

2012

Symposium 2012

University of Maine at Farmington

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**Celebrating Undergraduate Research
and Creative Achievements**

*Special Event: Theo's Last Lecture
Monday April 23*

Arts Nights: April 23 and 24



Michael D. Wilson

Symposium

*April 25
2012*

University of Maine
Farmington

Welcome to the Michael D. Wilson Symposium!

April 25th 2012

First held in February 1999, the UMF Symposium has grown into a wonderful tradition. Each spring we take a day off from classes and from our normal routines to share in the exciting work of faculty and students—mainly students.

In showcasing their scholarly and creative projects through papers, performances, poster sessions, etc., we are honoring our most deeply felt values as a public liberal arts college—specifically, active and engaged learning, academic rigor, student-faculty collaboration, and service to promote the common good. I find it particularly exciting that Symposium provides an opportunity for everyone—from beginning students to seniors who are completing an exciting capstone project—to share their work in a public venue.

I congratulate all the presenters along with their teachers and mentors. In addition, special thanks to the donors and organizers who have made this exciting day possible.

Daniel Gunn,

Interim Provost and Vice President for Academic Affairs

Symposium Day is a wonderful opportunity for students to showcase their scholarly and creative work. During the academic year they pursue their interests through individual projects, group projects, and working in collaboration with faculty mentors. Symposium Day provides them with the stage to share their work with peers, friends, faculty, and staff. We send our congratulations to the students, and we also thank the faculty and staff who have helped the students achieve what they have today.

Kathy Yardley, *Associate Provost and Dean of Education*

Rob Lively, *Associate Provost and Dean of Academic Services*

This Symposium is organized by the University Culture Committee:

Marisela Funes, Chair

Gustavo Aguilar

Alireza Geshnizjani

Paul Gies

Misty Krueger

Paul Stancioff

Theo's Last Lecture

Monday April 23rd from 7-8:30

Lincoln Auditorium

Reception to follow outside Lincoln Auditorium



The Last Lecture is a powerful book written by Randy Pausch. Pausch was diagnosed with cancer, and soon after gave a big last lecture at Carnegie Mellon University. The idea of a last lecture has become inspirational to many others; the idea behind it is that if you had one last lecture to give, what wisdom would you want to leave everyone with? Since this influential book came out, many professors have given lectures modeled after this idea of a last lecture, contemplating what matters most to them and what kind of legacy they want to leave behind. This Last Lecture, sponsored by Alpha Lambda Delta First-Year Honors Society, is President Kalikow's chance to do just that.

After 18 years of being our President here at UMF, President Theo Kalikow will retire at the end of this academic year. She has been inspirational here on campus, and has received awards and recognition from all over for all of her leadership roles. President Kalikow is actually an honorary member of Alpha Lambda Delta, inducted with the chapter's first members, in October 2007. Sponsoring this lecture is Alpha Lambda Delta's way of honoring President Kalikow for all of her years of hard work and devotion to UMF.

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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 almost 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 are funded by a generous gift of Michael and Susan Angelides, in honor of their good friend, and UMF alumnus, Michael D. Wilson, class of 1976. The students were nominated by UMF faculty mentor and, after a competitive selection process, were chosen by the UMF Undergraduate Research Council.

2011-2012 Wilson Research Fellows

Sebastian Jackson, *When Tongues Collide: A History of Language Policy in 20th Century South Africa.*

Faculty Sponsor: Dr. Walter Sargent

Skylar Hopkins, *The Role of Invasive Species in the Transmission of Infectious Diseases.*

Faculty Sponsor: Dr. Ron Butler

Thomas Kilcoyne, *Sigma Invariants of Semi-direct Products of Free Groups and Finitely Generated Groups with Respect to Group Actions by Pure Symmetric Automorphisms.*

Faculty Sponsor: Dr. Nic Koban

Fall 2011 Wilson Research Scholars

Cecelia Palow, *Does Brain Gym Enhance the Educational Process?*

Faculty Sponsor: Dr. Marilyn Shea

Grady Burns, *A Bitter-Sweet Relationship: Examining the Influence of Big-Cocoa on Nkrumah's Ghana and Cold War America.*

Faculty Sponsor: Dr. Chris O'Brien

Jonathan Boynton, *How Did We Get Here? Looking at Underdevelopment in the Moosehead Lake Region.*

Faculty Sponsor: Dr. John Messier

Jordan LeGrand, *The Generalized Euler Phi Function and its Applications to Mathematical Music Theory.*

Faculty Sponsor: Dr. Lori Koban

Megan Whitman, The Petrography and Geochemistry of the Mixer Pond Pluton, South-Central Maine.
Faculty Sponsor: Dr. David Gibson

Ryan Verrill, Feeding an Army: The Military Ration and its Impact on 70 Years of American Warfighting.
Faculty Sponsor: Dr. Walter Sargent

Sara Adams, Honors Thesis on Pond Dynamics and Water Chemistry.
Faculty Sponsor: Dr. Julia Daly

Zachary Giroux, Private Trade and Public Competition at Fort Orange: The Dutch West India Company's Effort to Maintain Monopoly.
Faculty Sponsor: Dr. Walter Sargent

Spring 2012 Wilson Research Scholars

Alexa Kusmik, Preliminary Assessment of Polychaete Assemblages for the Coral Reef National Monument, Hurricane Hole, Virgin Islands National Park.
Faculty Sponsor: Dr. Nancy Prentiss

Ben Radville, Art as Absurd as Life: The Generation of Terror.
Faculty Sponsor: Katrazyna Randall, M.F.A.

Brody Ford, The Literacy Problem: An Ethnography of Why Schools Are Failing Boys.
Faculty Sponsor: Dr. Clarissa Thompson

Christy Carle, Space: The Intimacy of Memory.
Faculty Sponsor: Katrazyna Randall, M.F.A.

Katherine Steward, The Pathos of the Powerless.
Faculty Sponsor: Dr. Katrazyna Randall, M.F.A.

Kenneth Lamb, Loose Dirt: A Full-length play about an eclectic group of people who live in Hadleigh, a small town that has been steadily declining since its raison d'être, the shoe factory, shut down.
Faculty Sponsor: Dawn Nye, M.F.A.

Kiley Gendron, Tablet Technology and Peer-Mediation in an Inclusive Preschool Classroom.
Faculty Sponsor: Dr. Loraine J. Spenciner

Libby Newhouse, Amorousness and Violence: The Dualistic Nature of Knighthood in The Canterbury Tales.
Faculty Sponsor: Dr. Eric Brown

Melaine Christensen, Teaching with Assistive Technology in Middle Schools.
Faculty Sponsor: Dr. Loraine J. Spenciner

Melanie Strout, The Health and Disabilities Issue.
Faculty Sponsor: Dr. Gaelyn Aguilar

Morgan Cousins, High Performance Liquid Chromatography Identification and Quantification of Common Antioxidants in Coffee.

Faculty Sponsor: Dr. David Heroux

Natalie Dumont, Influence of Leaf Litter Composition on Vernal Pool Water Quality in Western Maine.

Faculty Sponsor: Dr. Drew Barton

Nicole Phillips, Complex Connections with Nature.

Faculty Sponsor: Katrazyna Randall, M.F.A.

Sara Tarbox, Young Americans Who Look Like Me.

Faculty Sponsor: Katrazyna Randall, M.F.A.

The Wilson Scholar and Fellow program is facilitated by UMF's Undergraduate Research Council (URC) whose mission is to further develop and implement the goal of institutionalizing undergraduate research.

2011-2012 URC Members

John Messier, Associate Professor of Economics; David Heroux, Chair, Assoc. Professor of Chemistry; Walter Sargent, Associate Professor of History; Nic Koban, Associate Professor of Mathematics; Clarissa Thompson, Associate Professor of Secondary and Middle Education; Katrazyna Randall, Assistant Professor of Art; Karol Maybury, Associate Professor of Psychology; Steven Pane, Professor of Music; Sarah Sloane, Associate Professor of Biology; Jennifer Eriksen, Director of Alumni Relations; Rob Lively, Associate Provost and Dean of Academic Services; Frank Roberts, Director, Mantor Library

According to UMF's Undergraduate Research Council "undergraduate research is an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline.

Announcing the 2012-13 Wilson Research Scholar and Fellow Program

**Do you have an interesting and original research or creative project in mind?
Would you like to receive financial support to pursue your idea? Contact a
faculty member and begin developing a proposal for next year's Wilson
Program.**

The fall application deadline is 5pm, Friday, September 28, 2012

for more information go to ur.umf.maine.edu

ART(S) Night(s)

Sponsored by Faculty and Students from Sound, Performance and Visual Inquiry

Monday, April 23 5th Annual Pixel Hunter Video and Animation Festival

Emery Performance Space 7PM

This Festival is a screening of the best video and animation projects from UMF students over the past 12 months. From stop motion animation to the zombie apocalypse, this time based media exhibition includes student work from divisions across campus.

On Tuesday, April 24,

please join UMF faculty and students as we celebrate the visual, performative, sound and music, physical space and movement of ARTS Night! And food, we always celebrate with food!

5PM Clefnotes

Emery Performance Space

UMF's a cappella group features students from a wide range of disciplines and backgrounds brought together through their love of singing – anything from contemporary pop to classic oldies.

6PM ReinCARnation

After two years in the garage for servicing, the automobile orchestra returns to the parking strips between Emery and Psychology for a brand new traffic-jam session, in the tradition of Car Life, Car Afterlife, and Incarnation. Phil Carlsen's newest car-cophonous offering is called – what else? – ReinCARnation. Drivers and vehicles will gather at 6:00 for about a twenty-minute rehearsal, followed by two rousing performances.

7PM The Café Project with Gustavo Aguilar and David Carr

Emery Performance Space

8-9:30PM "The Loss"

Alumni Theatre

A collaborative live installation featuring members of SPVI Project 2 class

13 April – 12 May

Moxie

The Senior Show – Artists in Flex Space and throughout Emery and UMF Art Gallery (the barn)

Senior year is a test of will. Art students have learned to examine the problems of creative practice and production relevant to culture and theory. In this presentation, they will discuss the purpose of art in society; how the aesthetics of popular art are a part of their work; and their philosophy and aesthetic influences of making.

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, Dr. Eric Brown, Associate Professor of English, will be lecturing on his project, "Screening Milton: A Brief History of Paradise Lost on Film," at 11:20 in Lincoln Auditorium. All students, faculty and staff are invited.

