future research will evaluate repeated cinnamon treatments over several weeks to investigate their long-term effectiveness against mature biofilms and their potential application in plumbing system maintenance.

2. *Making Sense of Salud: Translating Agency and Coherence in a Free Clinic*

Name: Julia Aleckson, Dani Hallaway
Institution: Viterbo University
Faculty Mentor: Dr. Matthew Bersagel Braley
Discipline: Sociology
Presentation Type: Poster Presentation

Abstract: There are many factors that affect our physical health, and the social setting in which we live plays a major role. Increasingly, health care systems acknowledge the impact of these factors through the social determinants of health framework. Clinical encounters in a free clinic make clear the impact of the social determinants of health on the lives of those served. More recently, scholars and practitioners informed by the social determinants of health framework have begun focusing on what causes life (as opposed to what causes death). The leading causes of life include agency (the feeling of worth or dignity and the ability to decide how to use it) and coherence (how one understands, views, and orders life to make sense of it). Preliminary research suggests providers see translational and interpreting services in a free clinic not only as critical to reducing language barriers but also in supporting agency and a sense coherence in the lives of patients. These services allow patients to feel more confident in asking questions and understanding treatment regiments.

3. *The Impact of ACEs on College Students' Stress, Resilience, and Social Support Levels*

Name: Suzette Alvarez
Institution: Saint Mary's University of Minnesota

Faculty Mentor: Dr. Ashley Ransom
Discipline: Psychology
Presentation Type: Poster Presentation

Abstract: Over the course of a college student's academic career, they can experience many different challenges that they must attempt to overcome. Yet some may struggle more than others to find the proper assistance to overcome said challenges. Although everyone is considered to be at the same level when entering college, more than half of adults (18+) have experienced at least one adverse childhood experience by this point in their lives. Being able to understand this relationship and provide proper guidance to college students is essential in helping them succeed while in school and after. In this study, the impact of Adverse Childhood Experiences (ACEs) will be examined through college students' reported stress, resilience, and social support levels. Participants will be asked about their gender, race/ethnicity, age, year in school, and whether they are Minnesota residents or not. We hope to find that students with lower ACEs scores will have lower stress levels, higher social support, and higher resilience overall.

4. Parental Gender Attitudes and Traditional Gender Roles in College Men

Name: Gabriella Becker, Carter Bergland, Lexy Koenig, Caroline Petty
Institution: Winona State University
Faculty Mentor: Dr. Elizabeth Russell
Discipline: Psychology
Presentation Type: Poster Presentation

Abstract: Previous research suggests that there is a connection between parents' gender role attitudes and those of their children (e.g., Perales et al., 2021). However, little has examined the separate influences of maternal and paternal attitudes on children of different genders. The current study aims to explore how mothers' and fathers' attitudes separately shape how college men view traditional gender roles. We analyzed data from 32 college men who were part of a larger study on college student gender role attitudes. Using a modified version of the Social Roles Questionnaire (SRQ; Baber & Tucker, 2006), the participants in our sample identified the primary maternal and paternal figures in their lives and reported on their perceptions of their traditional gender role attitudes. Also using the SRQ, participants reported on their own traditional role beliefs. We performed a regression analysis with the mother SRQ and father SRQ as predictor variables and the self SRQ as the outcome variable. Results showed that the mother's SRQ had significant unique predictive value for the participants' self-reported SRQ. These findings can be used to advance the goals of gender equality, specifically by engaging more men in working toward egalitarian efforts. Additionally, understanding what contributes to perceived traditional gender roles can allow parents to become more mindful of the influence they hold.

5. The Effects of Enrichment and Exercise on BDNF levels in Rats

Name: Sophia Brunner
Institution: Viterbo University

Faculty Mentor: Dr. Charlie Lawrence
Discipline: Neuroscience
Presentation Type: Poster Presentation

