WALSH
UNIVERSITY

Senior Honors Thesis Presentations
Spring 2022

The Thesis Presentations will take place in The Barrette Business Center. If you would prefer to join by Zoom, please use the following link (https://walsh.zoom.us/j/99039306524) and Passcode: theses2022.

Session	Presenters
Tuesday, March 22nd 4:00 pm – 6:00 pm	**Erica Matthews** - *A Mixed Methods Approach into the Prevalence and Impact of Compassion Fatigue Amongst Forensic Nurses* **Emily Drago** - *Healthcare Workers' Perceptions of the Cultural and Socioeconomic Barriers to Prenatal Care for Hispanic Women* **Grace Andreski** - *Game Changer: Identifying the Relationships Between Teams' and Leagues' Social Media Presence on Fan Behavior and Engagement: Initial Study and Directions for Future Research* **M. Isabel Miller** - *Physical Therapy Management of Individuals with Advanced Heart Failure in the Intensive Care Unit: A Retrospective Case Series*
Wednesday, March 23rd 3:30 pm - 5:30 pm	**Rebecca Cabe** - *Correctional Healthcare Workers and Negative Perceptions: A Content Analysis of Social Media Posts and Corresponding Levels of Negativity* **Alyssa Viscounte** – *idyllic, a novella* **William Valentini** - *Different Century yet a Similar Story?: A Comparative Analysis between 20th Century Cases of Genocide and 21st Century Cases of Mass Atrocities.*
Thursday, March 24th 4:00 pm - 6:00 pm	**Madalyn Canter** - *Timed Floor to Stand: Natural Reference Data for Young Adults* **Jayson Wagner** - *Effects of Strength Level on Youth Athlete Performance Indicators* **Chad Holmes** - *Developing a Framework for Pellicle Analysis via Production of Enamel Analogs and Application of Synthetic Pellicle*

Tuesday, March 29th **2:00 pm - 4:00 pm**	**Ellie Molitor** - *An Investigation of the Effect of Antibiotic Use in Honeybee hives on the Resistance of Gut Microbiota in Honeybees, Apis mellifera L.* **Katherine Deibel** - *Enrichment and Statistical Analysis of ISG15-Protein Interaction* **Abby Winkler** - *Generation of a Prokaryotic HaloTag Protein Expression System to Express Wildtype and Variant SOX18 Proteins* **Kylie Gruey** - *Sequence Modulation of the ACE-2 Promotor by SARS-CoV-2*
Wednesday, March 30th **3:30 pm - 5:30 pm**	**Grace Doringo** - *Teaching the Underground Railroad through Museum-School Partnerships: Enriching the Ohio Department of Education's Social Studies Standards Through Historic Sites, Artifacts, and Works of Art* **Aurora Glory Ross** - *Current Feminist Dogma and the Exploration of Transcendentalism* **Sagar Subedi** - *Building an Open-source Learning Management System with the Modern MERN Stack* **Oscar Andres Ortega Mendoza** - *Do Corporate Environmental, Social and Governance Risks Affect Business Profitability?*
Thursday, March 31st **2:00 pm - 4:00 pm**	**Michelle Terbot** - *An Analysis of the Relationships Between Health Care Provider Experience and Treatment Recommendation in Patients with PTSD, and Provider interest in Future Research* **Hannah McFeeters** - *Presidential Poetry: The Power of Personality as a Function of American Federalism* **Frances Kraus** - *Anti-Government Sentiment within the American Ideology: The Relationship between Public Perceptions of Government & Domestic Terrorism* **Elise Kohl** - *Nursing and Autism: A Survey of the Education, Knowledge, and Self-Competency of Nurses in Caring for Adult Patients with Autism*

Please scroll down for more detailed information about each presentation.

Tuesday, March 22nd
4:00–6:00 pm

Erica Matthews
A Mixed Methods Approach into the Prevalence and Impact of Compassion Fatigue Amongst Forensic Nurses
Thesis Advisor: Mary Cook, M.S.N., Associate Professor of Nursing
Reader: Tammie Davis, M.S.N., Clinical Associate Professor of Nursing

The work of forensic nursing requires its nurses to display large amounts of compassion and empathy for their patients, who are victims of violent crimes. The forensic nurse's personal mental health and well-being can be negatively impacted by the extraneous use of empathy and compassion. Multiple gaps within the research were identified when detailing the specifics of both the positive and negative effects the role of forensic nursing has on its nurses' mental well-being. A mixed methods research approach was conducted to investigate the prevalence and impact of compassion fatigue/burnout, secondary traumatic stress, and compassion satisfaction amongst forensic nurses. A survey of practicing forensic nurses within the United States, recruited from the International Association of Forensic Nurses, was conducted to collect both qualitative and quantitative data. The survey consisted of basic screening/inclusion criteria questions, demographic information, the Professional Quality of Life questionnaire created by Dr. Beth Stamm, and five short extended response questions.

