Scholars Day 2023

A Celebration of Student Scholarship

Friday, April 28, 2023
8 a.m. – 6 p.m.

James Commons and Curtin Special Events Room
Campus Center

Le Moyne
Greatness meets Goodness®

From the President

It brings me great joy to welcome our student scholars, family members, faculty mentors, and our larger community to this Scholars Day 2023.

Today you share with us the results of your creativity, diligent research and the exploration of your full intellectual potential. You, my burgeoning scholars, have learned to explore your passions and interests under the guidance and mentorship of our dedicated faculty. In true Jesuit fashion, you have learned that asking essential questions is only the first step in exploring the unknown. For it is through hard work, long hours, and persistent and rigorous study that you found the answers you sought to those questions. Perhaps most importantly, you are now sharing the results of your studies with others, which will, in turn, help spur your next series of questions. The 500-year-old tradition of Jesuit education requires us to be active learners and use our gifts to make the world a better place. Congratulations, scholars, on showcasing your expertise and being exemplars of Le Moyne's Jesuit intellectual tradition.

Let us also thank your families, loved ones and former teachers who have helped guide you along the way. Additionally, I am deeply grateful to and inspired by our faculty, who place great emphasis on teaching and mentoring and see the vast potential in all of you.

Your work today is only the first step, I hope, of a lifetime of learning, creativity and intellectual inquiry. I, and all of the Le Moyne community, congratulate you. Know that we are deeply proud of you.

Warmest regards,
Linda M. LeMura, Ph.D.
President

From the Provost

It gives me immense pleasure to congratulate you on your inspiring accomplishments. Scholarly inquiry is an exciting, demanding and rewarding undertaking. As you well know, the pursuit of new knowledge requires determination, resilience, creativity, passion and humility. Scholarship also leads to feelings of joy and self-confidence, a sense of purpose and achievement, and new opportunities for personal and professional growth.

Your dedication to excellence and your many hours of hard work are a source of pride and inspiration to all of us at Le Moyne. While conducting research can sometimes be a solitary endeavor, scholars benefit tremendously from numerous sources of support, including research partners, faculty mentors, friends and family members. I extend my thanks to everyone who has accompanied our scholars on their intellectual journeys.

On Scholars Day, we celebrate the spirit of inquiry and the pursuit of knowledge that remain an enduring part of our common liberal arts mission as students and educators. Whether your formal studies will come to an end when you graduate from Le Moyne or you will pursue graduate education, I am confident that the knowledge, skills and habits of mind you have developed as a scholar will serve you well in your future endeavors. Once again, congratulations on all that you have achieved and thank you for being such a vital part of the Le Moyne College community.

Best wishes,
Jim Hannan, Ph.D.
Provost and Vice President for Academic Affairs

From the Interim Dean of the College of Arts and Sciences

I'm delighted to welcome our student scholars and their mentors to Scholars Day 2023. I'd like to extend a warm welcome to others: students, faculty, family and friends, who join us today as we celebrate our student and faculty scholars.

Le Moyne College has a long tradition of excellence in student research. Independent scholarship takes not only time but dedication, creativity, energy and enthusiasm, as I'm sure all of our scholars have learned! The time spent doing research, while it can be challenging, is also rewarding, especially when you can present your accomplishments to an audience that includes your peers and professors.

I extend my heartfelt congratulations to this year's scholars and faculty mentors for all you have accomplished, despite the continuing challenges in many of your lives. Le Moyne College is proud to recognize all our student scholars for their hard work engaging with challenging questions by thinking critically and striving for excellence as they work toward solutions for them. We are also proud to recognize our faculty mentors for guiding these students on their path to becoming scholars.

Student Scholars Day is a celebration of the pursuit of knowledge. We encourage all our student scholars to use the skills they have learned at Le Moyne as they continue to pursue several key goals of a Jesuit education: being lifelong learners, builders of knowledge, and women and men for others.

Once again, congratulations on all that you have achieved!
Beth Ferro Mitchell, Ph.D.
Interim Dean of the College of Arts and Sciences

From the Dean of the Madden School of Business

First, congratulations to the students and their faculty mentors on your achievements. Across all disciplines, academic research asks and answers the questions that propel civilization forward. At the Madden School of Business, we are fully aware that research is very often the catalyst for innovation. These explorations help solve the problems of our time and ensure that society does not become stagnant. Represented here today, we see the symbiotic relationship between academia and society, reminding us that without researchers and their work, we stand still, we fail to evolve, and eventually, we fall behind. Through the work of our young scholars, we celebrate this relationship and, most of all, the Le Moyne students who are poised to become the innovators and leaders of tomorrow.

Sincerely,
Jim Joseph '83, Ed.D. Candidate '23
Dean, Madden School of Business,
Ignatian Global Fellow, Boston College

From the Dean of the Purcell School of Professional Studies

The celebration of student scholarship and research has become a ritual at Le Moyne College, which celebrates what is at the very core of our Ignatian mission. It is the collaborative relationship between student and faculty mentor that helps produce a graduate who has the mental capacity and passion to make our world a better place. Your contribution today is evidence of the rich intellectual environment that thrives in our academic enterprise. Our faculty in the Purcell School of Professional Studies recognize the important role of research and scholarship in preparing tomorrow's educators and health care professionals. We congratulate our student and faculty presenters today not only for their commitment to this work but, more importantly, for their collaborative efforts, which give testimony to the academic excellence of our College.

Sincerely,
Margaret (Meega) Wells, Ph.D., R.N., ANP-BC
Dean of the Purcell School of Professional Studies

About Le Moyne College Student Scholars Day

Welcome to Le Moyne College Student Scholars Day, a tradition that started with the Undergraduate Research Symposium in 1998. Scholars Day 2023 celebrates the research, entrepreneurial and creative scholarly accomplishments of students across all academic disciplines. Today's program reveals how vibrant scholarly activity is on the Le Moyne College campus, with approximately 50 students representing more than 15 academic majors presenting their work. Student scholarship extends far beyond Scholars Day; our students publish in scholarly journals, present their work at academic conferences, produce works of art, and participate in theatrical and cinematographic productions, as just a few examples. Our students continue to impress us with their accomplishments after they graduate from Le Moyne. This year we continue the tradition of hosting an exceptional alumnus as a guest speaker by welcoming Austin Harning '22 back to campus. Austin is currently pursuing his master's degree in forensics at Syracuse University and will speak during the lunch intermission. We are delighted to have you join us for this day-long celebration of our students' achievements.

