

The McMaster School for Advancing Humanity Presents:

# McMaster Symposium & Academic Colloquium

THE QUESTION OF INDIVIDUAL LIBERTIES AS CRITICAL TO  
IMPROVING THE HUMAN CONDITION



Defiance College  
April 24, 2024

# McMaster Symposium & Academic Colloquium

**8:00 - 8:10 AM:**

SCHOMBURG AUDITORIUM

## Opening Remarks

Dr. Agnes Caldwell, Executive Vice President of Academic Affairs

Dr. Richanne C. Mankey, President

**8:10 - 8:50 AM:**

SCHOMBURG AUDITORIUM

## McMaster Ireland Learning Community

Fellow: Dr. Agnes Caldwell

Program Assistant: Bridgette Winslow

Scholars: Emma Bonnell, Will Garlock, Logan Gray, Zадria King, Colton Nutter, Olivia Rayk, Adam Tobin, Kirsten Vanisaker

*This McMaster project examines our research of the watershed moment, An Gorta Mor, also known as The Great Hunger, in Ireland from 1847 to 1852. An Gorta Mor leads to the death of over one million Irish and the immigration of up to two million more. This event impacted countless Irish lives in and around the world. In this study, the researchers examine real-life examples of immigrants who left Ireland and moved to our local community in Defiance, Ohio and are buried in Riverside Cemetery. The researchers trace the stories and journeys of 34 participants with potential to Irish roots. Our findings reveal An Gorta Mor as a profound event, highlighting the resilience of Irish immigrants in overcoming the adversity of forced migration, disease, and death. The researchers in this study use qualitative interviews, case studies, and unobtrusive measures such as archival work to understand the harsh conditions needed to leave Ireland. Student researchers will guide the audience through the stories of eight Irish immigrants and their lives in the United States.*

DANA 22

## Year 2, The Research Phase: Updates and Preliminary Data from the Defiance Research Alliance

Presented by: Dr. Sabrina Brown

*The Defiance Research Alliance is a partnership between Defiance College, the City of Defiance, and Defiance County schools to address water quality issues in the Upper Maumee Watershed. This collaboration harnesses student excellence and leverages community research and development assets to conduct applied water quality research. This presentation will guide the audience through this progress this new partnership in its second year. Ongoing student research projects will be highlighted.*

DANA 27

## Services and Supports for Individuals with Autism from Childhood through Transition to Adulthood

Presented by: Mitchell Roeвер, Kaitin Paul, Opal Thomas, Isabelle Vance

Faculty Advisor: Dr. Clarissa Barnes

*This presentation will provide a review of the literature related to four areas of autism research. Topics include practices for teaching language and communication, supporting elementary students with pathological demand avoidance profiles, the use of sensory rooms and tool in elementary settings, and challenges associated with the transition to adulthood. Recommendations for inclusive practices in each area will be provided.*

**9:00 - 9:50 AM:**

SCHOMBURG AUDITORIUM

## McMaster Local Learning Community: PATH Center

Fellow: Dr. Mollie Sorrell

Associate Fellow: Dr. James Sliwinski

Scholar: Hallie Webb

*The McMaster Local - PATH Center Learning Community will describe the community-based research projects that they have been implementing at the PATH (Partnership Assistance to the Homeless) Center. This panel discussion will guide the audience through the establishment of the learning community during the 2021-2022 academic year and all of the exciting work that has taken place since then. The panel will also highlight the exciting student projects, fundraising, and research-based learning that has been accomplished throughout the 2023-2024 academic year.*

DANA 22

## Assessing Body Composition and Cardiovascular Adaptations: A Comparative Study of Measurement

### Techniques and Individualized Fitness Programs

Presented by: Paige Rohloff, Rontonio Scott, Brooke Silcox, Lexi Coward

Faculty Advisors: Dr. Timothy Rickabaugh and Dr. Olivia Lozar

*This presentation will provide an overview of a Summer Undergraduate Research Project during which four students worked with personal training clients over a four-week period. There was a research emphasis on assessing body composition and cardiovascular adaptations to exercise, and those results will also be presented.*