Emily Drago
Healthcare Workers' *Perceptions of the Cultural and Socioeconomic Barriers to Prenatal Care for Hispanic Women*
Thesis Advisor: Yanmei Xu, Ph.D., Assistant Professor of Sociology
Reader: Judy Kreye, Ph.D., Dean, Associate Professor of Nursing

This qualitative study works to fill gaps in current research on the barriers to prenatal care which Hispanic women face. Previous research with a quantitative focus has looked into the barriers of language, health literacy, immigration, and socioeconomic status; however, few studies have traced the pathways to prohibiting access or utilization of care after identifying these barriers. Semi-structured interviews were conducted with a variety of healthcare providers aimed to gain insight to their perceptions on the barriers their Hispanic patients face regarding their prenatal care, as well as, their proposed solutions to diminishing these barriers. Results found pathways between compliance, comfort, and access have the ability to impact utilization of prenatal care. Another finding was centered around promotion of cultural competency as it may aid in the increased use of prenatal services for these Hispanic individuals.

Grace Andreski

Game Changer: Identifying the Relationships Between Teams' and Leagues' Social Media Presence on Fan Behavior and Engagement: Initial Study and Directions for Future Research

Thesis Advisor: Julie Szendrey, D.B.A., M.B.A., Professor of Business

Reader: Patricia Berg, D.B.A., M.B.A.

Each year social media usage increases which creates new opportunities for marketers to promote their products and brands. Sports teams and athletes are joining social media platforms and creating their own unique accounts (Cooper, 2015). Fans and followers, new and old, are discovering these teams and athletes while building relationships (Kentrin, 2020). Social media has also proven to be a useful tool in building two-way relationships between teams and spectators (Joanna & Zuzanna, 2020). This has also reigned true in building a team or personal athlete brand (Witz, 2020). Through different sports marketing social media strategies, marketers are learning how to engage fans, increase attendance, and stand apart from other teams (O'Hallarn et al., 2016). The manner in which a fan behaves and engages with different teams and athletes is influenced by social interactions, deals, promotions, giveaways, and relationships with teams and athletes (Fink et al., 2002; Perrault, 2016). Through new applications (apps), athletes and fans are spending more time online (Samet, 2020). These apps allow fans to witness new sides to athletes and teams through increased content which, consequently, helps form connections between fans and athletes (Sharpe et al., 2020).

This research analyzed the relationships between teams' and leagues' social media presence on fan behavior by conducting in-depth one-on-one interviews with professionals working in the sports industry at the professional and collegiate levels. A total of eight professionals were interviewed from eight different sports. Questions asked specifically addressed how social media platforms such as Instagram, Facebook, Twitter, and TikTok have affected ticket sales, fan attendance/tune-in rates, engagement, brand loyalty, and merchandise purchases. Using content analysis, best practices were determined for increasing engagement and fan behavior and understanding the relationships created on social media. The significance of this research is to provide insights to others in the sports marketing industry to better benchmark their own social media practices and adopt new strategies.

M. Isabel Miller

Physical Therapy Management of Individuals with Advanced Heart Failure in the Intensive Care Unit: A Retrospective Case Series

Thesis Advisor: Alysha Walter, PT, DPT, CCS, Assistant Professor of Physical Therapy

Reader: Lindsey Donohue, PT, DPT

Despite improvements in preventative measures and outpatient treatments for heart failure (HF) patients, the amount of hospital admissions in the United States due to HF continues to rise. While physical therapy (PT) has been shown to be beneficial in the intensive care unit (ICU) for other diagnoses as well as with less severe HF populations in outpatient settings, there is little evidence-based research concerning physical rehabilitation for advanced patients with HF in hospital settings. The purpose of this case series was to describe the PT interventions of two patients with decompensated HF admitted to the ICU and discuss how their outcomes relate to the evidence-

based practice recommendations for other HF populations. Both subjects presented with a variety of medical complications resulting in impaired levels of functioning. Primary PT interventions used were ambulation and lower extremity strength training. PTs used outcome measures such as the ICU mobility score, Activity Measure for Post-Acute Care (AM-PAC), and Functional Status Score for the Intensive Care Unit (FSSICU) to help track patient progress. It was found that subjects were able to tolerate modified PT interventions recommended for other HF populations, including aerobic exercise and strength training, with no adverse reactions. Both subjects showed improvements in at least one of their outcome measure scores upon discharge.

