

2016

Symposium 2016

University of Maine at Farmington

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2016 Program of Events

Celebrating undergraduate research & creative works

Wednesday April 27th

SPECIAL EVENT: Dedication of the Theodora J. Kalikow Education Center

Arts Nights

April 25-27

Michael D. Wilson



University of Maine at Farmington

Welcome to the Michael D. Wilson Symposium

April 27, 2016

Credit Ancient Greeks with the **symposium**, one of their many contributions to education and learning. As opportunities for debate, exchange of ideas and social interaction—fueled by ample food and drink—symposia built a social and intellectual foundation for the vibrant community the Greeks created for themselves and posterity.

UMF is pleased to follow suit with our campus-wide **Symposium** celebrating undergraduate research and creative achievement. Together with Arts Nights, Symposium Day showcases what's possible when you mix student passion, ambition, perseverance, creativity and talent with faculty joy, mentorship and care. It is no surprise that many members of the UMF community count Arts Nights/Symposium Day as their favorite and most uplifting time of the year.

It's possible that Greek participants of long ago discussed, as we will in the 2016 Symposium, shadows and veils, good local food, paternal resemblance, and the perception of distance running, but it's a good bet that our UMF presenters are far ahead on James Dean, Las Abuelas de Plaza de Mayo, Jean Rhys's socio-political imagination, Web game design, and dozens of other fascinating topics you'll encounter in posters, presentations and installations on campus.

This beloved UMF tradition is the product of hard work, inventiveness, financial support and deep commitment. For these we offer our thanks to the University Culture Committee, Paul Stancioff, Professor of Physics and chief Symposium organizer, our vital faculty mentors, devoted staff, generous supporters of undergraduate research, and, not least, the enterprising and intrepid students who put before us the fruits of their labor.

Feast heartily on Symposium, UMF's annual groaning board of creative and intellectual sustenance.

Kathryn A. Foster

President

The great American philosopher, Charles Peirce, famously argued that, to be successful, the pursuit of truth and the striving for wisdom needs to be a social activity. The locus of this effort was what he came to call a “community of inquiry.”

As I complete my second year at UMF, one thing that has become even clearer to me is the extent to which UMF is just such a community.

The Michael D. Wilson Symposium makes this eminently clear by showcasing not only the rich creative and scholarly achievements of so many members of this community but by highlighting the values and commitments upon which this work rests – creative and intellectual engagement, experiential learning, collaboration, and an awareness and rootedness in place.

As we set aside our routines and schedules for this year’s Symposium, I want to congratulate all of the presenters and thank them for sharing their insights with the whole community. In particular I want to recognize and to thank the members of the University Culture Committee, our donors, and all those who have helped to make this year’s celebration such a success.

I know that Charles Peirce would feel right at home!

Joseph McGinn, Provost and Vice-President for Academic Affairs

Symposium Day provides a wonderful opportunity for students from all disciplines to share their impressive scholarly and creative work with the UMF community. The incredible array of presentations, poster sessions, readings, installations, and performances highlights the many talents of our student body and the multiple opportunities students have to engage in rich, rigorous research and learning experiences throughout their UMF education. Congratulations to all of the student presenters and faculty mentors, and many thanks to the organizers of this special event!

Kathy Yardley, Associate Provost and Dean of the College of Education, Health, and Rehabilitation

Education is at its best when it’s active, and there’s no better way to take charge of one’s own education than by doing one’s own research. The students presenting today come from all fields, all levels, all backgrounds, but they all have this in common – they had an idea and they pursued it on their own.

The result, for the rest of us, is a feast of knowledge. Thanks to those who, by attending, provide an audience for these students to share their work. I know you join me in giving kudos and thanks to all the presenters, of whom we are proud and from whom we are pleased to be learning.

Jonathan Cohen, Associate Provost

This symposium is organized by the University Culture Committee:
Paul Stancioff, Chair, Patti Bailie, Katherine Kemp, Misty Kreuger

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SPECIAL EVENT

Dedication of “Theodora J. Kalikow Education Center”

4 p.m., Tuesday, April 26

Ceremony outside the UMF Education Center

Reception immediately following in North Dining Hall, Olsen Student Center

University of Maine at Farmington President Kathryn A. Foster warmly invites the campus community, UMF alumni and members of the public to the celebratory naming of the University’s Education Center as the “Theodora J. Kalikow Education Center.”

Former President Kalikow is the longest-serving UMF president since the Farmington school became a four-year college in 1945, serving from 1994 to 2012. Committed to putting student success first and foremost, she strengthened the academic experience at UMF with a renewed focus on experiential learning, internships and undergraduate research.

During her time at UMF, the University was recognized as “One of America’s Best Colleges” by U.S. News & World Report for 15 consecutive years, as one of 20 outstanding colleges selected as national models of educational effectiveness and by the U.S. Congressional Record for its efforts to make an environmentally sustainable campus a reality.

Completed in 2007, the UMF Education Center is a model of energy efficiency using geothermal energy for heating and cooling and recycled and sustainable materials. The building was awarded LEED-Silver certification by the U.S. Green Building Council.

“The campus community is thrilled to welcome President Kalikow back to Farmington for this distinct honor,” said Kathryn A. Foster, UMF president. “The ground work for UMF’s commitment to environmental stewardship was begun under Theo’s early leadership to promote and invest in sustainable practices. The Theodora J. Kalikow Education Center is a showcase of her vision and her efforts and what can be accomplished when a community is inspired by common goals.”

Special Presentation

“Last Lecture”

By

Professor of Literacy Education, Cathryn Wimett

North Dining Hall B-C

Wednesday April 27th at 7:00 PM

Forty-six Years of Wonders, Worries and Wishes

Dr. Wimett will discuss her time as an educator in relation to her own experiences teaching fourth grade, middle school, and college, especially UMF, as well as her experiences working in a psychiatric hospital for adolescents and a state institution for people with special needs. What joys, worries, plans and hopes has working in these institutions engendered? What wishes does she have for the UMF community as she leaves?

The "Last Lecture" is a yearly event sponsored by UMF's Alpha Lambda Delta, now in its fifth year. Alpha Lambda Delta is a nationally recognized honor society for students who achieved a grade point average of 3.5 or higher in their first year at UMF. The UMF chapter focuses on community service and academic excellence through a variety of events.

"The Last Lecture" gives a retiring UMF professor one last opportunity to address the UMF community. The speaker can reflect on what she/he has learned while at UMF, and/or it gives the opportunity to teach one final life lesson to students.

This year's speaker is Professor Cathryn Wimett, who is retiring this year after 19 years of dedicated service to The University of Maine at Farmington.

UMF Trustee Professorship

Symposium is a day to honor the value of scholarly and creative endeavor at UMF. Toward that end, we have chosen Symposium as an opportunity, not only to showcase the work of our students, but also to bestow the university's most prestigious award for scholarship to a faculty member. The Trustee Professorship is given each year to one UMF faculty member in recognition of her/his distinguished record of scholarly or creative work. The Trustee Professor receives a cash stipend, a professional development allowance, and a half-time reassignment for an academic year in order to focus on a scholarly or creative project.

Each year at Symposium we invite the current Trustee Professor to deliver a public lecture. This year's Scholar is Patricia O'Donnell, Professor of English. She will speak at 11:30 in Lincoln Auditorium. All students, faculty and staff are invited.

2014-2015 Trustee Professor

11:30 - 12:10

Stranger in a Strange Land

Patricia O'Donnell

The philosopher Novalis is quoted as saying, "Philosophy is really homesickness; it is the urge to be at home everywhere." Writers are people who never truly feel at home, or at ease within themselves or in society, and search through their writing to find that home. This two-part presentation presents fiction and nonfiction with characters who find themselves in a strange land, or in a familiar land forever changed. Pat O'Donnell's fiction in this project focused on building a collection of short stories with a theme of people finding themselves in a strange country, often suffering personal traumas. Along with this, she continued her work on a memoir inspired by the E-5 tornado that changed the landscape of the small town in Iowa in which she grew up. The first part of the reading will present a fiction story set in a place unfamiliar to the narrator, who sees his life revealed in the strangeness of this setting. The second part will present an excerpt from the memoir, in which she wanders the destroyed town, revisiting her early life as she meditates on time and on change.

Past UMF Trustee Professors

Spring 1999 – Mark McPherran
1999 – 2000 – Ronald Butler
2000 – 2001 – Jennifer Reid
2001 – 2002 – Chris Magri
2002 – 2003 – Dan Gunn
2003 – 2004 – Ming-Ming Pu

2004 – 2005 – David Daniel
2005 – 2006 – Mike Muir
2006 – 2007 – Tiane Donahue
2007 – 2008 – Paul Outka
2008 – 2009 – Drew Barton
2009 – 2010 – David Gibson

2010 – 2011 – Jeffrey Thompson
2011 – 2012 – Eric Brown
2012 – 2013 – Gretchen Legler
2014 – 2015 – Allison Hepler

Michael D. Wilson Research Fellows and Scholars

The Michael D. Wilson Scholars and Fellows represent some of UMF's best students from across all disciplines. The program recognizes UMF students' tremendous creativity, and expands UMF's commitment to undergraduate research and faculty mentoring. Each student was awarded funding to help underwrite an original undergraduate research or creative project. The Program has been providing single-semester support for research, scholarship and creative projects at UMF since the fall of 2006. It was expanded in the fall of 2007 to include two full-year Wilson Research Fellow awards to support even more substantive research projects. In the years since its inception, the Wilson program has supported the investigative research and creative activities of more than 200 students at UMF. During this time over 60 UMF faculty members have developed strong mentoring relationships with individual scholars, providing guidance with proposal development, research methodology and continuing pre-professional and post graduate opportunities. The awards honor UMF alumnus, Michael D. Wilson, class of 1976, an avid environmentalist, aspiring teacher, and dear friend whose untimely death in 1977 deeply saddened the UMF community. The students are nominated by a UMF faculty mentor and, after a competitive selection process, are chosen by the UMF Undergraduate Research Council.