Each year at Symposium we also announce the Trustee Professor for the upcoming academic year. The announcement will be made at the beginning of the Trustee Lecture at 11:20 in Lincoln Auditorium.

Congratulations to all of our faculty and student scholars.

Daniel Gunn, Interim Provost

2010-2011 Trustee Professor

Eric Brown

Screening Milton: A Brief History of Paradise Lost on Film

11:20 -12:00 Lincoln Auditorium

D. W. Griffith once suggested that ineffable works like *Paradise Lost* could never be successfully adapted by anything but the cinema: "Say that you had just written 'Paradise Lost' and wished to have it produced on the stage. To whom would you go? [. . .] The motion picture has taken all of these works, has deemed none of them too 'highbrowed,' and has 'got them across.' Perhaps the production was not always perfect, or wonderfully artistic, but the big idea was still there, still intact, and it reached the hearts of the spectators." Nearly a hundred years later, directors are still trying—and failing—to produce a feature-length film of *Paradise Lost* that would live up to the sublime reputation of its source. Indeed, despite a New York Times proclamation that *Paradise Lost* "was an interstellar science fiction epic before the genre existed, and its sense of spectacle was cinematic long before the invention of cinema," the presence of Milton on film has increasingly been marked by his absence: negations, excisions, denials, and other acts of unmaking that leave him on the cutting-room floor. This paper will trace the history of attempts to translate Milton into the language of moving pictures, from Victorian magic lantern shows to the most recent attempts by Hollywood to produce a *Paradise Lost* blockbuster.

Past UMF Trustee Professors

Spring 1999 – Mark McPherran
1999 – 2000 – Ron 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

Venue 1, Lincoln Auditorium

Wilson Scholar Presentations and Trustee Professor Lecture

Please Note: In addition to those in this venue, there are other Wilson scholar presentations within other venues around campus. Several are presenting in the Science venue in Thomas auditorium, and a number of art students will be presenting their Wilson Scholarship work at either the UMF Art Gallery or at the Emery Arts Center.

9:00 - 9:20

The Generalized Euler Phi Function and its Applications to Mathematical Music Theory

Jordan Legrand

Suppose we wanted to count the number of unique 4-note chords on a 12-note scale. How about the number of 8-note chords on a 32-note scale? We will develop a method to count the number of chords on a scale, regardless of chord and scale size. Julian Hook, a noted music theorist claims that to solve this problem, one must use high powered enumerative combinatorics. If we approach the problem from a different angle, we can discover a result using simpler methods. Topics for the talk will include music theory, combinatorics, group actions, the Euler Phi function, and a new, generalized Euler Phi function. *(Faculty Sponsor: Lori J. Koban)*

9:20 - 9:40

Geometric Invariants of Semidirect Products of Groups

Thomas Kilcoyne

The Bieri-Neumann-Strebel geometric invariants of a group have proven to be quite useful in obtaining information about the group. For example, these invariants provide finiteness information about certain normal subgroups. The invariants have been rather difficult to compute in general. We will discuss these invariants for free-by-free abelian split extensions with actions by pure symmetric automorphism. *(Faculty Sponsor: Nicholas A. Koban)*

9:40 - 10:00

How did we get here? Looking at Underdevelopment in the Moosehead Lake Region

Jonathan Boynton

At the turn of the century, the Moosehead Lake region was one of the top tourist destinations in the state. The wealthy elite of Boston, New York, and Philadelphia would come up by train to the largest inland hotel in the country, The Mount Kineo House. Flash-forward to today, the local economy is in distress, the tourist industry isn't performing as well as it should, given the regions past history and the natural beauty. The question is, what changed? What caused people to stop coming to the Moosehead Lake Region like they had at the turn of the 20th century? *(Faculty Sponsor: John D. Messier)*

10:00 - 10:20

A Bittersweet Relationship: Examining the Influence of Big-chocolate and Cold War America on Nkrumah's Ghana

Grady Burns

When Ghana declared its independence in 1957, its new leader, Kwame Nkrumah, vowed to turn his country into an industrialized and economically independent state. In reality, however, 60% of the

Ghanaian economy remained tied to the production and export of cocoa, an industry which relied on cheap labor and patronage from Western corporate confectioners. This paper examines the level of power that Nkrumah had over his own domestic policies in the face of the private and governmental pressures of the United States, as he struggled to assert himself on both the national and international stage, between 1957 and 1961. (*Faculty Sponsor: Christopher S. O'Brien*)

10:20 - 10:40

Break

10:40 - 11:00

Open Wide! Feeding Strategies of Polychaete Worms of the Virgin Islands National Park

Alexa Kusmik

Hurricane Hole! Here, boats take refuge from incoming storms about to strike St. John, U.S. Virgin Islands. But who are the full-time residents of this secluded area, lurking in the mud under the pristine mangroves and grass beds? From fans and tentacles to powerful jaws that retract back into the esophagus, this presentation will introduce you to the remarkable polychaete marine worms and the myriad of feeding structures different species have evolved to detect and devour their prey. (*Faculty Sponsor: Nancy Kotchian Prentiss*)

11:00 - 11:20

Private Competition/Public Trade: Monopoly in New Netherland, an Atlantic Success Story

Zachary Giroux

The Dutch Colony of New Netherland was founded under the mercantilist principles of total economic control. After a few faltering years, the Dutch West India Company relinquished control of the fur and carrying trade, allowing non-company merchants access to the colony's most valuable economic assets. These private merchants utilized the flexible Dutch credit system to greatly expand the colony's trade not only within the Dutch empire but also other European Colonies throughout the Atlantic. New Netherland has been criticized for failing to adhere to the mercantilist template- this study argues that the colony's success and uniqueness can be found in its domination of Atlantic trade. (*Faculty Sponsor: Walter L. Sargent*)

11:20 - 12:00

Screening Milton: A Brief History of Paradise Lost on Film

Eric Brown

D. W. Griffith once suggested that ineffable works like *Paradise Lost* could never be successfully adapted by anything but the cinema: "Say that you had just written 'Paradise Lost' and wished to have it produced on the stage. To whom would you go? [. . .] The motion picture has taken all of these works, has deemed none of them too 'highbrowed,' and has 'got them across.' Perhaps the production was not always perfect, or wonderfully artistic, but the big idea was still there, still intact, and it reached the hearts of the spectators." Nearly a hundred years later, directors are still trying—and failing—to produce a feature-length film of *Paradise Lost* that would live up to the sublime reputation of its source. Indeed, despite a New York Times proclamation that *Paradise Lost* "was an interstellar science fiction epic before the genre existed, and its sense of spectacle was cinematic long before the invention of cinema," the presence of Milton on film has increasingly been marked by his absence: negations, excisions, denials, and other acts of unmaking that leave him on the cutting-room floor. This paper will trace the history of attempts to

translate Milton into the language of moving pictures, from Victorian magic lantern shows to the most recent attempts by Hollywood to produce a Paradise Lost blockbuster.

12:00 - 1:00

Lunch Break

1:00 - 1:20

Testing Brain Gym's Pseudoscience

CeCelia Palow

Brain Gym claims to improve cognitive ability through simple stretches and movements which are said to change the physiological function of the brain. There is no scientific evidence offered by either the Brain Gym authors or by independent scientific investigators to support the claims. Brain Gym's evidence relies on anecdotal reports that suggest miracle cures after single interventions. The current study tested the effects of Brain Gym on reading comprehension using subsections of a PRAXIS practice test. The study found no basis for claims of short term benefits from either Brain Gym exercises or from the other forms of exercise tested. Results were analyzed in a 5 X 2, between and within groups analysis of variance; no significant comprehension improvements were found ($p=.375$), thus disputing Brain Gym's assertions. Nonetheless, the program continues to be used and adopted by schools both here and abroad by those who buy into the pseudoscience. (*Faculty Sponsor: Marilyn Ann Shea*)

1:20 - 1:40

Tablet Technology and Peer-Mediation in an Inclusive Preschool Classroom

Kiley Gendron

The use of technology in early childhood classroom settings is increasing. The National Association for the Education of Young Children supports effective use of technology with young children. This project involves the use of peer-mediation and an iPad together in order to support cooperative play in an inclusive preschool classroom. Young children with less involved disabilities or delays act as peer-mediators to children with more significant disabilities. The purpose of the study is to see if, through use of this strategy, children will develop cooperative play skills and if the skills are generalized to other play engagements. (*Faculty Sponsor: Loraine Spenciner*)

1:40 - 2:00

Teaching with Assistive Technology In Middle School

Melaine Christensen

Assistive technologies (AT) are tools designed to aid people with disabilities. Many students with disabilities use various types of AT in school to help them complete their school work in inclusive general education classrooms. This research examined the effects of integrating AT into a seventh grade general education science classroom. Students with diverse learning needs and styles used graphic organizers, Inspiration, iPads, computer games, and different types of microscopes in the context of their usual curriculum and completed surveys on what they had learned and their opinion of the AT that was incorporated in the lesson. (*Faculty Sponsor: Loraine Spenciner*)

2:00 - 2:20

Chivalry and Violence: Knighthood in The Canterbury Tales

Libby Newhouse

A presentation on Chaucer's Knight and his position as both a courtly figure and fierce warrior. Scholarship surrounding the Knight offers two competing narratives: the Knight as the noble, idealized crusader and as the merciless mercenary. This presentation examines the conflicting roles of knighthood and the relationship between men and women within the social framework of chivalry and concludes that through the Knight the institution of knighthood is unable to separate the lover and the fighter, thus promoting a culture of enmity between the sexes and violence against women. (*Faculty Sponsor: Eric C. Brown*)

2:20 - 2:40

Break

2:40 - 3:00

The Literacy Problem: An Ethnography of Why Schools Are Failing Boys

Brody Ford

Numerous international studies have shown that girls significantly outperform boys on all tests of literacy skills. The purpose of this research is to examine the "boy culture" present in today's schools associated with reading and writing, focusing on issues related to masculinity, popularity, bullying, and school status. This study includes interviews with middle and high school students, observations of classrooms, and interviews with teachers and librarians across major subject areas. I believe that this study will encourage education students and campus faculty alike to get to the root of the literacy problem among boys. Only then can we look past challenging male students as "problems" and instead can take proactive measures in developing strategies that will help boys close the literacy gap and attain higher levels of knowledge, all while inspiring them to be lifelong learners. (*Faculty Sponsor: Clarissa S. Thompson*)

3:00 - 3:20

Disability in the Workplace: An Ethnographic Approach to Understanding Barriers to Employment in Sydney, Australia.

