

# SCHOLARS DAY 2015

A Celebration of Student Scholarship

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FRIDAY, APRIL 17, 2015

8 A.M. – 5 P.M.

JAMES COMMONS AND CURTIN SPECIAL EVENTS ROOM  
CAMPUS CENTER

LE MOYNE

SPIRIT. INQUIRY. LEADERSHIP. *JESUIT.*

# ABOUT SCHOLARS DAY

Welcome to the 10th annual Le Moyne College Scholars Day, a tradition that originated with the Undergraduate Research Symposium in 1998. Scholars Day 2015 celebrates the creative and scholarly accomplishments of students across all academic disciplines. We are excited that you are here to share in the work of these faculty-mentored student scholars. The importance of undergraduate research at Le Moyne is seen in our students' achievements, including having their work published in scholarly journals, presenting it both on campus and at professional meetings, producing art exhibitions and theatrical work, and being accepted to a wide variety of post-graduate programs of study. Following in the tradition initiated three years ago, we are happy to welcome the return of a Le Moyne College graduate, Kelsey Woodrick '13.

*Jennifer Gurley, Ph.D.*

*Associate Professor of English and Associate McDevitt Chair and Director of Undergraduate Research*

## FROM THE PRESIDENT

### Welcome to Scholars Day!

The literature on undergraduate research reveals a wide variety of benefits, including greater student interest in the field, greater understanding of how problems are defined and approached (i.e., how to think like a scientist or psychologist or historian), greater student confidence in the ability to conduct research, and greater involvement in the learning process through active rather than passive learning. Undergraduate students who engage in research report an increased awareness of how small pieces of knowledge contribute to a greater understanding of their disciplines, gains in problem-solving and critical-thinking skills, and the ability to apply theoretical knowledge to real problems.

Thanks for joining us in this celebration of scholarship.

*Linda M. LeMura, Ph.D.*

*President*

## FROM THE PROVOST

Today's showcase of undergraduate research and scholarly work at Le Moyne College underlines the achievements of our students, the dedication of their faculty mentors, and the College's commitment to academic excellence. The honorees in this ceremony, Le Moyne College's undergraduate student-scholars, are joining one of humanity's great ongoing projects – the extension of knowledge and understanding. We honor them not only for their intelligence and ambition but also for their collaboration within this tradition. Thus we acknowledge them as colleagues as well as students. Thanks for joining us in this celebration of scholarship.

*Thomas Brockelman, Ph.D.*

*Interim Provost and Vice President for Academic Affairs*

## FROM THE DEAN OF ARTS AND SCIENCES

Welcome from the College of Arts and Sciences to Scholars Day, one of the finest traditions here at Le Moyne. Scholars Day foregrounds not only the variety and breadth of study which our students pursue, but also the ways in which our most ambitious students become active researchers and participants in their chosen fields. Through their dedication to these projects and their close working relationships with faculty mentors, these high-achieving individuals have explored what it means actively to live the life of the mind; to ask a question and answer it; and to pose an idea and follow it through to resolution. The results they share today reflect their ambition, hard work, and creativity, as well as the accumulated skills and knowledge they have painstakingly gathered throughout their time here at Le Moyne. We are immensely proud of these students' achievements, grateful to the faculty who have worked with and guided them so diligently, and delighted to share with each of you today's celebrations of their successes.

*Kathleen Costello-Sullivan, Ph.D.  
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. Today we celebrate this relationship and, most of all, the Le Moyne students who are poised to become the innovators and leaders of tomorrow.

*James Joseph '83, M.P.A.  
Dean of the Madden School of Business*

## FROM THE DEAN OF GRADUATE AND 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 intimate relationship between student and faculty mentor that will ultimately produce a graduate who has the mental capacity and passion to truly 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 School of Graduate and 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.

*Dennis R. DePerro, Ed.D.  
Dean of the School of Graduate and Professional Studies*

## SCHEDULE OF EVENTS

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8 – 9:30 A.M.	CONTINENTAL BREAKFAST
8 – 8:15 A.M.	WELCOMING REMARKS <i>Jennifer Gurley, Ph.D.</i> <i>Associate Professor of English and Associate McDevitt Chair and Director of Undergraduate Research</i> <i>James Joseph '83, M.P.A.</i> <i>Dean of the Madden School of Business</i>
8:15 A.M. – NOON	MORNING PRESENTATION SESSIONS
NOON – 1 P.M.	LUNCH
12:15 – 1 P.M.	GUEST SPEAKER <i>KELSEY WOODRICK '13</i>
1 – 5 P.M.	AFTERNOON PRESENTATION SESSIONS
3 – 5 P.M.	POSTER SESSION

## SCHEDULE OF SESSIONS

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### MORNING SESSION

8:15 – 8:30 a.m.	Promoting the Use of Popular Media to Help Elementary Students Learn about Moral Ethics <i>Skye Rode, mathematics</i>
8:30 – 8:45 a.m.	Mother Cabrini and Italian Immigration to the United States: Working Where the Need Was Most <i>Anthony Rufo, history</i>
8:45 – 9 a.m.	More than a Molecule: The Influence of Hope in the Healing Process <i>Danielle Kealy, biological sciences</i>
9 – 9:15 a.m.	A Comparative Study of Women in the Crimean War (1854-1856) to Women in the American Civil War (1861-1865) <i>Timothy Fandrich, history</i>
9:15 – 9:30 a.m.	Role of Fatty Acid Binding Protein 7 (fabp7) During Zebrafish Retinal Development <i>Andrew Tynon, biological sciences</i>

## SCHEDULE OF SESSIONS

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- 9:30 – 9:45 a.m. The New Commodity Fetishism: An Empirical Investigation of the Role of Cynicism in Marketplace Reification  
*Joshua Scalzetti, sociology*
- 9:45 – 10 a.m. ‘The Beauty of Death We All Adore’: Murder Narratives in Heavy Metal Music  
*Daniel R. Barbour, communication*
- 10 – 10:15 a.m. Confronting the Effects of 0.9% Saline Administration on Breathing  
*Taylor Glausen, biological sciences, concentration in neurobiology*
- 10:15 – 10:30 a.m. La Grande Illusion of Social Class  
*Alexander Leblond, history*
- 10:30 – 10:45 a.m. Effectiveness of Mood Induction Techniques: A Comparison of Odors and Music  
*Melissa Mastin, psychology*
- 10:45 – 11 a.m. Prevalence *Borrelia burgdorferi* in *Ixodes scapularis* at Le Moyne College  
*Alexis Donohue, biological sciences*
- 11 – 11:15 a.m. Breaking Barriers: A Gender Conscious Analysis of Same-Sex Marriage Laws  
*Patrick J. Harris, English*
- 11:15 – 11:30 a.m. Assessment of Winter and Spring Observation Dates of Migratory Birds in New York: 110 Years of Data  
*Christopher Klee, biological sciences*
- 11:30 – 11:45 a.m. An Analysis of Historical and Non-Scientifically Based Dental Practices in North Africa and Western and Southern Asia  
*Hadjer Sahraoui, biological sciences*
- 11:45 a.m. – Noon The Coming of *Salomé*: Wilde’s Fifth Gospel Religion  
*Francesca Considine, English, concentration in literature*

