

Symposium

Student Works

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2014

## Symposium 2014

University of Maine at Farmington

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# Celebrating Undergraduate Research and Creative Achievements



April 30, 2014

## Program of Events

Arts Nights Events, April 28 and 29



# Welcome to the Michael D. Wilson Symposium

*April 30, 2014*

*Ancient Greeks brought society the symposium, one of many institutions of learning and education to their credit. Opportunities for debate, exchange of ideas and social interaction—fueled by no small amount of food and drink—symposia built community, at least amongst their exclusively male participants.*

*UMF is proud to improve upon that model with its inclusive campus-wide Symposium Day celebrating undergraduate research and creative achievement. Together with Arts Nights, Symposium Day showcases what's possible when you mix student ambition, joy, perseverance, creativity and talent with faculty mentorship and care. No wonder that many members of the UMF community count Arts Night/Symposium Day as their favorite and most uplifting time of the year.*

*It's possible that Greek participants of long ago discussed, as we will in this Symposium, "food miles," views of the "heroic," and the ontology and ethics of naming, but it's a good bet our UMF presenters are far ahead on antibiotic resistance, writings of Haruki Murakami, palindromic automorphism, the pilot episode of a local college television show, "The Farm," and dozens of other fascinating topics you'll learn about in posters, presentations and installations around the campus.*

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

*Symposium offers a groaning board of creative and intellectual sustenance. Indulge.*

**Kathryn A. Foster**

*President*

***F**irst 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*

***S**ymposium 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

Paul Stancioff

Brian Cavanaugh

Chris Bennett

Katherine Kemp

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## **Special Event in North Dining Hall C**

Wednesday, April 30<sup>th</sup> at 7:00 pm

### **Lessons Learned, and Lessons Not Learned: Why Can't I Seem to Hold a Job?**

*Rob Lively*

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

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

This year's speaker is Rob Lively. Rob has held a variety of academic and administrative positions in his 37 years at UMF, and he is retiring as the Associate Provost and Dean of Academic Services. Rob did his doctoral work at Oxford University, and he enjoys traveling, reading, and kayaking.

*The Trustee Professor for next year will also be announced prior to the beginning of Dr. Lively's lecture.*

# 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 250 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.

## 2013-2014 WILSON FELLOWS

Simone Thiry - *The lattice of set partitions and transition matrices of symmetric functions*

Faculty Sponsor: Paul Gies

Christa Bonney - *The development of a live imaging technique and a sustainable diabetic model in adult zebrafish*

Faculty Sponsor: Jean Doty

## FALL 2013 WILSON SCHOLARS

Cidney Mayes - *Jane Austen's Northanger Abbey online: creating a digital and pedagogical resource for secondary teachers and students*

Faculty Sponsor: Misty Krueger

Georgia Qualey - *When the interstate came to town*

Faculty Sponsor: Allison Hepler

Joshua Richardson - *The BNS invariant of the palindromic automorphism group of a free group*

Faculty Sponsor: Nic Koban

Sean Cabaniss - *Baseball pitching: from the windup or from the stretch?*

Faculty Sponsors: Nic Koban and Lori Koban

John Buys - *Contextualizing the divorce novel in America, 1880-1920*

Faculty Sponsor: Sabine Klein

Lauren Breton - *The controversial line between young adult literature and literature and the impact of the that line on secondary education*

Faculty Sponsors: Sabine Klein and Clarissa Thompson

Nathan Sylvester - *The Farm*

Faculty Sponsor: Teal Minton

Ruby Rockwell - *Connecting watershed characteristics to lake behavior: how do bedrock and vegetation influence the stability of subalpine lakes?*

Faculty Sponsor: Julia Daly

## SPRING 2014 WILSON SCHOLARS

Cadyn Wilson - *Hello, my name is ...*

Faculty Sponsor: Kristen Case

Kara Chiasson - *Conserving books in the digital age*

Faculty Sponsor: Eric Brown

Carlee Knox - *Is the Rome-Norridgewock pluton a composite, zoned, or multiple intrusion? Petrographic and geochemical evidence*

Faculty Sponsor: David Gibson

Grace Kendall - *TransCountry*

Faculty Sponsor: Teal Minton

Alana Knapp - *Fashioning female identity: the role and relevancy of the costume in art*

Faculty Sponsor: Katrazyna Randall

Amanda Barrows - *Social impact of Law 101 on immigrant rights in Quebec, Canada*

Faculty Sponsor: Clint Bruce

Curtis Cole - *Postmodern Japanese existentialism*

Faculty Sponsor: Erin Kappeler

Mallory Smith - *Objects of consumption*

Faculty Sponsor: Sarah Maline

Marianne O'Loughlin - *In-Situ: on improving animal mental health in zoos and aquariums*

Faculty Sponsor: Mary Schwanke

Sean Igoe and Nicole Lejonhud - *Digital Arts and mixed literary hypermedia: Tanked*

Faculty Sponsor: Patricia O'Donnell

Sean Slattery - *Petrographic and geochemical characterizations of the mafic dike swarm, Grindstone Neck, coastal Maine*

Faculty Sponsor: David Gibson

Tobey Tozier - *The rejection of gay and transgender individuals: an investigation through language, the mundane, and the dramatic in film*

Faculty Sponsor: Katrazyna Randall

# Arts Night(s) 2014

Monday, April 28th 8pm

## Pixel Hunter Video and Animation Festival

This annual event is in its seventh year and UMF, and will be held at 8:00 pm in the Emery Community Arts Center on the Monday before Symposium Day (April 28). Pixel Hunter is a selection of student produced video and animation from the UMF campus from the preceding year. Students from all depts. and all levels are encouraged to submit, and the program is edited to about an hour and a half by the Arts faculty. This year's fest promises to deliver everything from zombies to family drama. Admission is free and this event is open to the public.

Tuesday, April 29th 4pm to 9pm

4pm Emery

### From Page to Stage

*Nick Lorenzen*

A short play based on the basic premise of "Jack and the Beanstalk" starring a group of 2nd grade students from W.G. Mallet School.