**9:00 - 9:50 AM:**

DANA 27

### **Dark Bonds: Unraveling Attachment Patterns in the Twisted Tale of H. H. Holmes**

Presented by: Caia Bevins

Faculty Advisor: Professor Candice Seiple

*This presentation explores the early life of H. H. Holmes, the world's first serial killer, and how his childhood could have aided in the construction of him becoming the monster many described him to be. It will look specifically at parental attachment styles, how they affect the behavior of individuals well into adulthood, and what some of the lasting effects can be. This analysis may provide possible explanations to the age-old question of whether evil is born or if it's made.*

CULTURAL ARTS ROOM

### **Continuing Discussion on Cancer Clusters in Ohio**

Presented by: Abigail Teders

Faculty Advisor: Bridgette Winslow

*The Center for Disease Control and the Ohio Department of Health defines a cancer cluster as "a greater than expected number of cancer cases that occurs within a group of people in a geographic area over a defined period of time." Cancer is the second most common cause of death in Ohio and the United States, accounting for nearly one of every four deaths. According to the Ohio Annual Cancer Report in 2022, Cancer claimed the lives of more than 25,000 Ohioans in 2019, at a rate (162.8 per 100,000 population) that was 12% higher than the U.S. rate (146.0 per 100,000). This is the second year of this study. This year the focus was on Northwest Ohio and the trends Northwest Ohio Health Departments show. In particular, Why are cancer cases so high in Northwest Ohio? Are there areas that appear to be more prone to cancer than others? What might lead to this? During this research, Northwest Ohio's geographic areas, quality of life, social determinants of health, and available health care are examined throughout Northwest Ohio to help determine possible trends in cancer outbreaks.*

BUCHMAN BOARD ROOM

### **Empty Bowls**

Presented by: Social Work Junior Class

Faculty Advisor: Professor Tess Salisbury

*This will be a panel presentation covering the logistics and process behind organizing the Empty Bowls fundraiser and then the way in which we integrate this into CSWE Social Work curricular expectations. We will describe also how this fundraiser goes from the classroom outward to social work macro practice into the community.*

SCHAUFFLER 121

### **Math 498 Senior Capstone Projects**

Presented by: Natalee Cooper, Cole Mortemore, Sherod Brooks

Faculty Advisor: Dr. Seonguk Kim

*Natalee Cooper: We are looking at the correlation between a running backs age and their rushing stats. This work could be used by NFL teams to see at what age a running back may be the most productive for their team. This data can also show a NFL organization when it is worth it to be paying a running back a lot of money.*

*Cole Mortemore: League of Legends is a video game that requires two teams of five players to compete against each other. Each player plays a unique champion to use in combat and achieve objectives. The project is to provide the mathematical and statistical method and the computer programming code to predict the outcomes of the games and visualize the analysis.*

*Sherod Brooks: In my presentation I will be comparing the normal distributions for NBA players from 1975 to 2017. I will be comparing different positions and I will also compare major stats and shooting percentages between these positions as well. Excel, Python pandas, and Power BI are the tools that I will be using to make these comparisons. In the findings we found that historically some positions are better at certain parts of the game than others. While this is mostly obvious for NBA fans and GMs, we can determine by this comparison of stats what teams should be looking for in the Draft and Free agency.*

SCHAUFFLER DIX ROOM

### **Linguistic Justice and the Defiance College Writing Studio**

Presented by: Dana Peterson

Faculty Advisor: Dr. Steven Engel

*This presentation explores the Defiance College Writing Studio through an antiracist framework. Through an analysis of the current writing consultant handbook, I identify several recurring themes surrounding the idea of linguistic justice. Because writing consultants are in a crucial position in creating a linguistically just environment, I offer possible revisions and active practices to achieve the overarching goal of supporting Defiance College in its mission for belongingness, inclusion, accessibility, and antiracism.*

TENZER 303

### **A Novel Mouse Model for Time of Death Determination using Intestinal Bacterial Migration**

Presented by: Rylee George

Faculty Advisor: Dr. Nathan Griggs

*Forensic scientists and forensic pathologists have used various methods to estimate the time of death of an individual. Accurate assessment of time of death is critical for proper legal evaluation of a crime as this may implicate or exonerate a suspect. In this study we have used the migration of resident bacteria in the gastrointestinal tract of the common mouse as a mechanism to ascertain the window of time of death.*