2015 – 2016 WILSON FELLOWS

Rebecca Young - *Investigating effects of antibiotic exposure on bacteria resistance of oral microbiota resulting in dental health issues*

Faculty Advisor: Jean Doty

FALL 2015 WILSON SCHOLARS

Thomas Alexander - *Investigating the occurrence of Rare Earth Elements in Igneous and Metamorphic Rocks from Maine*

Faculty Advisor: David Gibson

Tucker Atwood - *Application of game theory to baseball*

Faculty Advisor: Nicholas Koban and Chris Bennett

James Corcoran - *Nation on the water*

Faculty Advisor: Dawn Nye

Dylan Moreau - *The origin of staurolite pseudomorphs at the Cascades, Rangeley, Maine. Where is the "smoking gun"?*

Faculty Advisor: David Gibson

Tim Stokes - *The Dialectic of Don Quixote*

Faculty Advisor: Daniel Gunn

Tim York - *Social Determinants of Poverty and Development in Sub-Himalaya, Nepal*

Faculty Advisor: Brad Deardan

SPRING 2016 WILSON SCHOLARS

Leanne Arsenault - *Possession Attachment and Disposal Practices*

Faculty Advisor: Lilyana Ortega

Thomas Callahan - *The Bosun's Whistle*

Faculty Advisor: Christopher O'Brien

Curtis Cole - *An Asymmetrical Criticism of Jean Rhys*

Faculty Advisor: Lorna Hughes

Holden Cookson - *Bioassay Soil Remediation of Herbicides*

Faculty Advisor: Lucas Kellett

Luke Deems - *Transmute/Transmutation*

Faculty Advisor: Dawn Nye

Laura Dickey - *Mundane Tasks and Loss of Wonder*

Faculty Advisor: Katrazyna Randall

Nathaniel Duggan - *Hybrid Poetry Chapbook*

Faculty Advisor: Shana Youngdahl

Joshua Fletcher - *Origin of garnets from Cape Cod Hill granite*

Faculty Advisor: David Gibson

Jill Gingras - *Transitions*

Faculty Advisor: Gretchen Legler

Derek Guerrette and Dominic Martorano - *Variability of Textbook Utility*

Faculty Advisor: Lilyana Ortega

Tonner Hann - *Shadows and Veils*

Faculty Advisor: Dawn Nye

Layne Nason - *Usable Past: Examination of Urban Renewal*

Faculty Advisor: Matthew McCourt

Faith Purdy - *Effects of Bushtit vocalizations during nest building*

Faculty Advisor: Sarah Sloan

Zachary Roberge - *Making Organic Chemistry Fun*

Faculty Advisor: Christopher Bennett

Katharine Schrader - *Protest Group turned Human Rights Organization*

Faculty Advisor: Allison Hepler

Arts Nights 2016

On Monday, April 25th and Tuesday, April 26th, as an exciting prelude to UMF's University-wide Symposium and then again on Wednesday, April 27th as extension of the Symposium, Art Nights will highlight the Visual and Performance Arts Senior Projects. Both days will feature back-to-back artistic, musical, cultural and theatrical presentations throughout the Emery Community Arts Center, UMF Art Gallery, and Merrill Hall beginning at 6 p.m., and continuing into the evening. *Admission is free and all events are open to the public.*

April 25th, 26th, and 27th

Christina Hallowell and Hannah Watson - *Curating Arts Week*

In previous years, UMF dedicated one night to showcase student artwork and senior projects. Students Christina Hallowell and Hannah Watson recognized there was more talent and creativity than one night could hold and extended this Arts Night into Arts Week. The events during this week are designed to pull together the arts from every corner of campus and celebrate the creative spirit of the UMF community.

April 25th

Shelby Thibodeau - *Ants* - Emery Community Arts Center

A solo, autobiographical performance by Shelby Thibodeau, which explores the changes that adulthood brings, and the hardships that come with the loss of a loved one.

***Pixel Hunter Video and Animation Festival* - Emery Community Arts Center**

Pixel Hunter is a selection of student produced video and animation from the UMF campus from the preceding year. Students from all depts. and all levels are encouraged to submit, and the program is edited to about an hour and a half by the Arts faculty. This year's fest promises to deliver everything from zombies to family drama.

April 26th

Meg Scully – *Letters* - Emery Community Arts Center

A one act play about the letters being sent to and from a man at war and his family and how the ones he loves cope with his absence. This production will be benefitting the Travis Mills Foundation, with all donations going directly to this special cause. The cast and crew would like to dedicate the performance to Travis and all of our Veterans making sacrifices everyday. Directed by Meg Scully; Written by David Setchell.

Krysta Norris - *Drizzle* - Merrill Hall

A graphically notated sound art piece that centers around emotional connections to colors and the perception of lines and shapes. Performers will express their perception of the score through their instrument of choice. Conducted/Composed by Krysta Norris and performed by UMF students.

Tabatha Edes - *Coping with Heavy Metal Music* - Emery Community Arts Center

People were interviewed with the question in mind, "How do you use this type of music to help yourself emotionally and mentally?" A sound piece of the interviews along with portrait drawings will be shown of the people who give insight into why they listen to heavy metal music. This presentation will give anyone a better sense of why people listen and choose this music genre.

Jagger Trouant - *Jabber's Adventure* - Emery Community Arts Center

This is a short animation that is part of a much larger piece. It tells the comedic misadventures of Jabber, a dimwitted roman actor and his pursuit of happiness. Come witness its very first screening and stay tuned after for a Q&A to learn how the project developed and where it is planned to go from here.

Simon Rollins - *Audio Game* - Emery Community Arts Center

In this multimedia project, Rollins concentrates on sound to carry listeners into a reality separate from the one they already know. The work, which also utilizes film and theatrics, aims to blur the line between representation and truth, as well as question what impact the imagined has on our authentic world.

April 26th and 27th

Tyler Provencher - *ASMR: Therapeutic Tingles* - Emery Community Arts Center

What if there were alternate forms of therapy or relaxation that have previous remained unexplored? What if, at the click of a computer mouse, a person could be engulfed in a feeling of pure bliss and contentment? The Youtube phenomenon known as ASMR seeks to answer these questions. ASMR (Autonomous Sensory Meridian Response) is designed to stimulate a "tingling" sensation in viewers. In two live ASMR sessions, an attempt to induce such "tingles" will be made in real time. Featured ASMR sounds will include: whispering, crinkling paper, water sounds, etc. Do you have ASMR, and do you want to feel the "tingles"?

Main Program

Venue 1, Lincoln Auditorium

Wilson Scholars, Trustee Professor

9:00 - 9:20

High Carbon Wood Ash Bioassay Testing: Sustainability Connections between UMF's Biomass Plant and Compost Operation

Holden Cookson

The University of Maine at Farmington produces an average of a ton of food waste a week. The Sustainable Campus Coalition (SCC) in cooperation with UMF Dining Service transforms this food waste into usable compost which is sold to local farmers and community members. Since finished compost can contain adverse quantities of herbicides. This research seeks to discover whether there are herbicides present in the finished compost, and if so, can the high carbon wood ash from the University's biomass plant be the solution? To determine whether there are herbicides present in our finished compost bioassay testing was conducted, using white clover planted in seed cells with varying ratios of compost/potting soil and varying percentages of high carbon wood ash. Results highlights the practical application of bioassay testing in measuring herbicide concentrations in finished compost. (*Faculty sponsor: Lucas Kellett*)

9:20 - 9:40

Game On: Designing Web Games for Interactive Studying

Savannah Ridgley and Zachary Roberge

Organic chemistry is often regarded as one of the hardest courses science majors are expected to take, partially because it directly relates to so few careers. However, the supplemental instruction students from this fall's organic chemistry class responded well to playing games as a means of learning the material. As a result, the goal of this project became to create interactive games to study organic chemistry that could be used independently of an SI session. In an effort to design such games and build on computer science skills, web page versions of memory, pup-quiz, and battleship have been created. (*Faculty sponsor: Christopher Bennett*)

9:40 - 10:00

Variability of Textbook Utility within Collegiate Educational Settings

Derek Guerrette and Dominic Martorano

Traditionally, professors at universities across the world assign textbooks based on what they feel will be most beneficial for the students. This study, using both multiple choice and open-ended questions, looks at what aspects of our professors' course materials are most valuable to students here at UMF. Additionally, students provide insight on their own experiences with the course materials assigned by their professors. The insight found in this study can be used to inform professors of the utility of the types of materials that are commonly assigned in courses across many disciplines. *(Faculty sponsor: Lilyana Ortega)*

10:00 - 10:20

Break

10:20 - 10:40

Possession Attachment and Disposal Practices in a Non-clinical Population

Leanne Arsenault

The average U.S. household has 300,000 things, from paper clips to ironing boards. For some people disposing of possessions is an everyday occurrence that does not cause them any significant amount of stress; but for others like those with Hoarding Disorder just the thought of throwing something away can cause extreme anxiety. This study examines the relationship of object attachment and disposal patterns in a non-clinical population. In this qualitative study, one on one interviews are coded for overarching themes, these themes will be discussed along with implications for future research. *(Faculty sponsor: Lilyana Ortega)*

10:40 - 11:00

The Dialectic of Don Quixote

Timothy Stokes

In their 1944 *The Dialectic of Enlightenment* Horkheimer and Adorno define the culture industry as a process in which the consumption of entertainment media - film, magazines, etc. - determines conditions in contemporary culture. Cervantes' novel *Don Quixote* presumes this relationship when its protagonist decides to emulate the romances of knight errantry to return Spain to the Golden Age depicted in chivalric romances. While looking closely at these two texts I draw comparisons between Frankfurt School criticism and self-reflexivity in the *Quixote*, as well as notions of style in entertainment and the blurring of 'truth' and 'fiction'. *(Faculty sponsor: Daniel Gunn)*

11:00 - 11:20

Creating an Order: Using Data Analysis to Maximize Baseball Lineups

Tucker Atwood

Given nine hitters, is it possible to create a baseball lineup that will maximize the number of runs scored? Using data analysis and computer programming, we have set out to find a formula that will give us an answer. We created a computer program capable of "playing" thousands of baseball games per second and have used it to test the average number of runs scored by specific lineups. Age-old traditions of Major League Baseball have been challenged, with results that may redefine the way we look at baseball lineups for years to come. *(Faculty sponsor: Christopher Bennett)*

11:20 - 11:30

Presentation of the 2016 Walter Sargent Undergraduate Research Mentor Award

Christopher O'Brien

The 2016 Walter Sargent Undergraduate Research Mentor Award is presented to a UMF faculty member who has exhibited outstanding research mentorship to UMF students. This annual award is presented in honor of the late Walter Sargent, a dedicated Professor of History, who exhibited superlative devotion to student development, and selflessly guided countless UMF students to achieve their utmost academically.