4:30pm Emery

### The Wedding

*Cassidy Small*

A Commedia dell'arte script. When Isabella and Lelio are finally going to get married, Pantalone will do everything he can to stop their wedding. Add to that a mysterious object that has the whole wedding party acting strange, and you've got a recipe for disaster. Can the loyal servants Columbina and Arlecchino save the day, or is this one wedding that is doomed to fail?

4:45pm Emery

### Elephant In The Airwaves

*Frank Parsons*

As a culmination of musical and mathematical studies, this project intends to unravel the subtle pop music industry standards via rigorous musical and statistical analysis, as applied to four Billboard© hits Pop and R&B charts (including Katy Perry, OneRepublic, Pharrell, and Jason Derulo). The patterns and correlations derived from this process are exploited to assist the creation and production of an original "pop" song.

5:30pm Emery

## **Dance of Dolls**

*Directed by Ahnna-Balai Beane*

*Choreographed by Katherine Beach and Ahnna-Balai Beane*

*Costume Designer: Cassidy Small*

*Performed by Ahnna-Balai Beane, Cassidy Small, Patrick Rizzo, and Austin Hayes*

Having experienced stage combat and performance I wanted to explore the world of dance, specifically ballet. The journey has been a wonderful experience. Educating ourselves in the ways of discipline, balance and form, we have constructed this dream sequence between two puppet dolls, the Dream Master who controls them, and the young boy who liberates them.

5:50 to 6:10 Emery

## **Songs**

*Ben Grannell*

Performing two original songs off his first, recently recorded EP.

6:10 to 7pm UMF Arts Gallery

## **Objects of Consumption**

*Mallory Smith*

Mallory Smith, senior arts administration major, curated Objects of Consumption as her senior thesis project. The show is an investigation of objects through the lenses of nostalgia, feminism and commodification. Mallory sent out a call for art and received works from artists across Maine and other parts of the northeast.

6:10 to 7pm Mantor Library

## **Cranes of Wishes**

*Erin Zuidema*

Cranes of Wishes is an installation piece that will be presented at the Mantor Library lobby. "Cranes of Wishes" is based off the Japanese legend of 1,000 origami paper cranes. My version of this Japanese legend is that I will be creating 1,000 (maybe more) origami paper cranes but within each paper crane will be a wish. These wishes that I have received will be from the students of UMF along with community of Farmington. Each crane that I make will be unique as is the wish that will be inside of them. I will also be taking wishes and making paper cranes on the day this installation will be presented in the Mantor Library Lobby.

6:10 to 7pm Alumni Theater

### **Fear of Decisions or Decisions in Fear**

*Daniel Dempsey*

We all have fears and choices that must be made in life. Enter the mind of one music major seeking peace in or perhaps from the dissonance of his inner thoughts. Can you quell his uncertainty and doubt? Can anyone?

6:10 to 7pm Emery Hallway

### **Imperfections**

*Erin Wood*

A project based on skin "imperfections." I etch them into my skin and take a picture of the skin. With my pictures I am going to have different skin diseases and talk on how others handle them while also including some treatments that might help others.

7:45pm Emery

### **A Manifest Destiny: The Journey of the Taco**

*Cassandra Farmer*

From Mexican native to its assimilation into American culture, the taco now embarks on a new kind of journey. Gaelyn and Gustavo Aguilar will set out on a voyage following the path of Lewis and Clark during the 2016 presidential campaign. Along the way they will share food, art, and dialogue that discusses immigration and citizenship topics with American 'natives'.

8:15pm Emery

### **Controversial Concert**

*Lauren Arnold*

This performance is a compilation of pieces that were considered in one way or another controversial in their time. For, several of them we have lost the sense of controversy attached to them because of shifts in social norms or ideologies about music and its content. The ultimate goal of this performance is to bring back that sense of controversy or unease to the audience by performing them in a style they were not intended to be performed. The performance will include elements of prerecorded sound, live performance, and video installation.

4:30-8:30 pm at The Church Street Commons

**“EVERYDAY PLACES”**

*April 29th from 4:30-8:30pm at The Church Street Commons (107 Church St. Farmington, ME) for the Public Reception of “EVERYDAY PLACES” an exhibition of artwork created by UMF students from the Installation-Art class.*

Would you like to explore the way artists make sense of the world?...Witness the mundane transformed into the sublime? Or, see meaning constructed from the ether? Then, please come experience “EVERYDAY PLACES” and take a peek into the way students from the Installation–Art class frame their perceptions and construct new ways of looking at the world.

April 30th 1pm to 5pm (see main program for details)

1:00 - 3:00

**Senior Artist Talks for "Pardon My Tartle!"**

3:00 - 4:00

**The non-harmonious, unproductive productiveness of going against . . .**

4:00 - 5:00

**Re-Thinking Paul Bunyan: A Presentation of Outcomes**

# Venue 1, Lincoln Auditorium

## *Wilson Scholar Presentations*

9:00 - 9:20

### **Conservation in the Digital Age**

*Kara Chiasson*

A presentation on the history and future of the book as an interactive medium. Books have long been held up as objects of great cultural importance, but in the modern era, with instant access e-readers and other portable devices, the importance of the book in its traditional physical form has become less clear. As a way of exploring the connection between humans and the materiality of books, this presentation will discuss acts of preservation, instances of emotional attachment, and the place of physical books and printed matter in the digital age. (*Faculty sponsor: Eric Brown*)

9:20 - 9:40

### **Hello, My Name Is. . .**

*Cadyn Wilson*

This project explores the idea that the act of naming paradoxically strips the named object of the possibility of self-identification, of becoming its own thing; it also addresses the ways in which the social process of subject formation can annihilate a person's chances to become who he or she may want to be. Finally, the project shifts from ontological considerations (about the nature of being) to ethical ones (about the nature of human interaction), attempting to understand whether the very topics of identity, "I-ness", adopted personas, and the Other can be considered as emerging from the fundamental presence and absence paradox. (*Faculty sponsor: Kristen Case*)