Abstract: Brain-Derived Neurotrophic Factor (BDNF) is a protein essential for the survival, growth, and plasticity of neurons within brain circuits related to emotional and cognitive functions, including memory, learning, and mood. Its expression can be altered through life experiences, modifying brain functioning through changes in dendritic spines and spine density. Previous studies have found that decreased BNDF levels are associated with mood disorders, including major depressive disorder, anxiety, schizophrenia, bipolar disorder, and age-related cognitive decline. Physical activity has been linked to increased peripheral BDNF levels, whereas stress has been associated with decreased levels throughout the brain and body. BDNF is produced and stored as proBDNF until it is cleaved into its mature form, among several isoforms that have been identified in humans and rats. Rats were used as a model to study how exercise and environmental enrichment impact BDNF levels in humans. Rats were either subjected to standard or enriched housing and one of three exercise regimens. Standard housing included individual housing without additional toys, while enriched housing included partner housing in a larger cage and toys. The exercise conditions were access to a running wheel daily for the entirety of the study, access to a running wheel daily for the first 21 days, or no access to a running wheel. Hippocampal and prefrontal cortex BDNF levels were measured and analyzed using ELISA and Western blot protocols. The Western blot indicated the presence of multiple BDNF isoforms.

6. *Synthesis of Novel Indole-Based Kinase Inhibitors for Cancer Treatment*

Name: Macey Dickinson
Institution: Viterbo University
Faculty Mentor: Dr. Michael Konkel
Discipline: Organic Chemistry
Presentation Type: Poster Presentation

Abstract: Cancer is the second leading cause of death in the United States. Since each cancer has unique characteristics, new pharmaceuticals are in high demand to create effective treatments for a wider variety of patients. One proposed drug is isogranulatimide, a naturally occurring alkaloid that has been shown to inhibit Checkpoint kinase 1 and Glycogen synthase kinase 3β. However, it has not moved to clinical trials due to the compound's poor solubility and the unreliable photochemistry required for its synthesis. The aim of this research was to create analogs of isogranulatimide that are easier to create and more biologically available. Through a process of varying indole-based syntheses, purification through column chromatography, and chemical characterization, three novel analogs were created. These compounds have been sent to the National Cancer Institute to determine their biological activity against 60 different cell lines. If they show inhibitory activity, future directions may involve analyses of their specificity for certain kinases, identification of minimum dosage, and further characterization of the compound using mass spectroscopy.

7. *Searching for Novel Antibiotics from Soil-Based Bacterial Colonies*

Name: Jon Friemark
Institution: Viterbo University
Faculty Mentor: Dr. Luke Bussiere
Discipline: Microbiology
Presentation Type: Poster Presentation

Abstract: Antibiotic resistance has become a major obstacle in modern healthcare. Infectious microbes are continually gaining new resistance to existing antibiotics, eliciting a major shift in research to attempt to find new classes of antibiotics for treatment. Studies have found that a large number of bacteria derived from soil samples produce antibiotic compounds due to close contact and inter-microbe competition. This experiment was performed in an effort to supplement existing research on novel antibiotics by attempting to derive a new class of drug from selections of soil around Wisconsin. Colonies were grown from the soil in an attempt to find zones of inhibition, which are a potential indicator of an antibiotic-producing microbe. The potential microbes were tested against known species of gram positive and negative bacteria to test for multiple-gram resistance. Each microbe was classified using BLAST analysis and biochemical tests, with the potential antibacterial compound eluted to cross check against known bacteria. The four resulting microbes and compounds of this experiment were all found to be of the Bacillus genus, but the potential compounds failed to yield comprehensive results. The research illustrated here is a foundational aspect of antibiotic production, but the need for continued research is ever present. This research is a part of continued global microbial experimentation that can yield new antibiotics in an effort to curb infection as bacterial evolution progresses.

8. *Presidential Turnover and Policy Stability in South America: A Peruvian Case Study*

Name: Cisco Garcia
Institution: University of Wisconsin – La Crosse
Faculty Mentor: Dr. Agatha Hultquist
Discipline: Political Science
Presentation Type: Poster Presentation

Abstract: When a country experiences frequent regime change, its policies often become unpredictable. For example, a shift from democracy to autocracy upends the entire policy landscape. However, regimes don't always change when leaders do. Instead, a president can leave office through election, resignation, or impeachment while the underlying democratic system stays intact. This project asks two questions in South American democracies throughout 1996 to 2025: does the occurrence of a presidential transition affect policy stability, and does transition type, such as regular (elections, term limits) versus irregular (impeachment, resignation) shape that stability differently?

Peru serves as the pilot case. Despite roughly ten presidents in the past decade, government effectiveness and foreign direct investment have continued trending upward.