Wednesday, March 23rd
3:30–5:30 pm

Rebecca Cabe
Correctional Healthcare Workers and Negative Perceptions: A Content Analysis of Social Media Posts and Corresponding Levels of Negativity
Thesis Advisor: Mark Rogers, Ph.D., Professor of Communication
Reader: Laci Fiala, Ph.D.

The prison system in the United States, as of 2018, has the highest rate of incarceration in the world, with 655 inmates per 100,000 people, despite this being a record low rate of incarceration as of 2016. Prisoners have limited rights compared to other US citizens, and they have a constitutional right to "adequate" healthcare provided to them in correctional facilities, as protected under the eighth amendment to the constitution. Correctional healthcare workers face unique workplace issues due to their working environment that include poor quality of care or life for prisoners, restrictions on health resources, job and patient related stigma, and tensions between prison officers and healthcare workers. Additionally, individuals are increasingly more likely to post about their experiences on the job on social media. This project poses multiple questions regarding the level of negativity that healthcare workers express when posting about their work experiences on social media. Quantitative content analysis and qualitative analysis methods were used to study the relationship between the level of negativity healthcare workers express when posting about their work experiences and the level of negativity that they express toward inmates they care for, and if this relationship varies by the types of problems that they encounter on the job. The project also reviews the dominant themes that emerge when correctional healthcare workers share their experiences regarding attitudes toward and treatment of prisoners. Qualitative analysis also searches for evidence in the content that posters' negative perceptions of correctional healthcare may be indicative of a desire to change the current healthcare system for prisoners. The purpose of this study has been to contribute to the limited body of knowledge regarding healthcare workers' attitudes and perceptions of the jobs and workplace environments. Additionally, if this research is added to the existing literature, along with the attitudes displayed in the posts collected in this study, it could help to fight some of the negative stigma that surrounds correctional healthcare work in the future.

Alyssa Viscounte

idyllic, a novella

Thesis Advisor: Seth Hepner, Ed.D., Assistant Professor of English

Reader: Amanda Gradisek, Ph.D.

In writing, my novella, idyllic, it is my sincerest aspiration to provide a sense of chaotic confusion, to induce onlookers to contemplate their assumptive positions on domestic abuse in its emotional, verbal, and physical assaulting nature. Trauma is traditionally related in linear narratives, as a testament to a series of events—allowing readers to distance themselves from the tragedy and complexity of severing self-perceptions and relational ties. Hence, I am striving to plunge the reader into the uncertainty of the circumstance via omission of descriptors of human construct utilized to make sense of an uncertain Universe (names, time, etc.). Rather than attempting to relate a story, I am more interested in compelling readers into a sentiment, a feeling that the assault of character is their own, with the further aspiration that this will evoke a deeper sensitivity and willingness in them to empathize with those who belong to this reality.

William Valentini

Different Century yet a Similar Story?: A Comparative Analysis between 20th Century Cases of Genocide and 21st Century Cases of Mass Atrocities.

Thesis Advisor: Rachel Constance, Ph.D., Associate Professor of History

Reader: Koop Berry, Ph.D.

This thesis examines the process of genocide and mass atrocities in the 20th and 21st centuries. In particular, the author examines five cases of 20th century genocides (The Armenian Genocide, the Holocaust, Cambodian Genocide, Rwandan Genocide, and the Srebrenica Genocide) that scholars and experts have determined to be genocide under the UN definition of the crime. Through research, six key variables have been picked out to be common elements in most, if not all, the 20th century cases. Then, this thesis examines 21st century cases of mass atrocities (Darfur Sudan, Xinjiang China, Northwestern Yemen, Rakhine Myanmar, and Tigray Ethiopia), most of which are still on-going. While all of them have potential marks, or factors, of genocide, all are ambiguous as to their exact nature. This is because none of them have been designated by the international community to be genocides at the time of this writing. Thus, this study employs the fuzzy-set qualitative method of analysis in order to perform a comparative analysis between the 20th century cases of genocide and the 21st century cases of mass atrocities. Through comparison of the selected variables, the author is attempting to show how the 21st century cases align with the 20th century cases. If the numbers between the 20th century and 21st century cases are more closely aligned, this would indicate a high likelihood that the 21st century cases are genocides.