9:40 - 10:00

### **Contextualizing the Divorce Novel in America, 1880-1920**

*John Buys*

Researching the context of archival and informational texts surrounding divorce and close-reading divorce novels to see how far the literature works as a cultural document that participates in the debates about divorce and gender creates a more complete context to explore America's changing attitudes around gender performance. Exploring this wide berth of materials, the research seeks to demonstrate how cultural documents between 1880 and 1920 responded to the question of divorce and morality reconstructing America's debate on the institution of marriage and its reliance on gender performance and the transformations occurring at this time around gender codes and their effects on identity and agency. This research creates a unique data set to detail the intricacies of America's gender and relationship culture during this time frame. (*Faculty sponsor: Sabine Klein*)

10:00 - 10:20

### **Call Him Cody: Family, Home, and Transition in a Small Town**

*Grace Kendall*

Call Him Cody traces the story of a transgender man and his partner, Grace, as they return to their home town in western Maine after a 10-year absence. Settling once again where they each grew up, this manuscript sees them learning to farm, parent, and exist together in a place where everyone knows everyone, and Cody's story is anything but secret. Told from his partner's perspective, the manuscript asks readers to examine a story of transition in a different way - one celebrating empathy and the importance of perspective. (Reading followed by a Q&A with Grace & Cody). (Faculty sponsor: Nathaniel Minton)

10:20 - 10:40

### **Break**

10:40 - 11:00

### **Tanked: A Literary Immersive Text**

*Sean M Igoe and Nicole Lejonhud*

As a digital immersive text, this project incorporates literary hypertext and mixed-media in order to tell a congruent, non-linear, multi-perspective narrative. *Tanked* follows the story of seventeen-year-old Jack, an emerging artist, as he works at the New England Aquarium during his last few weeks before starting college. Over the course of the summer, Jack discovers his muse when his frustrated boss demands that he convince the exhibit's newest member, the Atlantic mermaid nicknamed "Nellie," to wear a bra. (Faculty sponsor: Patricia O'Donnell)

11:00 - 11:20

### **Postmodern Japanese Existentialism**

*Curtis Cole*

This presentation investigates the political mind of renowned Japanese author Haruki Murakami. The presentation's intent is to explore the extent to which Murakami incorporates not only postmodern and existential themes into his novels, but also his preferred literary manner (e.g., allegory, metaphor, character creation, and plot). Basing my research within a Marxian framework, I uncover the rationale explaining why Murakami writes in a fashion some view as "at odds" with traditional Japanese literature; history, philosophy, and the arts, therefore, fuse together, revealing the "how" and "why" of one of contemporary society's most debated writers. (Faculty sponsor: Erin Kappeler)

11:20 - 11:40

### **Jane Austen's Northanger Abbey Online: Creating a Digital and Pedagogical Resource for Secondary Teachers and Students**

*Cidney Mayes*

This project combines the study of Jane Austen's Northanger Abbey and the digital humanities into curriculum for secondary students and teachers. For this project I created two websites. One includes a version of the novel that students can annotate. The other gives instructors a range of teaching tools. The websites contribute to the pedagogy of blended-learning. This approach "blends" two kinds of classroom spaces: the online portion allows students freedom of time, place, and pace of their learning outside of the physical classroom. It prepares students to engage in thoughtful discussions inside the classroom that have been partially developed online. *(Faculty sponsor: Misty Krueger)*

11:40 - 12:00

### **"When the Interstate Came to Town"**

*Georgia Qualey*

The construction of the interstate highways in Maine had both positive and negative effects upon the Maine towns they ran through. The interstate could bring economic growth or ruin depending on the accessibility each town had to the highway after it was built. I argue that the establishment of the northern branch of the I-95, added in sections from 1965-1967, created economic opportunities for some rural areas that had been losing population to other parts of the state, but also precipitated a loss of formerly solid businesses in towns when the highway went through a neighboring town. Relying on sources such as Maine Dept. of Transportation records, maps, town reports, and oral histories suggests that there is no one way to tell the story of "when the Interstate came to town." *(Faculty sponsor: Allison Hepler)*

12:00 - 1:00

### **Lunch Break**

1:00 - 1:20

### **In-Situ: Enriching the Lives of Captive Animals**

*Marianne O'Loughlin*

What do animals truly need to thrive? The face of zoos and aquariums has changed dramatically over the decades, reflecting changing attitudes about the presentation of nature and animal welfare. The Association of Zoos and Aquariums (AZA), the accrediting body for all major facilities, employs the highest standards to ensure both the physical and mental health of zoo animals. In this presentation, explore varied and novel ways keepers encourage natural behavior and how the industry is looking to the future. *(Faculty sponsor: Mary Schwanke)*

1:20 - 1:40

### **The Utilization of Cardiac Markers to Detect for Cardiac Damage in Diabetic Zebrafish**

*Christa Bonney*

It would be valuable to have a diabetic zebrafish model for short term cardiovascular disease (CVD) studies, considering the increased risk of developing CVD in the diabetic patient. It was my belief that zebrafish would develop functional abnormalities and eventual cardiac damage associated with CVD when induced to a diabetic state. To test this I identified suitable biomarkers of cardiac damage in zebrafish. These were cardiac markers, and since many of these factors are normally isolated to cardiac tissues in healthy subjects, the presence of cardiac markers in the diabetic fish would positively indicate cardiac damage in diabetic zebrafish. (*Faculty sponsor: Jean Doty*)

1:40 - 2:00

### **Baseball Pitching: From the Windup or From the Stretch?**

*Sean Cabaniss*

The premise of this project is to challenge the commonly-accepted idea in baseball that pitching from the windup is more effective than pitching from the stretch. Since pitching from the windup is more technical than pitching from the stretch, if this common assumption is not true, our results will have implications for baseball pitchers at all levels. In particular, it has implications on how young pitchers should be taught to pitch. (*Faculty sponsor: Lori Koban*)