Preliminary results support that regular transitions predict a significant increase in foreign investment the following year, while transition occurrence alone shows no reliable effect. Building on the literature on presidential removals, this study argues that policy stability doesn't depend on leadership continuity itself. Transitions alone showed no reliable link to governance outcomes, but what mattered was how they happened, with regular transitions predicting a meaningful rise in foreign investment a year later.

9. Establishing a Primary Bovine Lung Fibroblast Model to Study Radiation-Induced Lung Fibrosis

Name: Caden Gerber
Institution: Viterbo University
Faculty Mentor: Dr. Susanna Driscoll
Discipline: Biology
Presentation Type: Poster Presentation

Abstract: Lung fibroblasts play an important role in tissue repair and the development of pulmonary fibrosis. Establishing primary fibroblast cultures provides a model for studying cellular responses to radiation and oxidative stress. This project focused on developing a method for isolating and culturing primary bovine lung fibroblasts while examining how different preparation techniques influence cell attachment and growth. Bovine lung tissue was mechanically processed and enzymatically digested using collagenase/dispase and trypsin. Following isolation, cell suspensions were cultured under different conditions to compare red blood cell (RBC) lysis versus no lysis and scored versus non-scored culture surfaces. Cell attachment and outgrowth were evaluated through microscopy. A preliminary reactive oxygen species (ROS) assay was also conducted using DCFH-DA fluorescent dye to investigate oxidative responses following radiation exposure. Observations suggested that RBC lysis reduced erythrocyte contamination, allowing for clearer identification of fibroblast-like cells. Scored culture surfaces also showed potential benefits for cell attachment and outgrowth. Preliminary ROS measurements demonstrated differences in fluorescence intensity between samples and controls, although variability and possible background fluorescence limited interpretation. Overall, these findings provide a foundation for refining primary bovine lung fibroblast isolation and culture techniques. Further optimization of cell preparation and ROS detection will support future investigations into radiation-induced oxidative stress, fibroblast activation, and potential therapeutic approaches to reducing radiation-associated lung injury.

10. Investigating the Roles of YkkC and YkkD in Guanidine Resistance

Name: Lauren Goettl
Institution: Viterbo University
Faculty Mentor: Dr. Scott Gabriel
Discipline: Biology, Chemistry
Presentation Type: Poster Presentation

Abstract: In the world today, bacteria are frequently presented with toxic metabolites, and they must use the mechanisms they are programmed with to adapt and survive. Guanidine is an example of such a stressor to the call acting as a small harmful molecule when exposed in surplus amounts. In Bacillus subtilis, there is a resistance mechanism the cell uses to fight against this toxin, it is known as the *ykkCD* operon. This operon encodes an efflux pump system that can export the toxic guanidine out of the cell. This operon is regulated by a guanidine-responsive riboswitch on the RNA. The riboswitch elements sense and respond to guanidine exposed in the cell and respond accordingly. Currently it has remained unclear how the mechanism truly works in response to the guanidine exposure and the activation of translation. This research hopes to define the structural and functional features of the guanidine riboswitch and compare it across multiple bacterial species Aim 1 tests the hypothesis that the riboswitch regulates translation initiation of the *ykkCD* operon by controlling ribosome-binding site accessibility. This is done through site-directed mutagenesis, plasmid transformation, and β-galactosidase reporters. Aim 2 expands this analysis by comparing riboswitch variants from multiple gram-positive species to determine conserved sequence and structural features, computational structures obtained by a computed base will be used. In all, the *ykkCD* operon is a well-known operon that includes an efflux pump system and that systems translation is directed affected by the riboswitch that regulates it. This research will clarify the molecular basis of guanidine and link it to a certain position on the riboswitch structure. Findings will lighten a path of understanding the *ykkCD* operon and the bacterial stress response. This may also highlight novel antimicrobial targets that exploit riboswitch sensing RNA elements

11. Synthesis of Novel Tetrahydrocarbazole and Aromatic Carbazoles as Potential Kinase Inhibitors

Name: Steffen Larson
Institution: Viterbo University
Faculty Mentor: Dr. Michael Konkel
Discipline: Organic Chemistry
Presentation Type: Poster Presentation

Abstract: Cancer is the second leading cause of death in the United States. There is a constant need for new therapeutics for cancer treatment. Carbazole derivatives have shown anticancer activity. However, the tetrahydrocarbazoles and aromatic carbazoles in this research have previously not had their biological activity tested. The goal of this research was to synthesize novel compounds that have not been tested before. The compounds were synthesized through a two-step synthesis. The first reaction produced tetrahydrocarbazoles and the second reaction aromatized the compounds. These reactions were optimized to give sufficient yields for testing by the National Cancer Institute. Eight compounds were synthesized and sent to the NCI for testing. Results from the NCI are still pending.