Emily M. Harcourt, Ph.D.
Assistant Professor of Chemistry
Chair of the Student Research Committee

Schedule of Events

8:15 – 9:15 a.m.	Continental Breakfast
8:15 – 8:30 a.m.	Welcoming Remarks Emily Harcourt, Ph.D. *Assistant Professor of Chemistry* *Chair of the Student Research Committee* Anna O'Brien, Ph.D. *Associate Professor of Chemistry* *2020-2021 Louis D. DeGennaro, Ph.D.* *Undergraduate Mentor of the Year*
8:30 – Noon	Morning Presentation Sessions
Noon – 12:40 p.m.	Lunch
12:10 – 12:40 p.m.	Guest Speaker Austin Harning '22
12:40 – 4:30 p.m.	Afternoon Presentation Sessions
4:45 – 6 p.m.	Poster Session and Closing Reception (Beer, wine and hors d'oeuvres)

Schedule of Sessions

8:30 a.m. – Noon Morning Session

8:30 – 8:45 a.m.	Instinctual Acting in Conversation with Michael Chekhov Donald Ormond
8:45 – 9 a.m.	The Cloud and the Darkness: The Apophatic Tradition in C.S. Lewis' *Till We Have Faces* Stephen Huffaker
9 – 9:15 a.m.	The Damned Lake Walker Goodemote
9:15 – 9:30 a.m.	Takeover Failure Prediction: An Application to Merger Arbitrage Declan Braun
9:30 – 9:45 a.m.	COVID-19 and its Impact on Economic Inequality Lazara Morales Cespedes
9:45 – 10 a.m.	Exploring Financial Instability in America through the Lens of Financial Education Benjamin Mousseau

10 – 10:15 a.m.	Understanding Risk Factors Associated with Femicides through a Multidimensional/Gendered Social-ecological Model and Feminist Lens Ivonne Santana
10:15 – 10:30 a.m.	Gendered Parenting: The Effects of Gender Socialization on Mental Health and Social Relationships Riley O'Shea
10:30 – 10:45 a.m.	The Mind and Feminist Theories: The Impact of Mindfulness Practice on Basic Psychological Need Satisfaction (SDT) and the Interplay of Needs Gwendolyn Fruehauf
10:45 – 11 a.m.	Personal Power Over Periodontitis: Using Prochaska's Stages of Change to Address Poor Oral Health Outcomes Due to Dental Anxiety Tanya Melnyk
11 – 11:15 a.m.	Tyger, Tyger Burning Bright: Showcasing the Current Issues and Conservation of Tigers in India Katherine McGrath
11:15 – 11:30 a.m.	Not So Wonder Drugs: How Penicillin Fought to Win WWII While Bacteria Now Soldier on in the Russo-Ukrainian War Kaitlyn Kulawy
11:30 – 11:45 a.m.	The Modern Space Debris Problem and Our Failure to Contain It Nicholas Carinci
11:45 – Noon	Metacognition, Help Seeking, and Overcoming Obstacles in Undergraduate STEM Research Philip Reutter

Noon – 12:40 p.m. Lunch

12:10 – 12:40 p.m.	Novel Psychoactive Substances and the U.S. Opioid Epidemic in Onondaga County: A Retrospective Study Guest Speaker Austin Harning '22

12:40 – 4:30 p.m. Afternoon Session

12:40 – 12:55 p.m.	Empathy and Belief in the Paranormal Izé Goodfriend
12:55 – 1:05 p.m.	Why Women are Marketed Differently in Combat Sports Robert Iqbal
1:05 – 1:15 p.m.	Alice Paul: The Woman Who Got the President on Her Side Mackenzie Getz

1:15 – 1:25 p.m.	Dismantling the Heteronormative Lifestyle: An Introduction into Queer and Feminist Space Alexandria Mills
1:25 – 1:35 p.m.	Women in Differing Civil Rights Groups Jason Cabrera
1:35 – 1:45 p.m.	Jewish Women in Second Wave Feminism Lily Buchholz
1:45 – 2 p.m.	Identity by the Sword: How Physical Force Abolition Affirmed Personhood and Manhood for 19th Century Black Abolitionists Walker Goodemote
2 – 2:15 p.m.	Effects of Urban Noise and Light Pollution on Bat Occupancy and Echolocation in Syracuse, N.Y. Carly Devereaux, John Fenzl and Megan Woyciesjes
2:15 – 2:30 p.m.	Bird Species Diversity: The Implications of Roadway Disturbance in the Le Moyne Woods Timothy Baker, Marie Stewart and Hanna Oestrich
2:30 – 2:45 p.m.	Factors Influencing Eastern Grey Squirrel Nest Distribution in Syracuse, N.Y. Jack McGovern
2:45 – 3 p.m.	Isopod Efficiency for Indoor Composting Nicolas Fallone
3 – 3:15 p.m.	Towards Mutagenesis of Recombinant *Mus musculus* LDHa: Cloning and Expression of LDHa Protein Irina Sokolik
3:15 – 3:30 p.m.	Synthesis and Kinetic Studies of Ureas as Potential Central Nervous System Therapeutics Brittany Cripps
3:30 – 3:45 p.m.	Investigation of N,N,N-Pincer Ligand Purification for Complexation to Alkali and Alkaline-Earth Metals Bryanna Howes
3:45 – 4 p.m.	Developing a Panel Swap Game in the Godot Engine: Discoveries and Difficulties Max Lee
4 – 4:15 p.m.	Cold Weather and the Performance of Unmanned Aerial Systems (UAS) Nolan Hillhouse
4:15 – 4:30 p.m.	UAS in Natural Disasters and Humanitarian Response and Recovery James McGarvey

4:45 – 6 p.m. Poster Session and Closing Reception
(Beer and wine, hors d'oeuvres)

Ecological Succession at the Skaftafell Glacial Foreland, Iceland
Genevieve Kikukawa, Kaylyn Weits

Attitudes on Environmental Education as a Function of Experiences
Sarah Moore

Effects of Migratory Waterfowl on Water Quality in Upstate New York
Nicholas Woronowski

Evaluating the Genetic Diversity of *Valvata tricarinata* Through Use of Microsatellite DNA Sequences
Caryn Zimmerman, Fiona Pepper

Determining the Role of p21 in Sulforaphane-mediated Activation of the Anti-viral Protein SAMHD1
David Lewin, Andrew Lewin

Impact of Changing CUL4 Variant on the Timing of Human Immunodeficiency Virus-hijacked CRL4 Ubiquitin Ligase Functions
Mary Root

Morphological Characterization of the Green Algal Class Klebsormidiophyceae
Sydney David

Synthesis of Alkylated Carbocyclic Curcuminoids
Sadie Davis

Synthesis of Diaryl-Thioureas and Guanidine
Zoe Genant

Synthetic Tracking of Asteroids
Lyniya Edwards

Improving Le Moyne's Shuttle Service with Real-Time Tracking
Erik Adler

Analyzing Student Experience at Le Moyne College and their Information Awareness
Max Lee

Covid-19 and the Athletic Scene: The Effect of the Covid-19 Pandemic on Athlete Identity in College-level Student-athletes
Olivia Snell

Marijuana Legalization and Teenagers' Perceptions of Driving While High
Nicole Gallagher

The Direct Impact of Intersectionality: Insecure and Chewing Gum Analysis
Alyssa Kizer

Relating Coding Supply from High Schools to Coding Need in the Workforce
Samuel White

Abstracts, Faculty Mentors, and Biographies:
Student Scholars Oral and Poster Presentations

8:30 – 8:45 a.m.

Instinctual Acting in Conversation with Michael Chekhov

Donald Ormond, Theatre Arts

Faculty Mentor: Matthew Chiorini, M.F.A.

Abstract: This thesis details through both research and practice some of the key differences between a personalized acting style and one that is drastically different. Through careful analysis, these ideas can then be applied to *The Woman in Black* by Stephen Mallatratt, culminating in a final performance to be seen by the public.

Bio: Donald (DJ) Ormond is a senior theatre arts major. After DJ graduates, he hopes to pursue his passions and start acting professionally. He would like to thank his mentor and reader for helping him on this journey, as well as his friends and family for their continued support.

8:45 – 9 a.m.