11:30 - 12:10

Stranger in a Strange Land

Patricia O'Donnell

The philosopher Novalis is quoted as saying, "Philosophy is really homesickness; it is the urge to be at home everywhere." Writers are people who never truly feel at home, or at ease within themselves or in society, and search through their writing to find that home. This two-part presentation presents fiction and nonfiction with characters who find themselves in a strange land, or in a familiar land forever changed. Pat O'Donnell's fiction in this project focused on building a collection of short stories with a theme of people finding themselves in a strange country, often suffering personal traumas. Along with this, she continued her work on a memoir inspired by the E-5 tornado that changed the landscape of the small town in Iowa in which she grew up. The first part of the reading will present a fiction story set in a place unfamiliar to the narrator, who sees his life revealed in the strangeness of this setting. The second part will present an excerpt from the memoir, in which she wanders the destroyed town, revisiting her early life as she meditates on time and on change.

12:10 - 1:00

Lunch Break

1:00 - 1:20

Contemporary Regionalism: Maine, Poetry, and Sad Lobster Gurgles

Nathaniel Duggan

Despite its rugged landscapes and beauty, Maine constantly faces the threat of having its uniqueness smothered beneath Dunkin Donuts chains or else reduced to a blurb in an L.L. Bean catalog. This dual poetry reading/presentation on contemporary regionalism, or the art of writing about a specific place, will seek to reinvigorate the way we look at our state by taking classic Maine symbols and radically altering them. Expect pieces rife with arthritic horseshoe crabs, backwoods Walmarts, and lovesick lobsters. *(Faculty sponsor: Shana Youngdahl)*

1:20 - 1:40

Socioeconomic Motives and Factors of Migration in Rural Nepal: Impacts of a Changing Mountainous Landscape

Timothy York

Small landholders and marginalized farmers in remote areas of the Himalaya are subject to high seasonal variability, in terms of both agricultural production and financial stability. Nepal is a country home to extremes existing in physical, social, and financial forms. Determinants of poverty, capability, and exclusion are all cross-examined to access the socioeconomic status during these times of change. With an additional unequal distribution of land and natural resources, geographic variation, and high poverty rates, these "environmental refugees" contribute to a high out-migration rate to attain better, more reliable livelihoods. *(Faculty sponsor: Brad Dearden)*

1:40 - 2:00

The Usable Past: An Examination of Urban Renewal and Historic Preservation

Layne Nason

This Symposium presentation will assess my research-based field guide and field expedition I led using the field guide. The objective of the field guide is to examine the ways historically-sensitive and historically-indifferent approaches to urban redevelopment and planning have shaped Boston's landscape. The guide is meant to be a well-researched, informative, and interesting introduction to the role of historical geography in urban development. This guide contains eight sites, four associated with historical sensitivity (Emerald Necklace, Beacon Hill, Davis Square/Somerville, Quincy Market) and four associated with historical indifference (e.g., Boston City Hall Plaza/Scollay Square, Melina Cass Boulevard, Saugus Marsh, West End). The field expedition will bring the field guide to life, venturing to Boston, Massachusetts with 4-8 fellow students. Students' experiences will be assessed before, during, and after the trip on their understanding of urban renewal and historical preservation, and what knowledge they gained. *(Faculty sponsor: Matthew McCourt)*

2:00 - 2:20

Break

2:20 - 2:40

An Asymmetrical Criticism: Interrogating Jean Rhys's Socio-Political Imagination

Curtis Cole

Jean Rhys's literary immortality stems from rectifying Charlotte Bronte's racist caricature of the 'madwoman in the attic' (Bertha/Antoinette) in the Victorian classic *Jane Eyre*; cheering Rhys's *Wide Sargasso Sea* for the challenge it posed to Eurocentric understandings of race, critics and scholars have hailed Rhys's narrative as the defining panacea to British literary colonialism. My outlook, however, is more nuanced. Accusing her of legitimating reactionary mythos concerning Black and Jewish populations, I investigate how, through autobiographical impositions, Rhys impregnates *Wide Sargasso Sea* with reflections of her own prejudiced mind. Utilizing the Deleuzian-inspired 'Affect Theory'-- a theory which focuses on how existentialism and emotional states of living collide in order to propel us toward action-- I juxtapose Rhys against her written works, problematizing her socio-political and class history (namely, her relation to English nationalism and her understanding of colonialism) in order to deconstruct her 'affectual' inferiority. Doing so, we see that Rhys, in fact, lacked a symmetrical understanding of race, or to put it another way, of true equality between the races; further, my undertaking charts how Rhys's supposed trans-historical rectification, was, in reality, underpinned by complex internalizations of the histories of colonialism and imperialism. (*Faculty sponsor: Lorna Hughes*)

2:40 - 3:00

Wonder: An Animated Exploration of Self

Laura Dickey

Through this series of animations I hope to incite an emotional dialogue that considers the relation between perception, society, nature and self as they mingle within the interstice of wonder and the mundane. Wonder prompts a sudden shift in the environment, jolting perception and allowing the subject to examine the protean nature of reality. Through this body of work I experiment with time, line quality, character development and surrealism in order to explore the relationship between self, the collective other, identity and reality. By creating work that is emotional and surreal I hope to connect to a more immediate and internal dialogue. (*Faculty sponsor: Katrazyna Randall*)

3:00 - 3:20

Investigating Effects of Antibiotic Exposure on Bacteria Resistance of Oral Microbiota Resulting in Dental Health Issues

Rebecca Young

Within the oral cavity, there exists hundreds of different bacterial, viral, and fungal species, making up the oral microbiome. These species can couple to form biofilms, which are resistant to mechanical stress or antibiotic treatment. The microbiome is a critical component of human health; and as such, investigating shifts in its bacterial communities is essential to better our understanding of our susceptibility to disease. This research investigates variances in oral microbial shifts in response to antibiotic exposure by comparing the oral microbiota between subjects with varying antibiotic exposure, to determine connections and distinctions between them. (*Faculty sponsor: Jean Doty*)

3:20 - 3:40

Transitions

Jill Gingras

A collection of non-fiction essays, *Transitions* draws upon the sudden and unforeseen occurrences that dramatically alter one's course in life. Inspired by personal experience, these writings speak to the physical and emotional challenges of one woman's journey into middle age. This work also finds a special significance in the way that each singular experience or personal account intertwines around the changing face of a small community in transition as it adjusts to the disappearance of the paper-making industry in Maine. (*Faculty sponsor: Gretchen Legler*)

3:40 - 4:00

Nation on the Water

James Corcoran

Over the past year, I have been continuously researching and filming for a documentary concerning a legal dispute between the Maine Native American tribe known as the Penobscot Nation as well as both the local and state governing bodies. In 2012, The Environmental Protection Agency supported a Water Quality Standards report put forth by the Penobscot Nation's Department of Natural Resources. The tribe and the EPA are demanding that the Maine Inland Fisheries and Wildlife and the Maine Attorney General regulate the pollution within the Penobscot River Watershed. Additionally, this conflict has spread throughout the business community that operates along the Penobscot River. The dispute concerns water quality standards of the Penobscot River Watershed, sustenance fishing rights for Penobscot Nation tribal members as well as commercial entities along the Penobscot River. (*Faculty sponsor: Dawn Nye*)

Venue 2, C-23, Roberts Learning Center

Geography, History

9:00 - 9:20

A Comparison of the Management Strategies and Environments of Revitalized Puffin Populations in Maine and Declining Populations in the United Kingdom

Catherine Dufault

Puffins were prized by Victorian Era fashion designers for their bright plumage and by hunters for their eggs. The rise of industrial fishing further depleted puffin populations worldwide. While puffins in Maine have experienced a resurgence in numbers due to management practices on the seacoast, puffins have been designated as an Amber List species in the United Kingdom as habitats and populations continue to suffer. This paper compares the puffin management styles of Maine to those of the United Kingdom. (*Faculty sponsor: Cathleen McAnneny*)

9:20 - 9:40

Is the Water Quality of Lemon Stream in Starks, Maine Affected Immediately Downstream by Neighboring Uses?

Heidi Smith

Non-point source pollution (NPS) has a major impact on Maine's water bodies. NPS is pollution that is not released from pipes but is discharged by water runoff from rainfall or snowmelt. It originates from land use activities such as agriculture, forestry, or from failing septic tanks. The focus of this study was to determine whether or not land use activities abutting Lemon Stream in Starks, Maine affected the quality of the water directly downstream. Water samples were collected at six sites along Lemon Stream. The samples were taken up stream, then immediately downstream and were analyzed for water quality. *(Faculty sponsor: Cathleen McAnneny)*

9:40 - 10:00

Stadium Relocation

Peter Doucette

Pro Sports teams move all the time without most fans having a second thought about it. For my study I am going to be focusing on two major aspects of a pro sports team moving locations. First I will be looking at the way a team's move impacts the city that it is leaving. Next I will be looking at the other side of the spectrum as a city that is receiving a new team. I want to see what effect the new stadium infrastructure has on many aspects of the new city. *(Faculty sponsor: Cathleen McAnneny)*

10:00 - 10:20

Break

10:20 - 10:40

Changing Ecosystems of Kilimanjaro: Alterations in Landscape and Regional Climate Patterns.