Melanie Strout

This anthropological study examines the social construction of disability and how the resulting misconceptions influence or inhibit one's search for employment. Based on three months of ethnographic fieldwork in a Transition to Work program in Sydney, Australia, this study follows the experiences of several young adults with a physical disability and/or high functioning autism as they encounter various barriers to full integration into the workforce. (*Faculty Sponsor: Gaelyn D. Aguilar*)

Venue 2, C-23, Roberts Learning Center

Humanities

9:00 - 9:20

Around the World in 15 Minutes

Chiaping Wen and Mary Moyer

Four students who have lived on three continents and spoken four languages will share their experiences and insights about the benefits, challenges, and humor of living abroad. They have come into contact with a variety of cultures, which have shaped who they are and who they want to become personally and professionally. They will share their stories and discuss academic and personal benefits. (*Faculty Sponsor: Sylvie Charron*)

9:20 - 9:40

Peoples First Language

Brandon Brents

Mark Twain once said, "The difference between the right word and the almost right word is the difference between lightning and the lightning bug." Words have power. The power of People First Language is making sure that our words recognize the individual. What is the politically correct way to address a person with special needs? Why does it matter? The answers to these questions and more information about People First Language will be shared in this presentation. (*Faculty Sponsor: Theresa L. Overall*)

9:40 - 10:20

Philosophy of Education

Jason Bragg, Ethan Jean, and Joseph Sullivan

Essays in the Philosophy of Education. (*Faculty Sponsor: Matthew G. Freytag*)

10:20 - 10:40

Break

10:40 - 11:20

A Feminist Case Study: NOW, Penn State, and Campus Sexual Assault Policies

Kelly Bean, Christina Blank, Alana Knapp, Kelsey Moore, Danielle Newman, Jasmine Portales, and Marie Russell

Students will present a public policy case study on the National Organization for Women's proposal to Pennsylvania State University's disciplinary council following the recent sexual assault charges against former coach Jerry Sandusky. The NOW proposal asks that the university address all forms of sexual violence on the campus and admit to a dismissive attitude toward sexual assault, citing previous cases at Penn State. Students hope the case study will encourage discussion about university policies that create an environment for sexual assault and do not provide adequate protection or justice for students. (*Faculty Sponsor: Tanya Ann Kennedy*)

12:00 - 1:00

Lunch Break

1:00 - 1:20

Silent Spring At 50

Students from English 362

Rachel Carson's *Silent Spring* helped spark the environmental movement of the 1960s and 1970s, which led to landmark protections of land, wildlife, and human health. To mark the 50th anniversary of the book, students and faculty from ENG 362 (American Environmental Writing) and BIO 110 (Ecology and the Environment) will read excerpts and discuss the book from both literary and scientific perspectives. (*Faculty Sponsor: Kristen A. Case*)

1:20 - 1:40

Antigone and Elizabeth Bennet

Katherine Beach

In very different social settings, Sophocles' Antigone and Austen's Elizabeth Bennet bring surprisingly similar values and character traits to bear on some surprisingly similar challenges. They value and struggle with their families, defy gender roles, and appeal to values that transcend the rules of their respective societies. (*Faculty Sponsor: Matthew G. Freytag*)

1:40 - 2:00

Spirit Through Matter: "Holy Sonnet 10" and "Easter Wings"

Hannah Huber

Drawing connections between two different mystical poets of the medieval and Early Modern periods and their religious verse, this essay reflects the ways in which John Donne, and George Herbert were able to understand and articulate their spiritual realizations through their often shattering and painful physical experiences. By respectively calling in prayer for a revelation of God's presence received through the body, and identifying personal suffering and sin with the redemption represented by Easter, the two poets are both able to attain spiritual truth. And by analyzing the language of the poems, modern readers can be provoked to reflection upon their own spiritual views and means of perceiving truth. (*Faculty Sponsor: Misty S. Krueger*)

2:00 - 2:20

The Unusual Fop: Etherege's Fopling as Object and Subject

Amelia Tuttle

Few characters compare to Sir Fopling Flutter of George Etherege's *The Man of Mode*; or, *Sir Fopling Flutter*. The flamboyantly French fop takes great delight in pursuing women with his meticulously cultivated personality, manners, and clothing. Fopling's presentation of himself brings to mind Misty G. Anderson's book, *Female Playwrights and Eighteenth-Century Comedy*. The book deals with female playwrights and female characters, but brings keen insight to light about men and women in the roles of subjects and objects. The same concept of subjects and objects can be applied to Sir Fopling Flutter, and through this application explores Fopling as a revolutionary, boundary-crossing character. (*Faculty Sponsor: Misty S. Krueger*)

2:20 - 2:40

Break

2:40 - 3:00

“What's Her Fortune”: The “Active” Objectification of Women in Aphra Behn's The Rover

Kassaundra Ricker

According to drama scholar, Robert Markley, Aphra Behn's 1677 Restoration comedy, The Rover, “may be the most widely revived Restoration play on stages in Great Britain and the United States” (237). The Rover was widely popular in its own time, and this fact has translated into modern times as well. Why is this the case? One of the reasons The Rover has stood the test of time is the interesting approach that Behn takes to creating her female characters. By looking at the main female characters of Florinda, Hellena and Angellica through the lens of Misty G. Anderson's theory of “active objects” we find that Behn's dynamic staging of female characters reveals something distinct from conventional images of women in English culture during this time period. (*Faculty Sponsor: Misty S. Krueger*)

3:00 - 4:30

Shakespeare: Word to Stage

Adrienne Abramowitz, Katherine Bennett, Bianca Bourgault, Molly Cavanaugh, Shila Cook, Laura Cowie, Melanie Floyd, Meghan Fogg, Hayden Golden, Kaitlin Goulet, Rebecca Grzesik, Andreaska Jeffcoats, Lauren Keane, Katie Marshall, Kellsey Metzge

No dramatist has achieved the critical reputation and cultural legacy as Shakespeare, whose language tugs at our imaginations, challenges our minds with its intricacies, and our hearts with its power to move us. His words make us pause. Yet, Shakespeare wrote these words to be performed, and performances propel us through the plays far more quickly than our private reading. In panels exploring aspects of staging, costuming, clowning, and performance history, this session explores the tension between the invitation to linger in thought in private reading and the desire to be moved dramatically through public performance on stage or screen. (*Faculty Sponsor: Misty A. Beck*)

Venue 3, Thomas Auditorium

Natural Sciences

9:00 - 9:20

Watershed Controls on Summer Stratification of Maine Subalpine Ponds

Sara Adams

The Mountain Ponds Project has been collecting high-resolution water temperature data in subalpine ponds over the last five years. Most of the ponds can be classified into three summer stratification types: strongly stratified, weakly stratified, and ponds that show intermittent, short duration mixing events. Previous work suggested transparency as a significant factor in pond mixing behavior. We collected water

samples and analyzed them for color and dissolved organic carbon (DOC). Preliminary results show higher DOC levels in sites that are exhibiting strong stratification. Better understanding the controls on stratification will help predict how these ponds respond to future climate change. (*Faculty Sponsor: Julia F. Daly*)

9:20 - 9:40

The Role of Non-host Species in Disease Dynamics

Skylar Hopkins

In the context of the present biodiversity crisis, there is renewed interest in the importance of biodiversity to disease dynamics. However, the majority of recent research considers the importance of host biodiversity, while non-host species may also play vital roles in disease systems. I reviewed the functional groups of non-host species and the mechanisms by which they may impact disease, and then I focused specifically on predators of free-living parasite stages to provide background context for my PhD work. The results of this literature review will be discussed with special emphasis on future research in *Chaetogaster limnaei*-snail-trematode systems. (*Faculty Sponsor: Ronald G. Butler*)

9:40 - 10:00

Snails and Oligochaetes: Friends, Casual Acquaintances, or Enemies?

Skylar Hopkins

Chaetogaster limnaei limnaei is a symbiotic oligochaete that resides in the mantle cavity of aquatic snails and consumes trematodes. We used field data regarding natural *Chaetogaster*-snail-trematode co-occurrence to parameterize experiments in which we manipulated *Chaetogaster* infestation intensity and trematode abundance to determine the importance of this non-host species to disease transmission. *Chaetogaster* protected snails against trematode infection, and oligochaete populations increased rapidly in response to high trematode abundance. Unlike other non-host species (e.g., damselflies), *Chaetogaster* may be uniquely able to rapidly turn energy from trematode consumption into offspring, thereby providing maximum protection to the snail hosts. (*Faculty Sponsor: Ronald G. Butler*)

10:00 - 10:20

Harvey Aft and Peter Mills Science Awards

Faculty of the Natural Sciences Division

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 Harvey Aft award.

The Mills Scholarship Award for Science Study was established at the University of Maine at Farmington in 1996 with a gift from Peter Mills. This award supports UMF students studying science topics that advance the understanding of biology or related aspects of human life. The award is made every two years to at least one deserving science student who has completed their junior year.

10:20 - 10:40

Break

10:40 - 11:00

An Analysis of Antioxidants Present in Coffee

Morgan Cousins

Antioxidants are believed to prevent the onset of a plethora of diseases including cancer, stroke, and Alzheimer's disease. Coffee is a known source of antioxidants and is believed to be one of the most abundant sources. A vitamin C equivalent antioxidant capacity (VCEAC) of the beverages was used to determine the antioxidant capacity in various types of coffee. Locally prepared drinks as well as more common roasts and brewing techniques were used to mimic the beverage consumed by the average coffee drinker. (*Faculty Sponsor: David S. Heroux*)

11:00 - 11:20

Influence of Leaf Littler Composition on Vernal Pool Water Quality in Western Maine

Natalie Dumont

Vernal pools are temporary ecosystems in ephemeral bodies of water that provide essential habitat for many species of aquatic animals. In Maine, vernal pools are characterized by their woodland context and productive contributions to forest food webs. Over the past century, the distribution of red maple has been expanding in the eastern United States, with Maine bounding its northeastern range. Red maple thrives under a wide range of soil, topographic, and climatic conditions. I sampled the chemistry of vernal pools in western Maine to determine whether species composition, and the presence of red maples specifically, influenced pool chemistry. (*Faculty Sponsor: Andrew M. Barton*)

12:00 - 1:00

Lunch Break

1:00 - 1:20

Effect of Antibiotic Use on the Composition of the Human Skin Microbiome.