The Cloud and the Darkness: The Apophatic Tradition in C.S. Lewis' *Till We Have Faces*

Stephen Huffaker, English and Communications

Faculty Mentor: Miles Taylor, Ph.D.

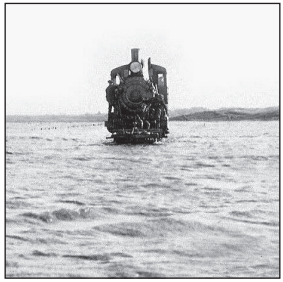
Abstract: *Till We Have Faces*, C.S. Lewis' final novel, is rooted in the medieval tradition of mystical apophatic theology. The apophatic tradition emphasizes God's inherent transcendence, as represented in*The Cloud of Unknowing*, a medieval mystical text. Lewis' portrayal of the gods consistently emphasizes their transcendence as a defining feature of their divine natures. Moreover, through his portrayal of apophaticism, Lewis intentionally demonstrates the importance of theological ambiguity.

Bio: Stephen Huffaker is a graduating English and communications major. After graduation, Stephen will attend the S.I. Newhouse School of Communications to earn his master's degree in magazine, news, and digital journalism. He would like to thank his professors, especially Dr. Fee, Dr. Taylor and Dr. Caterine, for their valuable mentorship throughout his time at Le Moyne.

9 – 9:15 a.m.

The Damned Lake

Walker Goodemote, History and Communications



Faculty Mentor: Holly Rine, Ph.D.

Abstract: The Great Sacandaga Lake is a large man-made lake in the southern Adirondacks that was created by flooding the Sacandaga Valley, annihilating several small farming communities in the process. The main focus of this thesis was the creation of a website that tells the history of the Great Sacandaga Lake from the perspective of the valley residents in order to make that history more accessible and available.

Bio: Walker Goodemote is a senior history and communications major planning to pursue a career in public history. Walker would like to thank Dr. Rine and Dr. Fee for their feedback and support. He would also like to thank his grandparents Gene and Carolyn Goodemote for making the Sacandaga Valley come alive.

9:15 – 9:30 a.m.

Takeover Failure Prediction: An Application to Merger Arbitrage

Declan Braun, Finance

Faculty Mentor: Emily Wang, Ph.D.

Abstract: This study examines the effectiveness and applicability of feed-forward neural networks (FFNNs) in making merger arbitrage investment decisions. This study finds that FFNNs do not predict failed takeovers well, given the low deal failure classification accuracy rates, but their use in an investment decision rule is able to increase risk-adjusted deal returns, on average, compared to other decision rules. This suggests that FFNNs would be a useful tool for merger arbitrage funds to employ.

Bio: Declan Braun will work as an investment banking analyst for Brown Gibbons Lang & Co. following graduation. At BGL, Declan will focus on sell-side merger/acquisition advisory services. He would like to thank Dr. Wang, Dr. Han, and Dr. Fee for their assistance on this project.

9:30 – 9:45 a.m.

COVID-19 and its Impact on Economic Inequality

Lazara Morales Cespedes, Finance

Faculty Mentor: Paul Blackley, Ph.D.

Abstract: The COVID-19 pandemic showed how economic inequality increases in times of economic crises. Who is affected the most by economic inequality is determined to a great extent by people's intersectional identities and their social position. This thesis aims to provide solutions to decrease economic inequality by using an intersectional lens.

Bio: Lazara Morales is a senior majoring in finance with a minor in accounting. Lazara's research focus is economic inequality because she would like to be able to provide solutions to make the U.S. a more equal country. Post-graduation, she will work on getting her MBA in analytics at the Madden School of Business.

9:45 – 10 a.m.

Exploring Financial Instability in America through the Lens of Financial Education

Benjamin Mousseau, Business Analytics and Finance

Faculty Mentor: Furkan Oztanriseven, Ph.D.

Abstract: Financial instability in America is a significant problem worth examining because of its vast social costs. People assume that financial education is the antidote to this problem, yet less than half of the states in America mandate it in high school. This thesis explores the links between financial education and financial instability, using financial literacy as a mediating factor. This study indicates that financial education is underutilized in America, which has resulted in a vast majority of the population's becoming financially unstable.

Bio: Benjamin Mousseau is a dual major, graduating with finance and business analytics degrees. At Le Moyne College, Benjamin is a part of the Integral Honors Program and the president of the men's rugby team. Post-graduation, Benjamin will begin his career with Equitable in their Emerging Leaders Program.

10 – 10:15 a.m.

Understanding Risk Factors Associated with Femicides through a Multidimensional/Gendered Social-ecological Model and Feminist Lens

Ivonne Santana, Criminology

Faculty Mentor: Alison Marganski, Ph.D.

Abstract: This study will examine American femicide cases that occurred in 2018 with the data provided by Women Count USA. Specifically, risk factors that contribute to the murder rates of women, such as the prior history of domestic violence, firearm ownership, stalking, economic strains, and substance use and abuse will be considered. These risk factors will be analyzed through a multi-dimensional/gendered social-ecological model informed by a feminist lens.

Bio: Ivonne Santana is a senior criminology major with minors in Spanish and gender and women's studies. After Le Moyne, Ivonne plans to enter the workforce and pursue more research opportunities before going into law school. Ivonne's dream is to become an attorney.

10:15 – 10:30 a.m.

Gendered Parenting: The Effects of Gender Socialization on Mental Health and Social Relationships

Riley O'Shea, Psychology

Faculty Mentor: Shawn Ward, Ph.D.

Abstract: This thesis explores the ways that gendered parenting practices perpetuate the patriarchal gender socialization of children and how this negatively impacts mental health and society. In particular, it discusses how the instilling of rigid gender roles during childhood contributes to the formation of different patterns of psychopathology in individuals that play a role in the perpetuation of dysfunctional, and often violent, social relationships.

Bio: Riley O'Shea will be attending graduate school in the fall to obtain a master's degree in social work. In the future, Riley hopes to become a licensed clinical social worker and provide emotional support and advocacy for victimized youth, particularly those who are a part of sexual and gender minorities.

10:30 – 10:45 a.m.

The Mind and Feminist Theories: The Impact of Mindfulness Practice on Basic Psychological Need Satisfaction (SDT) and the Interplay of Needs

Gwendolyn Fruehauf, Psychology

Faculty Mentor: Shawn Ward, Ph.D.

Abstract: Mindfulness is a discipline popular for improving wellness outcomes. We investigated whether brief mindfulness interventions aid in self-actualization through the fulfillment of self-determination theory's basic psychological needs (autonomy, relatedness, and competence). We found that mindfulness did not significantly improve need fulfillment. Feminist theory provides a divergent, necessary conceptualization of human experience, allowing development of a more nuanced understanding of human needs.

Bio: Gwendolyn Fruehauf is an Integral Honors scholar, psychology major and anthropology minor from Springville, N.Y. After graduating in May 2023, Gwendolyn plans to pursue a master's degree in social work. She is beyond grateful for Dr. Shawn Ward, Dr. Ludger Viefhues-Bailey, Emily Lawless, and Dr. Matthew Fee and would like to thank them for their consistent love, insight, and support.

10:45 – 11 a.m.

Personal Power Over Periodontitis: Using Prochaska's Stages of Change to Address Poor Oral Health Outcomes Due to Dental Anxiety

Tanya Melnyk, Biology

Faculty Mentor: Chad Corcoran, Ph.D.