Timothy York

Rising temperatures and changes in precipitation patterns due to a changing climate and geographical influences are having undeniably clear and severe impacts on ecosystem dynamics around the world. Large changes in ecosystem composition, through various land cover conversions, can have complex, multiscalar and cascading effects on biodiversity and regional climate regimes. Contributing additional vulnerability pressures throughout an already sensitive ecoregion. Based in East Africa, this research regarding the shift in water budgets, modifications in land-use and land-cover alterations surrounding Mount Kilimanjaro seeks to find clues throughout the landscape about future climatic distribution, variability and adaptability. *(Faculty sponsor: Cathleen McAnneny)*

10:40 - 11:00

The Impacts of Composting on Local Ecology

Holden Cookson

In the United States our landfills are closing at alarming rates and our only solution is to compost. According to Risse, Mark, and Britt Faucette (1990) "More than 72 percent of all materials entering landfills can be diverted through composting." The University of Maine at Farmington is one of many institutions that are dealing with this crisis responsibly by co-organizing a community-university composting operation. Despite the numerous benefits of composting, what are the effects on the local ecology? To examine this question wildlife cameras were installed at the UMF's composting facility. The motion sensitive wildlife cameras have captured ample evidence of a wide variety of mammal and bird species. This documentation of animal behavior gives insight as to how composting operations impact local ecology, especially as the composting trend becomes more popular. *(Faculty sponsor: Cathleen McAnneny)*

12:10 - 1:00

Lunch Break

1:00 - 1:20

Las Abuelas de Plaza de Mayo: Protest Group Turned Human Rights Organization

Katharine Schrader

Between the years of 1976 and 1983, Argentina was controlled by General Jorge Rafael Videla, the last of many dictators who had helmed the nation since the 1930s. Videla's rule was notoriously brutal: Nearly 30,000 people were kidnapped and murdered by the military regime. This research project tells the story of a protest group turned human rights organization called *Las Abuelas de Plaza de Mayo* (The Grandmothers of the May Plaza) and how their fight to find disappeared grandchildren caused fundamental transformations in Argentine justice, culture, and memory. *(Faculty sponsor: Allison Hepler)*

1:20 - 1:40

The Warren Incident: Exploring the Depths of America's First Act of Whistleblowing

Thomas Callahan

Ten months into its existence, the United States dishonorably discharged its first and last Naval Commander-In-Chief, Esek Hopkins. After more than two centuries, this often ignored, oversimplified, or otherwise sidelined event has recently been redefined as resulting from America's first case of whistleblowing. Today, illuminating the misconduct of powerful people has evolved into a critical part of US democracy, and understanding the forces behind Hopkins' dismissal has become more necessary than ever. This presentation explores the sins of Commander-In-Chief Hopkins, the intrigues of a contentious Congress, and the motivations of the defiant sailors that made the Warren Incident possible. *(Faculty sponsor: Christopher O'Brien)*

1:40 - 2:00

Missing Teeth and Foreign Fighters 1861-1865: Maine and British North America

Lucas Small

As the American Civil War began, it looked as if the traditional hostilities between Maine and New Brunswick might flare anew. The longstanding tensions between Great Britain and the US gave reason to believe that policies made in Washington and London might drive the wedge further between Mainers and Canadians. Despite the tension, however, Canadians served honorably in Maine regiments, and Mainers "skedaddled" to Canada to avoid the looming drafts. The effect of this cross-border transplantation was often dramatic: Canadians stood with Chamberlain in Gettysburg. And so many Mainers fled across the border that the economy of New Brunswick shuddered from the influx of low-wage immigrants. *(Faculty sponsor: Christopher O'Brien)*

2:00 - 2:20

Break

2:20 - 2:40

James Dean, or, the Valuable Candor of Youth

Quentin Brunet

Kenneth Krauss, professor of Drama and historian of postwar theater, said James Dean "was indeed showing [American adolescents] visually what they believed they were feeling." *Rebel Without a Cause* elevated Dean as an American myth with whom thousands of adolescents identified across the country. This presentation will examine how James Dean was eternally linked to his role Jim Stark in the common imagination, and will specifically examine how the youthful idealism that Dean's persona stood for proved unsustainable as it confronted 1950s middle-class conformism. *(Faculty sponsor: Christopher O'Brien)*

2:40 - 3:00

Para los Pueblos: The Fight for Liberal Reform in 19th Century Spain

Travis Bent

In 1808, Napoleon invaded the Iberian Peninsula and installed his brother Joseph as king of Spain. Local elites responded by establishing anti-Bonaparte juntas, which soon joined a call for a constitutional convention. That convention, the Cadiz Cortes, adopted the first liberal republican constitution of Spain in 1812. The results were devastating: Napoleon sent forces to protect his brother's reign, without success, and the Constitutionals found themselves facing the return of the former monarch, Ferdinand, who persecuted them ruthlessly. It took decades and a change in rulers, but the Constitutionals prevailed. This paper explores those early debates over the shape of that republican government as the members of the Cadiz Cortes dreamed of a better society. *(Faculty sponsor: Anne Marie Wolf)*

Venue 3, Thomas Auditorium

Science, Political Science

9:00 - 9:20

Exploring the Effects Nitrogen-based Fertilizers Have on Embryo Development in Zebrafish.

Krystal Blood and Brett Stuard

It is common for fertilizers to be used in large quantities to promote crop yields. Studies show that most fertilizers leach into nearby streams, rivers and oceans. This leaching can impact the aquatic habitat in negative ways. In this study we looked at the direct effects nitrogen-based fertilizers had on the development of zebrafish embryos. By exposing zebrafish embryos to a solution mimicking natural leaching ratios, we looked at embryo development as a measure of environmental impact. *(Faculty sponsor: Jean Doty)*

9:20 - 9:40

Who's Your Daddy?

Brennah O'Connell and Mitchell Walston

Paternal resemblance between biological fathers and their first-born children has been hypothesized to be an evolutionary factor that contributes to the level of care a child will receive from its father. To determine whether first-born children are more likely to resemble their dads, pictures from fifty families were collected, and facial features between the children and their parents were compared. Paternal resemblance was expressed as a percent of the sample population. Previous studies have shown that paternal resemblance is more likely to be claimed than maternal resemblance. *(Faculty sponsor: Jean Doty)*

9:40 - 10:00

Development of Genotyping Methods for Genes Controlling Cannabinoid Production in *Cannabis sativa*

Talya Briana

Medical cannabis growers need a simple method to identify the genotypes of cannabis seedlings with higher THC content. Two enzymes, CBDA synthase and THCA synthase, determine cannabinoid production in cannabis. The genes for these enzymes are multi-allelic, leading to different genotypes which can affect THC production. Hemp was used as a model system. Using PCR primers based on the known sequences of common CBDA and THCA alleles, genotypes were determined using DNA sequencing or a faster and less expensive agarose gel based technique involving restriction analysis of PCR products. *(Faculty sponsor: Anthony Brinegar)*

10:00

Harvey Aft Award for Excellence in Chemistry

Terry Morocco and Michael Sherrod

Each year the chemistry faculty recognizes a student who has excelled in upper-level chemistry courses, has outstanding general scholarship, has demonstrated interest in chemistry, and projects a good attitude toward the field. Please join us when we announce the winner and present the award.

10:00 - 10:20

Break

10:20 - 10:40

Effects of Atrazine on Sexual Development in Zebrafish Embryos

Zakkary Bates-Moody, Samuel Bennett, and Zachary Faulkner

Zebrafish embryos were exposed to the common herbicide atrazine to study its effects on the development of reproductive tissue and sex-specific morphology. Atrazine has been well documented in its effects on the sexual development of frogs, as well as the health risks it poses to fish species. Multiple trials were run on fish in varying developmental stages with the intent of observing key periods of reproductive development in each trial. The study will elaborate on the potential reproductive risks of atrazine on not just zebrafish, but the plethora of fish species found in inland waters of the continental United States. (*Faculty sponsor: Jean Doty*)

10:40 - 11:00

Transfer of the Lux Gene Plasmid into Tardigrade and Duckweed Genome via Horizontal Gene Transfer through *Agrobacterium Tumefaciens*

Zachariah Edwards, Craig Gajewski, and Mitchell Golas

We proposed the insertion of the lux gene into the bacteria *Agrobacterium tumefaciens*. Once the gene was taken up by the bacteria via artificial horizontal gene transfer, we proposed two different experiments in which the gene was taken up by Tardigrades (species TBD) and by duckweed (*Lemnaceae lemna minor*) utilizing organic horizontal gene transfer. In all three experiments listed above, the results were verified if the organism expressed the lux gene under UV light. (*Faculty sponsor: Jean Doty*)

11:00 - 11:20

Zebrafish as a Model for Bleaching Agent Exposure

Matthew Girouard and Zachary Mayo

Effects of chlorine dioxide, used to treat drinking water and bleach paper, on the development of Zebrafish embryos was studied. Household bleach was used in place of chlorine dioxide to simulate it in lab. We tested four treatments on Zebrafish: a control and three different concentrations of chlorine bleach: one trial contained 4.0g/L, the maximum safe level for human consumption; another the maximum level adjusted to the weight of Zebrafish embryos; and a concentration 8.0g/L to illustrate a chemical spill by doubling the safe

human level. After testing, any abnormalities due to chemical influences were documented. (*Faculty sponsor: Jean Doty*)

12:10 - 1:00

Lunch Break

1:00 - 1:20

Study of Nicotine on the Development of Zebrafish Embryos

Erica Baxter and Trevor Hall

The overall goal of this research was to better understand the effects that nicotine had on embryo development. This was done by exposing zebrafish embryos to varying concentrations of nicotine, monitoring their development, and comparing that to a control group. This will give a better understanding of the effects of nicotine on fetal development, which could help to educate mothers about the risks of smoking during pregnancy. (*Faculty sponsor: Jean Doty*)

1:20 - 1:40

The Effect of Varying Levels of Vitamin D on Zebrafish Embryonic Development

Eva Linehan and Lindsey Locklear

The purpose of this study was to use zebrafish as a model to investigate how varying concentrations of Vitamin D3 affect embryonic development. Vitamin D plays a crucial role in the mineralization of bone, growth and other functions, which is why it is recommended as an essential vitamin during pregnancy. There is no clear dosage limit indicated that may induce Vitamin D toxicity and so our aim was to test various levels of Vitamin D dosages on zebrafish embryos. Zebrafish exhibit genetic and physiological homology with humans and so results can be related back to human foetal development. (*Faculty sponsor: Jean Doty*)

1:40 - 2:00

Population Identification of *Hediste diversicolor* (Annelida; Polychaeta) Obtained from the Callahan Copper Mine Estuary and Nearby Estuaries in Maine

Nickolas Bray

To understand more about the biomedical effects of heavy metals on humans, a study of a marine polychaete worm living in heavy metal contaminated sediments was conducted. A sample of *Hediste diversicolor* were collected from sediment at the former Callahan Mine, located in Brooksville, Maine. The former copper mine has been designated an EPA Superfund site due to the high concentration of many heavy metals, including copper and zinc. A genetic analysis was performed to detect possible differences between worms collected at the mine site, and from the relatively clean sediments of nearby estuaries. (*Faculty sponsor: Nancy Prentiss*)

2:00 - 2:20

Break

2:20 - 2:40

Investigating Avenues to Improve Opiate Abuse Prevention Efforts in Maine

Rose Miller

Rising heroin use and continued prescription opiate abuse represent a serious threat to Maine public health. Conducted for the Maine Policy Scholars program, this project began as a general examination of the consequences of opiate addiction and the challenges it presents to health-care professionals, law enforcement, and prevention specialists. Although it's important to emphasize the need for policy work across all domains, because addiction is a chronic condition, preventing its onset holds significant value. This project further seeks to identify barriers in existing prevention infrastructure and offer potential recommendations to improve the efficacy and breadth of primary prevention efforts with youth populations. *(Faculty sponsor: James Melcher)*