### **NOON – 1 P.M. LUNCH**

- 12:15 – 1 P.M. Guest Speaker Kelsey Woodrick ’13

## SCHEDULE OF SESSIONS

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### AFTERNOON SESSION

- 1 – 1:15 p.m. Retinal Regeneration and her4/td Tomato Expression in Danio Rerio  
*Melissa Horton, biological sciences*
- 1:15 – 1:30 p.m. The Utility of DNA Barcoding for Species Identification and Investigation of Hybridization between Two Fishes  
*Ronald Lowe, biological sciences*
- 1:30 – 1:45 p.m. Assessment of Winter and Spring Observation Dates of Migratory Birds in Massachusetts: 81 Years of Data  
*Daniel Bolster, environmental science systems*
- 1:45 – 2 p.m. The Falklands Revisited: An Analysis of the Fates of Argentina and Great Britain Before, During, and After the Falklands War  
*Adam Thorne, political science, history*
- 2 – 2:15 p.m. Acoustic Levitation  
*Grant Farrokh, physics*
- 2:15 – 2:30 p.m. Teaching American Philosophy: A Website for High School Teachers Sponsored by the National Endowment for the Humanities  
*Madison Haheesy, English*
- 2:30 – 2:45 p.m. Bennington, Vermont: A Marxist Approach  
*Catherine Sharkey, peace and global studies, sociology concentrating in anthropology*
- 2:45 – 3 p.m. Price Tags: Faces of Human Slavery  
*Kailey McDonald, peace and global studies, political science*
- 3 – 3:15 p.m. Bismuth-Based Heterobimetallics  
*Brian Wilson, chemical engineering*
- 3:15 – 3:30 p.m. Ventilation in a Small Cohort of Senescent Ts65Dn Mice Compared to Controls  
*Bradley Kou, biological sciences*
- 3:30 – 3:45 p.m. GlassNav: Exploring Augmented Reality in Maritime Navigation  
*Jean-Philippe Rancy, management and leadership, information systems*
- 3:45 – 4 p.m. Response to Arctic Ocean Oil Spills  
*Christopher Rizzo, information systems*
- 4 – 4:15 p.m. Religious Fundamentalism, Psychopathy, and Violence  
*Taylor Lewis, psychology*
- 4:15 – 4:30 p.m. Mary? An Integral Honors Dance Thesis  
*Kimberly Grader, theatre arts, English, concentration in creative writing*

## SCHEDULE OF SESSIONS

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- 4:30 – 4:45 p.m.      When the Going Gets Rough, Water Bears Get Tough: A Survey of  
Cryptobiotic Tardigrades in Onondaga County, N.Y.  
*Tiffany Meador, biological sciences*
- 4:45 – 5 p.m.         Sports and American Society  
*Daniela J. Tartaro, peace and global studies*
- 5 – 5:15 p.m.        Strategy and Culture: Cultural Awareness Training in the United  
States Military  
*Sarah M. Harris, history*

### 3-5 P.M. POSTER SESSION

Diversity of the Green Algal Family Hydrodictyaceae in Central New York State  
*Afsah Chohan, biological sciences*

Ventilation in a Model of Down Syndrome  
*Morgan Goodell, biological sciences, minor in mathematics*

Synthesis of Tetragermyl Methanes as Molecular Beam Epitaxy Precursors  
*Colin Reynolds, biological sciences*

Design of a Fast Neutron Spectrometer for Measuring Background Radiation  
*Joseph Shupperd, physics*

SUMOylation in Chlamydomons Reinhardtii  
*Emily Mahoney, biological sciences and Devin Clegg, biological sciences*

Effects of Capsaicin Administration on Ventilation in Aging Mice  
*Sarah Ruby, biological sciences and Angela Le, biological sciences*

Ventilation During Hindlimb Casting in Mice  
*Katelynn E. Roffo, biological sciences*

I Want To Be Different Like Everybody Else  
*Alicia Zielenski, management and leadership, psychology*

Investigation of 2-Butoxyethanol's Effect on Lysozyme Activity  
*Thomas Barber, biological sciences*

Synthesis of Heterocyclic Isoindoline Derivatives Using Bis-Trichloroacetimidates  
*Allen Prusinowski, chemistry*

What Makes a Starter: How Racism and Other Factors Play a Role in Perceiving Athletes  
*Ashley LaBarge, psychology*

Microwave and Ultrasound Promoted Synthesis of Novel Methylated and Fluorinated  
Carbocyclic Curcuminoid Derivatives  
*Allen Prusinowski*

# ABSTRACTS, FACULTY MENTORS, AND BIOGRAPHIES: STUDENT SCHOLARS RESEARCH AND POSTER PRESENTATIONS

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8:15 – 8:30 a.m.

## PROMOTING THE USE OF POPULAR MEDIA TO HELP ELEMENTARY STUDENTS LEARN ABOUT MORAL ETHICS

Skye Rode, mathematics

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Faculty Mentor: Tabor Fisher, Ph.D.

**Abstract:** Popular children’s media have great potential as educational sources because they include comprehensive subjects and because children prefer them to traditional classroom media. Consequently, learning, especially about morality, should involve popular media. Critics disapprove of these media because of exposure to stereotyping and marginalization, imaginary elements, and the ethics of characters, which are problems because of indoctrination. If children learn critical thinking, indoctrination can be overcome, allowing teachers to use children’s interests, like popular media, during learning.

**Bio:** Skye Rode has lived around Central New York all her life and came to Le Moyne with a presidential scholarship as a mathematics major with a childhood and special education concentration. She was invited to join the Integral Honors program her freshman year and the International Education Honors Society, Kappa Delta Pi, her junior year. Last fall Skye student-taught in two elementary schools and is eagerly awaiting graduation and her first elementary teaching job.

8:30 – 8:45 a.m.

## MOTHER CABRINI AND ITALIAN IMMIGRATION TO THE UNITED STATES: WORKING WHERE THE NEED WAS MOST

Anthony Rufo, history

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Faculty Mentor: Leigh Fought, Ph.D.

**Abstract:** Italian immigrants to the United States in and around 1900 faced uncertainty in areas of nationality, religion, war and American society. Left helpless, many had nowhere to turn for answers. Mother Cabrini, a fellow Italian and founder of the Missionary Sisters of the Sacred Heart, aided her compatriots in their transition to a new land. Her ability to assist them through their uncertainties defined her success as a missionary among the Italian immigrant population.

**Bio:** Anthony Rufo is a senior majoring in history and minoring in Italian. He is a presidential scholar as well as a resident advisor on campus. He has begun graduate courses in the field of education at Le Moyne and plans to become certified to teach history in grades 7-12. He would like to thank his family, friends, and Dr. Fought for their help throughout this process.



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8:45 – 9 a.m.

## MORE THAN A MOLECULE: THE INFLUENCE OF HOPE IN THE HEALING PROCESS

Danielle Kealy, biological sciences

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Faculty Mentors: Theresa Beaty, Ph.D.; Christina Michaelson, Ph.D.; and Linda Pennisi, M.F.A.