Abstract: Periodontitis results from prolonged inflammation of the gingiva, reducing patient quality of life. This thesis explores the relationship between dental anxiety and periodontitis, specifically how dental anxiety can result in poor oral health due to avoidance of appointments and insufficient oral hygiene instruction. Prochaska's Stages of Change are applied to help dentists understand effective ways to aid dentally anxious patients and lead patients to better understand themselves.

Bio: Tanya Melnyk is a senior in the Integral Honors Program with a major in biology and minors in both chemistry and music. Tanya could not imagine having embarked on her academic journey without the unwavering support of her friends and family, or the periodontal expertise of her father. She would like to thank Dr. Chad Corcoran, Dr. Matthew Fee, and Dr. Whitney Wood for their invaluable help and guidance. She cannot wait to further her education at the Case Western Reserve School of Dental Medicine in Cleveland, Ohio, in the fall.

11 – 11:15 a.m.

Tyger, Tyger Burning Bright: Showcasing the Current Issues and Conservation of Tigers in India

Katherine McGrath, Biology

Faculty Mentor: Jason Luscier, Ph.D.

Abstract: Communication of science can be difficult, especially with complex ideas like conservation. This thesis displays the power of animation for education; the animation uses a balance of anthropomorphism and natural behaviors as to create a connection to tigers and promote action by the public. Also, two of the major conservation groups behind India's tiger conservation, the National Tiger Conservation Authority and the World Wildlife Fund for Nature are analyzed for their effectiveness in conservation.

Bio: Katherine McGrath is a senior biology major in the Integral Honors Program with a psychology minor. Katherine plans to pursue a career in conservation and eventually a doctorate in animal behavior.

11:15 – 11:30 a.m.

Not So Wonder Drugs: How Penicillin Fought to Win WWII While Bacteria Now Soldier on in the Russo-Ukrainian War

Kaitlyn Kulawy, Biochemistry

Faculty Mentor: Joseph Mullins, Ph.D.

Abstract: This thesis explores the development of antibiotics from just prior to WWII to now. Particularly, it focuses on how the widespread use of penicillin arguably helped the Allies win WWII, and now, how antibiotic resistance is impeding current infection treatment in war. Resistance has developed since WWII due to overuse and misuse of antibiotics, so there are, once again, fewer options to treat war wound infections in the ongoing Russo-Ukrainian War.

Bio: Kaitlyn Kulawy is a senior biochemistry major from Utica, N.Y. Kaitlyn hopes to attend an osteopathic medical school after graduation and will likely specialize in neurology. She would like to thank Dr. Fee, Dr. Mullins and Dr. Keeney for their guidance and words of encouragement during this past year and a half.

11:30 – 11:45 a.m.

The Modern Space Debris Problem and Our Failure to Contain It

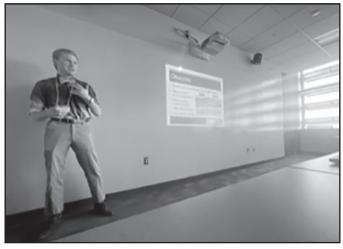
Nicholas Carinci, Physics with Concentration in Aerospace Engineering

Faculty Mentor: Stamatios Kyrkos, Ph.D.

Abstract: The reasons for the failure to stop and remove the increasing amount of debris in Earth's orbit were analyzed in this thesis. This predicament was analyzed through the lenses of Soviet history, contemporary retrieval missions, and historical, global legislation. It was found that there has been a precedent of negligence set during the Cold War, various impediments to creating retrieval systems, and that a potential, emerging hope is prior legislation from the late 20th century.

Bio: Nicholas Carinci is a senior physics major who is proud to be involved on the Le Moyne campus as a resident advisor, president of the Engineering Club and Chess Club, lector with Campus Ministry, and more. Nicholas is excited to pursue the field of aerospace engineering after graduation. Special acknowledgements to Dr. Kyrkos, Dr. Bass, Dr. Fee and the Carinci family for all their support.

11:45 – Noon



Metacognition, Help Seeking, and Overcoming Obstacles in Undergraduate STEM Research

Philip Reutter, Physics

Faculty Mentor: Ben Zwickl, Ph.D.

Abstract: This research project focused on the concept of metacognition and the role that it plays within the holistic experience in undergraduate STEM based research, and how to understand a student's unique reflective process of thinking while conducting research.

Bio: Philip Reutter's plan is to further explore the project to develop a large sample size in order to fully explore how people operate in a research environment. This will help Philip develop a better understanding of the process of educating in order for him to become the best teacher he can be when he is working in a school district, teaching physics and math.

12:10 – 12:40 p.m.

Novel Psychoactive Substances and the U.S. Opioid Epidemic in Onondaga County: A Retrospective Study

Guest Speaker Austin Harning '22

Abstract: Novel psychoactive substances (NPS) are a diverse group of substances that mimic the pharmacologic effects of controlled substances. Because of their sheer numbers and variety in toxicity, they pose significant forensic and public health concerns at the individual and societal levels. Here, I review NPS in the context of the American legal system and as a part of the ongoing Opioid Epidemic, and briefly outline the roles of the forensic toxicologist and forensic pathologist in the Medical Examiner system. The challenges these parties face in detecting NPS at autopsy are explored, including identification, standardization, and complications in cause of death diagnosis. Finally, in collaboration with the Onondaga County Medical Examiner's Office, I examine retrospective data from across the United States and drug-related deaths in Onondaga County to better understand the landscape of illicit drug use in 2023.

Bio: Austin Harning graduated from Le Moyne last year with a bachelor's degree in biochemistry and a music minor. Currently, Austin is pursuing his master's degree in biomedical forensic sciences and certificate of advanced study in medicolegal death investigation at Syracuse University. Additionally, he helps teach biology at the university, and is pursuing his certificate of university teaching. In his free time, he enjoys playing viola in SU's symphony orchestra and saxophone/violin in the Sour Sitrus Society athletic band.

12:40 – 12:55 p.m.

Empathy and Belief in the Paranormal

Izé Goodfriend, Psychology

Faculty Mentor: Christina Michaelson, Ph.D., and Vincent Hevern, S.J.

Abstract: A total of 70 participants were recruited to participate in an experiment called, "The Effect of Group Dynamic on Self-Perception and Beliefs." Participants in an experimental group were invited to play a cooperative game designed to induce empathy, and then assessed for empathy and belief in the paranormal. Empathy and paranormal belief scores were compared with scores from participants in a control group.

Bio: Izé Goodfriend is a psychology major and senior at Le Moyne. Izé plans to pursue a graduate degree in clinical psychology and work as an experimental researcher of emotion and belief.

12:55 – 1:05 p.m.

Why Women are Marketed Differently in Combat Sports

Robert Iqbal, History

Faculty Mentor: Leigh Fought, Ph.D.

Abstract: I will discuss women in the context of combat sports and how they are marketed to a general audience. Women are generally more marketed for their gender and physical appearance in comparison to men. I will be looking at women's MMA in particular, especially focusing on notable figures such as Ronda Rousey, Gina Carano, and Cristiane Justino, and how they were treated differently from each other.

Bio: Robert Iqbal is a junior at Le Moyne with a major in history, and a focus in dual certification in adolescent education. Robert is also a passionate martial artist, hence his interest in the topic of professional MMA and combat sports as a whole, and looking at them through the context of gender.