2:40 - 3:00

West Coast Hotel Co. vs. Parish

Lucas Dwornik and Consuela Web

Ms. Web and Lucas Dwornik will be acting as if they were in the Supreme Court presenting each side of the West Coast Hotel Co. vs. Parish. *(Faculty sponsor: James Melcher)*

Venue 4, Roberts 101

Special Education, Business Economics, Anthropology

9:00 - 9:20

Accessibility through My Lens

Lindsay Cochran, Amber Cognato, Jillian Cummings, Sharon Lake, and Kylie Reynolds

The Advocates for Disability Awareness Club (ADAC) is a student organization that provides disability awareness, promotes accessibility, and advocates for inclusion. This presentation showcases a club-developed video that follows an individual with a disability as she navigates around the community. The goal of this presentation is to increase awareness of accessibility and to generate discussion about creating more accessible communities. *(Faculty sponsor: Lance Neeper)*

9:20 - 9:40

Assistive Technology: Paving the Way for Independence

Lindsay Gorman

We all want to have that feeling of independence, that feeling of, "Okay, I finally got this, I don't need anyone to help me anymore." Assistive technology is just one of the many ways that people with disabilities are able to gain greater independence. This presentation will explain the different types of assistive technology, and focus on increasing awareness of its use in school and community settings. *(Faculty sponsor: Lance Neeper)*

9:40 - 10:00

Money Matters

Siiri Stinson

The current student debt crisis has posed a troubling dilemma for financial educators and administrators. The crisis impacts college life and opportunities beyond. One possible solution is to involve the students themselves in the effort to educate fellow students and prospective students about debt, money habits, and the best ways to prepare for financial self-reliance. The question is how do you involve students in a way that is both effective and sustainable, regardless of the economic landscape within any one given institution? This presentation will provide a blueprint for, and real examples of, such an initiative in action. *(Faculty sponsor: Wendy Harper)*

10:00 - 10:20

Break

10:20 - 10:40

Fluctuation of Oil Prices in the Global Market: Strategic Analysis and Economic Forecast for Exports of Norway, Russia, and OPEC Countries

Zhanna Ivanova

Oil consumption is steadily expanding in connection with the rapid development of the world economy. This research will emphasize the factors that have influenced the volatility of global crude oil prices since 2014, and assess the stability of export potential by analyzing influential economic indicators in regards to Norwegian, Russian, and OPEC economies, the role of oil in international industry and energy security, and comparative production and manufacturing patterns among the leading exporter countries. *(Faculty sponsor: Shahrokh Dalpour)*

10:40 - 11:00

A Behavioral Study of Sustainability: A Case Study from the UMF Dining Hall

Samantha Bevier

This study explores human decision making in the face of changing circumstances. The study examines how UMF students confront sustainability choices in the UMF dining hall. Samantha undertakes an analysis of

coffee mug usage in the dining hall, to understand students' daily decisions on food and drink consumption. The study hopes to be used to create a potential elimination of paper cup usage in the dining hall, in order to reduce the school's overall waste stream. This has previously been done at Middlebury College and a comparative analysis of research results from both colleges will allow for interpretation of student demographics and cultural of sustainability. *(Faculty sponsor: Lucas Kellett)*

12:10 - 1:00

Lunch Break

1:00 - 1:20

Autonomous Sensory Meridian Response (ASMR): An Ethnographic Study of a Tingle-Based Community

Tyler Provencher

What if, at the click of a computer mouse, a person could be engulfed in a feeling of pure bliss and contentment? A recent YouTube phenomenon, ASMR is designed to do just that by stimulating a "tingling" sensation in viewers. This research delves into the subculture of ASMR, with an emphasis on understanding the patterns, approaches, and techniques of ASMR content creators (known as ASMRartists). This project also focuses on gauging the social perception, acceptance, and experience of the ASMR sensation. Does everyone have ASMR? Does everyone experience "tingles"? *(Faculty sponsor: Gaelyn Aguilar)*

1:20 - 1:40

Social Media and Feminism: Expanding the Movement for Women's Rights and Equality through Modern Technology

Lindsey Cirell

Social media is expanding feminism with modern web.2 technologies such as Facebook, Twitter, Instagram and Pinterest. The study reveals that through social media, feminists are advocating for women's rights and equality by creating platforms where they can post information, ideas and spread awareness globally in a matter of seconds. As mainstream medias fail to represent women accurately, women are choosing social media as alternative sources for news, art, entertainment and culture. Social media allows feminists to inspire dialogue, call out misogyny, battle disinformation, advance political participation, fight for cultural and social change, promote the health and well-being of girls and women, and empower the next generation. *(Faculty sponsor: Gaelyn Aguilar)*

1:40 - 2:00

Global Ink: A Study of Tattoos and the Fight Against Decadent Imperialism through Personal Expression

Finn Hopkins-O'Neil

Ritual behavior, rites and ceremonies expressed in varying forms through pain ordeals, altered states, and physical trials, are common cross-culturally. Yet these types of practices may not be immediately associated

with having significant relevance to us as Americans and, through a wider lens, as "Westerners." My ethnographic research focuses on certain behaviors in non-indigenous American society, such as the increasingly popular art of tattooing, that exhibit characteristics found in rituals and rites of passage in indigenous cultures. Ultimately, the purpose of my research is to study and analyze the ways individuals vie for meaning in a neo-imperialist world. *(Faculty sponsor: Gaelyn Aguilar)*

2:00 - 2:20

Break

2:20 - 2:40

Agriculture and Subsistence Methods of the Penobscot

Madelyn Brackett

The Penobscot have contributed, in many ways, to Maine's heritage and "way of life." Through hunting, fishing, agriculture and other subsistence practices, the Penobscot have used their natural landscape to live to the best of their abilities. This research project focuses on how Penobscot subsistence strategies have changed over time, with an emphasis on how the Penobscot are adapting their traditions to an ever changing and challenging human landscape. *(Faculty sponsor: Gaelyn Aguilar)*

2:40 - 3:00

Hidden Underneath It All: A Study of Poverty through a Photojournalist's Perspective

Arielle Harding

What do you think of when you think of Costa Rica? Beautiful beaches? Some of the most bio-diverse places in the world? What about poverty? Despite how Costa Rica appears to the outside world, there is a significant population living in poverty. This research looks at the current situation of poverty in Costa Rica through the lens of a camera and in-field interviews of organizations that are helping to make a difference. *(Faculty sponsor: Gaelyn Aguilar)*

3:00 - 3:20

From Temples to Temptation: The Effects of Tourism on Thailand

Linda Pool

One of the primary questions surrounding tourism is what effect it has on the ecology and culture of a country. Thailand is one of the world's most popular countries for tourism, a place that conjures up visions of pristine beaches and quaint boat markets. But, tourism in Thailand has become more dynamic over the years, contributing to an increase in corruption, pollution, and sex trafficking. For this study, I have reviewed literature, Internet sources, travel blogs, and scholarly articles, using comparative analysis to draw specific conclusions about the effects tourism has had on Thailand. *(Faculty sponsor: Gaelyn Aguilar)*

3:20 - 3:40

The Hyde Amendment and the Intersection of Class and Reproductive Rights

Vanessa Norman

This research looks at the Hyde Amendment and analyzes it in constitutional and anthropological contexts in order to determine how it affects women differently based on class/economic status. Established in 1976, Hyde is a legislative provision preventing the use of specific federal funds, including Medicaid, from funding abortions (excepting cases of rape, incest, or to save the life of the mother). The aspects explored include the structural factors that play a role in a climate that politicizes women's bodies and reproductive choices, and the implications that repealing Hyde would have for the reproductive justice movement in the U.S. (*Faculty sponsor: Gaelyn Aguilar*)

Venue 5, CR 123

Humanities, Public Speaking

9:00 - 9:20

Teaching Shakespeare to Elementary Students

Mariah Buote

This presentation is focused on teaching elementary students about Shakespeare and the benefits it serves. Shakespeare's language challenges younger students, which is extremely important, even in elementary school. As a future elementary teacher, I believe that Shakespeare's work is an important piece of literature for young students. Shakespeare's language and stories teach students how to become better writers along with broadening their imagination in their own work. This presentation will provide strategies to use in an elementary classroom to encourage students to learn about Shakespeare and his work. (*Faculty sponsor: Misty Krueger*)

9:20 - 9:40

"Dumb Jock" or "Successful Student Athlete"? Managing an Athletic Identity at a Small, Liberal Arts College

Ryan Berthiaume

Participation in college sports may have a negative impact on an athlete's social reputation. For example, if the typical college student sees a person dressed in rugby attire, they might assume that this individual has lower intelligence and greater aggressiveness than people not dressed as such. The purpose of the present study is to explore whether or not the athletes themselves are attuned to this possible stereotyping based on their sport of choice, as well as their understanding of how the role of the athlete fits into their lives as a whole. To explore these issues, interviews were conducted with 17 male and female athletes. In general, the participants were aware of stereotypes regarding athletes in general, and some made reference to biases relating to their own sport. Significantly, the majority of the participants were comfortable embracing the role

of an athlete, even in the face of negative social judgments and other challenges. *(Faculty sponsor: Steven Quackenbush)*

9:40 - 10:00

Transhumanism: What It Is and Why We Need To Talk About It

Andrea Stemm

Science and technology allow humans to engineer amazing devices, but what happens when the human body and technology merge? Recent advances combining bio-science and technology have propelled the Transhumanist movement. Examples range from implants under the skin allowing users to unlock their smartphone to radical Transhumanists on a mission to achieve immortality through technology. This research presentation discusses the nature and extent of the Transhumanist movement, outlines the pros and cons of this controversial topic, and raises questions about the social and ethical implications of Transhumanism. *(Faculty sponsor: Matthew Freytag)*

10:00 - 10:20

Break

10:20 - 10:40

The Power of Breaking a Sweat

Brooklyn Brown

College students rely on medications to calm anxiety, treat depression, or alter their mood. What if there were a more natural solution? I conducted research and surveyed college students to assess the degree to which physical activity may address such illnesses and mood disorders. My presentation, which draws on this survey along with a personal case study, offers findings and conclusions on---and makes a case for---the power of breaking a sweat. *(Faculty sponsor: Kathryn Foster)*