**Abstract:** I argue that a whole-person approach to medical care is beneficial to the healing process because of the mind-body connection that is demonstrated by the placebo effect. A hopeful mindset can come from confidence in a physician, religious faith, or narratives of medical experiences and can benefit the healing process through the placebo effect. Doctors must consider emotional factors alongside the physical to provide quality, whole-person care.

**Bio:** Danielle Kealy is a junior biological sciences major. She plans on applying to physician assistant studies programs after graduating from Le Moyne. This project has been useful to her because she increased her knowledge about the importance of whole-person care, an idea that resonates strongly with Jesuit values. This project will positively influence the way she practices medicine upon entering the health care field.

9 – 9:15 a.m.

## A COMPARATIVE STUDY OF WOMEN IN THE CRIMEAN WAR (1854-1856) TO WOMEN IN THE AMERICAN CIVIL WAR (1861-1865)

Timothy Fandrich, history

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Faculty Mentor: Leigh Fought, Ph.D.

**Abstract:** In this project I take Emma E. Edmonds and Susie King Taylor of the American Civil War and compare them to Florence Nightingale and Mary Seacole of the Crimean War. The thesis is that these women went to war because they saw it as their moral duty. At first I give a brief overview of each woman's story, and then toward the end I compare their stories in order to justify the thesis.

**Bio:** Timothy Fandrich is a junior at Le Moyne College who is majoring in history with a concentration in education. This past semester he was awarded a spot on the Dean's list, and he was admitted into the five-year education program here at Le Moyne. Timothy hopes to receive a doctorate in Georgian Era (1714-1830) British history.

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9:15 – 9:30 a.m.

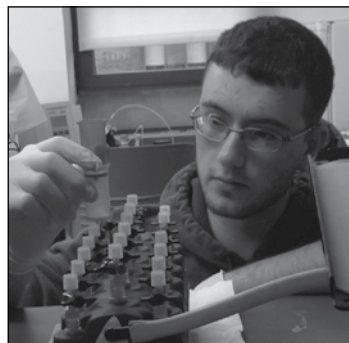
## ROLE OF FATTY ACID BINDING PROTEIN 7 (FABP7) DURING ZEBRAFISH RETINAL DEVELOPMENT

Andrew Tynon, biological sciences

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Faculty Mentor: Patrick Yurco, Ph.D.

**Abstract:** Recently, we have determined that fabp7 is highly unregulated during regeneration of the injured zebrafish retina. We are now examining its role during retinal development in zebrafish. Western blot techniques will demonstrate the effectiveness of morpholino antisense oligos (MO) in decreasing expression of fabp7. By comparing MO zebrafish with wild-type zebrafish, we will learn more about significance of fabp7 during development. Ultimately, this research could expand our understanding of central nervous system development in humans.



**Bio:** Andrew Tynon plans to graduate from Le Moyne College in the spring of 2016 with a bachelor's degree in biological sciences and minors in chemistry, philosophy and psychology. Following graduation, he aspires to participate in an M.D. and Ph.D. program in neuroscience. He would like to give special thanks to Dr. Yurco for his continued mentorship and support, the McDevitt Center for providing a fellowship for this project, and everyone else at Le Moyne who has helped and supported him.

9:30 – 9:45 a.m.

## THE NEW COMMODITY FETISHISM: AN EMPIRICAL INVESTIGATION OF THE ROLE OF CYNICISM IN MARKETPLACE REIFICATION

Joshua Scalzetti, sociology

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Faculty Mentor: Matthew Loveland, Ph.D.

**Abstract:** The marketplace remains a site shrouded in ideological mists and populated with hosts of phantoms, despite the increasingly skeptical disposition of the average consumer. Consumer cynicism is examined in this study in the context of commodity fetishism, where the consumer is aware of the systematic misrepresentation of commodities but behaves and purchases as if he was not. Ethical consumption is explored in this context using responses to a survey administered to Le Moyne College students.





**Bio:** Josh Scalzetti is a senior in the Integral Honors Program with a major in sociology and minor in philosophy. He is interested in critical theory, social philosophy and psychology, and cultural studies. Josh plans to attend a doctoral program related to the social sciences in the future.

9:45 – 10 a.m.

## “THE BEAUTY OF DEATH WE ALL ADORE”: MURDER NARRATIVES IN HEAVY METAL MUSIC

Daniel R. Barbour, communication

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Faculty Mentors: Daniel Roche, Ph.D.; Holly Rine, Ph.D.; and Edward Ruchalski

**Abstract:** Metal as a genre is idiosyncratically well suited to expressing the morbid lyrical content of the murder ballad form. Metal’s proclivity toward dark atmospheres and subject matter, discordant or evil sounds, and lyrical focus on storytelling all combine to make it perhaps the best contemporary musical genre for exploring the subjects of murder and violence. To demonstrate this, I have composed, performed, and recorded a metal song cycle telling the story of the Manson family.



**Bio:** Daniel Barbour is a senior communication major with a focus in music journalism. He has written music reviews for *Two Guys Metal Reviews*, *The Dolphin*, and *The Post-Standard* and has written and recorded music both solo and with his folk-metal band Hounds of Annwn, which released its debut demo, *Stirling*, in 2013. He intends to pursue a career in music journalism and to continue writing and recording music for many years to come.

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10 – 10:15 a.m.

## CONFRONTING THE EFFECTS OF 0.9% SALINE ADMINISTRATION ON BREATHING

Taylor Glausen, biological sciences, concentration in neurobiology

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Faculty Mentor: Lara DeRuisseau, Ph.D.

**Abstract:** Saline (0.9%) is used in both the hospital and research settings as a resuscitation solution and as a vehicle for compound administration. The present study is intended to elucidate the possible impact of the administration of saline on breathing, through quantifying breathing and collecting the partial pressure of oxygen and carbon dioxide in arterial blood. We tested the hypothesis that ventilation would be higher in mice prior to saline administration compared to after administration.



**Bio:** Taylor Glausen is a senior biological sciences major with a concentration in neurobiology and minors in religious studies and visual arts. In the fall of 2015, Taylor plans to attend graduate school to obtain a doctorate in neuroscience. Taylor was recently awarded the David S. Bruce Undergraduate Award by the APS (American Physiological Society) and will present her data at the 2015 Experimental Biology Conference. Taylor would like to thank Dr. DeRuisseau for all of her support and guidance.

10:15 – 10:30 a.m.

## LA GRANDE ILLUSION OF SOCIAL CLASS

Alexander Leblond, history

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Faculty Mentor: Julie Grossman, Ph.D.

**Abstract:** In Jean Renoir's 1937 film, *La Grande Illusion*, French prisoners of war attempt to escape from their German guards during World War I. This presentation explores the illusions of social class as presented in the film.

**Bio:** Alexander Leblond is a sophomore history major with an interest in theatre and film studies.

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10:30 – 10:45 a.m.

## EFFECTIVENESS OF MOOD INDUCTION TECHNIQUES: A COMPARISON OF ODORS AND MUSIC

Melissa Mastin, psychology

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Faculty Mentor: Theresa White, Ph.D.