Gabriel Williams

The human skin microbiome is less well understood than that of the gut, and the impact of antibiotic medication is unknown, while advances in sequencing technology have allowed the study of microbial populations with relative ease. The effect of antibiotic use on the composition of the human skin microbiome was studied by a culture independent molecular method. Samples were taken from volunteers before, during, and after antibiotic use and the bacterial component of the microbiome analyzed by amplifying variable regions of the 16S rRNA gene. These regions were sequenced for identification and the sequences analyzed by bioinformatics software. (*Faculty Sponsor: Jean A. Doty*)

1:20 - 1:40

Fish, Forskolin, and Facial Deformities: Do You Really Know What's in Your Diet Supplement?

Catherine Farsaci

When exposed to reagent-grade forskolin during the early hours post-fertilization (hpf), zebrafish embryos develop severe craniofacial deformities. Forskolin is a natural food supplement advertised to lower blood-pressure, and Forskolin is its active ingredient. A forskolin-containing extract was made from the supplement and 24-78 hpf zebrafish embryos were exposed to the extract in serial dilution. The primary results show that at certain concentrations of the extract, the embryos showed the same visible defects

seen in the reagent-grade forskolin exposed embryos. The affected gene-signaling pathway is conserved among vertebrates, so the effects seen in the zebrafish could be caused in humans too. (*Faculty Sponsor: Jean A. Doty*)

1:40 - 2:00

Two Things Genetics Can Tell You About Yourself Right Now!

Dmitriy Skoog

The oxytocin receptor gene (OTR) is thought to play a role in social behavior in humans. In this study I will determine my OTR genotype as a way of demonstrating how genetic testing can be used not only for detecting disease predisposition but also for detecting behavioral predispositions. In addition, a commercially-available direct-to-consumer genetic disease predisposition test will be utilized to demonstrate how genetic testing can be used as part of a health care plan you develop with your physician. (*Faculty Sponsor: Jean A. Doty*)

2:00 - 2:20

The Effects of Triclosan on Bacterial Antibiotic Resistance

Heather Budzko, Kelsey Ottmann, and Jasmine Nixon

This project tests the extent to which bacteria are becoming resistant to antibacterial products. Research shows that antibacterial products select for antibiotic resistance through cross-resistance mechanisms. Even though 99.9% of bacteria are eliminated by these products, the 0.1% left behind may be more dangerous. Triclosan, a widely used antibacterial agent, is responsible for much of the antibacterial resistance now seen in hospitals and homes around the globe, but is not the only culprit. This experiment may help resolve some questions as to the harmful effects of Triclosan. (*Faculty Sponsor: Jean A. Doty*)

2:20 - 2:40

Break

2:40 - 3:00

The Effect of Triclosan Exposure on the Overall Anti-Bacterial Resistance of *Micrococcus luteus*

Haley Churchill, Emily Chase, and Nile Rozie

This project tests the effects of Triclosan exposure on antibacterial and antibiotic resistance in *Micrococcus luteus*. The use of Triclosan in antibacterial products has the potential to breed super-resistant strains of bacteria that not only resist the effects of Triclosan, but also antibiotics. With continued exposure to Triclosan, we predict that *M. luteus* will develop not only a resistance to Triclosan, but also to Penicillin and Amoxicillin. This will occur as a direct result of natural selection for cross resistance in the presence of the Triclosan. This experiment could possibly unearth a dangerous process that is occurring everyday, and avoid, through knowledge, complications with resistant bacteria in the future. (*Faculty Sponsor: Jean A. Doty*)

3:00 - 3:20

The Impending Damnation of Regeneration: Global Warming's Effects On Planarian Regeneration

Patrick Kelly, Cameron Blouin, Keifer Boguhn, and Phillip Carville

The environment can impact gene expression through epigenetic mechanisms. Global warming models predict that an increase in temperature will increase the pH, salinity, and temperature of freshwater habitats. We used Planarian flat worm regeneration to measure, indirectly, the epigenetic effect these changes may have on freshwater habitats. Specifically, we tested the ability of *Dugesia dorotocephala* to regularly regenerate under simulated global warming conditions. The ability of *D. dorotocephala* to regenerate and survive will serve as an indicator of how other aquatic organisms, and by extension aquatic ecosystems, will fare if the effects of global warming continue to pollute freshwater sources. (*Faculty Sponsor: Jean A. Doty*)

3:20 - 3:40

Bacteriophage Therapy in Escherichia coli in Comparison to Penicillin

Dana Fioretti, Matthew Lamare, and Michael Yukna

This project is designed to determine the effectiveness of using bacteriophage to specifically destroy *Escherichia coli* as an alternative to traditional antibiotics. Antibiotic resistance in pathogens has led to resurgence in research to explore new methods for killing infectious bacteria. In this project, we will test the use of bacteriophage to target *E. coli* cells as a means of infection treatment. A practical application of this project is to find a more effective method for infection treatment, one with fewer negative effects on the human body, while simultaneously reducing the threat of creating a multidrug resistance bacteria, also known as “super bugs”. (*Faculty Sponsor: Jean A. Doty*)

3:40 - 4:00

UV Radiations Use to Prevent Food Poisoning

Jacob Taylor and Derek Reilly

Food poisoning is a global problem that affects 1 in 6 people. Scientists around the world are constantly searching for a way to remedy this problem in order to provide food that is safe for everyone. We are conducting research on finding a way to sanitize food with the help of UV light. When food is subjected to UV light it kills the bacteria on food which is responsible for food poisoning. By subjecting meat to different frequencies of UV and temperature we have found the optimal conditions for sanitizing meat. These conditions would ultimate help to provide people around the world with safer food and reduce the amount of annual food poisoning conditions. (*Faculty Sponsor: Jean A. Doty*)

Venue 4, North Dining Hall - C

Social Sciences, Mathematics

9:00 - 9:20

Fill It to the Line: The Constitutionality of Drug Testing Requirements for Welfare Recipients

Caitlin Guare

In recent months, over twenty states have considered passing legislation requiring those seeking aid from the Temporary Aid for Needy Families program to submit to urinalysis drug testing. A federal judge has halted this practice in Florida, citing Fourth Amendment protections against unreasonable search and seizure and the government's lack of evidence of prevalent drug use among welfare recipients. These lingering legal questions cast doubt on the constitutionality of similar proposed laws. The relevant precedents suggest that states will have a substantial burden meeting legal requirements, resulting in prohibitively high costs that will outweigh meager political benefits. (*Faculty Sponsor: James P. Melcher*)

9:20 - 9:40

Why The Supreme Court was Out of Line in Enforcing Prior Restraint during New York Times v. The United States (1971)

Jessica Leighton

In 1971, the New York Times published a series from the study famously known as the Pentagon Papers. The government sued the Times in an attempt to stop them from publishing the remainder of the articles. The Supreme Court heard the case promptly, but also ordered the Times to halt the rest of the series until the case was decided. Come discuss why the Supreme Court was out of line by forcing prior restraint on the New York Times. Should penalties be enforced when dealing with the First Amendment with only knowledge of the possible violation about to be committed? (*Faculty Sponsor: James P. Melcher*)

9:40 - 10:00

The Right to Education: a Discussion of Supreme Court Precedent, Political Questions, and Lessons from the States

Geoffrey Cyr

Modern-day efforts at school reform are highly motivated by the “achievement gap” dividing wealthy and poor school districts. Some reformers blame wide funding gaps between states and communities for the achievement gap and see federal intervention as necessary in closing these disparities. They argue that a positive, constitutional “right to education” would go far toward this end by involving the federal government in securing equitable funding across district and state lines. This presentation will examine the history, merits and demerits of the debate on education as a federal right along with the obstacles that continue to prohibit such a right from being recognized by the U.S. Supreme Court. (*Faculty Sponsor: James P. Melcher*)

10:00 - 10:20

An Examination of New Zealand's Electoral System

Jeffrey Willis

In 2011 New Zealand held a nationwide referendum regarding whether it should change its system of voting from Mixed Member Proportional to one of four alternate electoral systems. Ultimately, the electorate voted to retain MMP. My research seeks to show that when the relative strengths and weaknesses of the Mixed Member Proportional System are considered, its retention was the best course of action for New Zealand moving forward. (*Faculty Sponsor: Linda J. Beck*)

10:20 - 10:40

Break

10:40 - 11:00

"An Armed Band of the Lord": Rethinking Religion and the Pequot War

Hayden Golden

My research explores the relationship between religion and the Pequot War. Although religion was not the cause of the war, it represents a critical component of our historical-ideological mindset and needs to be incorporated into the way we think about the war and its culminating massacre of hundreds of indigenous people. More than an immolation of heathen non-believers, the Puritans saw the burning of Mystic fort as a deed toward the salvation of the Massachusetts Bay Colony. (*Faculty Sponsor: Allison L. Hepler*)

11:00 - 11:20

A Matter of Retirement

Brittany Rea

Thirteen years after the Civil War, Acting Lieutenant Samuel B. Washburn applied for a pension based on a disabled leg. Even though his family were politically influential, he decided to apply for a pension just like his fellow soldiers. Through Washburn's correspondence, pension file, and pension law, it has come to light that perhaps he did not legally qualify for the pension he eventually got; or he could have been like countless other soldiers who needed the money to live but could get it no other way. (*Faculty Sponsor: Allison L. Hepler*)

12:00 - 1:00

Lunch Break

1:00 - 1:20

Selling the Cure of All Ailments: the Effect of Patent Medicine Advertisements and Marketing in the 19th Century

Joseph Merrifield

"Selling the Cure of All Ailments: the Effect of Patent Medicine Advertisements and Marketing in the 19th Century." This paper critically examines the roles and methods that patent medicine manufacturers used to get their product into homes across the US. From the testimonials of "happy" and "satisfied" customers to the colorful and detailed pictures on the labels, patent medicine companies used the public dismay with the

failing traditional medical field to manipulate Americans into buying their “miracle” products while being extremely dangerous. (*Faculty Sponsor: Allison L. Hepler*)

1:20 - 1:40

Comic Book Villains and the History of Modern America

Michael Stasalovich

Comic books are often thought of as picture books that are written for children or nerdy adults, but they also shed light on what is going on in America, and what the American people are thinking. Comic book villains such as Doctor Doom, Red Skull, Kingpin, and Lex Luthor point out the fears and concerns of the American people. The fears and concerns range from inner city corruption to global control/destruction. The story lines of these characters over the decades can be seen as a modern day mythology of America. (*Faculty Sponsor: Allison L. Hepler*)

1:40 - 2:00

Zionism and the Ottoman Response, 1882-1914

David Powers

This presentation will explore the relationship between the government of the Ottoman Empire and the Zionist movement during the period from 1882 to 1914. The main question to be approached is why Jewish immigrants were able to continue settling in Palestine, which was Ottoman territory, despite the opposition of the Ottoman government to such immigration. A comparative analysis will be made between Ottoman immigration policy toward Jews in Palestine and immigration policy in other Ottoman territories. Such a study will reveal much about the political dynamics of the late Ottoman Empire. (*Faculty Sponsor: Allison L. Hepler*)

2:00 - 2:20

A Herstory: Reevaluating the Isolation of Ancient Greek Women

Molly Venne

Although many scholars of women in ancient Greece emphasize women's social and legal restrictions, a different picture emerges in the degree of these restrictions when less traditional sources are used.