1:05 – 1:15 p.m.

Alice Paul: The Woman Who Got the President on Her Side

Mackenzie Getz, History

Faculty Mentor: Leigh Fought, Ph.D.

Abstract: My paper will be about Alice Paul, who fought for women's suffrage. I am going to discuss Paul's early life, her place and her tactics. I will include her interactions with President Woodrow Wilson and Carrie Chapman Catt. Developing these dynamics of different thoughts and feelings on women's suffrage I will be able to show how the 19th amendment was ratified. Most importantly I will be able to show how Alice Paul became a symbol in 20th century women's history.

Bio: Mackenzie Getz is a history major at Le Moyne College.

1:15 – 1:25 p.m.

Dismantling the Heteronormative Lifestyle: An introduction into Queer and Feminist Space

Alexandria Mills, History

Faculty Mentor: Leigh Fought, Ph.D.

Abstract: A look at the lesbian liberation movement and its strategies developed from feminist theories about independent womanhood and applied to queer women while examining the marginalization queer women faced from both the feminist and gay liberation movements, leading to the development of a counter-culture, subverting heteronormative society and focusing on building supportive queer spaces. A look at lesbian liberation, lesbian feminism, and black feminism, groups formed with growing visions of freedom for queer women. I will be focusing on the development of these branched movements and the discrimination faced whilst fighting for the destruction of all systems of oppression through methods of feminine solidarity, vice versa culture, and rebellion to male heteronormative thinking.

Bio: Alexandria Mills is a junior at Le Moyne College working toward a bachelor's degree in history. Alexandria is working towards a future in public history whilst fighting for more diversity and education in women's history, Black history, and queer history.

1:25 – 1:35 p.m.

Women in Differing Civil Rights Groups

Jason Cabrera, History

Faculty Mentor: Leigh Fought, Ph.D.

Abstract: Many women who fought for civil rights did so in organizations. The most popular of these groups was Student Nonviolent Coordinating Committee which preferred nonviolent methods of protest. The Black Panthers had more radical ideas. From Casey Hayden to Angela Davis, women have different experiences in these groups. From these experiences, women changed how these groups were within, especially with their ideals.

Bio: Jason Cabrera has plans to teach American history.

1:35 – 1:45 p.m.

Jewish Women in Second Wave Feminism

Lily Buchholz, History

Faculty Mentor: Leigh Fought, Ph.D.

Abstract: This paper examines the intersection between feminism and Judaism during the second wave feminist movement, focusing on Betty Friedan, Gloria Steinem and Bella Abzug. It explores the connection between secular Judaism, strong female figures, and college in the lives of these women and how it led them to feminism. Primary sources include interviews with the women involved and articles in Jewish magazines.

Bio: Lily Buchholz is a junior history major. Lily is a member of the Integral Honors Program and plans on going to law school after graduation.

1:45 – 2 p.m.

Identity by the Sword: How Physical Force Abolition Affirmed Personhood and Manhood for 19th Century Black Abolitionists

Walker Goodemote, History and Communications

Faculty Mentor: Douglas Egerton, Ph.D.

Abstract: The mainstream abolitionist movement in the 1830s focused mostly on opposing slavery through nonviolent means. As the 1840s and 50s drew on, many black abolitionists who were influential in the movement came to see nonviolence as ineffective. They chose to embrace physical violence not only as a more effective means of opposing slavery but also as a means to assert their humanity and personhood in the face of white supremacy and racist violence.

Bio: Walker Goodemote is a senior communications and history major planning to pursue a career in public history. Walker would like to thank Dr. Egerton for his advice and continuing support.

2 – 2:15 p.m.

Effects of Urban Noise and Light Pollution on Bat Occupancy and Echolocation in Syracuse, NY

Carly Devereaux, Environmental Science Systems;
John Fenzl, Environmental Studies;
Megan Woyciesjes, Environmental Science Systems

Faculty Mentor: Jason Luscier, Ph.D.

Abstract: Artificial noise pollution may interfere with echolocation and may affect the distribution of bats in cities. Likewise, artificial light at night may affect distributions of urban bats due to fragmentation into bright and dark areas. We detected bats at 13 of 48 sites throughout Syracuse. We found that bat occupancy and echolocation frequency declined with increasing noise. We hope that our results help to inform urban bat conservation in the city of Syracuse.

Bios: Carly A. Devereaux '22 graduated in December with a degree in environmental science systems. Passionate about ecology and sustainability, Carly aspires to work in wildlife conservation.

John Fenzl is a sophomore environmental science systems major. John is interested in shaping his career in such a way to help preserve the environment. He is currently a member of the Wildlife Society and tries to spend as much time as possible in nature.

Megan E. Woyciesjes is graduating this May with a degree in environmental science systems. Megan is a member of the Wildlife Society. She is very passionate about nature and wildlife.

2:15 – 2:30 p.m.

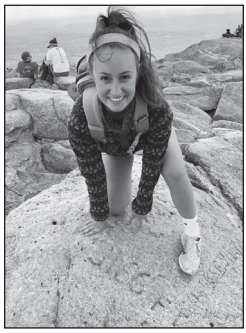
Bird Species Diversity: The Implications of Roadway Disturbance in the Le Moyne Woods

Timothy Baker, Environmental Science Systems;
Marie Stewart, Biology; **Hanna Oestrich**, Environmental Science Systems

Faculty Mentors: Jason Luscier, Ph.D. and Donald McCrimmon, Jr., Ph.D.

Abstract: The Le Moyne Woods (LMW) is a forest fragment in a sea of urban development. We compared breeding bird species diversity during three consecutive seasons at points of dense wood and ones subjected to disturbance from a heavily trafficked roadway. The master plan for LMC considers the possibility of an entrance to campus and roadway through LMW for future development. We provide data on the potential impact on the breeding bird community of LMW.

Bios: Timothy Baker plans on attending Syracuse University to receive a master's degree in Environmental Engineering. Timothy thanks Dr. Luscier and Dr. McCrimmon for their expertise, mentorship, and support.



Marie Stewart will graduate from Le Moyne College in May of 2023 with a bachelor's degree in biology and a minor in environmental science systems. In future endeavors, Marie plans to pursue her passion for studying wildlife, while communicating pertinent scientific information with larger populations of people. She would like to thank the faculty members of the Department of Biology and Environmental Science for their continued support in helping her realize her passion for studying the natural world, with a special thanks to Dr. Jason Luscier and Dr. Donald McCrimmon for their mentorship and dedication to this research.

Hanna Oestrich is focused on graduate school entry and obtaining a master's degree in environmental science in the future. Hanna would like to thank Dr. McCrimmon and Dr. Luscier for their support of this project.

2:30 – 2:45 p.m.

Factors Influencing Eastern Grey Squirrel Nest Distribution in Syracuse, NY

Jack McGovern, Biology

Faculty Mentor: Jason Luscier, Ph.D.

Abstract: Eastern gray squirrels (*Sciurus carolinensis*) exhibit high population densities in urban areas; however, it is not clear how urban habitat features affect distributional patterns. To better understand urban distributional patterns, we measured eight habitat variables (e.g., noise pollution, tree size, resource availability, distance to road, etc.) at 90 squirrel nest sites in downtown Syracuse. Variables identified in the strongest model will provide insight on how gray squirrels have adapted to urban life.