**10:00 - 10:50 AM:**

SCHOMBURG AUDITORIUM

**McMaster Belize Learning Community**

Program Lead: Nicole Hoffman

Program Assistant: Robyn Otey

Scholars: Jacob Martinez, Nevaeh Schiffhauer, Taylor Stull

*This McMaster Belize Learning Community as a freshman trip is in its second year this year, after a successful first first-year Belize trip in 2023. The group will present an overview of the various interdisciplinary projects that the individual students have been researching and working on during the Spring 2024 semester. The group will give detailed descriptions of where they are in their research leading up to the trip, as well as the project they will be doing in Belize, and what they intend to accomplish during their travels to Belize in May.*

DANA 22

**Identity Amidst Brutalist Conformity: Soviet Housing and the Robert Taylor Homes**

Presented by: Allie Bevins

Faculty Advisor: Dr. Steven Bare

*This presentation considers identity construction within the context of built environments erected by the state and evaluates their effectiveness as a means of eliciting conformity to citizen identity. It distinguishes between state structures that function to elicit conformity in public and private performance of citizenship and challenges the generalized assertion that public housing as a method of providing low-cost housing is inclined to fail. Specifically, it examines and compares the design, construction, and purpose of personal political spaces such as the Robert Taylor Homes and Soviet housing through the lenses of Foucault and Lefebvre's theories on space and the body. It asserts that effective public housing functions within the system it was designed by rather than by betraying or resisting the state's established overarching social and cultural means of relating to its citizens.*

DANA 27

**Communication Studies Senior Capstone Research Projects**

Presented by: Dana Peterson, Isabelle Vance, Brenden Garvin, My'Asia Wallace, Tawon Cannon, Jessica Leggett

Faculty Advisor: Dr. Kimberly Kuiper

*This presentation presents the findings of our Senior Research Capstone Projects conducted in COMM 498, focusing on the exploration of social media discourse. Each student selected a unique topic within the realm of communication studies, aiming to delve into its complexities through an in-depth examination. Communalytic.org was used to facilitate data collection based on search criteria specific to each topic. The research methodology employed a content analysis framework, utilizing the constant comparison approach to identify prevalent themes and patterns in the collected social media data. The studies sought to address specific research questions related to their topics, shedding light on the multifaceted nature of communication within this digital context by analyzing a diverse array of social media posts.*

CULTURAL ARTS ROOM

**Are the New ASM/NSCA Hypertension Guidelines Too Strict?**

Presented by: Winter Boroff, Alex Jung, Jalynn Parrett

Faculty Advisor: Dr. Timothy Rickabaugh

*This presentation will provide an overview of a course embedded research project which provided three students with the opportunity to assess reating blood pressure and its relationship with a variety of individual characteristics.*

BUCHMAN BOARD ROOM

**Special Topics in Mathematics**

Presented by: Tristan Frazzini and Joseph O'Neil

Faculty Advisor: Dr. Seonguk Kim

Joseph O'Neil: *Fractional differential equations are complex problems that involve fractional derivatives that can be solved using many different complex techniques. Because of the fractional derivative, these special types of differential equations cannot be solved using a normal Laplace transform. These equations have special uses in economics and engineering and can explain real-world events and problems.*

Tristan Frazzinni: *This presentation presents a basic analysis of fractional differential equations. We explore a theoretical approach for a fractional differential equation with initial condition. We start with the definition of the fractional derivative through the Riemann-Liouville method with an example. Then we move to the Laplace transform and its benefits and difficulties also with an example. Finally we analyze these fractional differential equations through the graphs made in MatLab.*

SCHAUFFLER 121

**Exploring Educational Accessibility: A Comparative Study of Public and Private Schools**

Presented by: Paige Rohloff

Faculty Advisor: Dr. Lisa Beringer

*This study examines accessibility standards for individuals with disabilities at the University of Toledo (public) and Defiance College (private) in Ohio. It highlights the challenges faced by individuals with disabilities in accessing higher education and evaluates compliance with federal and state laws at both public and private institutions. The study emphasizes the importance of legal obligations, resources, funding, and a commitment to inclusivity in creating accessible campuses, and suggests ways in which private colleges can enhance accessibility.*