Pairing evidence such as inscriptions and works of art with commonly cited laws and ancient drama, I argue that women of all classes had opportunities to participate in the public sphere -- festivals, sporting events, commerce, and even military engagements. More remains to be discovered about these women's daily

lives; they deserve a strong voice in history. Women make up half the population; it only makes sense to include them. (*Faculty Sponsor: Allison L. Hepler*)

2:20 - 2:40

The Last Good War: A Defense of American Justification during the Persian Gulf Crisis of 1990-1991

Gregory Estes

Iraq's 1990 invasion of Kuwait spawned an international coalition aimed at rolling back this violation of national sovereignty. The coalition, and its main member the United States, began with a diplomatic phase of negotiating with the aggressor. When that failed, a military phase accomplished what words could not. This paper, employing philosophical insights on Just War from the ancient Chinese, Romans and the

modern American, will argue that that coalition allies were justified in the diplomatic/aerial bombardment phase and, although skepticism is well founded during the ground war phase, closer analysis proves Iraq's enemies were justified even during the war. (*Faculty Sponsor: Allison L. Hepler*)

2:40 - 3:00

Break

3:00 - 3:20

A Look Beyond the Parades: The 20's KKK in Maine

Jeffrey Stroman

The Maine Ku Klux Klan of the 1920's was a synthetic community that championed white native-born Protestant ideals within a fraternal design, however it also ran an aggressive campaign in response to rise of cultural pluralism and other post WWI societal changes. A large portion of the historiography regarding the Maine Klan is focused on the fraternal aspects, but numerous newspaper articles, and additional primary sources present the victims point of view, thus revealing the "folk justice" that seemed congruent with Klan behavior in other regions around the country. (*Faculty Sponsor: Allison L. Hepler*)

3:20 - 3:40

John Eliot and the Praying Town of Natick, Massachusetts

Shelley Hutchins

The common assumption has been that Christianized Indians living in the "Praying Towns" of 17th century colonial Massachusetts Bay enjoyed better living standards than those living away from colonists. Using the praying town of Natick as a model, I argue, instead, that living in these towns hindered the Massachusett Indians more than it helped them. Not only were they looked upon with a lot of suspicion from other Indians, but English colonists also mistrusted them, and, in any event, any protections they might have enjoyed disappeared after King Philip's War. (*Faculty Sponsor: Allison L. Hepler*)

3:40 - 4:40

Mathematics in Action

MAT100 Students

MAT100 students will present examples of the use of mathematics in the modern world. Some of the topics presented include the probability of winning the lottery, geometry in architecture, accruing interest from student loans, a brief history of numbers, Dungeons and Dragons probabilities and the mathematics of flight. (*Faculty Sponsor: Peter G. Hardy*)

Venue 5, CR 123, Student Center

Philosophy, Psychology

9:00 - 9:20

Time-Consciousness and Being

Matthew Houston

Time is one of the basic conditions of our experience in the world. Edmund Husserl's descriptive, phenomenological examination of time "containing the insight that our experience of the present is in part an experience of both the past and the future" ended with the positing of what he called "absolute time-constituting consciousness," a level of Being responsible for the possibility of our experience in time. Maurice Merleau-Ponty, in his own phenomenological project, attempted to relocate the conditions of possibility for experience, including time, within the experiencing body-subject itself. This presentation will focus on the implications and concerns raised by Husserl's absolute consciousness and on Merleau-Ponty's innovative thought that offers fruitful insights into those concerns. (*Faculty Sponsor: George H. Miller*)

9:20 - 10:00

Sartre's "Being and Nothingness" as a Metaphysical Narrative

Angela Hall, Matthew Houston, Alanah Lockwood, Silas Lunetta, and Matthew Towle

In the conclusion of his 1943 essay entitled "Being and Nothingness", the French philosopher Jean-Paul Sartre observed that "everything takes place as if the In-itself [Being] in a project to found itself gave itself the modification of the For-itself [consciousness]". Yet, Being's quest for a meaningful foundation ends in failure, and consciousness finds itself "in a state of disintegration in relation to an ideal synthesis". The purpose of this presentation is to consider Sartre's Being and Nothingness as a narrative account of the failure of human reality to achieve the very integration that serves as its reason for being. (*Faculty Sponsor: Steven W. Quackenbush*)

10:00 - 10:20

The Possibility of Pure Reflection in Sartre's "Being and Nothingness"

Matthew Houston

Sartre's philosophical system, as laid out in "Being and Nothingness," characterizes human reality as a nothing. The rest of the world, however, is fully and wholly something. It has to be, otherwise there would be nothing for consciousness to experience. To know any object is at the same time to say "I am not that object." How then does consciousness, a nothing, know anything about itself? This presentation will critique the description given of "pure reflection," Sartre's answer to this concern, and will attempt to furnish the beginning of a more adequate solution to the puzzle. Implications for other central components of "Being and Nothingness," which in part hinge on this issue, will be discussed. (*Faculty Sponsor: Steven W. Quackenbush*)

10:20 - 10:40

Break

10:40 - 11:00

The Deontic Dilemma: An Empirical Approach to the Possibility of Moral Dilemmas

Travis Cyr

In the field of psychology, moral dilemmas have been utilized in order to gain insight into the inner workings of our decision making processes. It has been argued however, by a number of scholars, that due to certain valid principles of logic, we must reject moral dilemmas as nothing more than logical contradictions. The present study examined the soundness of these claims by differentiating between two types of moral dilemmas; one type violated principles of logic, the other type did not. To test the difference between the two dilemma types, physiological changes were recorded using the galvanic skin response during presentation of the dilemmas. Results of the measures will be presented as well as discussion of the implications for decision making. (*Faculty Sponsor: Marilyn Ann Shea*)

11:00 - 11:20

The Psychology and Evolution of Moral Integrity

Nicolette Arsenault

In this presentation, I will be discussing morality based on evidence from the fields of psychology and human evolution. Piaget and Kohlberg's theories of child development present distinct stages relating to cognitive and moral development. I will attempt to relate this development to how the human species acquired moral integrity, based on both biological and cultural evolution. Earlier forms of humans (including Neanderthals) and primates will be considered. (*Faculty Sponsor: Mary L. Schwanke*)

12:00 - 1:00

Lunch Break

1:00 - 1:20

Protecting our Choice

Maurice White, Ian Luker, Alexis Kennedy, Melissa Poulin, and Tyler Kalbach

The purpose of our presentation is to put forward an overlooked view of the new smoking policy that completely bans tobacco products on the UMF campus. In doing this, we will share results from recent studies concerning the effectiveness of "no smoking" signs. We will also discuss how the rights of students who smoke are being affected by this new policy. Additionally, we will present recorded interviews from members of the university discussing the stigmas brought about by this ban. Finally, we will conclude with ideas concerning how the policy can be amended in order to satisfy the entire community. (*Faculty Sponsor: Katherine Antoinette Kemp*)

1:20 - 4:00

Research Methods in Psychology

Beverly Dunst, Stephen Squiers, Melissa Poulin, Gregory Mcelvaine, Andrew Fowler, Erika Fujimaki, Michelle Green, Amanda Lord, Ryan Lounsbury, Travis Mills, Brittany Kashar, Lindsey Fisher, Aaron Poirier, Kassandra Strickland, Christina Troi

Sixteen Psychology and Business Psychology majors will present their original, semester-long research projects. Students' projects include: how teaching evaluations are impacted by response options; quilting and generativity, the influence of smoking behavior on the inclination to blame cancer victims; how socio-economic status influences observers' judgments of embezzlement; perceptions of the riskiness of winter

sports; and framing effects on risk evaluation of medical procedures. Join us to learn about these and many other intriguing topics related to human emotion, cognition, and behavior. (*Faculty Sponsor: Karol K Maybury*)

Venue 6, The Landing, Student Center

Readings

9:00 - 10:00

The Personal Narrative: An Exploration into the Mystery of Life

ENG 100 students

'The Personal Narrative: An Exploration into the Mystery of Life' will feature 6 ENG Composition students reading their essays on the mysteries of life. Listeners will likely find parts of themselves and their lives echoed in the essays; difficult and painful moments, times of discovery and illumination of truth, relationships that offer humor and love, the range is wide and deep. It will be a time to settle in and bathe in the beauty of language and life. (*Faculty Sponsor: Elizabeth M. Cooke*)

10:00 - 10:20

Kate Johnson reads from her novel, "The Ghost of Good Things"

Katherine Johnson

Kate's Johnson's novel, under contract with a NY literary agent who will begin the search for a publisher in early April, will read selected scenes from her book and answer questions about her process, her success, and almost anything about the book (except the amazing conclusion). (*Faculty Sponsor: Elizabeth M. Cooke*)

10:20 - 10:40

Break

10:40 - 11:40

The Novel...Scenes from Student Writers

To be determined

Student writers will read aloud from their 100-page novel starts. Be prepared to listen to stories of the human spirit and how it survives, to find your own spirit in the narratives and to recognize the universal in the particularity of the small scenes. (*Faculty Sponsor: Elizabeth M. Cooke*)

12:00 - 1:00

Lunch Break

1:00 - 2:00

Reading by Advanced Fiction Writers

Erin Banks, Michaela Blow, Jared Boghosian, Noelle Dubay, Samantha Ellis, Max Eyes, Zachary Fowler, Nicaela Giglia, Joana Hill, Nicole Lejonhud, and Casey Omalley

Writers in Advanced Fiction will each read brief excerpts from stories written this semester to submit for English 310, Advanced Fiction Writing. Stories will encompass a broad range of styles and voices. Each reader will present for five minutes. (*Faculty Sponsor: Patricia E. O'Donnell*)

2:00 - 3:00

Outdoor Writing Contest Finalists

Various students, as determined by contest results

As part of the Mantor Library's yearly On Our Minds reading event, and in conjunction with the English Department, we are sponsoring a writing contest for two categories: Academic and Creative (prose). The theme for this year's contest is The Great Outdoors. Inspired by Bill Bryson's A Walk in the Woods, students are invited to write on any topic touching on the great outdoors. Creative prose can be fiction or non-fiction. Academic papers should focus on a topic relating to the environment. This session will feature winners and 1st runners up in both categories reading their entries.

