



# THE HONORS COLLEGE AT UW OSHKOSH

FALL 2024

HONORS THESIS SYMPOSIA

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WEDNESDAY, DECEMBER 4

THURSDAY, DECEMBER 5

UNIVERSITY OF WISCONSIN  
OSHKOSH

4:30 p.m. \_\_\_\_\_

FATIMA MUÑIZ  
MATHEMATICS

“Variation on Peg Solitaire with Graph Theory”

A graph consists of vertices depicted as points and edges represented by a line that connects two vertices. In peg solitaire, we start with a board full of pegs except in one spot, which is left empty. The objective of the game is to have one peg left. To get here, we move one peg over another to an empty spot. Then the peg jumped over is removed. Applying graph theory to peg solitaire treats the board as the graph and peg place holders as vertices. Between two adjacent vertices is one undirected edge connecting the two. The usual game is not always solvable on graphs; however, adding edges as a variation to the game allows for freely solvable graphs for paths of any size. The variation adds extra edges between vertices that are not otherwise adjacent. Once a peg is moved from one vertex to another, an edge is added connecting the initial and final vertices from the jump. The purpose of the variation is to have freely solvable graphs. With paths freely solvable, all cycles are also freely solvable. Some categories of caterpillar graphs are solvable with this new variation.

Advisor: DR. LINDA EROH, MATHEMATICS, COLLEGE OF LETTERS AND SCIENCE

5:00 p.m. \_\_\_\_\_

TAYLOR JOHNSON  
BIOMEDICAL SCIENCE; MINORS IN CHEMISTRY, MICROBIOLOGY, AND SPANISH

“A Tragedy of Common Goods and Pulcherrimin Production in Yeast”

Yeasts are single-celled eukaryotic microorganisms that are studied for their metabolic capabilities. Some yeast species produce a compound called pulcherrimin, which is a reddish secondary metabolite that binds to iron. Iron is often a scarce resource in the environment. When organisms produce specific molecules to bind with and uptake iron, these molecules become a common good that could be exploited by cheater organisms. In this situation, producers expend their resources to create pulcherrimin, while cheaters exploit the pulcherrimin without incurring production costs. In the lab we have several strains of yeast that should act as “producers” and “cheaters.” By growing and quantifying the yeast strains in direct competition with one another, we can assess fitness levels in the communities. We are measuring the fitness levels of three different strains: the wild-type producer, which incurs a production cost and receives the benefits of iron uptake; the *pu1Δ* biosynthesis mutant strain, which incurs no cost but receives the benefits; and the *pu3Δ* uptake mutant strain, which incurs the cost of production but receives none of the benefits. By competing all these strains pairwise, we will measure the fitness costs of producing pulcherrimin as well as the benefits of having the pulcherrimin-iron uptake system under various environmental conditions. We expect the *pu1Δ* mutant to have the greatest fitness, the wild-type to be in the middle, and the *pu3Δ* mutant to have the worst fitness. The results from this experiment will not only contribute to a broader understanding of the environmental conditions in which these yeasts may compete and thrive but will also provide insights into the evolutionary pressures that shape cooperative and exploitative relationships in microbial communities.

Advisor: DR. DAVID KRAUSE, BIOLOGY, COLLEGE OF LETTERS AND SCIENCE

# FALL 2024 HONORS THESIS SYMPOSIA

5:30 p.m.

## TEAGAN TOLLEY

RADIO-TV-FILM

### “From Script to Scream: The Art of Independent Horror Filmmaking”

The film *Apparition Annihilators: The March House* follows a team of amateur filmmakers who set out to create a viral video proving the existence of ghosts. Their plan takes an unexpected turn, however, when they unwittingly awaken genuine paranormal forces within an abandoned house. Their harmless hoax quickly spirals into a nightmare as they find themselves facing horrors beyond their control. Exploring the horror genre requires a deep dive into the nuances of storytelling, visual elements, and sound design. Crafting a compelling narrative that builds tension and fear is essential, while efficient sound design and visual elements are used to create visceral experiences that enhance the atmosphere and amplify emotional responses. These elements not only enhance the film’s overall quality, but also foster a greater appreciation for the elements that contribute to effective storytelling within the genre. This project also explores the fundamentals of creating a film with minimal resources and budget. The creation of this film provided a renewed understanding of the importance of thorough planning and the challenges faced in independent filmmaking. This project involved navigating the trials and errors throughout the pre-production, filming, and post-production phases as well as adapting to last-minute changes that were beyond anyone’s control. This experience has offered valuable insights into the filmmaking process while also guiding professional and personal growth. The skills acquired during this project will be vital to future filmmaking projects.

Advisor: DR. ADAM DILLER, RADIO-TV-FILM, COLLEGE OF LETTERS AND SCIENCE

6:00 p.m.

## CHRIS JEWSON

RADIO-TV-FILM; MINORS IN MUSIC AND MUSIC INDUSTRY

### “Big Press”

Through hours of interviews with Minneapolis artist Devinci, his family, and his acquaintances, the documentary film *Big Press* examines the artist’s drive and lust for success. Drawing inspiration from Michael Jackson and J. Cole, Devin Barksdale is a creative originally from central Wisconsin. Upon high school graduation, he pursued a career in music by traveling to the brisk city of Minneapolis, Minnesota. While attending the Institute of Production and Recording, he honed his knowledge of engineering, production, and hip-hop recording. His sound morphed with the local scene, finding a propensity for R&B vocals laden with melodic structure. As Devin grew as an artist, he sought to understand the familial relationships that shaped his growth as a man. Through interviews with Devin’s mother, father, and others, *Big Press* tells the story of one man’s ambition to prevail.