**10:00 - 10:50 AM:**

SCHAUFFLER DIX ROOM  
**A Study of Jumping Spiders**

Presented by: Jalen Warren

Faculty Advisor: Dr. Patrick Cain

*Predators use a variety of techniques to capture prey, such as sit-and-wait and pursuit. Jumping spiders (Family Salticidae) have high visual acuity and are masters of stalking and pursuing prey. They also comprise of more than 600 genera and over 6 000 species. This diversity has revealed many unique evolutionary traits and behaviors. Here, we describe species diversity and abundance of jumping spiders on the campus of Defiance College. We also describe species that might be good candidates for future studies of jumping spiders at Defiance College.*

ART CENTER - ROOM TBA  
**Zero Waste Vending Machine**

Presented by: Colton Nutter and Evan Gregory

Faculty Advisor: Professor Aaron Naplierala

*The Zero Waste Vending Machine, utilizing a Raspberry Pi 4 and an interactive LED touchscreen, redefines animal feed dispensing at a Toledo-based petting zoo by merging convenience with environmental sustainability. This student-created prototype streamlines the previously cumbersome two-step process of token acquisition and feed vending into a seamless transaction through direct payment methods. Built from scratch, including all physical components, and programmed in Python and Java, the project emphasizes operational efficiency, secure payment protocols, and a user-friendly interface. It demonstrates the application of technology to enhance user experiences while adhering to eco-friendly principles. By simplifying the feed purchasing process and reducing reliance on single-use plastics, this project serves as an example of how technological innovation can be integrated with environmental sustainability efforts, paving the way for future eco-conscious advancements in the service industry. The next step for this prototype is pursuing a patent, marking its novelty and potential for broader impact in the future.*

**11:00 - 11:50 AM:**

SCHOMBURG AUDITORIUM

**McMaster Local Learning Community: Defiance County Health Department**

Fellow: Bridgette Winslow

Scholars: Jazmine Hoffman, Rontonio Scott, Abbie Spow, Orlando Villanueva, Jalen Warren

*In the fall of 2023, the Defiance County Public Health Department partnered with Defiance College to create a local initiative to assess the needs of the east side community of Defiance and the overall state of wellness in Defiance County. Through an in-depth analysis of the Defiance County Health Department's Community Health Assessment and Community Health Improvement Plan, students examined the social determinants of health and the role they play in the overall well-being of the Defiance County Community. Along with the analysis of the Health Departments' data, an in-depth literature review was completed. The findings of the research contribute to a deeper understanding of the state of well-being in Defiance County. This research is the foundation from which further research initiatives is being built.*

**12:00 - 12:50 PM:**

HUBBARD BANQUET ROOM

**Underclass Honors and Service Leaders Luncheon**

*By invitation only - This luncheon is for 1st, 2nd, and 3rd year members of the Honors and Service Leaders Programs. Service Leaders must have completed 50 hours this academic year to attend.*

**1:00 - 1:50 PM:**

SCHOMBURG AUDITORIUM

**McMaster Rome Learning Community**

Fellow: Dr. Kathryn Phillips

Associate Fellow: Dr. Kimberly Kuiper

Scholars: Allie Bevins, Caia Bevins, Dana Peterson, Mallory Timbrook, Cassady Van Dyke

*The Rome McMaster Learning Community is focused on issues facing refugees around the world. Italy is currently in the middle of a humanitarian crisis, receiving more asylum seekers than any other country in Europe. According to the International Rescue Committee, Italy received an estimated 700,000 asylum seekers and migrants from 2014-2020. Many of these were escaping war, religious persecution, and environmental issues such as famine among other crises. These McMaster scholars have spent the academic year researching various issues refugees face including in areas of integration, education, and public policy.*