3:00 - 4:00

Native American Identities in American Literature and Popular Culture

Ronald Flannery, Libby Newhouse, and Olivia Wandelea

In American literature from colonial times to the present, Native Americans have played a central role even as Euro-American writers attempted to marginalize them. The presentations in this panel will investigate how Native Americans are represented and represent themselves in different media historically and today. (*Faculty Sponsor: Sabine A. Klein*)

Venue 7, Ricker 217

Geography, Health

9:00 - 9:20

Vermont Growth Management

Gabriel Perkins

This pecha kucha style presentation will explore growth management techniques in Vermont during the last 50 years. (*Faculty Sponsor: Matthew J. McCourt*)

9:20 - 9:40

The Economic Impact of Saddleback Mountain: A Study of a Local Economy and Snowfall Amounts

Michael Phelan

The research focuses on trying to find out generally how much Saddleback impacts Rangeley's' local economy and if snowfall rates play a role? This will be done by talking to visitors of Saddleback, Employees, General Managers and businesses in the Rangeley downtown. The main goal will be to try and find people's perceptions. Questionnaires will be the main way of doing this. Through the research, I expect to find that snowfall amounts generally tend to control Rangeley's winter economy. I also expect that Saddleback mountain plays a large role in this as well. (*Faculty Sponsor: Susan F. Thibadeau*)

9:40 - 10:00

Natural Gas Policy Implications for the State of Maine.

Lucas Butler

Natural gas development in the State of Maine is growing at a fast rate. New political policies are being developed to keep up with the rapid development across the state, while more consumers are switching to natural gas as a cheaper, cleaner form of energy. With a cheaper fuel source more consumers are also considering the use of natural gas vehicles to offer an alternative to the high price of oil based fuels. Natural gas vehicles play an important role in our energy future, as new policies are being developed to continue their growth. (*Faculty Sponsor: James P. Melcher*)

10:00 - 10:20

Municipal Natural Gas Vehicle Implementation

Lucas Butler

As fuel costs are rising, natural gas powered vehicles are becoming a much more viable option for municipalities that might be looking to save money. The infrastructure development required for natural gas powered vehicle fleet can be a challenging task for small and medium municipalities that may not have the necessary resources to adequately research and implement a program. This study presentation will explore the many challenges that municipalities across the State of Maine could face when considering the viability of natural gas use. (*Faculty Sponsor: Brad T. Dearden*)

10:20 - 10:40

Break

10:40 - 11:00

Evaluating Health Care Access Perceptions Along a Rural/Urban Divide in Livermore Falls and Scarborough, Maine

Catherine Ingraham

Health care is a very important service for people to access but increasingly in America, segments of the population find barriers that prevent them from obtaining adequate care. Lack of primary and preventative care is associated with long term and chronic conditions. Studies have been conducted that examine health care inequalities in both rural and urban populations, but little has been done that considers individual perception versus actual distance from care centers. Through interviews and questionnaires administered

in Livermore Falls and Scarborough, Maine, this research aims to discover why certain populations in Maine are underserved with health care access. (*Faculty Sponsor: Brad T. Dearden*)

11:00 - 11:20

Industrial Hemp in Maine

Peter Anderson

Delve deeper inside one of the most controversial crops in the United States: industrial hemp. Maine took the lead in the industrial hemp revolution, by being one of the first states in the country to contradict the federal government and re-approve the cultivation of industrial hemp. This research explores usage of Industrial Hemp as a source of bio-fuel, and whether or not it would be an economically wise move to push for dedication of crops for this purpose, in the state of Maine. A conclusion will be reached through analysis of interview data and pre-existing soil, climate, and economic data. (*Faculty Sponsor: Brad T. Dearden*)

12:00 - 1:00

Lunch Break

1:00 - 1:20

The Spatial Succession of Downtown Farmington

Blake Shelley

The downtown Farmington area has a rich and unique history. These two buildings will be studied through historical documents, photographs, newspaper articles, and other documents. The spatial succession of these two buildings has been dependent on the economy of the area. There has also been a drastic change in infrastructure since these two structures were built and this is reflected in the differing uses in the buildings. (*Faculty Sponsor: Brad T. Dearden*)

1:20 - 1:40

Perceptions of Stress Levels Among UMF Students after Interacting with Nature

Matthew Thompson

The positive effects of nature are being talked about more and more in our society today. Urban environments are everywhere and it is possible for people to lose their connection to nature. The positive effects of nature on mental health is being studied more and more. Reduced stress levels have been known to be one such positive effect. One of the most stressful environments are college campuses. Students become highly stressed due to being away from home, homework, exams, social stresses, and relationships. This research will examine how interaction with nature affects the stress levels of UMF students. (*Faculty Sponsor: Brad T. Dearden*)

1:40 - 2:00

Perceptions and Acceptance by Seniors and Potential Caregivers of Technology for Home Health Monitoring and Safety in Franklin County, Maine

Randall Berry

This research explores perceptions by seniors and potential caregivers in Franklin County related to using modern technology to support elder independence. Growing numbers of seniors and shrinking financial resources will compound the difficulties related to keeping them safe and healthy. This study will include

interviews and questionnaires to survey opinions of seniors and potential caregivers within Franklin County regarding perceived concerns and possible benefits of technology to ensure that seniors living independently are healthy, active, and safe. (*Faculty Sponsor: Brad T. Dearden*)

2:00 - 2:20

HEA 410: Grant Writing Final Presentation

Renee Brown, Sarah Higgins, and Rachel Clement

Through HEA 410, Grant Writing and Resource Management, in response to a mock grant, we developed a program to prevent underage drinking in Washington County, Maine. We conducted research to assist in the development of our program, and based our program on others that have been successful. Our presentation will focus on the purpose, need, and statement of the problem sections of our grant. (*Faculty Sponsor: Kelly M. Bentley*)

2:20 - 2:40

Break

2:40 - 3:00

Healthy Androscoggin Youth

Elizabeth Quigley, Jacklynn Chadbourne, and Aimee Clarrage

Our presentation will provide an overview of a hypothetical program developed to decrease the act of adults supplying alcohol for minors in Androscoggin County, Maine. We will provide an overview of what is in our grant, including our problem statement, goal and objectives, action plan, budget and program evaluation. (*Faculty Sponsor: Kelly M. Bentley*)

3:00 - 3:20

Post-Traumatic Stress Disorder (PTSD) in a Sample of Canadian Women Who Have Left an Abusive Relationship

Kelly Bentley

Selected data collected in Wave 1 of the Women's Health Effects study (WHES), the first Canadian prospective investigation of women's physical and mental health in the early years after leaving their abusive male partners was analyzed. This presentation will describe the extent of Post-Traumatic Stress Disorder (PTSD) symptoms; demographic characteristics of women with and without PTSD; and, the relationships between multiple traumatic experiences (e.g., childhood abuse, sexual assault) and women's experiences of PTSD. (*Faculty Sponsor: Kelly M. Bentley*)

3:20 - 3:40

Living Water International: Honduras Experience

Kaitlyn Johnson

In April of 2011 I traveled to Honduras with Living Water International as a Hygiene and Sanitation Educator. I accompanied a Well Drilling Team of four to the village of Arena where we provided desperately needed clean water, basic health and sanitation education, and hope to this mountainous village of 2,000. The global clean water crisis effects over one billion people, kills more people that all forms of violence combine, and causes 80% of disease in the world. I had a small part in alleviating this global public health issue and I can't wait to share my story. (*Faculty Sponsor: Maurice W. Martin*)

3:40 - 4:00

Food, Fruit and Fiber Drive: Healthy Eating on a Budget

Michele Meservey and Rebecca Carter

The Food, Fruit, and Fiber Drive is a food drive sponsored by the Care and Share Food Closet in Farmington, the Commuter Council, and the Community Health department. The goal is to collect healthy foods at local businesses and locations around campus. We provided education to the campus and community about healthy eating with a low social-economic status and awareness of the Care and Share Food Closet. Overall, the "big picture" is for the Farmington Community to be educated and meet the dietary requirements as outlined by Health People 2020. (*Faculty Sponsor: Alireza Geshnizjani*)

Venue 8, Art Gallery and Emery Arts Center

The Arts

"A moveable feast." Some presentations will take place at the UMF Art Gallery, others will be in the new Emery Arts Center, and will conclude with a performance in Alumni Theater. See details below and at the venues.

1:00 - 3:00

Senior Artists have 'MOXIE'

Senior year is a test of will. Art Students have learned to examine the problems of creative practice and production, relevant to culture and theory. They will inform us of the purpose of their art in this society; how the aesthetics of contemporary art are a part of their work; and their philosophy and aesthetic influences of making. Our seniors have developed these ideas in this Senior Seminar and will speak of them with their work exhibited in their collaborative, capstone show MOXIE. Seniors, Katherine Steward, Nicole Phillips, Christy Carle, and Benjamin Radville will be speaking in Emery. Tim Millett, Kelson Williams, Dillon Robinson, and Sara Tarbox will be presenting in the UMF Art Gallery.