**Abstract:** This study examined whether odor or music is more effective in inducing mood. To test the effectiveness, 49 students completed mood assessments prior to, during, and after the exposure of an odorant or music. Mood assessments did not differ between odor groups or music groups nor did the groups show a shift in mood. This indicates that neither stimulus influenced mood induction, possibly because they were equated for strength, pleasantness, familiarity and irritation.



**Bio:** Melissa Mastin is a senior psychology major with a minor in sociology. She plans to obtain a graduate degree in occupational therapy in the future. She would like to thank the members of her Departmental Honors Committee as well as the Student Research Committee for their support of this project.

10:45 – 11 a.m.

## PREVALENCE *BORRELIA BURGENDORFERI* IN *IXODES SCAPULARIS* AT LE MOYNE COLLEGE

Alexis Donohue, biological sciences

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Faculty Mentors: Patrick Yurco, Ph.D., and Sherilyn Smith, Ph.D.

**Abstract:** *Ixodes scapularis*, commonly known as the deer tick, is most densely populated in the Northeastern United States and is the primary vector for Lyme disease, which is caused by the spirochete *Borrelia burgdorferi*. By targeting and amplifying the DNA from deer ticks collected at Le Moyne College, we can determine how many of them are infected with *B. burgdorferi* and create awareness of the risk of Lyme disease at Le Moyne College.



**Bio:** Alexis Donohue is a senior biological sciences major. She has a concentration in health professions and minors in chemistry and environmental science systems. After graduation, she will attend graduate school to pursue a master's degree in environmental health sciences. Alexis would like to thank Dr. Yurco and Dr. Smith for all of their support with this project.

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11 – 11:15 a.m.

## BREAKING BARRIERS: A GENDER-CONSCIOUS ANALYSIS OF SAME-SEX MARRIAGE LAWS

Patrick J. Harris, English, with a concentration in literature

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Faculty Mentor: Ludger Viefhues-Bailey, Ph.D.

**Abstract:** The project is an interdisciplinary examination of the roles that gender norms, hegemonic masculinity and patriarchy have played in the jurisprudence of same-sex marriage laws in the United States since the 1950s. I argue that challenges to the patriarchy over the last half-century have altered the way in which the courts approach and understand the constitutionality of same-sex marriage.

**Bio:** Patrick Harris is a senior English major with a minor in legal studies. He is a member of the Integral Honors Program and has spent the last two years working on his final thesis. He plans to attend law school after graduation to pursue a degree in environmental law.



11:15 – 11:30 a.m.

## ASSESSMENT OF WINTER AND SPRING OBSERVATION DATES OF MIGRATORY BIRDS IN NEW YORK: 110 YEARS OF DATA

Christopher Klee, biological sciences

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Faculty Mentor: Donald McCrimmon, Ph.D.

**Abstract:** The project analyzes bird observations collected by citizen scientists in New York from 1903 – 2013 for evidence of changing trends in migration dates as atmospheric temperatures have increased over that span of time. For 69 species, statistically significant decreases in the dates birds were first observed were demonstrated via both parametric and non-parametric comparisons. Average and median arrival dates were 24 and 18 days earlier, respectively, between 1903 – 1950 as compared with 2003 – 2013.

**Bio:** Chris Klee is a senior biology major and resident advisor in Nelligan Hall. He spent the summer of 2014 working on a large portion of this project as a McDevitt Scholar in ecology. He will be attending the University at Buffalo School of Dental Medicine next year as a member of the Class of 2019.

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11:30 a.m. – 11:45 a.m.

## AN ANALYSIS OF HISTORICAL AND NON-SCIENTIFICALLY BASED DENTAL PRACTICES IN NORTH AFRICA AND WESTERN AND SOUTHERN ASIA

Hadjer Sahraoui, biological sciences

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Faculty Mentor: Theresa Beaty, Ph.D.

**Abstract:** This project explores the history of dental practices in North Africa and Western and Southern Asia. While many of these treatments have proven to be ineffective, some, such as the habitual use of plants for oral hygiene purposes, may have implications for global use in modern times. Scientific laboratory research was performed to investigate the antimicrobial effects of *Salvadora persica* and *Azadirachta indica*, two “chewing sticks,” on selected oral pathogens.



**Bio:** Hadjer Sahraoui is a junior biological sciences major in the Integral Honors Program. She will be attending the University at Buffalo School of Dental Medicine beginning in the fall of 2015.

11:45 – Noon

## THE COMING OF SALOMÉ: WILDE’S FIFTH GOSPEL RELIGION

Francesca Considine, English, concentration in literature

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Faculty Mentors: Michael Davis, Ph.D., and Karmen MacKendrick, Ph.D.

**Abstract:** An enigmatic character, Oscar Wilde’s religious views were often ambiguous. Favoring his own interpretation of religion, Wilde wrote the tragedy *Salomé* in anticipation of writing what scholar Jennifer Speaks calls “the fifth gospel according to Oscar Wilde.” In my paper, I will attempt to analyze this new religion from an academic and literary standpoint within the tragedy *Salomé*, illuminating the ways that Wilde and others were influenced by religious changes in the 19th century.

**Bio:** A transfer student, Francesca Considine earned an associate degree in English literature with honors from Cayuga Community College. She transferred to Le Moyne as an English major with a concentration in literature with the intention of pursuing a doctorate in British literature specializing in the 19th and 20th century. After graduation this May, she plans on applying to a master’s degree program through the Peace Corps and specializing in education before applying to doctoral school.

12:15 – 1:00 p.m.

GUEST SPEAKER

Kelsey Woodrick '13

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Kelsey Woodrick was a Fulbright grantee for the year 2013-2014 in Ubon Ratchathani, Thailand. She was one of 20 chosen throughout the United States. Woodrick taught English at a secondary school under the role as an ETA (English teaching assistant). She also interned at Thailand's Ministry of Education in the Policy and Strategy Bureau, as well as the International Relations Bureau, during her stay in Thailand. Previous to the Fulbright award, Woodrick was a recipient of the Freeman Foundation Fellowship through the ASIANetwork Foundation. She conducted research with Professor Deborah Tooker, Ph.D., and fellow Le Moyne students in the hills of Chiang Rai, Thailand. Woodrick earned a bachelor's degree in English from Le Moyne (2013), with a concentration in literature. She also acquired an education concentration in TESOL (teaching English to speakers of other languages), as well as a minor in anthropology. Currently Woodrick is teaching English as a second language to new refugees living in Oneida County. Passionate about culture and education, Woodrick aspires to pursue a career in international education development, working with marginalized ethnicities to improve quality and access to education.



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1 – 1:15 p.m.

## RETINAL REGENERATION AND *HER4*/TDTOMATO EXPRESSION IN *DANIO RERIO*

Melissa Horton, biological sciences

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Faculty Mentor: Patrick Yurco, Ph.D.

**Abstract:** Zebrafish embryos were collected and injected with plasmid DNA to develop a transgenic line of zebrafish that can be used in the future to study retinal development and regeneration. Zebrafish are an excellent model to use since they are able to regenerate cells their central nervous system. Studying the zebrafish central nervous system and its regenerative properties can lead to answers as to why humans are unable to regenerate their central nervous system post-injury.