2:00 - 2:20

### **The Cayley Graph of the Palindromic Automorphism Group of the Free Group on Three Variables**

*Joshua Richardson*

Let  $F_3$  be the free group with generators  $x$ ,  $y$ , and  $z$ . This group consists of all “words” on the letters  $x$ ,  $y$ ,  $z$ ,  $x^{-1}$ ,  $y^{-1}$ , and  $z^{-1}$ . A palindromic automorphism is any odd length word that is a palindrome (the same backwards as forwards). In this talk, we explore the Cayley graph ( $\Gamma$ ) of this palindromic automorphism group. This group has six generators  $\{B12, B13, B21, B23, B31, B32\}$  and a number of defining relations. We will explore cross-sections of two or three generators to make it more readily understood. (*Faculty sponsor: Nicholas Koban*)

2:20 - 2:40

**Break**

2:40 - 3:00

### **The Lattice of Set Partitions and Transition Matrices of Symmetric Functions**

*Simone Sisneros-Thiry*

Relationships between partitions in the lattice of set partitions have significance in calculating entries in transition matrices of the symmetric functions. This project extends collaborative research launched at the Mathematical Sciences Research Institute Undergraduate Program in the summer of 2013. Two formulas for calculating factors of entries in several transition matrices were proven at the program. We have since made progress in developing formulas to produce factors of some of the remaining matrices. Topics for the talk will include relevant relationships in the lattice, the mathematical research process and the connections between algebraic combinatorics and representation theory. (*Faculty sponsor: Paul Gies*)

3:00 - 3:20

### **Defining Immigrant Integration in the Aftermath of Bill 101: A study on Immigrant Perspective in Sherbrooke, Quebec**

*Amanda Barrows*

Bill 101 is a law concerning language rights in Québec. This research focuses on the impact of Bill 101 on social integration of immigrants in Sherbrooke, Québec and investigates the successes and/or failures of this legislation. The sampled population is the immigrant population within Sherbrooke seeking a higher education and opportunities beyond a university domain. Field sampling occurred in fall 2013. Interviews were conducted in French among international students and employees of various nationalities within the University of Sherbrooke. Immigrant anthologies were used to enhance pertinent themes including: preconceptions, cultural tensions, barriers, resources, immigration trends, integration and cultural representation. (*Faculty sponsor: Clint Bruce*)

3:20 - 3:40

### **"Young Adult Literature" vs. "Fiction/Literature"**

*Lauren Breton*

The genre of "young adult literature" hosts a plethora of texts, but what makes these texts different from other novels marketed as just "fiction" or "literature"? Is there a difference between young adult literature novels with the teenage protagonists and the teenage protagonists in "fiction" novels? In this presentation, I will discuss my research on the genre of young adult literature, the history of genre, and how genres are classified. I will also discuss books that seem to cross from the young adult literature genre to the "fiction/literature" genre (and vice versa) and whether or not I believe these texts have been classified by genre correctly. (*Faculty sponsor: Sabine Klein*)

# Venue 2, C-23, Roberts Learning Center

*Geography, Math, Theater*

9:00 - 9:20

## **The Active Community Environment in Bethel, ME**

*Gabriel Perkins*

Bethel, Maine has a deep history of wellness and as a recreational paradise. Today, to maintain those ties to history and continue to be known as a recreation center, policies and infrastructure investments for a better walkable and bikeable community are critical. This research project engages at multiple levels, the perception of Bethel's active community environment. Results from participatory mapping, interviews with town leaders and a community questionnaire produce a snapshot of the active community today, one that is trying to effect change, manage daily life activities and meet expectations for a more prosperous future. *(Faculty sponsor: Brad Dearden)*

9:20 - 9:40

## **Perceptions of Urban Environmental Impacts in Portland, Maine**

*Shaun Clancy*

Human impact on the environment will continue to be of growing concern. This research is an effort to examine people's perceptions of these impacts. Air and water quality, traffic congestion, waterfront pollution and walkability are just some of the many environmental topics that will be examined. Each one of these aspects is influenced or impacted by urban citizens, their views on such environmental issues, and the way their city functions. Portland, Maine is the particular study area that will be examined. *(Faculty sponsor: Brad Dearden)*

9:40 - 10:00

## **Comparing and Contrasting Single Stream vs. Single Sort Recycling Methods in Western Maine Municipalities**

*Myles Labonte*

In Maine there is an ongoing issue with decreasing recycling rates and non-viability of recycling programs. There are currently two different recycling methods in use today, single stream and single sort recycling. This research will analyze citizen participation between single stream and single sort methods in an attempt to determine which method generates the most amount of citizen interest to recycle and make the program viable. The study will compare and contrast participation in recycling for several municipalities in western Maine that are of similar and different sized populations and with respect to the two recycling methods in question. *(Faculty sponsor: Brad Dearden)*

10:00 - 10:20

### **Impacts of Climate Change on Maine's Guiding Industry**

*Noah Burditt*

The purpose of this project was to further investigate the impact that climate change has on Maine's historic Guiding Industry. Instead of viewing these facts through the eyes of a climatologist, view them through the eyes of a preservationist, through the eyes of a professional who creates his livelihood in Maine's woods. To research this topic, there was a selectively chosen group of Maine Guides and Maine State Game Wardens. Constructive conversations with these professionals provided insight into Maine's Guiding future, given the climate change and ecological realities that exists. Surveyors and focus groups also contributed additional qualitative data. *(Faculty sponsor: Brad Dearden)*

10:20 - 10:40

### **Break**

10:40 - 11:00

### **Commuter Rail Expansion: Is the Long Island Railroad East Side Access Project Doing it Right?**

*Nora Morris*

The Long Island Railroad is the largest commuter rail system in the United States, taking about 285,000 people to work in Manhattan each day. With so many people riding, many projects are taken on to improve it, including the current East Side Access Project. This paper will examine commuter and leisure rider perceptions of this project. Riders will be given questionnaires addressing general understanding of the project, opinions of the project, and current routes commuters use. The overall objective of this study is to determine if the East Side Access Project is really worth it based on LIRR riders' perceptions. *(Faculty sponsor: Brad Dearden)*