Madalyn Canter
Timed Floor to Stand: Natural Reference Data for Young Adults
Thesis Advisor: Antonette Doty, PT, Ph.D., PCS, Visiting Clinical Assistant Professor
Reader: Daniel Deleandro, PT, DPT, CSCS

The purpose of this study was to establish normative data for the Timed Floor to Stand-Natural outcome measure in young adults 18 to 24 years old. The descriptive research study was conducted using a convenience sample of 62 students attending Walsh University from the undergraduate and graduate levels. The procedures were adapted from a study conducted by Weingarten et al. There were 14 male and 48 female subjects who participated in the research study. According to age group, the minimum mean performance time was 8.95 seconds (19-year-old age group) and the maximum mean performance time was 9.81 seconds (23-year-old age group). There were no clinically significant differences according to BMI, age, or sex. This study provides reference data for the TFTS-N in young adults. The overall performance time was 9.12 seconds. This outcome measure can be utilized by physical therapists to assess functional mobility and performance in young adults of typical development or with lifelong disabilities.

Jayson Wagner
Effects of Strength Level on Youth Athlete Performance Indicators
Thesis Advisor: Kelton Mehls, Ph.D.
Reader: Sarah Martinez, Ph.D.

Currently the information available on how to properly train youth athletes is limited due to the lack of studies performed on this population. It is widely understood that youth athletes should be trained in some manner but exactly how they might be trained for maximum effectiveness is still unclear. To better understand how to train youth athletes this study looks at 16 male athletes between the ages of 14 and 18 years old who participate in at least one sport and have had at least a youth of strength training experience. The study aims to determine how relative strength levels in the squat and deadlift effect the performance of five athletic indicators, the max hang high pull, 40-yard dash, 10-yard dash, max broad jump, and 3-cone drill. These were the chosen indicators because each movement demonstrates an athletes' speed, agility, and power production all of which are essential markers of athletic success. Each athlete performed a max squat and deadlift to determine their relative strength levels where the highest eight scores of each lift were placed in a high strength group and the lowest eight were placed in the low strength groups. Correlational analyses were run to determine if there were any correlations between strength levels and performance each of the athletic indicators. One-way ANOVA tests were run between the high and low strength squat and deadlift groups respectively to determine if there was a significant difference between the high and low strength groups of each lift. There was a significant correlation between relative squat strength and each of the five indicators at the .05 level, there was also a significant correlation between relative deadlift strength and each of the five indicators at the .05 level. The one-way ANOVA tests revealed there was a significant difference ($p \leq .05$) between the high and low relative deadlift

strength groups in each of the five indicators while there was also a significant difference between the high and low relative squat strength groups in each indicator except the hang high pull. These results indicate that relative strength levels of youth athletes, specifically relative strength levels in the squat and deadlift, have a significant effect on the way they can perform in athletic tests required of their sports.

Chad Holmes
Developing a Framework for Pellicle Analysis via Production of Enamel Analogs and Application of Synthetic Pellicle
Thesis Advisor: Peter Tandler, Ph.D., Associate Professor of Chemistry
Reader: Darlene Walro, Ph.D., Professor of Microbiology

The dental pellicle is a relatively unknown facet of the oral environment. While extensive studies have uncovered the interactions between enamel and bacteria, those between pellicle, enamel and bacteria are lacking in scope. The dental pellicle is a thin layer of glycoproteins and glycolipids which protects enamel surfaces from bacterial decay. Despite its advantageous characteristics, dental caries remains one of the most common ailments among adults and young people in the US. To increase the caries preventing traits of the dental pellicle, a practical model would benefit further research. For example, the construction of synthetic enamel discs and analogous pellicle would promote characterization and modification of the oral environment to better suit caries prevention. Current studies often suffer from the variability of individuals' unique oral environments. If this factor were to be removed and synthetic enamel and pellicle created, single-variable analyses could be carried out. The advantages of a synthetic model include replicability and accessibility. This project involves the pressing and sintering of hydroxyapatite discs. All discs vary in either mass, chemical components or pressing technique in an attempt to replicate actual enamel as accurately as possible. Overall, the wide array of discs will prove useful in further research at Walsh University. Polyethylene glycol (PEG), was used as the pellicle substrate and contact angles were measured to compare the characteristics of normal and pellicle-covered HA discs. It was found that contact angles of HA discs produced are closely aligned with contact angles of naturally occurring enamel. Along with this, contact angles of HA integrated with PEG are much lower as expected. Dry integrated PEG and wet PEG offer two different results. As expected, contact angles and microhardness tests of HA are statistically similar and show potential as oral environment analogs. While much of this project aims to perfect methodology and does not venture far into exploratory experimentation, the accuracy of produced models of HA and pellicle is integral to the validity of future research.