12. Developing an Interdisciplinary Endoscopy and Imaging Education (IEIE) Framework: Flexible Laryngoscopy (FEEV), FEES, Ultrasound and Multidomain Assessment of Voice and Swallowing for SLP Students

Name: Ella Luoma
Institution: Viterbo University
Faculty Mentor: Dr. Theodora Nestorova
Discipline: Speech-Language Pathology
Presentation Type: Poster Presentation

Abstract: Instrumental imaging (Ultrasound and Fiberoptic Endoscopic Evaluation of Voice (FEEV) & Swallowing (FEES)) support clinical assessment in speech-language pathology (SLP) by providing visualization of speech, swallowing, and laryngeal function. However, graduate SLP programs often lack access to specialized training, equipment, and curricular integration for these procedures. To develop and evaluate changes in students' self-reported confidence and perceived procedural competence following scaffolded training, this project proposes a preliminary Interdisciplinary Endoscopy and Imaging Education (IEIE) framework. A JBI-informed scoping review (PRISMA-ScR; 66 included sources) examined literature on clinical applications, education, competency, and implementation, integrating ultrasound findings with prior laryngoscopy education research. Secondary analysis examined existing, de-identified pre-/post-training self-ratings (on a 5-point Likert scale) from two graduate cohorts: a Voice Disorders course focused on FEEV (eight students; 15 weeks) and a Dysphagia course focused on FEES (10 students; three weeks). Training progressed from classroom instruction to high-fidelity mannequin simulation and supervised nasoendoscopy with human participants. The review informed the preliminary IEIE framework, organized around three connected domains: scope of practice, education, and competency. Prior FEEV and FEES training research provided a practical example of progression from didactic instruction, high-fidelity mannequin simulation, supervised human nasoendoscopy. From pre- to post-training, mean self-ratings increased across 10 competencies in both cohorts (FEEV: 2.86 to 3.52 (Cohen's d = 0.64)), with the largest gain following the first session; FEES: +1.12 points during mannequin practice & +0.55 points during supervised live practice), with gains in handling, navigation, infection control, and troubleshooting. Limitations included survey attrition, need for trained faculty, resources, integration of experiences across coursework, standardized competency measures. To our knowledge, few structured, competency-based models for graduate ultrasound and laryngoscopy training exist in SLP. The proposed IEIE framework is designed to support students' perceived preparedness and narrows the education-to-clinical-application gap and may be adaptable to other imaging technologies.

13. Effects of Voluntary Exercise and Environmental Enrichment on Learning, Memory, and Physiological Stress During Adolescence

Name: Sara Malinowski
Institution: Viterbo University
Faculty Mentor: Dr. Charlie Lawrence

Discipline: Neuroscience
Presentation Type: Poster Presentation

Abstract: Adolescence represents an important period of neurodevelopment when stress regulation and cognitive functioning can be impacted by the experiences in the environment. Environmental enrichment and exercise have independently been shown to contribute to improvements in cognition and stress; however, the interaction between environmental enrichment and exercise has not been well characterized during adolescence. The present study explores the impact of environmental enrichment and voluntary exercise on the modulation of stress and recognition memory in adolescent male Long-Evans rats. Subjects were divided into groups depending on environmental enrichment and/or access to the running wheel. Environmental enrichment included social housing and other environmental enrichment objects such as cardboard tubes and wooden sticks for chewing. Exercise subjects had access to running wheels during the dark period. The cognitive performance of animals will be measured using the Novel Object Recognition (NOR) test, which is based on the recognition memory ability to distinguish between a known and a new object. Behavioral effects of stress will be assessed using the Forced Swim Test (FST). This test evaluates behavioral reactions to the challenge of involuntary swimming and gives information about the stress coping behavior. Corticosterone concentration will be also measured by means of an enzyme-linked immunosorbent assay (ELISA) as another indicator of physiological reactions to stress. These behavioral and biochemical measurements can help to obtain complementary information about the impact of environment and stress on cognitive performance of adolescents. The research will help to understand whether the combination of environmental enrichment and physical exercise has different effects from single use of each strategy.