**Bio:** Melissa Horton is a senior biological sciences major with minors in chemistry and psychology. She is a resident advisor in St. Mary's Hall and the vice president of CARE. She aspires to attend medical school following graduation. Melissa would like to thank Dr. Yurco for being an excellent research mentor and the Student Research Committee for funding her project.

1:15 – 1:30 p.m.

## THE UTILITY OF DNA BARCODING FOR SPECIES IDENTIFICATION AND INVESTIGATION OF HYBRIDIZATION BETWEEN TWO FISHES

Ronald Lowe, biological sciences

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Faculty Mentor: Devon Keeney, Ph.D.

**Abstract:** DNA barcoding allows for the identification of morphologically similar species through the amplification and sequencing of specific barcode genes. This project examines the utility of this approach to distinguish between the fish species black redhorse (*Moxostoma duquesnei*) and golden redhorse (*Moxostoma erythrurum*) collected from rivers in Illinois. The overall goal is to be able to accurately identify members of each species of fish and investigate if hybridization between the two species is occurring.



**Bio:** Ronald Lowe is currently a junior at Le Moyne College majoring in biological sciences. He is involved with many student-run clubs and is a member of the varsity swim team. Upon graduation in the spring of 2016, Ronald hopes to attend the SUNY Buffalo School of Dental Medicine. He would like to thank Dr. Keeney and the Department of Biological Sciences for this great opportunity as well as the Student Research Committee for funding the project.

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1:30 – 1:45 p.m.

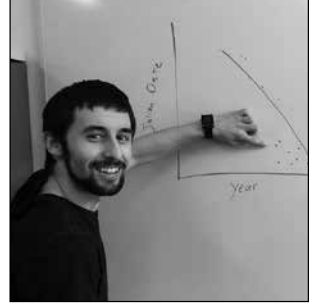
## ASSESSMENT OF WINTER AND SPRING OBSERVATION DATES OF MIGRATORY BIRDS IN MASSACHUSETTS: 81 YEARS OF DATA

Daniel Bolster, environmental science systems

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Faculty Mentor: Donald McCrimmon, Ph.D.

**Abstract:** The project analyzes bird observations collected by citizen scientists in Massachusetts from 1932 – 2013 for evidence of changing trends in migration dates as atmospheric temperatures have increased over that span of time. For 68 species, statistically significant decreases in the dates birds were observed in the spring were demonstrated via both parametric and non-parametric comparisons. Average and median arrival dates were 17 and eight days earlier, respectively, between 1932 – 1950 as compared to 2003 – 2013.



**Bio:** Daniel Bolster is an environmental science systems major, chemistry minor, and a junior at Le Moyne College. He is a McDevitt Scholar who embraces research and difficult courses on his pathway to graduate school. He is currently pursuing multiple summer internships in the environmental field. His future plans include deepening his knowledge of the environmental field to find a job in government research, perhaps with the Environmental Protection Agency.

1:45 – 2 p.m.

## THE FALKLANDS REVISITED: AN ANALYSIS OF THE FATES OF ARGENTINA AND GREAT BRITAIN BEFORE, DURING, AND AFTER THE FALKLANDS WAR

Adam Thorne, political science, history

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Faculty Mentor: Bruce Erickson, Ph.D.

**Abstract:** Both Argentina's and Britain's economies were poor in the early 1980s; this made both governments unpopular. Argentina invaded Britain's Falkland Islands to distract citizens from its problems. Britain reacted strongly, and won in two months. Prime Minister Margaret Thatcher was able to secure a majority in the 1983 election and continued implementing her policies. Conversely, pressures pushed the junta to hold democratic elections in 1983, and military rule has not returned to Argentina since.

**Bio:** Adam Thorne is senior with dual majors in political science and history. British politics have been a particular interest of his ever since he arrived Le Moyne in the fall of 2011, and partly inspired his project. He hopes to attend graduate school in history at Boston College, George Mason University, or La Salle University. Outside of academia, Adam enjoys tennis, golf, and the (occasional) card game.

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2 – 2:15 p.m.

## ACOUSTIC LEVITATION

Grant Farrokh, physics

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Faculty Mentor: Stamatios Kyrkos, Ph.D.

**Abstract:** Acoustic levitation is the phenomenon by which objects can be held stationary in midair using high intensity sound waves. This effect has seen practical applications in a variety of fields as a means of positioning and manipulating materials in a contact-free environment. The aim of this project was to research acoustic levitation and subsequently design and fabricate a system for levitating small samples in a single axis.

**Bio:** Grant Farrokh is a senior physics major with a concentration in mechanical engineering and minors in mathematics and visual arts. After graduation, he will go on to pursue a master's degree in mechanical engineering at Syracuse University. Grant would like to thank the physics faculty for their help and support throughout this project.



2:15 – 2:30 p.m.

## TEACHING AMERICAN PHILOSOPHY: A WEBSITE FOR HIGH SCHOOL TEACHERS SPONSORED BY THE NATIONAL ENDOWMENT FOR THE HUMANITIES

Madison Haehy, English

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Faculty Mentor: Jennifer Gurley, Ph.D.

**Abstract:** The National Endowment for the Humanities sponsored the Teaching American Philosophy website to be created by Dr. Jennifer Gurley of Le Moyne. The website includes 11 digitized primary texts written by Edwards, Jefferson, Emerson and James, a clickable interactive timeline of the American intellectual history between the 18th and 20th centuries, and lesson plans for high school teachers to use engaging these texts and the timeline. My work entailed helping Dr. Gurley finalize the primary documents with annotations, obtaining images for the timeline and copyright permissions for those documents, and writing lesson plans using the website.





**Bio:** Madison Hahey is graduating from Le Moyne in May 2015 with a Bachelor of Arts in English and a minor in advanced writing. Upon graduation, she plans to return to Le Moyne as a graduate student in the Master of Business Administration program. She would like to thank Dr. Jennifer Gurley for the opportunity to work on the Teaching American Philosophy website.

2:30 – 2:45 p.m.

### BENNINGTON, VERMONT: A MARXIST APPROACH

Catherine Sharkey, peace and global studies, and sociology  
(concentrating in anthropology)

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Faculty Mentor: Dr. Deborah Tooker

**Abstract:** Marx states that the upper class in society controls the intellectual power to mold the community's way of thinking, ultimately creating a local ideology. An ideology is seen as the ideals of a community. In Bennington, Vt., the ideology reflects a community that is united through its pride in its local Revolutionary Era heritage. Though the upper-classes work with preserving the heritage, they have unconsciously hidden the growing economic and social gap in Bennington.

**Bio:** Catherine Sharkey is a senior honors student finishing her dual degree in peace and global studies and sociology, concentrating in anthropology. She has plans to start her graduate degree in the next year or two to continue her studies in anthropology. Her ultimate goal for the future is to travel abroad with the intention of immersing herself in a foreign community to learn more about other cultures' worldviews.

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2:45 – 3 p.m.

## PRICE TAGS: FACES OF HUMAN SLAVERY

Kailey McDonald, peace and global studies, political science

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Faculty Mentors: Jon Carter, Ph.D.; Linda Pennisi;  
Holly Rine, Ph.D.