11:00 - 11:20

### **Barriers to Volunteerism: Franklin County Citizens Perspectives on Why or Why Not to Volunteer**

*Susan Hunter*

Franklin County, Maine, is a diverse space with people of different socio-economic statuses. With much research done on why people volunteer, this study looks at what types of barriers discourage or prevent people from potentially volunteering. An additional key to this research is looking at people's particular perspectives on the nature of volunteerism; What constitutes volunteerism? Through questionnaires and interviews, data will be gathered in order to answer the meaning of volunteerism and how people perceive it. *(Faculty sponsor: Brad Dearden)*

11:20 - 11:40

## **Environmental and Health Impacts of Mountaintop Removal in Kentucky and West Virginia**

*Maxwell Juliano*

With ever-growing advances in technology, commercial development, population growth and a general increase in energy consumption, there is a need for new ways of obtaining that energy. Since its rise in the 1960s, the growth of mountaintop removal mining has become one of those ways to acquire that energy. This study will examine, for the area of West Virginia and Kentucky, the effects of mountaintop removal on the ecological environment and the potential human health effects as a result of the mining process, with consideration for the economic opportunity that exists at such mining sites. *(Faculty sponsor: Brad Dearden)*

11:40 - 12:00

## **College Students Perceptions About Health And Exercise**

*Kyle Mclaughlin*

This study examines how University of Maine at Farmington students perceive health and exercise. Many college students struggle to acquire the adequate amount of nutrition and exercise, therefore potentially creating problems later in life. This study attempts to understand the thought process students have about what to eat and all the factors surrounding food such as dietary choices where money is not considered, time, and means of transportation that might inhibit food choices. Students leaving the school cafeteria will complete a questionnaire about their daily habits in regards to food consumption and exercise as well as their thoughts and perceptions. *(Faculty sponsor: Brad Dearden)*

12:00 - 1:00

## **Lunch Break**

1:00 - 1:05

## **The Presentation of the Walter Sargent Undergraduate Research Mentor Award**

*Nic Koban*

In 2012, the Undergraduate Research Council presented the first Undergraduate Research Mentor Award. In 2013, the award was named after UMF history professor and URC member Walter Sargent. Walter was not only a council member, but a mentor of many undergraduate research projects that built a culture of undergraduate research in his discipline. We will present the Walter Sargent Undergraduate Research Mentor Award to a faculty member with a similar record of mentoring and establishing a culture of undergraduate research within the discipline. *(Faculty sponsor: Nicholas Koban)*

1:05 - 1:25

## **Can Controversy Create Communities? Street Art as a Community Enhancing Tool**

*Jeremy Vroom*

Gang-associated graffiti has been looked at as a way that gangs mark their territory and define their communities. However, these boundary marking practices, and the communities they help form, are often associated with violence or illegal activities. From these roots, graffiti has evolved into street art today, which can be used as a creative outlet promoting a greater sense of community in public spaces, even if it continues to be controversial. By looking into different forms of street art and artists, this presentation will show the development of how street art can be used to promote a positive sense of community. *(Faculty sponsor: Matthew McCourt)*

1:30 - 2:30

## **Survivor: Farmington**

*MAT100-001 and MAT100-002*

The year is 2014. It is the dead of winter. One week ago a coordinated series of terrorist attacks has effectively cut off the flow of oil from the Middle East. There have been no local deliveries of gasoline or food since the attack. A blackout of the entire region began three days ago and the Federal government has declared a state of emergency for the entire country. You are holed up with twenty-four other students in your math professor's house in Farmington, Maine. How will you survive? Come and see which MAT100 students survived the ensuing carnage. *(Faculty sponsor: Peter Hardy)*

2:40 - 3:00

## **The Farm**

*Nathan Sylvester, Caleb Fletcher, and Aaron Verrill*

Nathan Sylvester will be presenting the pilot episode of The Farm - a local comedy television show based on college life. The presentation will consist of a trailer, several clips and segments of the first episodes, and will close with an open discussion and response as Nathan and his film crew prepare to present the perspective television series at the Maine Film Festival. *(Faculty sponsor: Nathaniel Minton)*

## Venue 3, Thomas Auditorium

*Science, Community Health, Special Education*

9:00 - 9:20

### **Antibiotic Resistance in *Streptococcus pneumoniae***

*Allison Pease*

This project is designed to test if there is a dosage of the antibiotic Erythromycin that the bacterium *Streptococcus pneumoniae* can tolerate as a first step to developing resistance. Antibiotic resistance is rapidly increasing due to natural selection; certain bacteria synthesize enzymes that can prevent the antibiotic from killing the bacteria. When the full antibiotic dosage is taken the bacteria should be killed, however when the dosage is not maintained it leaves bacteria able to develop resistance. This experiment may help determine at what dosage *S. pneumococcus* survives and develops resistance to Erythromycin. (*Faculty sponsor: Jean Doty*)

9:20 - 9:40

### **Effects of Laromustine on Human Leukemia Cells**

*Jacob Taylor*

Programmed cell death, or apoptosis, is a necessary phenomenon for human cells facing severe stress. Cancer cells are able to divide at an abnormally high rate by evading this suicidal defense mechanism. My research measured a variety of cellular markers of apoptotic induction upon exposure to the anticancer drug Laromustine. Laromustine has been successfully tested against leukemia and brain cancer in clinical trials, yet its complete mechanism of action remains elusive. The effects of Laromustine on cultured human leukemia cells will be monitored and used in concert with previously obtained genetic evidence of apoptotic induction, to illuminate the molecular responses that correspond to Laromustine treatment. (*Faculty sponsor: Jean Doty*)

9:40 - 10:00

### **Effects of Aluminum Chlorohydrate Exposure on Embryonic Zebrafish**

*Heidi Graf and Grace Toles*

Aluminum chlorohydrate is a known carcinogen for which little testing has been done to determine safe levels. Everyday products including deodorants and antiperspirants for underarms and feet, oil-controlling facial cleansers, shaving products, sun protectants, air fresheners, and athlete's foot treatments all contain this chemical. Groups of embryonic zebrafish were exposed to varying solution concentrations of aluminum chlorohydrate to determine at what levels negative effects become noticeable. (*Faculty sponsor: Jean Doty*)