14. The Role of Exercise-Induced BDNF in Associative Learning and Alcohol-Seeking Behavior

Name: Mikaela Marquardt
Institution: Viterbo University
Faculty Mentor: Dr. Charlie Lawrence
Discipline: Neuroscience
Presentation Type: Poster Presentation

Abstract: Adolescence is a critical period of brain development during which individuals may be particularly vulnerable to mental health disorders and addictive behaviors. Brain-Derived Neurotrophic Factor (BDNF), a growth protein associated with neuroplasticity, learning, and memory, may play an important role in these processes. Exercise and environmental enrichment have both been shown to promote brain health and improve cognitive function. This study examined how exercise, exercise cessation, and environmental enrichment influence associative learning and alcohol-seeking behavior in adolescent Long-Evans rats. Rats were housed in either standard or environmentally enriched conditions and assigned to one of three exercise conditions: continuous running wheel access, ceased running wheel access, or no running wheel access. Associative

learning was evaluated using operant conditioning chambers, where rats learned to complete 30 successful lever presses within 40 minutes to receive a 7.5% sucrose reward. Following acquisition, rats were exposed to a 5% ethanol reward to assess alcohol-seeking behavior. Learning performance was evaluated by measuring the time and number of trials required to complete tasks, while alcohol-seeking behavior was assessed through lever presses during ethanol trials. Blood samples were collected before and after testing for future analysis of BDNF concentrations using an enzyme-linked immunosorbent assay (ELISA). Preliminary results demonstrated variability in learning performance and ethanol-related lever pressing across experimental groups. However, small and uneven sample sizes, equipment inconsistencies, and limitations in BDNF measurements restricted statistical analysis and prevented definitive conclusions. This study provides a foundation for further investigating how continuous exercise, exercise cessation, and environmental enrichment may influence neuroplasticity, associative learning, and alcohol-seeking behavior during adolescence.

15. Self-as-Doer Identity Predicts Fruit and Vegetable Consumption: Does Perceived Behavioral Control?

Name: Grace Meinert, Sayeeda Khan, Georgia Jeddeloh, Riley Buck, Emma Mrozek, Parker White, Megan Ekhern
Institution: Winona State University
Faculty Mentor: Dr. Amanda Brouwer
Discipline: Psychology
Presentation Type: Poster Presentation

Abstract: The CDC recommends eating 3-5 cups of fruit and vegetables daily to receive health benefits, yet only one in ten adults meet these guidelines. Psychosocial factors, like identity and perceived behavioral control (PBC), have been linked to increased healthy eating habits. Self-as-doer identity is an identity construct which describes one as a doer of an action or behavior (e.g., healthy eater). Research shows that if one sees oneself as a healthy eater, they are more likely to consume healthy foods. However, there is a lack of research exploring whether the effect of doer identity on fruit and vegetable consumption (FVC) is dependent on one's PBC. Therefore, we explored whether differing levels of PBC change the relationship between doer identity and FVC. Participants (N = 383) answered questions about demographics, self-as-doer identity, PBC, and FVC. Two moderation analyses were conducted to explore whether PBC would moderate the relationship between self-as-doer identity and FVC. PBC was not a significant moderator for fruit ($t(1, 374)=.65$, $p=.51$) or vegetable consumption, $t(1, 374)=.22$, $p=.47$. Self-as-doer identity individually predicted fruit ($b=1.07$, $t(374)= 5.66$, p< .001) and vegetable ($b=.47$, $t(374)= 4.33$, p< .001) consumption; PBC did not.

16. Design for Manufacturing of the Skinner Box

Name: Damian Morales
Institution: Viterbo University

Faculty Mentor: Dr. Emily Vanderfleet
Discipline: Engineering
Presentation Type: Poster Presentation

Abstract: This document describes the assembly procedure for the Skinner box and provides dimensional information for all structural components. Future work will include the electrical and control systems documentation to facilitate reproduction and commercialization.