**Abstract:** *Price Tags* is a collection of poetry examining the evolution of slavery from Antebellum American slavery to today's market in labor. The poetry examines different incarnations of slavery in different eras in contemporary history. Each poem carves a face, a witness into the bedrock of slavery upon which our global capitalist economy is built. Poetry mimics the rhythm of a work song, and calls to mind the incantations of the ancestors.

**Bio:** Kailey McDonald is a senior political science and peace and global studies double major in the Integral Honors Program. She has had two short stories published previously in *The Healing Muse* and *Stone Canoe*. She is hoping to continue exploring documentary and political poetry as a medium in Latin America after graduation.



3 – 3:15 p.m.

## BISMUTH-BASED HETEROBIMETALLICS

Brian Wilson, chemical engineering

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Faculty Mentor: Karin Ruhlandt, Ph.D.

**Abstract:** Metal-organic chemical vapor deposition (MOCVD) precursors are compounds that have properties that are favorable in creating thin films. A particular desired precursor group is bismuth heterobimetallic compounds due to their use in semiconductor and computer chip thin films. In the past, compounds containing the ligand 1,1,1,3,3,3-hexafluoro-2-phenyl-2-propanol (HFPP), has been used in the creation of alkaline earth/alkaline heterobimetallic precursors. This work attempts to synthesize bismuth alkali/ alkaline earth heterobimetallic compounds using the (HFPP) ligand.

**Bio:** Brian Wilson is a sophomore majoring in chemical engineering. He has conducted research as part of the Ruhlandt group since the summer of 2014 when he was an REU student there. He plans on continue his research into this upcoming summer. After college, Brian plans on going to graduate school in either chemistry or chemical engineering in the hopes of one day becoming a professor.

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3:15 – 3:30 p.m.

## VENTILATION IN A SMALL COHORT OF SENESCENT Ts65Dn MICE COMPARED TO CONTROLS

Bradley Kou, biological sciences

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Faculty Mentor: Lara Deruisseau, Ph.D.

**Abstract:** Ts65Dn are a mouse model that recapitulates the Down syndrome genetic disorder. Apnea, or cessation of breathing, has been known to occur in children with Down syndrome during sleep, although the changes in breathing in this population have not been studied in older age groups. The goal of the project was to test the breathing patterns of senescent Ts65Dn mice to littermates in normal, hypoxic, and hypercapnic conditions using barometric plethysmography.

**Bio:** Bradley Kou is a senior from Markham, Ontario, who plans on graduating with a bachelor's degree in biological sciences and a minor in chemistry. He is president of the Tae Kwon Do Club and enjoys playing ultimate Frisbee. After graduation, he plans on attending dental school at Case Western Reserve University.

3:30 – 3:45 p.m.

## GLASSNAV: EXPLORING AUGMENTED REALITY IN MARITIME NAVIGATION

Jean-Philippe Rancy, management and leadership, information systems

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Faculty Mentor: Martha Grabowski, Ph.D.

**Abstract:** Augmented-reality (AR) technology combines reality with a virtualized environment by providing data that enhances our senses and could be perceived as a sixth sense. AR is reaching a level of importance that calls for its consideration in today's information systems. Such systems that could implement AR technology are Maritime Navigation Systems. AR technologies like Google Glass can harness the functions of these integrated navigation systems and remotely provide interaction with these technologies anywhere on deck.

**Bio:** Jean-Philippe Rancy has a passion for information technology and has undertaken many internships and opportunities to enrich his technical skills. His interest in IT started in his elementary school years with community service projects. In high school, his skills developed as he started with technical database design, implementing Web design and server management projects, and improving the overall technology. Jean-Philippe is currently taking business and information systems courses at Le Moynes to practice and master his technical skills.

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3:45 – 4 p.m.

## RESPONSE TO ARCTIC OCEAN OIL SPILLS

Christopher Rizzo, information systems

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Faculty Mentor: Martha Grabowski, Ph.D.

**Abstract:** The presentation will be about a database developed to respond to oil spills in the Arctic region. More countries are using the Arctic as a means of travel, which causes concern as to what to do if an oil spill occurs. A prepared response needs to be in place in case of an oil spill in the Arctic Ocean. My database model will show how the United States Coast Guard can respond to oil spills effectively. Discussion of international efforts on oil spill responses and equipment used will also be available.



**Bio:** Christopher Rizzo is a junior at Le Moyne College, where he is majoring in information systems. He has an associate degree in mechanical engineering. Christopher has a background in finance, accounting, engineering and information systems. After graduation, he plans to get a job in the field of information systems.

4 – 4:15 p.m.

## RELIGIOUS FUNDAMENTALISM, PSYCHOPATHY, AND VIOLENCE

Taylor Lewis, psychology

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Faculty Mentor: Vincent Hevern, Ph.D.

**Abstract:** My Integral Honors thesis discusses the ideas of religious fundamentalism and psychopathy, and looks at the commonalities between them. I argue that violence and the act of demonizing outside groups are two of the most prevalent ways in which these two groups are in common. My most prominent example is the Jonestown Massacre and the ways in which all three of these topics can be seen in this one example.



**Bio:** Apart from being in the Integral Honors Program at Le Moyne, Taylor Lewis has also been a member of Le Moyne's cross-country team for the last four years. She also is very involved in campus ministry, having led several retreats and attended various alternative breaks. After college, she hopes to work towards either a career in behavioral analysis in law enforcement or as a mental health counselor.

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4:15 – 4:30 p.m.

## MARY? AN INTEGRAL HONORS DANCE THESIS

Kimberly Grader, theater arts, English

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Faculty Mentors: Matthew Chiorini, Lawrence Crabtree, and Elizabeth Hayes, Ph.D.

**Abstract:** Though the woman in the Bible who anointed Christ has been immortalized by her association with the resurrection, few details are known about her, including her name, occupation, even age. This interpretation, presented in a Martha Graham choreographic style, combines scholarly understanding of the four Scriptural accounts of the anointing story (Matthew 26:6-13, Mark 14:3-9, Luke 7:37-50, and John 12:1-8, KJV) into movement as it pieces together this woman's true identity.



**Bio:** Kimberly Grader, a theatre arts/English double major and Integral Honors Program student concentrating in creative writing and minoring in advanced writing, arts administration, dance, music, and philosophy, is a business manager, graphic designer, Webmaster, and member of Phi Sigma Tau. Favorite roles include Lucy Law, *Fourth Graders*; Ariel, *A Tempest*; Anne, *La Cage*; Belle, *Beauty and the Beast*; and Wendy, *Peter Pan*. She has 16 years of dance experience. She thanks her dancers, mentors, and family for their support throughout this journey. She has been accepted to the most prestigious MFA acting program in London.

4:30 – 4:45 p.m.

## WHEN THE GOING GETS ROUGH, WATER BEARS GET TOUGH: A SURVEY OF CRYPTOBOTIC TARDIGRADES IN ONONDAGA COUNTY, N.Y.

Tiffany Meador, biological sciences

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Faculty Mentor: Sherilyn Smith, Ph.D.