Advisor: DR. ADAM DILLER, RADIO-TV-FILM, COLLEGE OF LETTERS AND SCIENCE

6:30 p.m.

## THOMAS O’SHEA

MUSIC INDUSTRY (MUSIC BUSINESS AND AUDIO PRODUCTION)

### “Dances with the Devil: Telling a Story with Music in Polystylism”

*Dances with the Devil* is an original musical composition that narrates a story by utilizing various genres of music. Embodying polystylism, the composition is separated into four sections. The piece begins with a classical overture that flows into a rock song. The next section is a hip hop song, and the piece ends with an electronic dance music section that synthesizes elements from each part. Thematic leitmotifs, a popular technique in film scores, are used to represent different characters throughout *Dances with the Devil*.

Advisor: DR. JOHN MAYROSE, MUSIC, COLLEGE OF LETTERS AND SCIENCE

4:00 p.m. \_\_\_\_\_

EMILY MERTEN

PSYCHOLOGY; MINOR IN NEUROSCIENCE

“Directed Forgetting in Short- and Long-Term Memory  
for Auditorily Presented Verbal Stimuli”

Directed forgetting is a cognitive process in which individuals actively try to suppress specific information. The majority of studies have examined this phenomenon after longer delays, demonstrating that when people are instructed to forget information, they often remember less of it later, as their cognitive resources are redirected from the “to-be-forgotten” to the “to-be-remembered” content. Festini and Reuter-Lorenz (2013) revealed that directed forgetting instructions during working memory reduced semantic processing of “to-be-forgotten” lists in both short- and long-term memory. However, they used visual presentation of verbal stimuli. The present experiment examined whether auditorily presented verbal stimuli would affect short- and long-term memory in a similar way. A directed forgetting effect was found in short- and long-term memory following recognition tests. Moreover, a directed forgetting effect was present following long-term recall tests. A reduction in semantic processing for “to-be-forgotten” lists was found following long-term recognition but not short-term recognition and long-term recall tests. The results are discussed within directed forgetting, false memory, and auditory superiority frameworks.

Advisor: DR. JUSTYNA OLSZEWSKA, PSYCHOLOGY, COLLEGE OF LETTERS AND SCIENCE

4:30 p.m. \_\_\_\_\_

ALLISON WALDHART

NURSING; MINOR IN PSYCHOLOGY

AND

MEGAN WALDHART

BIOMEDICAL SCIENCE AND PSYCHOLOGY; MINOR IN CHEMISTRY

“How Christianity Affects Symptoms of Mental Illness: A Literature Review”

Mental illness affects many people and can be debilitating. According to the National Institute of Mental Health, more than 20% of adults in America struggle with mental illness, and the American Psychiatric Association has noted that suicide rates have risen over the last 2 decades. Thus, treatments and ways to cope with mental illness are essential. This project seeks to answer the following question: How does Christianity affect symptoms of mental illness? For some, Christianity is one aspect of life that might help with managing mental illness and/or optimizing mental health. A systematic review of literature identifies three themes of wellbeing that Christianity affects: (1) having a feeling of hope, (2) having an adequate support system, and (3) having a sense of purpose in life. The first theme is characterized by the feeling of hope as associated with a faith in God. Hope can bring someone suffering from mental illness a greater sense of joy, and faith has been shown to cause positive physical changes in the brain. The second theme, having an adequate support system, is an underlying goal of Christianity, which provides people with a community who is there to encourage and motivate them. The third theme suggests that Christians facing mental health struggles can gain a renewed sense of purpose through meaning-making and God-given callings. These themes support the thought that Christianity can have a profound benefit for those suffering from mental illness.

Advisor: DR. BONNIE NICKASCH, COLLEGE OF NURSING

5:30 p.m.

HANNAH HOTCHKISS

COMPUTER SCIENCE; MINOR IN CYBERSECURITY

“Strengthening the Cyber Awareness of First-Year College Students during High-Stress Transitions”

This research examines the effectiveness of short-term, non-invasive educational interventions in reducing susceptibility to phishing attacks among first-year college students. First-year students are hypothesized to be particularly vulnerable to phishing due to uneven cybersecurity awareness education and elevated stress levels during the early weeks of the academic year, a condition often exacerbated by the absence of a student’s historic support systems. Assuming the transition to college intensifies stress, the study seeks to assess whether brief, targeted educational sessions can significantly enhance first-year students’ ability to recognize and avoid phishing attempts. Participants will be recruited from the first-year class and will complete pre-intervention assessments to gauge stress levels and establish baseline knowledge of phishing tactics. Participants will be divided into two groups: one group will be assessed on phishing detection without prior education, while the other will receive focused educational content designed to improve recognition of phishing attempts. Following the educational intervention, students in the second group will be tested to measure changes in their phishing detection abilities. The study will also evaluate stress levels and explore the correlation between stress and improved phishing recognition. Data will be analyzed using both quantitative and qualitative methods, comparing pre- and post-intervention results to determine the effectiveness of the educational program. The research aims to contribute to the development of more effective, targeted phishing education strategies, thereby helping to improve cybersecurity awareness and resilience among university students. The findings will also highlight the importance of timing and content in educational interventions, particularly during high-stress periods, to better protect vulnerable populations from phishing attacks.

Advisor: MR. MICHAEL PATTON, INFORMATION SYSTEMS, COLLEGE OF BUSINESS





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THE HONORS COLLEGE AT UW OSHKOSH

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