Bio: Jack McGovern is a senior biology major with minors in chemistry and economics. After Le Moyne, Jack plans to attend graduate school to pursue a degree in ecology.

2:45 – 3 p.m.

Isopod Efficiency for Indoor Composting

Nicolas Fallone, Biology

Faculty Mentor: Blair Page, Ph.D.

Abstract: As the human population continues to grow, so does the food waste we produce. The FDA estimates that 30-40 percent of food in the United States is wasted. Much of the food waste is landfilled which leads to the production of methane, a potent greenhouse gas, worsening climate change and hindering future food production. We aim to assess the efficiency of isopods in composting food waste. Our work has previously shown that isopods can maintain high population densities and process vegetable/fruit waste very well. This semester we explored the viability of isopods compared to red wriggler worms, a more commonly used invertebrate for composting.

Bio: Nicolas Fallone is a junior biology major with minors in chemistry and environmental science systems. After graduating from Le Moyne, Nicolas plans to attend medical school with the hope of working in pathology. Nicolas would like to thank Dr. Blair Page for his passion and guidance throughout this project. He would also like to thank Ms. Sue Wetzel and the Le Moyne dining hall staff for all of their help in providing food waste for the project, and the Student Research Committee for funding this work.

3 – 3:15 p.m.

Towards Mutagenesis of Recombinant *Mus musculus* LDHa: Cloning and Expression of LDHa Protein

Irina Sokolik, Biology

Faculty Mentor: Emily Harcourt, Ph.D.

Abstract: Lactate dehydrogenase (LDH) is the enzyme that catalyzes reversible interconversion between pyruvate and lactate. In my study, the Ldha cDNA generated from the RNA of mouse muscle tissue was inserted into the pET15b plasmid. The recombinant plasmid was then transformed into bacterial cells. We have so far been unable to express the mouse LDH protein in bacteria despite multiple attempts at optimization.

Bio: Irina Sokolik graduated in December 2022, majoring in biology and minoring in chemistry and applied statistics. Irina has done research in Dr. Harcourt's lab for three years.

3:15 – 3:30 p.m.

Synthesis and Kinetic Studies of Ureas as Potential Central Nervous System Therapeutics

Brittany Cripps, Chemistry

Faculty Mentor: Joseph Mullins, Ph.D.

Abstract: The urea functional group is a structural feature in many compounds that demonstrate promise for the treatment of neurological and neurodegenerative diseases, such as Alzheimer's disease. Diaromatic ureas are relatively simple molecules that have activity across a spectrum of central nervous system (CNS) disorders. Target molecules have previously been synthesized and purified. Kinetic studies using the nucleophilic catalyst, 4-diethylaminopyridine (DMAP), were investigated and will be discussed.

Bio: Brittany Cripps is a senior chemistry major and mathematics minor with a passion for research. Brittany was accepted into the chemistry doctoral program at the University of Rochester. She would like to thank Dr. Mullins for his continued support over the past two years, as well as Dr. Blackley for providing this outstanding research opportunity.

3:30 – 3:45 p.m.

Investigation of N,N,N-Pincer Ligand Purification for Complexation to Alkali and Alkaline-Earth Metals

Bryanna Howes, Chemistry

Faculty Mentor: Anna O'Brien, Ph.D.

Abstract: A pincer ligand, bis[2-(3,5-dimtheyl-1-pyrazolyl)ethyl]amine, has been synthesized for complexation to potassium, calcium, strontium, and barium; however, the high reactivity of these metals requires that the pincer ligand be free from trace amounts of water. This project seeks to modify published purification methods to yield a water-free pincer ligand for subsequent reaction with moisture-sensitive alkaline/alkaline earth reagents. The water-free ligand was found to be in an oil form rather than a solid like the literature suggests.

Bio: Bryanna Howes is graduating this May. Bryanna plans to pursue a master's degree in forensic science. Bryanna would like to thank the Clare Boothe Luce Scholars program, which provided her with the resources she needed to engage in this research, and her mentor, Dr. O'Brien, for all of the support she has provided her through her junior and senior years at Le Moyne.

3:45 – 4 p.m.

Developing a Panel Swap Game in the Godot Engine: Discoveries and Difficulties

Max Lee, Computer Science

Faculty Mentor: Aparna Das, Ph.D.

Abstract: Developing personal projects, such as making a video game, can be a great way to develop and practice new skills. As a result, this independent study recreated and developed further the game Tetris Attack in the software Godot. This study focused on producing a playable prototype as well as developing old and new computer science methods and techniques.

Bio: Max Lee plans to graduate this May as a SCORE scholar with a bachelor of science in computer science. Max hopes to find a job in the data analytics field in the hopes to further support the growth and development of the Syracuse area while continuing their passion for software and video game design.

4 – 4:15 p.m.

Cold Weather and the Performance of Unmanned Aerial Systems (UAS)

Nolan Hillhouse, Business Analytics and Information Systems

Faculty Mentor: Martha Grabowski, Ph.D.

Abstract: The impact cold weather has on the performance of Unmanned Aerial Systems (UAS) was studied. Studies and Flights of Arctic operating organizations were analyzed, and meetings were held with the University of Alaska Fairbanks in order to propose solutions to problems faced in cold weather operations.

Bio: Nolan Hillhouse is a senior and will be graduating in May. Nolan is on the men's track and field team, a tour guide and a resident adviser for Foery Hall. He thanks the McDevitt Foundation, Ignite Fellowship, Dr. Grabowski, Jimmy McGarvey, SUNY Upstate Autonomous Systems and his mother, Charlene Adams.

4:15 – 4:30 p.m.

UAS in Natural Disasters and Humanitarian Response and Recovery

James McGarvey, Management Information Systems and Marketing

Faculty Mentor: Martha Grabowski, Ph.D.

Abstract: This project explores the use of Unmanned Aerial Systems (UAS) before, during, and after natural disasters, how they can help people who have been affected, and the potential behind using UAS in these situations.

Bio: James McGarvey's future plans are to finish his undergraduate degree in management information systems and marketing, pursue his master's degree in information systems, and continue his education, as well as start a business.

Ecological Succession at the Skaftafell Glacial Foreland, Iceland

Genevieve Kikukawa, Environmental Science Systems;
Kaylyn Weits, Environmental Studies and Political Science

Faculty Mentor: Lawrence Tanner, Ph.D.

Abstract: Ongoing climate change has resulted in the retreat of most glaciers globally. This presents an opportunity to study ecological succession; as the ice retreats, it exposes land that undergoes primary succession. The distance of any location on the glacial foreland is proportional to the age of exposure of the land at that location. The distribution of specific plant groups were measured at different distances from the glacier in 2007. This study returned to these coordinates to remeasure these groups and examine the changes which have occurred over this 15-year period. The distribution of the same groups were measured and compared to the 2007 study utilizing the Bray-Curtis Dissimilarity Index.

Bio: Genevieve Kikukawa is graduating in May with a bachelor's degree in environmental science systems and plans on pursuing a graduate degree in forestry. Genevieve is a member of the Le Moyne College varsity swimming and diving team and co-president of Le Moyne's Friends of Recreation, Conservation, and Environmental Stewardship (FORCES). She would like to thank her mentor, Dr. Lawrence Tanner, for his wonderful guidance throughout the project and her friends and family for their continued support.