17. The Synthesis of Potential Anti-Cancer Pharmaceuticals

Name: Styrk Myhre
Institution: Viterbo University
Faculty Mentor: Dr. Michael Konkel
Discipline: Organic Chemistry
Presentation Type: Poster Presentation

Abstract: Cancer is the second leading cause of death in the world. 18.6 million Americans are dealing with cancer, and in 2026 alone, 2 million more will be diagnosed. There is currently no cure for cancer; however, there are over 600 anticancer pharmaceuticals, with more being developed as time goes on. For this research, the kinase inhibitor arcyriaflavin was the guiding molecule. Using indole, maleimide, cyclohexane, and HCl, the first step of the synthesis was completed. Next, Thin Layer Chromatography (TLC) and Hydrogen Spectroscopy were used to confirm the starting material had been used up. With that product, dioxane and 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) were used to acquire the final structure, which was confirmed with TLC and Hydrogen Spectroscopy. Once the synthesis was complete, the products were sent to the National Cancer Institute (NCI)-60 Human Tumor Cell Line Screen. This screen is a free resource from NCI's Developmental Therapeutics Program. The data from the cell line has not been acquired yet, so further research may be conducted pending the resulting data.

18. Unpacking 3rd Wave Autocratization's (Democratic Backsliding) Impact on Human Development in West African Countries

Name: Hephzibah Ohiloin
Institution: University Wisconsin – La Crosse
Faculty Mentor: Dr. Agatha Hultquist
Discipline: Political Science
Presentation Type: Poster Presentation

Abstract: How does autocratization impact development? Recent research shows that autocratization, which is characterized by democratically elected leaders stewarding the country into democratic recession through means like media restriction, civil society repression, and hampering of free and fair elections, is on the rise. In 2025, 41% of world countries were identified as undergoing autocratization compared to 9% in 2005, confirming a 3rd wave. This 3rd wave is new and more gradual in its autocratization process

separating it from past waves that have mostly happened from democratic breakdowns such as coups. As researchers are just starting to examine the 3rd wave, mostly its trends, we don't know its effects on human development. This is important to address, since many studies show that democracies outperform autocracies in various aspects of development. I address this gap by unpacking the autocratization process into its distinct components and examining how these different aspects of autocratization impact human development. Using the Human Development Index (HDI) as a measure of development, I examined the association between the most common processes in which elected leaders are undermining their democracies, as measured by the Varieties of Democracy Project. I focused on West African countries because autocratization is especially prevalent in this region. This research is important because it contributes to the growing knowledge on modern autocratization and efforts towards resolving development shortcomings in our world.

19. "Check Your Tone." Examining Emotional Responses to Black Women through Auditory Priming

Name: Jordan Plitzner
Institution: University Wisconsin – La Crosse
Faculty Mentor: Dr. Kevin Zabel
Discipline: Psychology
Presentation Type: Poster Presentation

Abstract: This research focuses on bias and stereotypes about Black women categorized as the "Angry Black Woman." Previous research, such as Plant et al. (2011), Thiem et al. (2019), Correll et al. (2014), and Salerno et al. (2017), examined stereotypes through visual cues, social labeling, and narratives. This offers a major gap in understanding how auditory priming may activate bias and affect our perceptions. Drawing on the MODE Model (Fazio & Olson, 2013), the Stereotype Content Model (Fiske et al., 2002), and intersectional theory (Ghavami & Peplau, 2013; Hudson et al., 2024), this study considers how auditory priming influences emotional reactions toward Black women. Existing literature on Black women frequently labels them as the "Angry Black Woman" stereotype, which characterizes them as hostile, aggressive, and emotionally volatile despite the range and complexity of their emotional experiences as intersectionally invisible. While previous research has analyzed race perception through visual priming and emotional prosody, it has paid little attention to how listeners emotionally respond to Black women speaking. Approximately 120 undergraduate students will be randomly assigned to situational contexts and listen to a brief audio clip of a Black woman, Black man, White woman, or White man. Participants will then complete a questionnaire assessing perceived emotion, speaker characteristics, and demographic information. It is hypothesized that Black speakers will be attributed more negative emotions than White speakers and that Black women's speech will be associated with greater perceptions of anger than that of Black men, White women, and White men. This study confronts an important gap by shifting attention from visual stereotypes to auditory senses of bias. The findings may advance understanding of

stereotype activation, emotional judgment, and intersectional bias while informing interventions to reduce damaging stereotypes in commonplace and interpersonal settings.