10:40 - 11:00

Definition and Treatment of Unlawful Combatants-Contemporary and Historically

Nicholas Bucci

The Obama Administration's discussion to close Guantanamo Bay Detention Center in Cuba raises issues and questions about the definition and treatment of unlawful combatants. My research, organized to inform and guide the next President of the United States towards policy creation, explores these issues through discussion of historical and contemporary Supreme Court precedence. A subset of my broader Political Science Capstone Project on the same subject, this abridged illustrated presentation offers findings and a policy argument for the next chapter in U.S.-detainee relations. *(Faculty sponsor: Kathryn Foster)*

11:00 - 11:20

Happiness at your Fingertips

Carl Suter

What does it take to acquire happiness? In an ever-unfolding "New Age," we struggle to find the road that leads us to that elusive and impermanent joy. Looking for an answer, I've explored research in Psychology and Neuroscience as well as East Asian philosophy and religion and have come to understand that we need look no further than the tips of our fingers to find joy. In this presentation, I share what I have discovered about the nature of our joy, and what might be possible when we can access it. *(Faculty sponsor: Kathryn Foster)*

12:10 - 1:00

Lunch Break

1:00 - 1:20

Just One Drink

Kylie Reynolds

Fetal Alcohol Syndrome (FAS) is a lifelong and incurable condition. Just one alcoholic drink while pregnant can result in a lifetime of hardship for not only the child but their families as well. This presentation will examine the different areas of significant struggle such as physical, intellectual, and social aspects, as well as tips about how to help an individual with the disabilities that can occur from (FAS). *(Faculty sponsor: Kathryn Foster)*

1:20 - 1:40

"I Go To Bed Starving": The NCAA's Exploitation of Student Athletes

Henry Ametti

The NCAA, National Collegiate Athletic Association, is a multi-billion dollar business. The athletes who are responsible for generating the enormous amounts of revenue for the NCAA are not paid. The NCAA claims its athletes are students and not employees. Meanwhile, coaches and athletic directors are paid millions of dollars. Based on research, expert opinions, and other evidence, I will argue, we cannot take the money out of the NCAA. Instead, we must begin fairly compensating athletes and treating them like the employees they are. *(Faculty sponsor: Kathryn Foster)*

1:40 - 2:00

Exploring the Effectiveness of Sex Education Programs

Emily Jaye

Sex education is the most awkward, uncomfortable class a student will take in high school. Are they getting anything out of it? Drawing upon research and student health surveys, this presentation will describe the different types of sex education classes used in U.S. high schools, discuss how effective they are at preventing teen pregnancy and the spread of sexually transmitted diseases (STDs), and explore how sex education is

taught in other countries. The presentation challenges the audience to rethink their approach to sex education, and advocates for more effective classes for future generations. *(Faculty sponsor: Kathryn Foster)*

2:00 - 2:20

Break

2:20 - 2:40

LGBT is More Than Just Stonewall and AIDS: Why There Should Be More LGBT+ Inclusive Education.

Christina Hall

American education is always being reformed. It's gone from allowing males and females to be taught the same education, to having non-segregated classrooms. But it's not entirely up to date. This presentation is to show the benefit of incorporating more LGBT+ topics into the American education system. By using surveys, personal experience, and research, I outline the extent of LGBT+ education at a US High school level. I conclude with a possible curriculum that incorporates more LGBT+ topics into an American high school level classroom. *(Faculty sponsor: Kathryn Foster)*

2:20 - 2:40

Live Well, Laugh Often, Floss Much: The Psychology of Oral Health

Abbie Hartford

Despite an industry of supports and interventions to keep children safe and healthy, many suffer from poor oral health. According to the Centers for Disease Control, "tooth decay is one of the most common chronic conditions of childhood in the United States." Poor oral health leads not only to negative health conditions, but also to a plethora of psychological problems. Drawing upon research and case studies, this presentation discusses the link between deficient oral health and childhood problems with eating, speaking, playing, and learning. It concludes with a call to action for caregivers. *(Faculty sponsor: Kathryn Foster)*

3:00 - 3:20

Power of Music

Samantha Hatch

Whether for enjoyment or traditions, music has always been part of every civilization. Over time societies recognized that music could be used also for healing and helping. One population that music particularly helps is children with autism. This presentation introduces music therapy as a practice helping children with autism to communicate wordlessly with music. It demonstrates how rules of music help children learn rules of social interaction, taking turns, expressing emotions, and building relationships. *(Faculty sponsor: Kathryn Foster)*

3:20 - 3:40

Conversion Disorder: The Physical Manifestations of Mental Anxiety

Vanessa Schaeffer

Anxiety disorders are serious mental conditions that affect the everyday life. When anxiety is displayed through physical ways it is known as Conversion Disorder. Drawing on personal experience and thorough research this presentation will discuss the signs, symptoms, causes, tests, and treatments associated with Conversion Disorder. *(Faculty sponsor: Kathryn Foster)*

3:40 - 4:00

A More Flexible Meal Plan: A Feasibility Study of Implementing FlexCash at Farmington

Gavin Brickley

FlexCash is offered as an addition to the regular Sodexo dining plan. It functions as a debit card that can be accessed at various different locations on and off campus. This research project focuses on the pros and cons of implementing an off campus FlexCash system. It will include a non-biased cost benefit analysis and will discuss campus and community demand. *(Faculty sponsor: Kathryn Foster)*

Venue 6, The Landing, Student Center

Humanities

9:00 - 10:00

Gender and the Body Co-Lab Toolkits

Ashley Coulombe, Shania Creamer, Aliza Dube, Amber Duffus, Kayla Ide, Sarah Jenkins, Anastasia Johnson, Ciara Keene, Veronica Manasco, Anastasia Mcfadden-foy, Tiffani Melia, Angelica Morneault, Vanessa Norman, Faith Norton, Emma Pidden, Jordan Plummer, Samantha Regios, Andrea Stemm, Nicole Stewart, Zoe Thomas, Melody Tobey, and Alexandra Umstadt

Students in the Gender and the Body Co-Lab will share the educational toolkits they have designed. These toolkits are a collection of information, materials, and activities brought together to educate a specific audience about a topic related to gender and the body. Students will discuss the educational purposes of their projects and demonstrate some of the contents of each toolkit. The toolkits to be presented are on pregnancy and childbirth, social identity, popular culture, sex education, reproductive justice, and public Space. *(Faculty sponsor: Tanya Kennedy)*

10:00 - 10:20

Break

10:20 - 10:40

Modern Motherhood: Analysis of American Perceptions of Mothers and Motherhood

Savannah Ridgley

Societal views of mothers have varied over time, from the idealized Victorian mother to the Freudian concept that mothers drastically impact their sons' development. In the time of social media and reality TV shows centered around moms, how has American perception of the mother changed? This study assess what exactly current views are, as well as what influences opinions on mothers and motherhood in modern America.

(Faculty sponsor: Shana Youngdahl)

10:40 - 11:00

Roots: A Chapbook of Environmental Poetry

Elise Musicant

Drought, pollution, wild fires. How do humans impact nature? How has nature shown its infinite patience towards mankind? In her poetry, Elise examines the environment, our role in it, and how, despite human indifference, nature continues to give back to us. *(Faculty sponsor: Shana Youngdahl)*

11:00 - 11:20

Legacy and Desensitization: Andy Warhol's Perspective on Death

Michaela Carney

I argue that Andy Warhol's celebrity portraits should be included in his "death series," in turn representing how society sees death in different ways. Warhol's aim was to show that society as a whole has become desensitized to death due to the media's overexposure of the topic. As Klaus Honnef states, in the death series Warhol "used newspaper pictures which added a piquant horror to unemotional reports of the death of individuals." Through various silkscreen prints of Marilyn Monroe, Warhol was able to effectively communicate the lack of emotion people have regarding celebrity deaths. *(Faculty sponsor: Misty Krueger)*

12:10 - 1:00

Lunch Break

1:00 - 1:20

Beyond Halakha: Jewish Feminism in Women's Minyan

Brigid Chapin

This essay analyzes the play *Women's Minyan* (2006) by Naomi Ragen, placing it within the theoretical context of Jewish feminism. The student argues that the play addresses anti-feminism within ultra-Orthodox Judaism and illustrates women's responses to the problem of corrupt spiritual leadership. The play text and scholarly works within the field are used to analyze depictions of anti-feminist oppression and response by the Orthodox women represented in the play. *(Faculty sponsor: Michael Johnson)*

1:20 - 1:40

From Experience to Writing: the Fiction of Non-fiction in David Foster Wallace's *A Supposedly Fun Thing I'll Never Do Again*

Clement Grouzard

Commenting on David Foster Wallace's collection of essays *A Supposedly Fun Thing I'll Never Do Again*, I will focus, for this presentation, on discussing the concept of fiction in order to show that it is the condition through which Wallace's non-fiction is constructed. *(Faculty sponsor: Michael Johnson)*

1:40 - 2:00

Adapting Dickinson

Julia Lent

adapt |ə'dapt| verb [with obj.] make (something) suitable for a new use or purpose; modify

For this project I have created my own adaptations of Emily Dickinson's works. This presentation will be a discussion of the process of adaptation as a form of expression. Discussion will look at film, music, theater, and literature and how the process might be different with various mediums. I will discuss not only the adaptations that I have created but how others may choose to go about adapting a work. This will include a screening of the finished project. *(Faculty sponsor: Michael Johnson)*

2:00 - 2:20

Break

2:20 - 2:40

Reading by Students in Advanced Fiction

Lorin Burnham, John Pich, Cashel Lisse, Brittany Wheeler, and Sarah Williams

Five students from the Advanced Fiction Writing class, English 310, will read excerpts from fiction written this semester. *(Faculty sponsor: Patricia O'Donnell)*

2:40 - 4:20

Reading Ulysses

Brittany Courtot, Julie Guerra, Astra Pierson, Ryan Scott, and Timothy Stokes

Students from the fall, 2015, Honors seminar on James Joyce will present excerpts from their papers on *Ulysses*, including a meditation on Molly Bloom as critical problem; an analysis of music and sound in the "Sirens" episode; a reading of the novel from the perspective of the French feminist theorist Luce Irigaray; an argument for May Dedalus and Leopold Bloom as parallel maternal artist figures; and a discussion of the novel's technique in the light of Lessing's distinction between *nebeneinander* and *nacheinander*. *(Faculty sponsor: Daniel Gunn)*