Kaylyn Weits is a graduating senior studying environmental studies and political science. Kaylyn hopes to pursue a role in sustainability consulting and eventually attend graduate school following graduation. She would like to thank her family, friends, and Dr. Tanner for being incredibly supportive and for providing her with such amazing opportunities.

Attitudes on Environmental Education as a Function of Experiences

Sarah Moore, Environmental Science Systems

Faculty Mentor: Emily Ledgerwood, Ph.D.

Abstract: This research assesses how an environmental education curriculum presented in early childhood and high school informs sustainable choices later in life. A survey was sent to Le Moyne campus students and faculty to obtain data about the subject. Survey responses were analyzed to assess the impact of childhood environmental education on adult sustainable decision-making. This work should uncover which sustainability topics are most critical to incorporate into school curricula.

Bio: Sarah Moore is a senior at Le Moyne and will be graduating in May. Sarah would like to thank Dr. Emily Ledgerwood for helping her bring her research to life and for all of the support and guidance that she has provided through the process. She hopes to join the workforce after she graduates and to continue working in the environmental science field.

Effects of Migratory Waterfowl on Water Quality in Upstate New York

Nicholas Woronowski, Environmental Science Systems

Faculty Mentor: Emily Ledgerwood, Ph.D.

Abstract: A connection between migratory waterfowl presence and a decrease in water quality has been suggested but the data remain unclear. To address this, water was collected from six sites across two lakes in Upstate New York. Samples were filtered and placed on media to support the growth of coliform bacteria. Colony counts were recorded and plotted against waterfowl migration for 2022-2023. Our data suggests that the presence of migratory waterfowl negatively impacts water quality.

Bio: Nicholas Woronowski is a SCORE scholar who is graduating in May 2023, and will be pursuing graduate-level education, obtaining his master's degree in Environmental Engineering. Nicholas would like to thank Dr. Emily D. Ledgerwood, Jason D. Luscier, and the SCORE program for helping make this happen.

Evaluating the Genetic Diversity of Valvata Tricarinata Through Use of Microsatellite DNA Sequences

Caryn Zimmerman, Biology; **Fiona Pepper**, Biology

Faculty Mentor: Patrick Yurco, Ph.D.

Abstract: The freshwater snail *Valvata tricarinata* is an understudied species of snail in New York State. The goal of this study is to utilize sequences of DNA called microsatellites (MSATs) to evaluate the genetic diversity and evolutionary history of this snail species. Researching the genetic history of these snails can provide insight into the environmental health and history of New York State watersheds.

Bio: Caryn Zimmerman is a sophomore biology major interested in pursuing a graduate degree in forensic science or molecular biology research. Caryn would like to thank Dr. Yurco for guidance during her research and all of her friends and family for supporting her.

Fiona Pepper is a junior biology major with a pre-engineering specialization and a student-athlete planning to pursue a graduate degree in biotechnology. Fiona would like to thank Dr. Yurco for his research guidance and her parents for all their support.

Determining the Role of p21 in Sulforaphane-mediated Activation of the Anti-viral Protein SAMHD1

David Lewin, Biology; **Andrew Lewin**, Biology

Faculty Mentor: John Sharifi, Ph.D.

Abstract: Sulforaphane (SFN), found in cruciferous vegetables, blocks HIV. Sharifi et al. found that SFN removes an inhibitory phosphate from the anti-viral protein SAMHD1. P21 is a cellular protein shown to inhibit SAMHD1 phosphorylation and is upregulated by SFN. We therefore hypothesize that p21 is responsible for reduced SAMHD1 phosphorylation by SFN. To test this, we diminished p21 through both chemical inhibition and siRNA mediated depletion. We are now assessing SFN-mediated SAMHD1 dephosphorylation under these conditions.

Bio: David Lewin has plans of attending medical school following graduation with the possibility of gaining further laboratory work. David would like to thank Dr. Sharifi for all the memories, lessons and kindness he has shown over the last couple of years in both the academic setting and extracurricular experiences.

Andrew Lewin plans on attending medical school with the goal of specializing in surgery and regenerative medicine after he graduates in May. He plans on continuing his research at his medical institution. He would like to thank Dr. Sharifi for his insightful mentorship and wonderful friendship, and he wishes him the best in his search for more information on HIV.

Impact of Changing CUL4 Variant on the Timing of Human Immunodeficiency Virus-hijacked CRL4 Ubiquitin Ligase Functions

Mary Root, Biochemistry

Faculty Mentor: John Sharifi, Ph.D.

Abstract: HIV proteins hijack the cellular CRL4 ubiquitin ligase complex to cause the degradation of proteins that function as part of the cell's defense against HIV. The CRL4 ubiquitin ligase complex contains CUL4, which can be either type A or B. Preliminary data suggest that the type of CUL4 that is abundant may affect the timing of HIV protein functions. In this project, CRISPR-Cas9 gene editing technology will be used to create a knockout cell line wherein CUL4A is completely absent. Future work will do the same for CUL4B. Ultimately, establishing these knockout cell lines will allow us to determine which of the two CUL4 types is more important for efficient HIV protein function. This knowledge may serve as the basis for the development of novel therapeutics.

Bio: Mary Root is a junior Integral Honors student majoring in biochemistry and will be continuing research during her senior year. After graduation, Mary plans on gaining additional research experience before pursuing a graduate degree. She would like to thank Dr. Sharifi for making this research possible and for his mentorship and guidance on this project.

Morphological Characterization of the Green Algal Class Klebsormidiophyceae

Sydney David, Chemistry

Faculty Mentor: Hilary McManus, Ph.D.

Abstract: Molecular phylogenetic data have revealed new lineages in green algae that have deepened our understanding of morphological variation and classification schemes. Recent molecular studies of the green algal class Klebsormidiophyceae have revealed they are more diverse than previously estimated based on morphology alone. The objective of this research is to use light and scanning electron microscopy to study the morphological characteristics of Klebsormidiophyceae and determine which traits are useful in defining species boundaries.

Bio: Sydney David is a senior chemistry major with a minor in psychology. After graduation, Sydney hopes to further her education in the mental health field. She would like to thank Dr. McManus for her guidance, assistance, and mentorship.

Synthesis of Alkylated Carbocyclic Curcuminoids

Sadie Davis, Chemistry

Faculty Mentor: Joseph Mullins, Ph.D.

Abstract: Curcumin is a natural product extracted from the plant *Curcuma longa L*, and its synthetic derivatives possess a variety of medicinal properties, including anti-cancer activity. The goal of the project is to prepare novel derivatives of curcumin that contain a carbocyclic moiety. The project aims to synthesize a catalog of 4,4-dialkyl curcuminoid pharmacophores of novel composition that offer interesting biological properties.

Bio: Sadie Davis is a junior chemistry major and member of the Integral Honors Program. Sadie currently does research as part of the Clare Boothe Luce Research Scholar Program and plans to continue research in her senior year. In the future, she hopes to pursue a doctorate degree in chemistry, continue her love for research, and become an undergraduate chemistry professor.

Synthesis of Diaryl-Thioureas and Guanidine

Zoe Genant, Chemistry

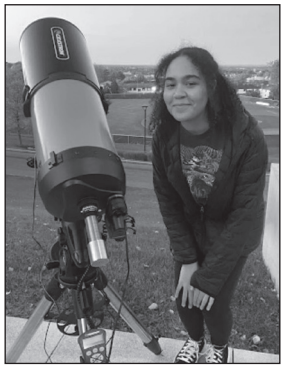
Faculty Mentor: Joseph Mullins, Ph.D.