Tuesday, March 29th
2:00-4:00 pm

Ellie Molitor
An Investigation of the Effect of Antibiotic Use in Honeybee hives on the Resistance of Gut Microbiota in Honeybees, Apis mellifera L.
Thesis Advisor: Darlene Walro, Ph.D., Professor of Microbiology
Reader: Jennifer Clevinger, Ph.D., Professor of Biology

At the root of agricultural success that supplies the entire world is the honey bee pollinator, *Apis mellifera* L. Though an often overlooked aspect of the environment, the honey bee plays an integral role in the pollination and growth of every crop that is harvested. Honey bees do not only exist within their hives, nor do they only affect the plants they pollinate as they contribute to the health of the planet. As the fundamental building block of the entire ecosystem, honey bees impact every trophic level of the environment. The health of the honeybee has declined in recent years due to an increase and spread of infectious diseases. In an effort to protect the honeybee, humans attempt to intervene in multiple ways. The most notable and significant effort is the use of antibiotics in the beehive. Various types of antibiotics are used and can be applied directly to the hive. The purpose of antibiotic use around the world is to decrease the number of bacteria that make their way into the beehive and harm the bee. However, as a result of the extensive use of antibiotics, there is a concern that the bacteria in the bee develop resistance to the applied antibiotics. Antibiotic use can result in resistant microbiota which destroys the defense system of the honeybee.

The purpose of this project is to explore the effect of antibiotics on the honey bee pollinator, *Apis mellifera* L. Four sites in the North-Eastern states of Michigan and Ohio were sampled. The samples of honeybees were dissected in order to obtain the most bacteria-rich portion of the digestive system, the crop. The bacteria in the crop of each sample were grown and reproduced. Those same colonies were isolated, grown, identified, and treated with two of the most commonly used antibiotics; Tetracycline and Ampicillin. A significant number of colonies exhibited complete resistance to both antibiotics, illustrating the harm posed by the use of antibiotics. Resistance to antibiotics leaves the hive vulnerable to uncontrollable disease attacks and eventual fatality. This experiment illustrated the harmful impact of antibiotics on honeybee hives in the Northeastern region of the United States.

Katherine Deibel
Enrichment and Statistical Analysis of ISG15-Protein Interaction
Thesis Advisor: Adam Underwood, Ph.D., Professor of Biology
Reader: Thomas Freeland. Ph.D., Professor of Biology

Interferon-stimulated gene 15 (ISG15) plays an important role in promoting antiviral signaling and inflammation. With regards to the COVID-19 pandemic, the role of ISG15 is dampened due to its cleavage by non-structural protein 3 (NSP3). The inhibition of the natural immune response pathway is what allows SARS-CoV-2 to conceal itself and replicate, until the detection of the virus. When detected, over-expression of an inflammatory response and cytokine storm occurs, resulting in

multiple organ dysfunction syndrome (MODS) for lethal patients. Through the use of bioinformatics and statistics, this project explores ISG15-protein interaction for COVID-19 positive, COVID-19 lethal, and control patients. An enrichment analysis using STRING and Cytoscape produced a list of proteins that fall within the ISG15-protein interaction network, ordered by degree centrality. Additionally, there was no significant difference between the means for the usable RNA abundance for the COVID-19 positive vs. COVID-19 lethal groups. There were, however, differences between the usable RNA abundance for the means for the control groups when compared against the COVID-19 positive group and then the COVID-19 lethal group.

Abby Winkler
Generation of a Prokaryotic HaloTag Protein Expression System to Express Wildtype and Variant SOX18 Proteins
Thesis Advisor: Adam Underwood, Ph.D., Professor of Biology
Reader: Thomas Freeland, Ph.D., Professor of Biology

The purpose of this project is to clone the protein coding region of SOX18 and a variant gene termed SOX18 E137K into a bacterial expression vector capable of producing large amounts of each either protein. SOX proteins function by binding to DNA and influencing the production of other proteins in a cell. Cloning and synthesizing the native (or wild type) SOX18 and SOX18 E137K variant proteins will enable future projects to begin to identify how an amino acid exchange at residue 137 from a Glutamic Acid (E) to a Lysine (K) alters SOX18 protein function. The goal is to produce enough proteins to determine how mutation to SOX18 leads to a derangement of function. Therefore, the overarching goal of this project is to eventually determine if the presence of a lysine residue at position 137 in SOX18 will reduce DNA binding affinity when compared to SOX18 proteins encoding a glutamic acid at this position. However, before this can be achieved the protein coding region of SOX18 wild type and SOX18 E137K must be cloned into an expression vector capable of producing large quantities of each protein. To begin the process, PCR amplification was employed to copy the specific segment of DNA that encodes SOX18. These DNA's were then digested with enzymes allowing me to ligate the PCR amplified copies in the expression vector. The assembled expression vector was then inserted (or transformed) into a strain of E.coli which will then act as a vessel to make the protein. After be purified, this protein can be used in downstream applications to determine the impact the E137K mutation on SOX18 cellular activity.