10:00 - 10:20

### **Possible Mutagenic Effects of Consuming Microwaved Food**

*Sebastien Dumont, Dustin Mccrossin, and Brian Nolan*

Recent studies have shown that microwaving food in plastic containers may not be safe. This experiment was designed to test the mutagenic effects of consuming food that has been microwaved, and in addition to compare the effects of consuming food that has been microwaved in containers made from a range of materials, such as, plastic and styrofoam. Groups of flies (*D. melanogaster*) were fed microwaved and unmicrowaved food prepared in different container types. DNA from these flies was extracted and examined for mutation, allowing us to examine the difference in mutagenic effect on flies between container type and preparation method. (*Faculty sponsor: Jean Doty*)

10:20 - 10:25

### **Harvey Aft Award for Excellence in Chemistry**

*Terry Morocco and Michael Sherrod*

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

10:25 - 10:40

### **Break**

10:40 - 11:00

### **Carcinogenicity of Artificial Sweeteners and Causal Mutations of the P53 Tumor Suppressor Gene in *Drosophila Melanogaster***

*Brittany Bissell, Meryl Bond, Samantha Lackeyram-Owen, and Hannah Lust*

In this project we tested the hypothesis that artificial sweeteners are carcinogenic and can potentially cause mutations that lead to cancer. To test this hypothesis we exposed fruit flies (*D. melanogaster*) to NutraSweet, raw sugar, and cigarette smoke, which is a known carcinogen (Feng et al. 2006). DNA was extracted from all exposure groups, followed by PCR amplification of the p53 tumor suppressor gene. Sequence analysis of the p53 PCR products from exposure groups were compared to each other and to a control to determine which exposure resulted in p53 mutation, which is indicative of carcinogenicity. (*Faculty sponsor: Jean Doty*)

11:00 - 11:20

### **Possible Carcinogenic Effects of Naphthalene and Fiberglass on *Drosophila melanogaster***

*Hayley Hanson, Molly Hinkel, and Conor Kirby*

The objective of this experiment was to determine whether probable carcinogens cause genetic mutation of the tumor suppressor gene *lats* in *Drosophila melanogaster*, resulting in cell proliferation and cancerous growth (Xu, 1999). Naphthalene poses an exposure risk to many workers in the biofuels industries, while fiberglass has a wide range of residential and commercial applications. Inhalation of either substance is irritating and harmful, and both compounds are listed as probable carcinogens. Presence of *lats* mutations in treatment versus control groups may indicate the tumorigenesis mechanism for these carcinogens. Similar alterations may well occur in the mammalian homolog gene *LATS1*. (*Faculty sponsor: Jean Doty*)

11:20 - 11:40

### **The Effects of Caffeine on Zebrafish Development**

*Noelle Hancock and Dylan Rogers*

The objective of this experiment was to observe the effects of caffeine on developing zebrafish embryos. Caffeine is known to have an effect on the structural development of zebrafish. Several different groups of embryos were exposed to caffeine for 72 hours after fertilization. Observations were noted of any structural deformations, as well as size differences and deaths that occurred from exposure. Our results show how caffeine may affect the development of human embryos in a country where caffeine is often used excessively by the general population, including pregnant women. (*Faculty sponsor: Jean Doty*)

11:40 - 12:00

### **Eating Locally on a Student Budget**

*Erin Beal*

On average, food travels over 1,500 miles from harvest to home. "Food miles," as they are called, impact our climate through carbon emissions. This project outlines the journey of two college students as they experiment with buying foods grown within one hundred miles of the UMF campus on a shoestring budget of \$75 per week to help reduce their impact on the environment. The purpose of this presentation is to provide information on the availability and affordability of local foods during the winter, despite common misconceptions. The results of the social experiment will be discussed. (*Faculty sponsor: Grace Eason*)

12:00 - 1:00

### **Lunch Break**

1:00 - 1:20

### **Boldness and Aggression in Crayfish *Procambarus spp.* : the Relationship is not that Simple.**

*Jennifer Gravrok*

Crayfish, *Procambarus spp.*, display consistent personality traits of boldness and aggression. I tested the hypothesis that crayfish would display the "aggressiveness-boldness behavioral syndrome;" specifically I looked to see if boldness and aggression were positively correlated. A total of 66 crayfish were tested for both traits. Boldness was measured with and without aquatic predator odor and the crayfish were scored based on observable criteria. To measure aggression I randomly chose five individuals to fight against the remaining crayfish. Aggressive and submissive behaviors were used to give each individual an aggressiveness score. Although individuals were consistent in their measure of boldness, there was no relationship between boldness and aggression. (*Faculty sponsor: Sarah Sloane*)

1:20 - 1:40

### **A Needs Assessment and Intervention Design to Prevent Unintended Pregnancy in New England**

*Nathaniel Carson, Jacob Linkletter, Erin Mcguigan, and Jenna Williams*

The United States has the highest teen birth rate out of all of the developed Western countries. This may be caused by a variety of environmental, societal, and personal determinants. An intervention using both a needs assessment and the Health Belief Model was implemented focusing on young women and their parents' attitudes and beliefs toward perceived barriers in relation to safe-sex practices, increasing their perceived benefits of contraceptive use and increasing their self-efficacy in their ability to communicate important ideals with their partners will be discussed. (*Faculty sponsor: Alireza Geshnizjani*)

1:40 - 2:00

### **Assessing the Risks, Rates, and Resources Associated with Vitamin D Deficiency in Order to Develop Appropriate Intervention Measures**

*Autumn Gann, Grace Toles, and Danielle Woodworth*

Vitamin D deficiency, affecting approximately 75% of the world's population, is a serious public health concern due to the many ailments it can exacerbate. In addition to secondary data, interviews were conducted with deficiency sufferers and health professionals focusing on deficiency. Based on disproportionate risks of deficiency, a target population of women in college, ages 18-25, located at latitudes greater than 35 degrees was framed. Characteristics of effective interventions include nutritional counseling and lengthy timeframe. Based on this needs assessment, a multipronged intervention focusing on diet, sun exposure, and supplementation through educational sessions, behavioral training, and social reinforcement is recommended. (*Faculty sponsor: Alireza Geshnizjani*)