Abstract: This research project focuses on synthesizing diaryl thioureas and guanidine analogues. Thioureas are of interest due to their unique ability to form disulfide bonds, while guanidine has hydrogen bonding interactions. These place them as possible drug candidates especially for central nervous system diseases such as Alzheimer's. In addition, a focus has been placed on the synthesis process of guanidine from thioureas, with hopes of finding safer and more efficient methods.

Bio: Zoe Genant plans to pursue her doctorate in chemistry once she graduates but currently is a junior with a chemistry major and a pre-engineering concentration. Zoe has a passion for research and currently plans to continue research during her senior year with her mentor Dr. Mullins, whom she is immensely grateful to. In addition, she would like to acknowledge and thank Le Moyne College for offering the Clare Booth Luce Research Scholars Program, an opportunity she would encourage any eligible undergraduate to take.

Synthetic Tracking of Asteroids

Lyniya Edwards, Physics, pre-Engineering



Faculty Mentor: Christopher Bass, Ph.D.

Abstract: Synthetic tracking was used to observe near-Earth asteroids (NEOs) at the Le Moyne College Science Center Addition in order to examine their orbital paths and light curves. The observation used a ZWO ASI-cooled monochrome camera and a Celestron 8SE telescope set on a German equatorial mount to record asteroids with magnitudes between 16 and 18. Synthetic tracking involves taking multiple short exposures of the same area of the sky and combining them into a single image, which is especially useful when observing fast-moving objects such as asteroids. By analyzing the data collected, we can gain insights into the behavior of these NEOs as they move through our solar system.

Bio: Lyniya Edwards, a SCORE scholar, is set to graduate in spring 2023 and plans to pursue a career in astronomy. Lyniya is grateful for the opportunity to conduct research as it has taught her about various programs utilized in the field. She would like to express her sincere gratitude to Dr. Bass and Dr. Kyrkos for their assistance and expertise during the experimentation and analysis process.

Improving Le Moyne's Shuttle Service with Real-Time Tracking

Erik Adler, Computer Science

Faculty Mentor: Aparna Das, Ph.D.

Abstract: The current features of the Le Moyne shuttle service are not sufficient for students with limited transportation options. The Phin Tracker app aims to address these issues by showing the driver's location to students. The app was created using React Native, a Javascript framework to achieve location tracking for both Android and IOS. The goal of this project is to create a more streamlined transportation system for students that operates in real-time.

Bio: Erik Adler is graduating in this May and plans to backpack through Europe before beginning his new job as a technology associate at Equitable.

Analyzing Student Experience at Le Moyne College and their Information Awareness

Max Lee, Computer Science

Faculty Mentor: Yue Han, Ph.D.

Abstract: Access to information is an essential part of the overall college experience for students. As a result, this research surveys and uses a mix of quantitative and qualitative analysis to observe students' knowledge of on-campus facilities and their general experiences at Le Moyne College. This research hopes to highlight any patterns or challenges students face when navigating and finding college-specific information, which can be used to then improve students' experiences on campus in the future.

Bio: Max Lee plans to graduate this May as a SCORE scholar with a bachelor's degree in computer science. Max hopes to find a job in the data analytics field in the hopes to further support the growth and development of the Syracuse area while continuing their passion for software and video game design.

Marijuana Legalization and Teenagers' Perceptions of Driving While High

Nicole Gallagher, Nursing

Faculty Mentor: Carrie Rewakowski, Ph.D.

Abstract: This research was conducted to understand the impact of marijuana legalization on teenagers' beliefs that driving under the influence of marijuana is safe. The expansion of legalization laws prompted this research in order to understand what beliefs are held by teenagers related to driving high. This literature review supports the critical need to develop and implement age-appropriate education related to the dangers of driving while high.

Bio: Nicole Gallagher is completing a bachelor's degree in nursing with a minor in psychology. Nicole currently is a registered nurse on the oncology & women's health floor at St. Joseph's Health Hospital. She would like to give a special thank you to Dr. Carrie Rewakowksi for supporting and guiding this research.

Covid-19 and the Athletic Scene: The Effect of the Covid-19 Pandemic on Athlete Identity in College Level Student Athletes

Olivia Snell, Psychology

Faculty Mentor: Whitney Wood, Ph.D.

Abstract: Covid-19 put the world on hold. Shortly following the flare of the virus' aggressive trek across the globe, schools were closed, employees were sent home, and the human population was sentenced to years of increased isolation. While all of society was subject to these consequences of the pandemic, various subpopulations, including athletes, were affected in different ways. The goal of this experiment is to determine how Covid-19 affected athlete identity in collegiate student-athletes.

Bio: Olivia Snell is a senior psychology major. Olivia has spent her time at Le Moyne as a leader in athletics, serving as a captain of the cross country and track and field teams, vice president and previously mental health chair of the Student-Athlete Advisory Committee, and athlete representative in the Student Government Association. She has also dedicated her time to chronic illness awareness, having founded the Chronic Illness Awareness Club in her freshman year and serving as the president each year after. Liv will be pursuing a graduate degree in sports and exercise psychology from Springfield College.

The Direct Impact of Intersectionality: Insecure & Chewing Gum Analysis

Alyssa Kizer, Political Science

Faculty Mentor: Farha Ternikar, Ph.D.

Abstract: This analysis delves into Michaela Coel's *Chewing Gum*, and Issa Rae's *Insecure*, to examine how intersectionality is important in 21st-century media culture. Black feminist discourse introduces theories like intersectionality to understand the grappling identities BIPOC, specifically Black, individuals face in this world. This work demonstrates why intersectional media work is important by showing how the shows *Insecure* and *Chewing Gum* offer multi-dimensional representations of Black women.

Bio: Alyssa Marie Kizer is the author of "The Direct Impact of Intersectionality: Insecure & Chewing Gum Analysis," an essay on the importance intersectionality serves in modern television. Alyssa is a Brooklyn native currently studying under a HEOP & AHANA scholarship at Le Moyne College. She majors in political science with minors in gender & women's studies and race in American society. She shares her curiosity in learning more about the impact of socialization, intersectionality, racism, sexism, and anti-LGBTQ violence on Black and Brown women.

Relating Coding Supply from High Schools to Coding Need in the Workforce

Samuel White, Computer Science

Faculty Mentor: Yue Han

Abstract: Following high school, I felt underprepared to apply for internships in computer science. To address this, I exported data from Handshake and compared job requirements to data gathered on coding languages taught in NYC, Utica, and Syracuse schools. This analysis will determine if the top coding languages needed in the workforce, such as Java or Python, match what is offered in high schools. I want teachers, employers, and students to understand the value of coding, focusing on coding languages needed in the workforce.

Bio: Samuel White Jr. is a senior majoring in computer science with pre-engineering. Samuel aspires to start his master's degree in computer engineering and start a career regarding software development, and he sees this project as a stepping stone in understanding the challenges underclassmen and high school students may face when searching for jobs in computer science.

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This Scholars Day celebration is sponsored by the Student Research Committee, the Office of the Dean of the College of Arts and Sciences, and the Office of the Provost and Academic Vice President of Le Moyne College.