Kylie Gruey
Sequence Modulation of the ACE-2 Promotor by SARS-CoV-2
Thesis Advisor: Adam Underwood, Ph.D., Professor of Biology
Reader: Thomas Freeland, Ph.D., Professor of Biology

With the onset of the 2019 SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) pandemic, renewed interest arose in the ubiquitously expressed cardiovascular factor ACE2 (angiotensin-converting enzyme 2). First described in the year 2000, ACE2 was found to be novel regulator of blood pressure by antagonizing the elevated pressure outcomes of the Renin Angiotensin System (RAS). By cleaving a single amino acid from the carboxyterminal end of Angiotensin 2, ACE2 produces a blood pressure reducing and cardioprotective peptide referred to as Ang 1-7. In 2002 ACE2 was also identified as the primary coronavirus spike protein docking/attachment site of SAR-CoV. This virus,

like SARS-CoV-2, also relied on the enzymatic activity of ACE2 to cleave a portion from the viral spike protein to eventually gain entrance into a host cell. While counter intuitive, some studies show increased expression of ACE2 in respiratory tissue is directly related to overall better clinical outcomes and survival in both SARS-CoV and SARS-CoV2 infections. Yet, individuals with poor late infection clinical outcomes, binding of the CoV spike proteins to respiratory ACE2 leads to a decrease in ACE2 levels that possibly accelerates respiratory failure. In consideration of the ambiguous outcomes of SARS-CoV-2 infections, the purpose of this project was to generate molecular tools (pGL3 ACE2 luciferase reporter constructs) that will allow our group to begin to explore potential DNA sequence differences in the regulatory region of the ACE2 gene. To begin this project, genomic DNA was first isolated from cultured cells. Using the isolated genomic DNA, PCR (polymerase chain reaction) was used to amplify varying lengths of the ACE2 gene promoter. Next, the amplicons were cleaved with restriction endonucleases for subsequent ligation into the pGL3 basic luciferase reporter construct. Following ligation, all constructs inserted into Zymo Research α5 E. coli. These transformants were then cultured and plasmid DNA was isolated using a New England BioLabs Monarch plasmid DNA isolation kit. All purified DNA was then analyzed using PCR and restriction endonuclease digests to confirm proper insertion of the various ACE2 promoter segments. These reporter constructs can then be used to carry out luciferase reporter assays, which will begin to elucidate essential nucleotide positions in the promoter of ACE2 that may modulate differences in the gene's expression. Distinctions in expression profiles of different individuals, within the general population, may lead to some explanations to discrepancy in the severity of COVID19 infections.

Wednesday, March 30th
3:30-5:30 pm

Grace Doringo

Teaching the Underground Railroad through Museum-School Partnerships: Enriching the Ohio Department of Education's Social Studies Standards Through Historic Sites, Artifacts, and Works of Art
Thesis Advisor: Katherine Brown, Ph.D., Dean of the School of Arts and Sciences
Reader: Betty Marko, M.S., Ed.S., Professional Associate Professor of Education

The Underground Railroad was an abolitionist movement against slavery in the United States in the years leading to the Civil War (1861-1865). The Ohio Department of Education (ODE)'s Learning Standards for eighth-grade Social Studies focus on the history of the United States from 1492-1877; however, within these learning standards, the Underground Railroad is not mentioned specifically. Although American slavery is introduced as a topic, forced labor and the ownership of human beings are discussed only in the context of affecting sectional issues that would lead to the Civil War. Presentation of the Underground Railroad as a migration and as a response to the institution of slavery is critical for students to gain a full, unbiased understanding of American history. To support teachers who do broach this topic in the classroom, my website, "The Underground Railroad in Ohio: Curriculum Resources and Lesson Plans for 8th-Grade Social Studies Teachers", will foster museum-school partnerships and outline three lessons that will focus on significant people and places

associated with the movement. It will also examine the topic with information, resources, and links about related historic sites, works of art, artifacts, and other primary sources. Regional historic sites in northeast Ohio, artifacts, and art offer a way of learning about the subject as well as an opportunity for schools to collaborate with museums. The goal of this project is to support eighth-grade Social Studies teachers in Ohio public schools to incorporate this topic into existing Learning Standards. It is also aimed at fostering connections between public schools and the local museums that will host this resource for teachers. By using historic sites, artifacts, and works of art, the goal of this project is for public schools and museums to work together to teach students about an important part of American history.