**1:00 - 1:50 PM:**

PILGRIM LIBRARY

## **POSTER PRESENTATIONS**

### **Nutrition Among High School Female Athletes**

Presented by: Riley Alcorn

Faculty Advisor: Dr. Olivia Lozar

### **Effectiveness of Dry Needling with Distinct Injuries**

Presented by: Adam Tobin

Faculty Advisor: Dr. Olivia Lozar

### **Alternative Electromyography Replacement in Physical Therapy**

Presented by: John Hammerstein

Faculty Advisor: Dr. Olivia Lozar

### **Blood Flow Restriction Therapy**

Presented by: Teagan Hunt

Faculty Advisor: Dr. Olivia Lozar

### **Sensory Intervention in Children with Autism Spectrum Disorders**

Presented by: Kendra Kline

Faculty Advisor: Dr. Olivia Lozar

### **ACL Injuries and Recovery**

Presented by: Zakary Klopfenstein

Faculty Advisor: Dr. Olivia Lozar

### **An Overview of Cupping Therapy**

Presented by: Dakota Oswalt

Faculty Advisor: Dr. Olivia Lozar

### **Invasive *Cirsium Arvense* Thistle Response to Chloride Road Salts**

Presented by: Hallie Webb

Faculty Advisor: Dr. Sabrina Brown

### **Seasonality of Diatom Assemblages in Upper Maumee Watershed Tributaries**

Presented by: Katelyn Smith

Faculty Advisor: Dr. Sabrina Brown

### **Soil Assessment of Defiance College: A Study Identifying Nonpathogenic Variables and Their Impacts on Soil Health**

Presented by: Clover Worrell

Faculty Advisor: Dr. Sabrina Brown

### **Diatom Bioassessment of the Upper Maumee Watershed & History of Watershed Use**

Presented by: Allie Bevins, Connor Pool, Emily Vargo

Faculty Advisor: Dr. Sabrina Brown

### **Investigating the Influence of Gender and Reward Timing on Spatial Learning and Memory in Mice: A Morris Water Maze Study**

Presented by: Cherokee Agnew

Faculty Advisor: Dr. Mollie Sorrell

### **Establishing Long-Term Assessment Study on Water Quality in the Upper Maumee River Watershed**

Presented by: Riley Alcorn, Ezekiel Baffour, Emma Bonnell, Anika Craft, Sophia Kerr, Hannah Sanderson

Faculty Advisor: Dr. Mollie Sorrell

### **Arthropod Diversity at Penney Nature Center**

Presented by: Karrie Smith, Kolbe VanderLeest, Jalen Warren

Faculty Advisor: Dr. Patrick Cain

### **Stock Data Through Linear Regression, SVM, KNN, and Ensemble Methods**

Presented by: Colton Nutter

Faculty Advisor: Dr. Seonguk Kim

**1:00 - 1:50 PM:**

**POSTER PRESENTATIONS (*continued*)**

**History of Empty Bowls**

Presented by: Gabriella Herod

Faculty Advisor: Professor Tess Salisbury

**Behind the Scenes of Empty Bowls 2024**

Presented by: Aubrey Bujalski

Faculty Advisor: Professor Tess Salisbury

**The Benefits of Pediatric Physical Therapy for Children with Autism Spectrum Disorder**

Presented by: Brooke Silcox

Faculty Advisor: Dr. Clarissa Barnes

**Physical Activity & Mental Health in Children with Autism Spectrum Disorder**

Presented by: Gabriella Herod

Faculty Advisor: Dr. Clarissa Barnes

**Ethics Training: Higher Education v. Police Academies**

Presented by: Caia Bevins

Faculty Advisor: Dr. Steven Sondergaard

**Clicks vs. Crafts: Identifying the Differences Between Computer-Based and Hands-On Student Learning and Content Retention**

Presented by: Noelani Schmidt and Clover Worrell

Faculty Advisors: Professor Aaron Napierala and Dr. Amanda Gilbert

**The Detection of Common Drugs of Abuse using Fourier-Transform Infrared Spectroscopy (FT-IR)**

Presented by: Olivia Rayk

Faculty Advisors: Dr. Nathan Griggs

**2:00 - 2:30 PM:**

SCHOMBURG AUDITORIUM

**Outstanding Inquiry Paper in FYE Competition**

Heath Kash - "What is the Effect on the Mental Health of Athletes?"

Jacob Martinez - "How Do Injuries Affect High School Athletes?"