Venue 7, Ricker 217

Psychology and Business Psychology

9:00 - 11:00

Oral Presentations of Research Methods in Psychology Students

Bethany Bergeron, Nicole Colageo, Jennifer Field, Courtney Frost, Kassidy Giggey, Derek Guerrette, Deric Hanscom, Alicia Higgins, Rayanna Howard, Alexis Lanctot, Anastasia Mcfadden-Foy, Stephanie Michaud, Janelle Noonan, and Logan Wiseman

Fourteen Psychology and Business Psychology: students will present their independent research projects in individual oral presentations. The students' research topics include: evaluations of masculinity as a function of whether a person bathes or showers; effectiveness of warm vs. cold community assistants; perceptions of lesbian vs. heterosexual parents; how mental illness stigma impacts E.R. visits; inclination to socialize with a person who has poor personal hygiene; helping behavior toward an Atheist vs. Christian person; the impact of a missing tooth on person evaluation; affiliation toward childhood objects as a function of attachment style; perceptions of people who have experienced childhood trauma; the Big Five personality traits and responses to video vignettes; attachment style and commitment to a romantic partner; the impact of personality and childhood experiences on recollections of childhood memories; age and stereotypes of hikers' behavior; and perceptions of college students who intend to remain child-free. (*Faculty sponsor: Karol Maybury*)

12:10 - 1:00

Lunch Break

1:00 - 4:00

Oral Presentations of Research Methods in Psychology Students

(Continued from morning session)

Venue 8, Art Gallery

Artist Talks

1:00 - 3:00

Senior Artist Talks: Company Picnic

Luke Deems, Bridget Flaherty, Jill Gingras, Tonner Hann, Channa Schroff, and Spencer Shaw

Senior art students in the Department of Sound Performance and Visual Inquiry exhibit the culmination of their capstone research in their group show titled *Company Picnic*. The exhibition is a diverse compilation of work, encompassing the relationships of culture, nature and technology, the exposure of the intimacy of the human psyche, the identity of things and people, hopeless power structures, relationships between design, seduction and disgust, and perception and expression. Luke Deems, Bridget Flaherty, Jill Gingras, Tonner Hann, Channa Schroff, and Spencer Shaw will discuss the ideas and theories that shape and inform their work that is on display in the UMF Art Gallery. (*Faculty sponsor: Jesse Potts*)

Venue 9, North Dining Hall

Poster Session

Please note that all poster presenters are expected to be at their posters to address questions for at least one hour, either between 10:00 and 11:00 or between 1:00 and 2:00.

Poster #1

Money Matters

Siiri Stinson

The current student debt crisis has posed a troubling dilemma for financial educators and administrators. The crisis impacts college life and opportunities beyond. One possible solution is to involve the students themselves in the effort to educate fellow students and prospective students about debt, money habits, and the best ways to prepare for financial self-reliance. The question is how do you involve students in a way that is both effective and sustainable, regardless of the economic landscape within any one given institution? This presentation will provide a blueprint for and real examples of such an initiative in action. (*Faculty sponsor: Wendy Harper*)

Poster #2

Good Local Food

Students from ECO 228

In this poster session, students from ECO 228 (Environmental and Natural Resource Economics) will investigate issues surrounding food production and distribution in New England. Posters will explore a wide variety of questions including: Could New England Feed Itself? What would an all New England diet look like? How does agritourism help small farms survive and thrive in the current economic climate? Could compost be used to generate energy? How will future global water issues impact New England food production? (This presentation is part of the Good Food CoLab) (*Faculty sponsor: Wendy Harper*)

Poster #3

Research Methods in Psychology: Poster Presentations

Marissa Arrigoni, Shelby Bryant, Britt Couturier, Taylor Gelman, Shannon Knight, Emily Leonard, Jubilee Macleod, Dominic Martorano, Meagan O'Reilly, Stephanie Pasciuti, Victoria Penney, Kaylee Pickering, Sean Rowe, Rayah Saucier, Brittney Sieg, Kirsten Trogon, and Trevor Whitney

Seventeen Psychology and Business Psychology students will present their independent research projects in poster presentations. The students' research topics include: evaluations of transgender and cisgender adoptive mothers; evaluations of emoticons; the effect of playing the Sims on well-being; personality traits and college major; evaluations of people who take frequent 'selfies'; gendered views of one-night stands; the impact of weather on mood and academic performance; correlation between procrastination and g.p.a.; correlation between stress and illness; the impact of ethnicity on evaluations of a crime; the impact of music on memory performance; how people view a male (vs. female) boss who reprimands an employee; perceptions of male and female gamers; how a person's body mods impact attraction; musical preferences and attachment style; animal assisted therapy in school reading programs; and the impact of ethnicity on evaluations of protesters. (*Faculty sponsor: Karol Maybury*)

Poster #4

Effects of Stress on Steadiness

Amy Clark, Katherine Drew, Hannah Forbush, Jeffrey Lamar, and Mark Leahy

Testing the effects of high versus low stress on our participant's ability to stay steady. The high stress group will be subjected to a timer while using the steadiness tester. The non-stress group will just complete the steadiness tester with no sound or timer. The dependent variable is the amount of times the participants buzzes. (*Faculty sponsor: Marilyn Shea*)

Poster #5

Effects of Caffeine on Performance

Katherine Drew

Subjects will be given different amounts of caffeine and asked to complete the task of completing a game of operation. The subjects will be given a beverage with varying amounts of caffeine prior to the task. The number of times that the subject hits the buzzer on the game will be recorded for each amount of caffeine

consumed and then studied for correlation between caffeine consumed and hand steadiness. (*Faculty sponsor: Marilyn Shea*)

Poster #6

Memory of Auditory/Visual Stimuli with or Without Music Distraction

Charles Martin

Music and memory are two important parts of many student's lives. The question is: "Does music help or harm memory?" This experiment will involve two kinds of memory, visual and auditory. (*Faculty sponsor: Marilyn Shea*)

Poster #7

Perception of Distance Running

Mark Leahy

In my study participants will be given three similar paragraphs that they will have to read. My independent variable will be the amount of running that the person in the paragraph does and this will be the only part of the paragraph that varies. This variable has three levels: no running, moderate running, and heavy running. The dependent variable will be which participant in the three paragraphs would be most successful. Which subject are you most willing to hire to fill an important teacher vacancy? Based on the results, running perceptions will be able to be measured. (*Faculty sponsor: Marilyn Shea*)

Poster #8

Correlation of Values with Gender Perception

Hannah Forbush

This experiment examines how participants associate certain values with masculine and feminine facial features. The primary values being examined are family life and career aspiration. (*Faculty sponsor: Marilyn Shea*)

Poster #9

Attraction Experiment

Amy Clark

Testing a man's attraction to a woman with and without a guitar as well as testing a woman's attraction to a man with and without a guitar. Measured on a Likert scale from 0-10 for attractiveness. (*Faculty sponsor: Marilyn Shea*)

Poster #10

The Effects of Breakfast Consumption on Learning

Jeffrey Lamar

This presentation will be on the effects of eating breakfast on the ability to learn. I will conduct an experiment with 2 groups, each group containing 10 subjects. One group will be given a breakfast to eat and the other group will not have eaten breakfast. I will then administer a reading comprehension test. I will then grade the tests and determine the results of the experiment. *(Faculty sponsor: Marilyn Shea)*

Poster #11

The Big Catch: Impacts of Climate Change on Maine Fisheries

Christopher Beahm, Amanda Boyd, Brewster Cherkis, and Amanda Swart

Fishing, both coastal and inland, have provided an essential role in the economy and culture of Maine. Currently, state fisheries are being threatened by various anthropogenic factors. Human induced climate change has altered seasonal scheduling, including regular "ice in" and "ice out" dates. Warming temperatures and changing chemistry of fresh water lakes and streams, as well as in the Gulf of Maine, are allowing for invasive species and foreign pathogens to affect native fish populations. In this poster we examine current impacts and potential pathways to mitigate and adapt to changes in Maine fisheries. *(Faculty sponsor: Lucas Kellett)*

Poster #12

Maine: Moving Forward with Climate Change

William Doehring, Brianna Flagg, Donald Hutchins IV, and Alisa Tibbetts

As the media, scientists, citizens and others have noted, climate change is becoming an increasingly certain, yet variable in nature. The impacts of climate change in Maine have already been well established and the state and its residents now must consider its future. In this poster we offer an optimistic view of how Maine can make progress on climate change by considering how mitigation and adaptation efforts can be suited to a range of spatial scales, including local, regional and statewide. We highlight a few key options for action which are universally applicable in dealing with climate change. *(Faculty sponsor: Lucas Kellett)*

Poster #13

Effects of Climate Change on Agriculture and Plant Life in Maine: Potential Impacts and Opportunities

Madelyn Brackett, Nicholas Gerry, Thomas Grady, and Jacquelyn Rose

Our poster project examines the impacts of current and future climate change on plant life and agriculture production in the state of Maine. The state's changing climate, including shorter winters, longer growing season and projections of increased temperature and precipitation, offer a multitude of challenges and opportunities for Maine agriculture. While traditional crops may continue to be grown, warmer conditions may enable a new suite of crops to be successfully harvested as well. While warmer and wetter conditions may create new problems (e.g., plant disease, weed growth), Maine's agricultural economy will have to find new ways to adapt and prosper. *(Faculty sponsor: Lucas Kellett)*

Poster #14

Current and Future Impacts of Climate Change on Maine's Lobster Industry

Thomas Alexander, Thea Sayward, Ciara Tolman, and Cheyenne Vandooren

The lobster industry in Maine has been a vital part of Maine for decades, both culturally and economically. Already observed changes in water temperature, acidity, salinity in the Gulf of Maine have provided both record yields, but adverse impacts to the lobster industry. The potential movement of lobster to colder waters off shore may make the lobster industry more expensive and may threaten the economic viability of lobster dependent communities. In this poster we will look at current data, and future projections of climate change on Maine's lobster industry. *(Faculty sponsor: Lucas Kellett)*

Poster #15

Climate Change and its Impact on Maine's Forests

Tori Decoteau, Jacob Legere, Jocelia Pease, and Jennifer Pinkelman

In this poster we examine the current and projected changes that climate change will have on Maine's forests. Changes in temperature, precipitation, seasonality and other factors will have a range of effects on tree, as well as animal and bird populations. Insects, tree disease and other invasive species are already being observed in Maine's forest lands. These changes offer challenges and opportunities to the wood products, tourism and outdoor recreation industries, in particular. In addition to impacts of climate change, we also explore how Maine and its residents can successfully manage as well as adapt to its changing forests. *(Faculty sponsor: Lucas Kellett)*