Aurora Glory Ross
Current Feminist Dogma and the Exploration of Transcendentalism
Thesis Advisor: Eugenia Johnson-Whitt, Ph.D., Assistant Professor of Education
Reader: Jeffrey Warnke, Ph.D., Assistant Professor of Graduate Education

The aim of this thesis is to exemplify the application of transcendentalism and the resulting consciousness-raising in early feminism to ideas surrounding contemporary feminism in a small collegiate population at a private Catholic liberal arts institution in the midwest United States. Similar research has neglected to address a college student population with majority religious affiliation at a private university. The research addresses how college students at such an institution define modern feminism, to what extent these students identify as feminists, whether or not feminist discussions are an active part of student participation in feminism, and what current ways these students participate in feminist activism. Using a web-based questionnaire to investigate perceptions around contemporary feminism, this study's survey provokes an internal thought process in its participants concerning their views around feminism by applying consciousness-raising framework. Quantitative and qualitative pieces were addressed utilizing percentage reports of survey questions, and main themes in respondent answers. The significance of the research and findings is that an application of transcendental history and consciousness-raising to contemporary feminism provided individuals with a new outlook on feminist objectives and ways to reach them.

Sagar Subedi
Building an Open-source Learning Management System with the Modern MERN Stack
Thesis Advisor: Jim Jerkofsky, M.A., M.S., Associate Professor of Math and Computer Science
Reader: Brian Greenwell, D.B.A., Vice President for Administration and Chief Information Officer

During the unfortunate global pandemic of 2019, COVID-19, it was clear how some countries and most of the schools in them were struggling to teach their students. This is a result of poor digital infrastructures, lack of online services, including an online educational platform, and the lack of skilled software developers. Whatever the reason might be, having an online web platform is a very effective use of technology. This will make it easier for professors to assign and students to access tests, quizzes, assignments, and other curriculum resources. I believe that this will allow for a better teaching-learning experience. My research is focused on building a full-stack MERN (MongoDB, Express, React, and Node) web application that provides the online web interface to fulfill the purpose stated above.

Oscar Andres Ortega Mendoza

Do Corporate Environmental, Social and Governance Risks Affect Business Profitability?

Thesis Advisor: Branko Bucar, Ph.D., Associate Professor of Business

Reader: James Falter, D.B.A., Director of Graduate Programs

There is unsettled debate between those who believe Environmental Social and Governance activity positively affects firm performance and those who do not. General streams of research point towards the existence of a positive relationship between the two. Even the studies that link ESG and FP positively, conflict between each other regarding the nature of this relationship and how to measure it. Regardless, a slight majority favors the existence of a positive relationship. Interestingly, various studies focus on single industries, implying the existence of differing levels of ESG scoring by industry, which guides the first hypothesis. Secondly, management theories, such as Stakeholder Theory provide the framework necessary to hypothesize about the existence of a positive relationship between ESG and FP. This leads to the next hypothesis that tests if higher ESG risk (lower ESG activity) negatively affects financial performance.

The majority of studies in this field utilize third-party databases that score firms solely based on ESG activity. To improve upon previous studies, this study used a more enhanced measure of ESG activity; ESG risk scoring. ESG risk scoring grants firms an ESG risk score based on the total ESG risk exposure and total ESG activity. A higher score means greater risk and vice-versa. Risk scores were collected for five industries (Technology Hardware, Software and Services, Retailing, Real Estate, and Regional Banking) and compared using an Analysis of Variance. The results found that Regional Banking ESG risk scores are significantly different from the other groups tested. The results for the regression analyses were mixed. Some variables such as ROA demonstrated a significant relationship to ESG risk when all companies (n=150) were analyzed. When the five groups of firms (n=30) were analyzed, only the firms in the Banking and Real Estate industry demonstrated a negative relationship between ESG risk score and FP. The results provided helpful insights about the nature of the relationship between ESG and FP as well as starting points for future research.