3:00 - 3:15

Diverse Connections to Nature

Nicole Phillips

Over the past few months I have been investigating our symbiotic relationships with the natural world, our love and admiration for it and our dependence on it. Having a deep passion for biology and nature I intertwine these concepts throughout my work. Highlighting beauty and fragility, I create unique yet disturbing moments between life and life-like entities through the use of refuse. These installations boldly speak for the unspoken, exposing the stark confrontations between humanity and nature. I invite you to the Emery Flex space to be immersed in the opposing conversation. (*Faculty Sponsor: Katrazyna A. Randall*)

3:15 - 3:30

Things that Spin

Benjamin Radville

Using sound and visuals, I work toward a poetic experience. In poetry we see that the signs become opaque, standing resolutely for what they are (and what they are not). Instead of this "standing for what

they are" giving us one meaning, it gives us the multiplicity of meaning that is inherent in any sign. Poetry is not a linear procession of signs, but an explosion of signification. This poetic moment, entirely human, is where signification explodes in our human faces. Our humanity, our humor, our sadness, our awe, our contradictions, our joy, our terror, all come out. (*Faculty Sponsor: Katrazyna A. Randall*)

3:30 - 3:45

Investigation of Memory and Identity Through Intimate Space

Christy Carle

The home, in its reflective sense, is not solely relied upon for our memory of a literal structure nor is it referenced as a part of a personal linear narrative. It is a thriving community of memory(ies) and images networked within our mind that can be provoked unexpectedly, producing non-linear impressions, experiences, and tensions that we may be unaware of in our lives. In this work I explore the foundations of identity, focusing on moments and spaces that have the ability to produce concentrated experiences of emotion and memory. (*Faculty Sponsor: Katrazyna A. Randall*)

3:45 - 4:00

Power and Powerlessness

Katherine Steward

In my work I investigate the relationship between the powerful and the powerless. I ask my audience to interact with my work both actively and passively in order to form a more intimate connection. I construct mechanized scenes with signifiers of innocence. With the audience's participation, the work is subjected to destruction. Although the destructive acts are mild and often playful, the audience often feels sympathy as well as guilt for their participation. In this way, I attempt to tell the story of a suppressed fragility. (*Faculty Sponsor: Katrazyna A. Randall*)

4:00 - 4:15

Young Americans Who Look Like Me

Sara Tarbox

Pop culture and marketing completely infiltrate our whole culture. We try to carve personal identity out of these things, despite being unable to separate ourselves from them. My work, which combines painting, drawing, digital prints, text, found objects and photography, examines the humor, tragedy, absurdity and inevitable contradictions of this hazy area between sincere personal identity and clever marketing techniques as they relate to daily life. (*Faculty Sponsor: Katrazyna A. Randall*)

4:15 - 4:45

"Loose Dirt" Preview and Discussion

Kenneth Lamb

In the student written, directed, and produced play "Loose Dirt," the small town of Hadleigh has fallen into decay. The shoe factory has closed, the railroad abandoned, and the many trucks that once stopped in town now zoom by at a deafening speed. Those who still live there have become trapped in the memories and failures of their once prominent community. An examination of the differing perspectives of small town life, "Loose Dirt" will be performed in its entirety on May 3 and 4 in Alumni Theater at 7:30, and on May 5 at 2:00. (*Faculty Sponsor: Dawn M. Nye*)

Venue 9, Education Center

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

Petrography and Geochemistry of the Mixer Pond Pluton, South-central Maine.

Megan Whitman

The Mixer Pond pluton (MPP) in south-central Maine has been interpreted as a granitic pluton emplaced into the Cape Elizabeth Formation within the Liberty-Orrington thrust sheet. Subsequently metamorphosed and deformed, it now crops out as an elongate body trending parallel to the regional structures. Its texture and mineralogy display extreme variability which, along with the uneven distribution of exposures, adds complexity to the interpretation of its original nature. Geochemical analysis has cast doubt on the original interpretation of this pluton and has suggested two sources to explain the variability within the MPP. (*Faculty Sponsor: David Gibson*)

poster #2

UMF's Sustainable Campus Coalition's 2011-2012

Students from The Sustainable Campus Coalition

The SCC has had another very active year. We produced Trash Day, the Recycled Sledding Contest, and the upcoming Salvage and Recycle week and a local foods day (with community organizations). We promoted further energy and carbon saving through the Green's List visits to residence halls and offices, a campus wide Energy Challenge, signage and work trying to improve recycling on campus, and an alliance with Aramark to improve dining hall sustainability. Students will present a slideshow of their activities, bringing hands-on materials demonstrating their projects, and being on site to discuss their contributions individually. (*Faculty Sponsor: Andrew M Barton*)

poster #3

Politics in the Maine Waterfront

Christine Friant

A working waterfront has always been a way Maine residents support themselves. My research was sparked from debate within the industry, ground fishermen against lobster fishermen. The state of Maine currently holds a law in place that makes it illegal for ground fishermen to keep a bi catch of lobsters that may come up in their boats nets. Ground fishermen argue this law to be unfair and they will take their catch elsewhere; lobstermen want their catch left alone. I look into which side will benefit Maine the most; and make an opinion as to which side policy should favor. (*Faculty Sponsor: James P. Melcher*)

poster #4

UMF's Volunteer Income Tax Assistance and Tax Counseling for the Elderly (VITA/TCE) Program

Anna Soule

In the Volunteer Income Tax Assistance and Tax Counseling for the Elderly (VITA/TCE) Programs, IRS-certified volunteers provide free income tax return preparation to individuals in local communities who

make \$50,000 or less. For the on-campus program site at UMF, two direct-study courses are offered together (2 credits each) to matriculated students who are interested. Whether students wish to commit their needed involvement voluntarily or to earn college credit, the VITA/TCE program allows for a unique experiential learning opportunity that looks great on a resume. My poster will include detailed information about UMF's program site, my own experience, and statistical data. (*Faculty Sponsor: Clyde Mitchell*)

poster #5

Our Shared Experiences in PIWI-Inspired Playgroup

Jessica Leavitt and Melissa Ryan

The playgroup model used in the early childhood special education program is based on the Parents Interacting with Infants (PIWI) approach. PIWI is evidenced-based in that research on attachment and parent-child interactions was instrumental in developing the model and many studies have been conducted on it since it was developed. In this poster presentation we will provide examples of the assessing, planning, implementing, and evaluating process used on two levels. For children and families we provide an inclusive playgroup in which families and children can work on targeted goals. Student facilitators are provided with an early intervention practicum experience. (*Faculty Sponsor: Dolores J. Appl*)

poster #6

SAVI: Skype a Veteran Initiative

Jennifer Bailey

The SAVI initiative, (Skype a Veteran Initiative) is a group in the process of creating opportunities for Veterans living in the Maine Veteran's Home care to keep in communication with friends and family all around the world. With the assistance of others, I'm creating this group and encouraging the use of technology integration into Veteran care. Come stop by this presentation to sign up as a volunteer, or simply check out our initiative! (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #7

Hospice Care

Sara Lolley

This presentation will be on a semester-long project on working with people in hospice care. A slideshow will show what it is like to be a hospice volunteer and how the organization works, as well as the effect of hospice care on those receiving it and their families. The slides will use pictures and descriptions to give viewers information on the project and the experience of working with people in hospice care and those who also work in the organization. (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #8

Youth Fitness Clinic

Garrett Ellis, Kyle Rines, and Kevin Mckeown

A presentation on our mission to educate and advocate the importance of physical activity, practicing healthy behaviors, and staying fit with the local adolescents. We achieved our goal by conducting multiple sessions that informed our participants on the importance of leading a healthy lifestyle. We believe that our approach will instill a better awareness of health and why it is important. Our presentation will demonstrate our work and show how we were able to achieve our objectives. We chose this project to practice our roles as leaders in our community. (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #9

Perspectives on Volunteerism

Kaitlyn Dickinson and Autumn Greenleaf

A short promotional video created with the intent to inform viewers about the benefits of voluntarism and to encourage viewers to become involved in volunteer programs. This video features primary images and video as well as secondary images, video, and statistics. Content for the video has been generated from interviews with people who are, or have been, involved in volunteer activities as well as from academic studies, which analyze the costs and benefits of participating in volunteer programs and provide statistics about volunteerism in the United States and in the global community. (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #10

Aiding The Franklin County Animal Shelter

Thomas Deul, John Kuntz, and Noah Meldrum

Our objective is to work with the Franklin County Animal Shelter to help raise awareness regarding the needs of stray animals, and to boost adoption rates within Farmington and the surrounding areas. We intend to bring attention to the importance of spaying and neutering pets, and the programs that help facilitate such procedures. We also hope to raise adoption rates by holding adoption drives within the local community. Our objective is to work with the Franklin County Animal Shelter to help raise awareness regarding the needs of stray animals, and to boost adoption rates within Farmington and the surrounding areas. We intend to bring attention to the importance of spaying and neutering pets, and the programs that help facilitate such procedures. We also hope to raise adoption rates by holding adoption drives within the local community. (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #11

Fellowship of Christian Athletes Leadership Initiative

Emma Morrison, Zachary Keene, and Lauren Perkins

For our leadership initiative for PSY 247, we chose to start a Fellowship of Christian Athletes Huddle on campus. The Fellowship of Christian Athletes is a national organization that provides a support system among collegiate athletes and focuses on integrity, serving, teamwork and excellence. Having a Huddle on campus helps provide Christian athletes with a community of comfort and support and also gives an avenue for athletes to impact the world. We have promoted the group across campus as well as through social media and we hold weekly meetings at which we help to lead discussions and bible studies. (*Faculty Sponsor: Katherine Antoinette Kemp*)

poster #12

Empowering Rural Regions: An Evaluation of Western Mountains Alliance's Policy Tracking Program

Haley Nickerson

Western Mountains Alliance, a nonpartisan nonprofit organization located in Farmington, works every day to provide help and support to western Mainers and their communities through various projects. One of those projects is the Policy Tracking Program. Through this initiative, interns track legislation relevant to western Maine small businesses and rural communities. The goal is to help small businesses become more engaged, if they wish, in the legislative process. The question is: is it working? (*Faculty Sponsor: Linda J. Beck*)

poster #13

Water Clarity in some Smaller Ponds in the Rangeley Lakes Region

Hunter Corson

The Rangeley Lakes region is one of the premier recreational areas of Western Maine. Much of the recreational and economic activity in the region is focused around the local lakes, rivers and streams. Two of the region's ponds, Haley and Quimby, have historically had impaired water quality and a few others may be exhibiting declining water clarity. This analysis along with photographic records of the entire shoreline taken in 2011 for seven of the region's lakes and ponds is an important tool for planning future development and the possible remediation of existing erosion problems. (*Faculty Sponsor: Daniel E. Buckley*)

poster #14

Comparisons of Damselfly Fauna Associated with High and Low Altitude Lakes in Maine

Dustin Colbry and Thomas Ferrari

High altitude lakes often differ dramatically from those at lower altitudes because of differences in annual temperature regimes, growing seasons, external nutrient inputs, and trophic states. As part of UMF's ongoing sustainability science research program, we assessed damselfly assemblages at 26 lake and pond sites in the Rangeley Lake region of Maine during the summer of 2011. We determined what the most important determinants of damselfly abundance and diversity were, and we contrasted these results to similar data collected in 2007 from 25 low altitude lakes in central Maine. Generally, high altitude lakes had fewer species of damselflies than low altitude lakes, which was probably related to restricted insect breeding habitat. (*Faculty Sponsor: Ronald G. Butler*)

poster #15

Ground Penetrating Radar Surveys of Large Point Bars along the Sandy River, Western Maine

Abigail Berlin

Using the MALA ground penetrating radar (GPR) system, 100 and 500 MHz profiles were collected to survey the bars along the Sandy River. Topographic data were collected with a laser theodolite. The data were processed using RadExplorer software to identify the water table and sand contact. This project will quantify sand and gravel volume and estimate the percent removed. Permits were suspended for removal of sand and gravel about ten years ago here, until now. There will be future GPR surveys done at the Pillsbury bars to see the changes of the meander after the gravel removal job is complete. (*Faculty Sponsor: Julia F. Daly*)

poster #16

Ground Penetrating Radar - What's Under the Lake?