20. Preparing Engineering Students for a Career in Manufacturing

Name: Collin Proksch
Institution: Viterbo University
Faculty Mentor: Dr. Emily Vanderfleet
Discipline: Engineering
Presentation Type: Poster Presentation

Abstract: The goal of this project was to create a proposal for a manufacturing course for the Viterbo University engineering program. Many students enter the program with little knowledge of how products are manufactured and later struggle to design components that are easy and economical to produce. We developed three instructional modules. The first module introduces the common processes used to manufacture metal and plastic parts. The second module establishes a framework for the design process, guiding students from an initial concept to a functional device. The third module covers design for manufacturing principles for each manufacturing process and introduces basic drafting guidelines for creating effective engineering drawings.

21. Athletic Identity, Psychological Reactions of Shame To failure and the Moderating Effects of Self-Compassion

Name: Pieter Rippentrop
Institution: Luther College
Faculty Mentor:
Discipline: Psychology
Presentation Type: Poster Presentation
Abstract:

22. Investigating the Personal Experience of Social Anxiety Among Generation Z

Name: Sophia Smith, Lukas Greshowak
Institution: Saint Mary's University of Minnesota
Faculty Mentor: Dr. Stephanie Thorson-Olesen
Discipline: Psychology
Presentation Type: Poster Presentation

Abstract: Social anxiety is one of the most prevalent mental health conditions according to the Global Burden of Disease (2024). This condition influences the well-being of many people, while many people may experience the symptoms of this condition without being clinically diagnosed or substantially supported. As social norms change, especially within technology and post-COVID, it is important for future clinicians and clients to have a better understanding of how social anxiety may be influenced by various factors. This study

reviews the current research on social anxiety and examines the patterns of lived experiences of social anxiety in Generation Z (18-25-year-olds). There were 17 participants who completed an anonymous online survey with open-ended questions. A thematic analysis was conducted to understand the experiences of social anxiety. The following questions were formulated to direct further research: What is the lived experience of Gen Z with social anxiety from a social-ecological theoretical lens? What contributes to the lived experience of social anxiety for Gen Z from a social-ecological theoretical lens? Results showed synthesized and collected themes: (1) Fear of Negative Evaluation, (2) Heightened Self-Awareness and Cognitive Overload, (3) Physiological and Somatic Distress, (4) Avoidance and Behavioral Restriction, (5) Contextual and Environmental Triggers, (6) Relational Dynamics: Support, Pressure, and Belonging, (7) Coping, Adaptation, and Self-Regulation, and (8) Desire for Connection and Growth Amid Anxiety. Results suggest patterns of experiences, bringing understanding to future clinicians and client connectivity. Future studies should differentiate between social anxiety-related experiences and clinically diagnosed experiences by using validated tools.

23. More Than a Prison Sentence: Understanding Mental and Physical Health Among Incarcerated Women

Name: Savannah Spees
Institution: University of Wisconsin – La Crosse
Faculty Mentor: Dr. Nicholas Bakken
Discipline: Sociology and Criminology
Presentation Type: Poster Presentation

Abstract: Women represent one of the fastest-growing incarcerated populations in the United States, yet correctional research has historically focused more heavily on men. As a result, comparatively less attention has been given to the experiences and circumstances associated with women's mental health during incarceration. Many incarcerated women enter prison with histories of disadvantage, trauma, substance use, unstable relationships, and existing mental health concerns. Once incarcerated, these experiences may intersect with current social relationships, sources of support, and conditions within the prison environment to shape mental health during confinement. This study examines the personal, social, and institutional factors associated with mental health among incarcerated women. Data are drawn from a sample of women incarcerated in two prisons in Pennsylvania. The study considers how experiences prior to and during incarceration, interpersonal relationships, and prison conditions are associated with women's mental health. Findings aim to provide a better understanding of the factors connected to mental health during incarceration and identify areas where correctional programs and services may better support incarcerated women. Policy implications will be discussed.