2:00 - 2:20

### **Needs Assessment and Intervention Design for Type II Diabetes in Franklin County Maine**

*Brian Clukey, Michael Colella, and Amber Gray*

Type II diabetes among adolescents has been on the rise in recent years. Dietary choices and physical activity level are prominent determinants associated with the disease. There are many levels interrelated that are influencing the disease such as socio-environmental, policy, peers and intrapersonal factors. After a needs assessment for Franklin County Maine there is a need to incorporate consciousness raising, environmental reevaluation, counter conditioning and self-efficacy. An intervention including cooking classes, after school programs and summer programs will be implemented within Franklin County schools. In conjunction with these the long term goal is to decrease Type II diabetes among adolescents. *(Faculty sponsor: Alireza Geshnizjani)*

2:20 - 2:40

### **Needs Assessment and Intervention Design for Substance Abuse among Adolescents**

*Jaclyn Kandler, Trey Nelson, Karen Reed, and Jamie Williams*

Objective: The purpose of this needs assessment was to explore the numerous behaviors and determinants associated with adolescent substance abuse in Cumberland County, Maine. Methods: Data was obtained via journal articles, government sponsored websites and interviews. Results: Substance abuse among Cumberland County's adolescent population is a serious health concern. These behaviors include the family structures such as parental relationships, socioeconomic status, societal norms and peer pressure. Conclusions: The best possible solution is to address the community needs for parental education surrounding effective parenting and current rates of use among adolescents. *(Faculty sponsor: Alireza Geshnizjani)*

2:40 - 3:00

### **Implementing Special Education Services in the General Education Classroom**

*Jason Bragg, Carinne Haigis, Allison Reynolds, Kellie Sanborn, Christopher Whitney*

This presentation will explore the findings of a class research project conducted by future general education teachers. The research focused on the reflections of current general educators' experiences and thoughts on working with students who receive special education services. Qualitative methods, such as interview development, data collection, and data analysis, were used to complete the research project. Seventeen secondary educators were interviewed and asked to share and reflect on their experiences working with students with and without disabilities, creating and implementing Individual Education Programs and classroom accommodations, and their advice for future teachers. *(Faculty sponsor: Lance Neeper)*

## Venue 4, North Dining Hall C

### *Psychology Research Methods*

9:00 - 12:00 (with a break at around 10:20)

#### **Research Methods in Psychology: Spring 2014 Independent Research Projects**

*Ryan Berthiaume, Renee Clermont, Cordana Dingley, Rebecca Ellis, Jarrod Goodwin, Tyler Hadyniak, Catherine Hodge, Allison Holmes, Andreaska Jeffcoats, Leisha Lewis, Hannah Lust, Joseph Pepin, Richard Russell, Bailey Scott, Dylan Turner, Jamie Williams, and Alison Zubrod*

This Spring 17 Psychology and Business Psychology students will present their independent research projects in individual oral presentations. The students conducted research on perceptions of 'gamer' undergraduate students; how gender influences decisions to seek medical attention for physical and mental maladies; the influence of a professor's disability on student evaluations; how chewing gum influences memory; inclination toward authoritarianism among different college majors; how body type contributes to observers' prejudgments; evaluations of dancing errors; and many other thought-provoking topics in contemporary psychological research. (*Faculty sponsor: Karol Maybury*)

1:00-3:00

#### **Research Methods in Psychology: Spring 2014 Independent Research Projects**

*(continued)*

Continuation of the session for Psychology and Business Psychology research projects.

## Venue 5, CR 123

### *Anthropology/Sociology*

9:00 - 9:20

#### **A Dining Dilemma: UMF's Path Toward a Sustainable, Diversified, and Healthy Food Service on Campus**

*Paul Santamore*

How do UMF Dining Services align with the three goals of our university--sustainability, diversity, and wellness? These three goals were central to my research and are the integral cog in my product, a policy recommendation to leadership at UMF. It is hoped that this project will affect student perceptions, and

the UMF community as a whole, in a positive way so that we can move forward with better, more sustainable, and more distinctive food services here on campus. *(Faculty sponsor: Gaelyn Aguilar)*

9:20 - 9:40

### **I am Evil ... You have No Idea How Evil I Am: A Sociological Study of Social Bias Against Females and Female Serial Killers**

*Ashley Ross*

Portrayed in movies, books, and talked about by many, serial killers have been captivating our attention for decades. One rarely, however, hears about female serial killers. Women are capable of killing, too, but their acts have not been exposed in the same light as the men who commit these same crimes. Since women go unnoticed, and do not cross police minds, they can continue to kill for longer periods of time. My research asks: Is there a correlation between the social bias of women and why their serial murders go unrecognized? *(Faculty sponsor: Gaelyn Aguilar)*

9:40 - 10:00

### **Let's Play a Game. Let's Play Murder: An Analysis Between Observing and Participating in Violence from Past Events and Current Games**

*Laura Mills*

Have you ever played an aggressive videogame and were called a psychopath because of it, even though, as history reminds us, citizens once went to events where groups were openly killed for the entertainment of the masses? This research project compares and contrasts the current practice of participating and playing violent video games with the historic practice of spectating violent acts. My goal is to see if the question people are asking might be true: Does playing these brutal video games stimulate violence in today's society, or is the desire to spectate violent behavior a human necessity? *(Faculty sponsor: Gaelyn Aguilar)*

10:00 - 10:20

### **Should I Stay or Should I Go? Human Sexuality in the Lutheran Church**

*Kathleen MacLagan*

In 2009, the Evangelical Lutheran Church of America adopted a new social statement titled "Human Sexuality: Gift and Trust" which dealt with the Lutheran perspective on homosexuality and human relationships. This Study looks at how this new social statement affected one particular Lutheran church located in a small town in Maine. Working specifically with Pine Hill Lutheran Church, I interviewed both current and past members to explore the immediate and long-term results of the ELCA's new social statement. How did the congregation deal with the loss of members and how has the congregation changed and adapted since the social statement? *(Faculty sponsor: Gaelyn Aguilar)*