Michelle Terbot

An Analysis of the Relationships Between Health Care Provider Experience and Treatment Recommendation in Patients with PTSD, and Provider interest in Future Research
Thesis Advisor: Zana Zawahri, M.S.N., Clinical Assistant Professor of Nursing
Reader: Sarah Bokovitz, M.S.N., Clinical Assistant Professor of Psychiatric Mental Health Nurse Practitioner Program

The purpose of this study is to determine the awareness and interest of health care providers, with prescriptive authority, of complementary and integrative health (CIH) treatments in patients, specifically Veterans, with posttraumatic stress disorder (PTSD). The goal of this study is to evaluate the data regarding the relationships between health care providers with prescriptive authority and the trends in prescribing treatments, as well as the awareness and interest of complementary and integrative health (CIH) treatments depending on age, gender, years in practice, and experience with the Veteran population. The focus for this research is complementary and alternative medicine (CAM) with a narrowed focus on complementary and integrative health (CIH) treatments. There is limited research on the use of CIH treatments when treating Veterans with PTSD. This study identifies the level of interest in CIH treatments and identifies areas of future research based on provider interest.

Hannah McFeeters

Presidential Poetry: The Power of Personality as a Function of American Federalism
Thesis Advisor: Carl Taylor, Ph.D., Associate Professor of Government and Foreign Affairs
Reader: Amanda Gradisek, Ph.D.

In a democracy like America, it is imperative for the public to have access to information about its leaders to make informed, intelligent decisions about who they choose to fill the Office of the Presidency. This thesis project is founded upon a political science theory perpetuated by James David Barber that understanding the personality of a President is crucial to understanding presidential decision making and their optimal success as leader of the world's first democracy. This thesis project explores the style, worldview, and character of the man behind four monumental presidents via the "Hamilton" method resulting in spoken word poetry. Four autobiographical poems will be performed that take on the persona of four chosen Presidents: George Washington, Andrew Jackson, Abraham Lincoln, and Franklin Delano Roosevelt. The poems will display to audience members the thoughts, desires, anxieties, and humanity behind each President to expose Barber's 1992 theory in a more accessible, intriguing 2022 way.

Frances Kraus

Anti-Government Sentiment within the American Ideology: The Relationship between Public Perceptions of Government & Domestic Terrorism

Thesis Advisor: Carl Taylor, Ph.D., Associate Professor of Government and Foreign Affairs

Reader: Joseph Wayand, Ph.D., Associate Professor of Psychology

While the past two presidential elections are worthy of investigation for numerous reasons, a significant trend of both elections is the increase in widespread political polarization. The increase in polarization in the American electorate is most evident by the contentious nature of the past two presidential elections and the outbreak of political protest post-election. Alongside this emerging trend of polarization is significantly and historically low levels of trust in government. Pew Research Center reported public trust in government was as low as 17% during 2019 ("Public Trust in Government: 1958-2019", 2019). It is generally accepted that political violence towards government represents the public's dissatisfaction with civil authority- political discontent. In addition, Homeland Security now recognizes domestic actors as representing the largest terrorist threat, as violent extremism continues to rise in the United States. As political discontent is attributed to the public's dissatisfaction with government and/or state actors, is the likelihood of domestic terrorism intensified by the public's negative views of government?

Elise Kohl

Nursing and Autism: A Survey of the Education, Knowledge, and Self-Competency of Nurses in Caring for Adult Patients with Autism

Thesis Advisor: Andrea Price, M.S.N., Clinical Associate Professor of Nursing

Reader: Mary Cook, M.S.N., Associate Professor of Nursing

Autism spectrum disorder, also referred to as ASD, is a lifelong neurodevelopmental disorder that is characterized by social and relational deficits, repetitive behaviors, and difficulties with verbal and/or nonverbal communication. An individual with autism commonly depends on daily routines and is likely to be hypersensitive to tactile, auditory, and visual stimuli. These sensory challenges can be especially challenging in the hospital setting, where the individual may not be following their normal routine and are exposed to novel smells, lighting, sounds, and unfamiliar healthcare staff. Even routine clinical interventions like wearing a hospital gown or having a blood pressure reading done can be overstimulating and stressful to a patient with ASD. While there is an emphasis on autism research and training for pediatric providers, there is still a lack of research being done on specialized care training for providers that care for adult's with ASD. This patient population has specific needs that adult hospital settings are not prepared to meet, as autism is often assumed to be a disorder of childhood alone. Further, the increasing prevalence of children being diagnosed with ASD has led to a greater number of adults, and their aging caregivers, that require specialized medical care. Nurses, who are at the forefront direct patient care, will have the potential to care for many individuals with ASD throughout their careers. They must be able to tailor a plan of care to a patient's specific needs to provide intelligent, sympathetic, and comprehensive care. This study examined nurses' prior education on autism, their level of knowledge on the disorder, and their self- perceived competency in their ability to provide holistic care to a patient with autism.