Poster #16

On Thin Ice: Climate Change and the Future of Winter Recreation in Maine

Mena Boyah, Catherine Dufault, Jacquelyn Rose, and Cassie Scott

This poster explores the impacts of climate change on winter recreation in Maine. Since winter is closely tied to Maine's state identity, history and economy a changing winter season is especially relevant. Winter recreation, especially ice fishing, snowmobiling and skiing, and associated economic industries will be challenged by warming temperatures and shorter, likely wetter winters in the future. Additionally, since winter tourism is a cornerstone of Maine's economy, understanding the impacts as well as successful avenues for mitigation and adaptation is required for the state's prosperous future in a new era of climate change. *(Faculty sponsor: Lucas Kellett)*

Poster #17

Alternative Vehicles, Alternative Energy

Students of PHY 110

With cars like the Chevrolet Volt, the Nissan Leaf, and the Tesla Model S on the road, it's a good time to look at the technology behind cars and energy generation. Student groups have carried out projects on alternative fuels, alternative vehicles, and alternative modes of generating electrical energy to power those vehicles, and

will present their projects in poster form. Topics include electric vehicles, hybrid-electric vehicles, hydrogen fuel cell vehicles, tidal and wave power, industrial-scale wind power, small-scale wind power, photovoltaic cells, combined heat and power, grid energy storage, passive solar design, and nuclear fusion. (*Faculty sponsor: Christopher Magri*)

Poster #18

Exploring Astronomy

Students of PHY 101

Space missions are constantly exploring the solar system from Mercury out to Neptune and beyond. Groups of students have carried out term projects on various areas of planetary science and will present them in poster form. Topics include Saturn, Neptune, Pluto, Europa, star formation, the Kepler exoplanet mission, and the aurora borealis. (*Faculty sponsor: Christopher Magri*)

Poster #19

Cannabinoid profiling in *Cannabis sativa*

Talya Briana

Cannabinoid compounds (*Cannabis sp.*) are known to have medicinal properties. Medicinal use requires more precise knowledge of cannabinoid profiles to allow for proper dosage, matched to the particular medical condition. To this end, we're developing a trimethylsilyl derivative method to analyze THC, CBD, THCA, CBDA, in whole cannabis or preparations, using Gas Chromatography/Mass Spectrometry (GC/MS). Better analytical techniques for cannabinoid profiling will help improve medical *Cannabis* treatment. (*Faculty sponsor: Martin Morocco*)

Poster #20

Terpene Analysis in the *Cannabaceae* Family

Riley Johnson

Terpene and terpenoid compounds are thought to work in concert with cannabinoid compounds (*Cannabis sp.*) resulting in medicinal qualities. Medicinal use requires more precise knowledge of terpene profiles to allow for proper dosage, matched to the particular medical condition. To this end, we have developed a gas chromatographic-flame ionization detection method for terpene profiling in whole cannabis or preparations using the full evaporation technique (FET-GC-FID). Better analytical techniques for terpene profiling will help improve medical cannabis treatment. (*Faculty sponsor: Martin Morocco*)

Poster #21

Chitinase Expression in Eelgrass Collected from Frenchman Bay

Erica Baxter, Talya Briana, and Brennah O'Connell

Eelgrass (*zostera marina L.*) populations off of the coast of Mount Desert Island have declined in recent years. Eelgrass is critical to the marine environments in Maine. Along with being a primary producer, eelgrass provides habitat, stabilizes the sediment, filters pollution, and sequesters carbon. Ongoing studies have been

looking into multiple factors that may be affecting the eelgrass. We assisted this research by looking at the expression level of the stress gene chitinase, from 11 different samples collected around Frenchman's Bay. This data will then be used to determine how the level of gene expression affected the plant's overall health. *(Faculty sponsor: Timothy Breton)*

Poster #22

What Lies Beneath: A Radar Investigation of Farmington's Near Surface Features

Thomas Alexander, Joshua Fletcher, and Joshua Richards

This project uses ground-penetrating radar (GPR) and other surveying equipment to investigate the subsurface of Farmington and paint a picture of what near-surface features look like. We will present data from well-known campus locations (Mantor green, Merrill Hall) and sites in town including some historic cemeteries. GPR works by sending radar energy into ground, contrasting features bounce some energy back to map out subsurface structures. After analyzing the data collected, we hope to help tell a story of the history of the area and connect people to the hidden geology beneath their feet. *(Faculty sponsor: Julia Daly)*

Poster #23

Coral Reefs: Brakes or Accelerator in the Global Carbon Cycle?

Seth Cochran and Jesse Enos

Rising CO₂ levels are increasing the greenhouse effect, and consequently warming the planet. As the pCO₂ increases, Earth's climate approaches a "hothouse" state very different from the "icehouse" state in which humanity has grown accustomed. With this problem in mind, we were drawn to explore the role of coral reefs in stabilizing or destabilizing pCO₂. Weathering of coral reefs, due to ocean acidification, acts as a CO₂ sink, but coral growth, expected to occur as sea level rises, produces CO₂. During this project we hope to estimate the net effect of coral reefs on global pCO₂. *(Faculty sponsor: Douglas Reusch)*

Poster #24

Phosphorus Loading in Maine Lakes

Matthew Bilodeau and Wyatt Mccurdy

Phosphorus is abundant in man-made fertilizers, but also exists naturally in geologic environments. Anthropogenic activity, such as land development and the fertilization of lawns near streams, is greatly increasing the normally small amount of phosphorus in waterbodies and lake sediments. This has a significant impact on their chemical and biotic makeup, causing eutrophication and related problems. In order to gain more insight on this issue of anthropogenic phosphorus loading, we summarize the phosphorus geochemistry of several Maine lakes using published data from Maine lakes. *(Faculty sponsor: Douglas Reusch)*

Poster #25

Geochemistry of the Deer Isle Serpentinite

Sumaya Hamdi and Cody Smith

The Deer Isle Serpentinite is a component of the Cambrian Ellsworth Terrane, a key tract of seafloor preserved in coastal Maine. Geochemical and petrographic analyses have yet to be properly documented in this locality. In this project, X-Ray Fluorescence will be used to determine major and trace element compositions of whole rock samples, and microprobe analyses to determine major and trace element compositions of chromite grains. These new data will significantly constrain the tectonic setting of the northern Appalachian mountain belt. (*Faculty sponsor: Douglas Reusch*)

Poster #26

Concentrating Lithium Using Evaporative Processes

Matthew Wilson

Lithium-ion batteries, used in electric cars and laptops, are light-weight (high energy density) and rechargeable, to which contribute to efforts to decrease the anthropogenic carbon footprint. Lithium, however, is scarce, with significant concentrations known only from low-tonnage granitic pegmatites (present in the mineral lepidolite) and in brines/evaporates. The present study considers the potential of evaporate sequences in the Northeastern Maritime provinces. Further processing and evaporative concentration, might yield economic deposits of lithium in these provinces. (*Faculty sponsor: Douglas Reusch*)

Poster #27

A Possible Rock-weathering Mechanism to Reduce Maine's Carbon Footprint

Justin Caron and Joshua Richards

Could Maine use ultrabasic rocks instead of current road sand on its roadways in winter to reduce its carbon footprint? These reactive rocks could be supplied by local mining, and shipped throughout the state to supplant road sand sourced from gravel pits. Once on the roads, these ultrabasic rocks would react with carbon dioxide, scouring it from the atmosphere through chemical alteration to carbonate. These same rocks could also be spread on flat top roofs or used as the grit on shingles to help further reduce the state's carbon footprint. (*Faculty sponsor: Douglas Reusch*)

Poster #28

The Role of Magmatic Processes in Concentrating REE Accessory Phases; Evidence from the Mt. Waldo Pluton, Coastal Maine.

Thomas Alexander

The 371 ± 2 Ma Mt. Waldo pluton (MWP) is a coarse grained, porphyritic, bt + hb + sp granite, which displays definite evidence, i.e. mineral layering or schlieren, that magma mixing played an important role in the evolution of this magma chamber. Geochemical data from the MWP show that the schlieren have very high concentrations of the REEs. They are not only enriched relative to the composition of the average MWP granite but also average crustal abundances. This strongly suggests that magmatic processes were responsible

for the enrichment in REEs in the schlieren during the crystallization of this dynamic magma chamber. *(Faculty sponsor: David Gibson)*

Poster #29

Origin of Garnets in the Cape Cod Hill Granite

Joshua Fletcher

The purpose of this study is to determine the origin of garnets observed in the Cape Cod Hill granite, west-central Maine. Garnets are typically observed in metamorphic rock so their occurrence in an igneous rock is problematic. They could be magmatic in origin, crystallizing at higher temperatures, or inherited from a metamorphic source, and formed at lower temperatures. The temperature under which the garnets form often controls their composition. Therefore analyses of the garnets from the CCH granite will enable us to calculate the temperature under which they formed and elucidate their magmatic or metamorphic origin. *(Faculty sponsor: David Gibson)*

Poster #30

School Health Education Research

Sean Murphy, Rhiannan Jackson, Jaclyn Langevin, Katherine Stasalovich, Miranda Shurtleff, Tricia Grover, Joseph Menice, Tyler Flayhan, and Kaylond Mauzerolle

A variety of school-aged youth and adolescent topics will be addressed utilizing a classroom perspective. Poster content embraces health promotion, prevention, healthy behaviors, and healthful messages. *(Faculty Sponsor: Stephanie Swan)*

List of Faculty Sponsors

Gaelyn Aguilar
Christopher Bennett
Timothy Breton
Anthony Brinegar
Shahrokh Dalpour
Julia Daly
Brad Dearden
Jean Doty
Kathryn Foster
Matthew Freytag
David Gibson
Daniel Gunn
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Jesse Potts
Nancy Prentiss
Steven Quackenbush
Katrachyna Randall
Douglas Reusch
Marilyn Shea
Stephanie Swan
Anne Marie Wolf
Shana Youngdahl

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A Tribute to Michael D. Wilson

Michael D. Wilson graduated from UMF in 1976. He loved teaching, helping children grow and develop. He reached out to help people whenever he could. He also had a deep love for the beauty and serenity of the wilderness where he felt a deep sense of connection.

Michael chose to live his life in a manner that was true to his beliefs. Many people remember him as a special person and a good friend. He died in a tragic accident in 1977, just as he was preparing to begin a new teaching position in a small town in Aroostook County.



SYMPOSIUM 2016