**Abstract:** Tardigrades, also known as water bears, are often called extremophiles for their ability to enter a latent state of cryptobiosis when exposed to austere environments. Little information exists on the presence and distribution of tardigrades throughout New York. The objective of this research is to complete a survey of tardigrades in Onondaga County, N.Y., with the intention of identifying which species are present as well as the distribution of those species across the county.







**Bio:** Tiffany Meador came to Le Moyne College in 2013 as a retired Army combat medic looking to further her career in the medical field. She began doing research with Dr. Sherilyn Smith in the 2014 fall semester, and she hopes to continue her work until graduation. Tiffany plans to apply to the Physician Assistant Studies Program at Le Moyne this year to fulfill her goal of continuing to care for the people around her.

4:45 – 5 p.m.

### SPORTS AND AMERICAN SOCIETY

Daniela J. Tartaro, peace and global studies

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Faculty Mentor: Magdoleen Ierlan, Ph.D.

**Abstract:** This project explores people's current perceptions and understandings of sports in American society and further questions their opinions on hot topic issues within the sports world. Certain topics include compensation of athletes, salary caps and the importance of athletic programs in our society.

**Bio:** Daniela Tartaro is a senior peace and global studies major, sports marketing minor and member of the Integral Honors Program here at Le Moyne. After Le Moyne, she plans to attend graduate school where she hopes to study sports management and one day work in the sports field.

5 – 5:15 p.m.

### STRATEGY AND CULTURE: CULTURAL AWARENESS TRAINING IN THE UNITED STATES MILITARY

Sarah M. Harris, history

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Faculty Mentor: Deborah Tooker, Ph.D.

**Abstract:** The project is a multi-perspective examination of cultural awareness training in the military. The purpose is to examine the effects of varying anthropological approaches and applications used by the military to determine the role they should play in military training. Questions concerning the relationship between anthropologists and the military are also addressed.

**Bio:** Sarah Harris is a senior at Le Moyne College, majoring in history with a minor in anthropology. She is also a cadet of Syracuse University's Army R.O.T.C. program. This coming May, Sarah will be graduating from Le Moyne as well as commissioning active duty as a 2nd lieutenant in the Army's Medical Service Corps.

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## 3-5 P.M. POSTER SESSION

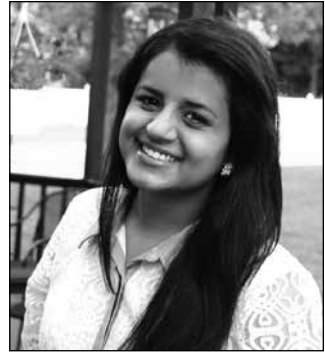
### DIVERSITY OF THE GREEN ALGAL FAMILY HYDRODICTYACEAE IN CENTRAL NEW YORK STATE

Afsah Chohan, biological sciences

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Faculty Mentor: Hilary McManus, Ph.D.

**Abstract:** The purpose of this study is to examine the diversity of the freshwater green algal family, Hydrodictyaceae, within Central New York State. Species of the family were previously classified using morphology alone, but recent studies of DNA sequence data show morphology can be misleading. Data from the chloroplast rbcL gene and phylogenetic analyses reveal the genetic diversity in species of Hydrodictyaceae collected from several bodies of water in the region.



**Bio:** Afsah Chohan is a senior biological sciences major. She plans on attending medical school and pursuing a career in the health professions. Afsah would like to thank Dr. McManus, the Student Research Committee, and the McDevitt Center.

### VENTILATION IN A MODEL OF DOWN SYNDROME

Morgan Goodell, B.S., biological sciences, minor in mathematics

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Faculty Mentor: Lara Deruisseau, Ph.D.

**Abstract:** Using a triplicated mouse model of Down syndrome, we studied the ventilation of controls and Ts65Dn mice at one year of age. Barometric plethysmography was used to study the pattern of breathing during exposure to room air, low oxygen levels (hypoxic air) and high carbon dioxide levels (hypercapnic air). Main variables collected were breaths/min, tidal volume, or size of each breath, minute ventilation, or the product of tidal volume and breaths/min and peak inspiratory flow



**Bio:** Morgan Goodell is a junior from Elmira, N.Y., majoring in biological sciences with a minor in mathematics. She is a member of the Loyola Companions Leadership Program on campus and is funded for research through the McDevitt Undergraduate Fellowship. In her free time, she likes to read, go for runs, and listen to music. After graduation she plans to attend medical school.

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## SYNTHESIS OF TETRAGERMYL METHANES AS MOLECULAR BEAM EPITAXY PRECURSORS

Colin Reynolds, biological science

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Faculty Mentors: Anna O'Brien, Ph.D.;  
Miriam Gillett-Kunnath, Ph.D.

**Abstract:** My research experience involved learning air sensitive Schlenk-line and glove box chemistry techniques. These techniques were used in an attempt to synthesize tetragermyl methanes,  $(\text{H}_3\text{Ge})_4\text{C}$ , that would be used as precursors for semiconductor growth via molecular beam epitaxy (MBE). The resulting  $\text{Ge}_4\text{C}$  semiconductor heterostructures could set the stage for further applications in hetero-junction bipolar transistors that, in theory, will increase the speed and efficiency of electronic devices such as phones and computers. For the synthesis of  $(\text{H}_3\text{Ge})_4\text{C}$ ,  $\text{GeCl}_2$  dioxane was reacted with tetrabromomethane in a solution of toluene. Stringent air-free conditions and freshly distilled/degassed solvents were used. The products will be characterized by melting point, FT-IR,  $^1\text{H}$  and  $^{13}\text{C}$  NMR.



**Bio:** Colin Reynolds is a sophomore biological sciences major with minors in psychology and business administration. Colin is from Endwell, N.Y., and his plans include medical school with interest in enrolling in a dual M.D.-Ph.D. program.

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## DESIGN OF A FAST NEUTRON SPECTROMETER FOR MEASURING BACKGROUND RADIATION

Joseph Shupperd, physics

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Faculty Mentor: Christopher Bass, Ph.D.

**Abstract:** Fast neutrons pose a problem for any low-threshold particle detector. A fast neutron spectrometer would allow for a high-resolution picture of what the background radiation is around a detector. This will help to better analyze data coming from a detector. This background picture is needed to differentiate false positives from actual events.

**Bio:** Joe Shupperd is a physics major with a concentration in mechanical engineering and a minor in mathematics. He is currently enrolled in the joint engineering program with Syracuse University. Joe has earned a McDevitt Fellowship for his work on this project. His future plans include going to graduate school for his doctorate in physics. He would like to thank Dr. Bass and the rest of the physics department for their support.



## SUMOYLATION IN *CHLAMYDOMONS REINHARDTII*

Emily Mahoney, biological sciences; Devin Clegg, biological sciences

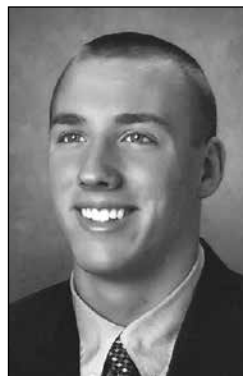
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Faculty Mentor: Beth F. Mitchell, Ph.D.