Rylee Miller - "The Performing Arts and Its Effect on Student Achievement"

Avery Roeber - "Impacts of Religious Retreats on Individuals"

Nevaeh Schiffhauer - "Why I am Me"

**2:30 - 3:30 PM:**

SCHOMBURG AUDITORIUM

**Outstanding Orator in World Issues Competition**

**3:30 - 4:30 PM:**

SCHOMBURG AUDITORIUM

**Krieger Visiting Scholar in Religious Studies Presentation**

**Influenced: Performing Gender and Femininity in Mormon and Evangelical Online Spaces**

Presented by: Dr. Kathryn Davis

*The construction of a digital self is fully performative; online identities are simultaneously highly curated, edited, and uniquely personal. Religious women have created increasingly diverse virtual spaces for themselves, and these online communities give women a safe space to talk about their faith and create common bonds with other female adherents. Through these platforms a significant number of Latter-day Saint and Evangelical Christian women perform, co-create, sustain, and perpetuate systemic gendered norms. In this talk I will explore this phenomenon and introduce several 'influencers' who are performatively shaping how we understand and interpret these two religious traditions.*

**4:30 - 5:30 PM:**

SCHOMBURG AUDITORIUM

**Stroede Distinguished Faculty Presentation**  
**Interventions for Allistic Employers**

Presented by: Dr. Clarissa Barnes

*Autistic adults are disproportionately underemployed and unemployed in comparison to their non-autistic peers. These poor employment outcomes persist despite efforts to improve career readiness and develop neurodiversity hiring initiatives. This presentation will present an analysis of variables correlated with employment and interventions that have been developed in an attempt to improve employment outcomes for autistic adults. An intervention package, influenced by the social model of disability, to facilitate successful transition from college to career for autistic college graduates will be proposed.*

**6:00 PM:**

WOMEN'S COMMISSION ART GALLERY

**Faculty Reception**

**7:00 PM:**

SCHOMBURG AUDITORIUM

**Honors Convocation**

*By invitation only*

**Thank  
you!**

*Thank you to all presenters and faculty advisors for making this year's McMaster Symposium and Academic Colloquium a great success!*

SAVE THE DATE

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2025 McMaster Symposium &  
Academic Colloquium

*Service Leaders*  
**FOOD DRIVE**

for the PATH Center

Let's come together to help our community and fill the plates of those in need! Please bring a non-perishable food donation to the McMaster Symposium and help us to help others in our community.

Items Needed:

- Boxed Food (Stuffing, Noodles, Rice, Sides)
- Spaghetti & Pasta Noodles
- Mayonnaise
- BBQ Sauce
- Instant Potatoes
- Jam, Preserves, or Jelly
- Ketchup
- Mustard
- Cereal
- Drinks
- Sugar



# ABOUT THE MCMASTER SCHOOL FOR ADVANCING HUMANITY

The McMaster School for Advancing Humanity was founded to serve as a focal point for teaching, service, scholarship, and action to improve the human condition worldwide. The mission of the McMaster School is:

- To educate students for responsible citizenship;
- To produce committed global citizens and leaders who understand the importance of individual liberties in improving the human condition worldwide;
- To encourage graduates to take an active role in addressing these issues in whatever professions they may choose.

The School serves as a catalyst for innovative, interdisciplinary, community-based work by creating and supporting opportunities for teams of faculty, students, and staff to use their academic and professional skills to address a community need.

## ABOUT DEFIANCE COLLEGE

Defiance College, founded in 1850, is a private liberal arts college affiliated with the United Church of Christ. Building on a strong foundation of more than a century of educating citizens for lives of leadership and service, Defiance College provides opportunities for its students to make meaningful impact on society in the twenty-first century with an educational experience of engagement. Defiance's spirit of service through leadership sets us apart.

Defiance College's role as a national and innovated leader in service learning and engagement was recognized by the Corporation for National and Community Service which named Defiance among the top 20 schools in the nation for community service and engagement. This designation was made by naming Defiance College as a Presidential Award Finalist for the 2013 President's Higher Education Community Service Honor Roll.

The Princeton Review features Defiance College in Colleges with a Conscious: 81 Great Schools with Outstanding Community Involvement. Defiance is accredited by the North Central Association of Colleges and Schools, the National Council of Teacher Education, Commission on Collegiate Nursing Education, the Council on Social Work Education, the Commission on Accreditation of Athletic Training Education, and the International Assembly of Collegiate Business Association.

As a national leader in the field of service learning and engagement, DC teaches students to take the knowledge they have gained and use it to change lives for the better - in their communities, in their careers, and in the world.