Thomas Ferrari

A distinct boulder field south of Oquossoc, ME is of enigmatic origin; large, rounded cobbles and boulders suggest high-velocity flowing water may be responsible for the deposit. If this were true, sand and silt would have been scoured from the channel and deposited in Mooselookmeguntic Lake. To test this idea, ground-penetrating radar (GPR) was used to characterize the lake bottom sediments in eastern Mooselookmeguntic Lake. Data were collected along transects across Bugle Cove in Mooselookmeguntic and compared to known similar data of a known delta. Preliminary interpretation finds the presence of foreset beds, a characteristic of deltas, at both sites. (*Faculty Sponsor: Julia F. Daly*)

poster #17

Geochemistry of Western Maine Mafic Dikes

Alexander Cyr

A suite of mafic dike samples outcrop in Western Maine and northern New Hampshire. Their provenance is uncertain though they could be linked to extensional tectonic events through the Late Proterozoic and Mesozoic. Petrographic analysis and XRF major and trace element data was collected and compared to the geochemistry of dike suites from New England and Atlantic Canada. Using this method these intrusions can be placed within specific suites from the Triassic, Jurassic and Cretaceous periods based on geochemical properties. (*Faculty Sponsor: David Gibson*)

poster #18

Geochemical Modelling of Magma Mixing in The Mount Waldo Pluton, Coastal Maine

Myles Felch

The Mount Waldo Pluton (MWP), 371 Ma, is one of the Late Devonian plutons within the Coastal Maine Magmatic Province. It is a coarse-grained, porphyritic to equigranular, biotite - hornblende granite, that contains a range of enclaves from intermediate diorites and quartz diorites to more felsic compositions. Schlieren are common and they contain abundant accessory minerals. Plagioclase mantled K-feldspar, plagioclase zones with spikes in anorthite content, and other disequilibrium textures are also common and suggest that the MWP received inputs of more mafic magma as it crystallized. These thermal and physical additions produced a dynamic, convecting magma chamber in which magma mixing occurred. (*Faculty Sponsor: David Gibson*)

poster #19

Field Relations, Petrography and Geochemistry of Mafic Dikes, Schoodic Peninsula, Coastal Maine

Samantha Burk

This project focuses on the petrography and geochemistry of mafic dikes located on Schoodic Peninsula, coastal Maine. Samples were collected from two locations, both with Mesozoic and Devonian(?) aged dikes present. These samples were analyzed using x-ray fluorescence (XRF) spectrometry to determine their major and trace element levels and identify any distinctive geochemical variations. This can be used to categorize these rocks as diabases, basalts or composite dikes and match them to the two dike suites that have been studied from New England and Maritime Canada. (*Faculty Sponsor: David Gibson*)

poster #20

Dye-Sensitized Solar Cells: A Method to Synthesize TiO_2 Thin Films, and Analysis of Anthocyanin and Betalain as Molecular Sensitizers

Benjamin Murphy

The purpose of this experiment was to determine whether anthocyanin or betalain, two natural dyes, would perform better as a molecular sensitizer for a dye-sensitized solar cell. The dye compounds were compared in two ways: by output (voltage), and by absorption spectra. It was determined that the anthocyanin dye absorbed less light in the visible range than the betalain dye, suggesting that betalain would perform better. The output of cells created with betalain dye was higher than those made with anthocyanin. These results suggest that betalain is the superior dye for use in dye-sensitized solar cells. (*Faculty Sponsor: David S. Heroux*)

poster #21

Geochemistry for Everyone I: Current state of the atmosphere and oceans

Rebecca Capowski

As of 2012, the concentration of carbon dioxide in the atmosphere is 392 ppmv, compared to 315 ppmv when, during 1958, the prescient Charles Keeling began measuring it. In this period, the rate of increase has more than doubled from 0.8 ppmv per year to 1.8 ppmv per year. Ice core measurements later established the background range: 180 ppmv (glacial) to 280 ppmv (interglacial). Atmospheric carbon has become increasingly enriched in light ^{12}C , confirming the extra carbon derives from isotopically light fossil fuels. Ocean acidification occurs as CO_2 dissolves. Mean ocean pH is around 8.1 and decreasing (more acidic). (*Faculty Sponsor: Douglas N. Reusch*)

poster #22

Geochemistry for Everyone II: Lessons in the Geologic Record

Samantha Burk and Megan Whitman

Past episodes of global warming strongly correlate with massive volcanic eruptions (large igneous provinces or LIPs). Weak forcing by volcanic CO_2 was amplified by methane release ($^{13}\text{C}/^{12}\text{C}$ troughs), and diminished ocean circulation led to anoxia, organic carbon accumulation, and the conversion of marine sulfate to poisonous hydrogen sulfide. Acidification of the ocean dissolved its carbonate lining, raising the carbonate “snowline.” On land, the hydrologic cycle intensified, with leached soils and extensive boulder layers pointing to intense rainfall locally and evidence for drought in other areas. Biotic turnovers were dominated by extinctions. (*Faculty Sponsor: Douglas N. Reusch*)

poster #23

Geochemistry for Everyone III: Solutions for the Future

Alexander Cyr and Sarah Lavorgna

Geochemistry will play a critical role as the fossil fuel era wanes. Most of the alternative “green” energy technologies (solar panels, wind power, hybrid cars) require rare earth elements, which are concentrated in certain alkaline igneous rocks (e.g., nepheline syenites). Phosphate minerals, highly stable (insoluble) in near-surface environments, may serve as ideal receptacles for nuclear waste because the radioactive ions form solid solutions internally (they fit snugly in the mineral lattices). Finally, mantle peridotites, highly reactive at the Earth’s surface, offer some hope through carbonation of removing and safely locking up significant amounts of atmospheric CO_2 . (*Faculty Sponsor: Douglas N. Reusch*)

poster #24

Geochemistry for Everyone IV: Arsenic and Old ACE (Anoxia, Carbon, Euxinia)

Natasha Manuel

The Temple Stream Formation, which underlies much of Farmington and Wilton, locally contains high concentrations of arsenic (392 ppm). It accumulated in a marine setting in which the water column was anoxic, organic carbon accumulated, and marine sulfate was converted to hydrogen sulfide (euxinia). Devonian in age, it is likely the easternmost equivalent of the Marcellus Shale, presently being exploited for methane. Arsenic in our only sample of tap water to date was borderline safe, and our long-term goal is to establish the spatial and temporal variability of arsenic in drinking water from wells in this formation. (*Faculty Sponsor: Douglas N. Reusch*)

poster #25

Comparative Anatomy Projects

Keifer Boguhn, Sarah Bunch, Dana Fioretti, Heidi Graf, Patrick Kelly, Matthew Lamare, Sarah Letourneau, Emily Littlefield, Emily Mcgee, Margaret Moore, and Derek Reilly

Comparative vertebrate morphology is the study of anatomy in the context of understanding function, uniformity and diversity of structure among groups, and the adaptive significance of evolutionary modifications. Students in Comparative Anatomy are working in pairs to research topics of particular interest to them. These will culminate in oral presentations at the semester's end. The poster presentations represent key aspects of this work. (*Faculty Sponsor: Mary L. Schwanke*)

poster #26

Developmental Biology

Sarah Bunch, Emily Littlefield, Alyssa Renzi, Ashley Soucy, Katherine Watson, and Gabriel Williams

Developmental biology is the study of changes that occur from the fertilized egg through embryogenesis, to the time of hatching or birth. Genetic and molecular analysis of development has allowed exciting advances in our understanding of the mechanisms underlying development. Students in Developmental Biology are working in pairs to research topics of particular interest to them. These will culminate in oral presentations at the semester's end. The poster presentations represent key aspects of this work. (*Faculty Sponsor: Mary L. Schwanke*)

poster #27

Exploring the Solar System

Students of PHY 101

Space missions are currently 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 Neptune, volcanoes on Venus, the formation of the solar system, the origin of Earth's water, the Viking missions to Mars, the Voyager missions to the outer solar system, the science accomplished by the Apollo program, and the lives and deaths of stars. (*Faculty Sponsor: Christopher Magri*)

poster #28

Einstein's Physics

Students of PHY 110

Albert Einstein's towering accomplishments were his special and general theories of relativity and his crucial contributions to quantum physics. Groups of students have carried out term projects on various features and applications of these theories and will present them in poster form. Topics include time travel, the accelerating universe, dark energy, quantum mechanics and free will, magnetic resonance imaging (MRI), superconductors, lasers, particle accelerators, the philosophy of the block universe, and quantum teleportation. (*Faculty Sponsor: Christopher Magri*)

poster #29

Research Methods in Psychology

Zachary Gayton, Paul Philippy, Tiffany Cheney, Ashley Cox, Becky Mills, Brandy Wheeler, Melissa Berry, Melissa Poulin, and Meghan Brann

Eight Psychology and Business Psychology majors will present their original, semester-long research projects. Students' projects include: personality traits and perceptions of social network status updates, the influence of emotional content on statistical judgments, ratings of romantic scenarios and attachment, student employment and academic achievement, recovering from romantic relationship break-ups and attachment, the role of criminals' facial hair on perceptions of crime severity, difference between personal ads of gay and straight men, and the correlation between the number of on-line and real-life friendships. *(Faculty Sponsor: Karol K. Maybury)*

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.

Michael D. Wilson Symposium Day is made possible by a gift from Michael and Susan Angelides, who remember Michael with gratitude.

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