**Abstract:** Post-translational modifications are a topic of interest in the biological sciences. Many of these modifications have been studied in great detail. However, there is still a lot that is unknown. One such modification is the process of SUMOylation, in which a Small Ubiquitin-like Modifier (SUMO) group is attached to a protein. The purpose of our study is to isolate

SUMOylated proteins from the eukaryotic unicellular alga *Chlamydomonas reinhardtii* in both the whole cell protein extract and flagellar protein extract. Eventually we hope to identify the proteins modified in this way as well as to learn their functions.

**Bio:** Emily Mahoney is a senior biological sciences major who plans to attend graduate school and study biology. She plans to pursue a career in biological research. Devin Clegg is a senior biological sciences major who plans to attend medical school following graduation. Both Emily and Devin would like to thank Dr. Mitchell for this experience and for her guidance throughout this project.



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## EFFECTS OF CAPSAICIN ADMINISTRATION ON VENTILATION IN AGING MICE

Sarah Ruby, biological sciences; Angela Le, biological sciences

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Faculty Mentor: Lara DeRuisseau, Ph.D.

**Abstract:** Capsaicin is a molecule found in spicy peppers and its administration has shown changes to physiological parameters, although the effects on conscious breathing are currently not known. Twenty-two-month-old male mice were subjected to either a capsaicin or control diet for four weeks. Changes in breathing characteristics were monitored in response to room air and hypoxic conditions (low oxygen) before and after the two diets (capsaicin or control) using barometric plethysmography.

**Bio:** Sarah Ruby is currently a senior biological sciences major with a concentration in health professions and will be graduating from Le Moyne College in May 2015. She will be attending Albany College of Pharmacy and Health Sciences in the fall of 2015 as a member of the PharmD program.

Angela Le is currently a junior at Le Moyne College studying biological sciences with an interest in the pharmaceutical sciences. She was recently awarded the American Physiological Society David S. Bruce Outstanding Undergraduate Abstract Award. She presented this project at a national conference.



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## VENTILATION DURING HINDLIMB CASTING IN MICE

Katelynn E. Roffo, biological sciences

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Faculty Mentor: Lara DeRuisseau, Ph.D.

**Abstract:** Hindlimb casting is a technique used to induce muscle atrophy and has become more common in the research setting. Mice were hindlimb casted for 14 days and then exposed to a two-day reloading period without casts. Barometric plethysmography was used to quantify breathing during casting and after two days of unloading. The purpose of this study was to monitor breathing in casted mice to determine if any changes occur during hindlimb casting.



**Bio:** These experiments were Katelynn Roffo's first experience working in a research lab performing experimental design, data collection, and analysis. She currently works in a Pasteurize Lab monitoring micro-bacterial levels of products and sterility of machinery. Katelynn's future research plans are to study the ubiquitin proteasome system and the control of breathing in order to determine if a proteasome inhibitor will alter ventilation.

## I WANT TO BE DIFFERENT LIKE EVERYBODY ELSE

Alicia Zielenski, psychology, management and leadership

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Faculty Mentor: Shawn Ward, Ph.D.

**Abstract:** We examined the relationships between tattoo choices and personality traits, particularly conformity and rebelliousness. Each student completed the CAD inventory, the NEO-PI as well as a survey regarding the nature of each participant's tattoos. For the group of participants that didn't have tattoos, we explored the reasons for this choice. We performed analyses and looked for similarities between design, reason and placement of the tattoos. We studied the relationship between personality traits, rebelliousness and tattoos.

**Bio:** Alicia Zielenski is from Remsen, N.Y. She is a senior at Le Moyne College and is studying to earn both her a bachelor's degree in psychology and management and leadership. Alicia has hopes of being admitted to a school psychology doctorate program and attending graduate school in the fall of 2016.

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## INVESTIGATION OF 2-BUTOXYETHANOL'S EFFECT ON LYSOZYME ACTIVITY

Thomas Barber, biological sciences

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Faculty Mentor: Theresa Beaty, Ph.D.

**Abstract:** To test if exposure to 2-Butoxyethanol, a common chemical found in household cleaning supplies, effects lysozyme efficiency, lysozymes were exposed to different concentrations of 2-butoxyethanol and their ability to kill bacteria was observed. The results suggest that exposure to 2-BE negatively effects the efficiency of lysozyme's ability to kill bacteria. Their efficiency is important to our health because they are one of our first lines of defense when it comes to fighting infection.

**Bio:** From upstate New York, Thomas Barber is a senior biological sciences major at Le Moyne College. He plans on attending osteopathic medical school next year and eventually becoming a member of Doctors Without Borders.



## SYNTHESIS OF HETEROCYCLIC ISOINDOLINE DERIVATIVES USING BIS-TRICHLORACETIMIDATES

Allen Prusinowski, chemistry

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Faculty Mentor: John D. Chisholm, Ph.D. (Syracuse University)

**Abstract:** Previous work in the Chisholm group has determined mono-trichloroacetimidates are good electrophiles for the alkylation of amines. The study further imitates chemistry by dialkylating nitrogen nucleophiles to yield novel, heterocyclic isoindolines, as a pretense for complete molecule total synthesis of complex, biologically significant compounds.

**Bio:** Allen Prusinowski is senior from East Syracuse, New York. He plans to continue his education to pursue a doctorate in organic chemistry.



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## MICROWAVE AND ULTRASOUND PROMOTED SYNTHESIS OF NOVEL METHYLATED AND FLUORINATED CARBOCYCLIC CURCUMINOID DERIVATIVES

Allen Prusinowski, chemistry

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Faculty Mentor: Joseph Mullins, Ph.D.

**Abstract:** The synthesis of novel fluorinated and alkylated carbocyclic curcuminoid derivatives under microwave and ultrasound conditions has been studied. These reactions proceed via acid and base catalyzed aldolcondensation, forming rigid derivatives, while avoiding Knoevenagel condensation through the formation of boron complexes. Novel curcuminoid derivatives have been synthesized in lieu of FLLL32 via convenient aldolcondensation with the use of microwave and ultrasound energies, with the goal of increased bioavailability.

**Bio:** Allen Prusinowski is a senior chemistry major from East Syracuse. His future plans include attending graduate school to pursue a doctoral degree in organic chemistry.

## WHAT MAKES A STARTER: HOW RACISM AND OTHER FACTORS PLAY A ROLE IN PERCEIVING ATHLETES

Ashley LaBarge, psychology

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Faculty Mentor: Brenda Kirby, Ph.D.

**Abstract:** This study explored the current perceptions of athletes by college students, and whether or not racial discrimination is a factor when judging an athlete. We examined whether high racism levels relate to judging by an athletes' race. We also explored whether racism in sports has changed by examining other variables that may be overlooked while evaluating an athlete. Finally, we examined whether college students demonstrate perceived differences between American football players based on these factors.

**Bio:** Ashley LaBarge is a senior graduating summa cum laude this spring with a major in psychology. She is a Deans' Scholar and member of Psi Chi and Pi Gamma Mu. Upon graduation, she will present her research at this year's Association for Psychological Science convention in New York City. She would also like to pursue a doctorate in sports psychology. Ashley would like to thank Dr. Kirby for her constant support and guidance in this project.



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