10:20 - 10:40

**Break**

10:40 - 11:00

**By Heavenly Decree: The Effect of Mythology on Gender Roles in Ancient Society**

*Kelsey Theriault*

Throughout the centuries, mythology has held a strong influence over human societies all over the globe. These influences can still be found in the societies of today, from the way we tell time to the way we speak to one another. This research project looks at the mythologies of the Classical Maya and the Old Norse and seeks to draw conclusions about the impact of myth on gender roles within these ancient societies. Through the comparative analysis of these different cultures, the universality of the symbiotic nature of mythology and society is explored. *(Faculty sponsor: Gaelyn Aguilar)*

11:00 - 11:20

**Artificial Winter: A Study on Changing Perceptions on Artificial Snow Making and Winter Recreation in a Rapidly Changing New England Environment**

*Courtney Bolduc*

What started as a single trail blazed by a handful of local boys in the early 1950s quickly turned into what we now know as Sugarloaf Mountain: the largest ski area east of the Rockies. What impact have the millions of people, lucky enough to experience Sugarloaf, had on the environment? This study was done in order to look at how the winter sports culture both impacts, and is perceived to impact, the environment, whether positively or negatively, with special attention given to the way in which the people who inhabit this area have responded to the demand of expansion. *(Faculty sponsor: Gaelyn Aguilar)*

11:20 - 11:40

**When a Partner Goes Too Far: The Anthropological Study on the High Rate of Homicides Through Intimate Partner Violence in Maine**

*Innes Herdan*

Homicides through intimate partner violence make up about 40-50% of Maine's yearly total homicides. While delving into this research, my initial question was based on what policies are lacking in Maine that causes such a high rate of homicides through intimate partner violence. Through detailed interviews with professionals in the advocacy centers in Maine, as well as people working in the legislative branch and the police force, I have been able to get answers, at a human-interest level, to my policy-driven questions. My research is partnered with literary analysis from Maine records and scholarly articles. *(Faculty sponsor: Nicole Kellett)*

11:40 - 12:00

### **The 9 Twitter Accounts of Pope Francis: A Sociological Study of the Relationship Between Technology and the Values of the Catholic Church**

*Thomas Cyr*

I began my research partly inspired by Pope Francis and his revolutionary ideology of how the Catholic Church should operate. My question concerned how and why the values of the Catholic Church changed over time. What I encountered was interesting personal opinions of the definition of religion itself, as well as the research of theorists and who predicted that the need for religion and faith would dissipate as science and technology evolved. The Catholic Church is adjusting to the advances of technology with the help of Pope Francis by focusing on public social issues. *(Faculty sponsor: Nicole Kellett)*

12:00 - 1:00

### **Lunch Break**

1:00 - 1:20

### **How Do You Solve A Problem Like Attendance? A Closer Look at One of the Big Problems Facing Churches Today and How We Can Solve It**

*Victoria Coskery*

In the past 50 years, many churches have been experiencing a high decline in attendance numbers. However, the reasons for this decline are not simple, instead coming from many different facets of society and life. This research project looks not only at the reasons for decline in attendance, but also what can be done to fix the problem. Through surveys and interviews with both older people and college students, this project offers an in-depth look at both sides of the coin; those who lead the church, and those who are leaving. *(Faculty sponsor: Nicole Kellett)*

## **Venue 6, The Landing, Student Center**

*Humanities, History, Miscellaneous*

9:00 - 10:00

### **Readings by Students in Advanced Fiction**

*Tory Axford, Kimberly Clark, Maileny Guillen, Victoria Luce, Alyssa Mahoney, Kyle Manning, Joseph Paine, and Ashley Smith*

Eight students from Advanced Fiction will read short excerpts from work they have written this semester. They will each read for no more than five minutes, leaving time for questions after. *(Faculty sponsor: Patricia O'Donnell)*

10:00 - 10:20

### **Hard-boiled Truths**

*Molly Meadows*

"Hard-boiled Truths" examines Haruki Murakami's 1985 *Hard-boiled Wonderland and the End of the World* as a commentary on the trauma of World War II and the Holocaust. Murakami saw the value of lessons in history and used literature to expand on it with clear allegorical representations of major figures, events, and themes paralleling the two worlds, both literary and literal. Through characterization and intentional vagueness with plot lines, characters, and major details, Murakami expresses the connection between his literary work and the events and trauma of the Holocaust. My reading shows that literature can do much more than entertain. *(Faculty sponsor: Erin Kappeler)*

10:20 - 10:40

### **Break**

10:40 - 11:00

### **Nietzsche as Misogynist: How an Alternative Reading of Nietzsche May Support Modern Feminist Theory**

*Catherine Zachary*

Friedrich Nietzsche is one of the most interesting and dynamic philosophers of the 19th century. Nietzsche's long-standing reputation as a misogynist is due I argue in large part to superficial readings of several key passages of his work. In this paper, I will undertake a more nuanced reading of these passages in attempt to open up the question of Nietzsche's relevance for contemporary feminist theory. *(Faculty sponsor: Jonathan Cohen)*

11:00 - 11:20

### **Public and Private: Who Draws the Line Anyway?**

*Kyle Sareyani*

In 2013, Edward Snowden disclosed a vast number of documents which detailed a global surveillance apparatus run by the United States' NSA, and featured spying techniques such as tapping personal phone lines and hacking personal computer browsing information. Drawing primarily upon the works of Jean Baudrillard and Hannah Arendt, we will explore the ideas and connotations of the "public" and "private" realms of our world, as well as the impact social media and mass media have on our understanding and navigation of these realms. *(Faculty sponsor: Jonathan Cohen)*

11:20 - 11:40

### **Inducing Relaxation via Virtual Reality/Binaural Beats**

*Craig Detheridge*

*Objectives:* The quantitative electroencephalographic correlates of Virtual Reality and Alpha-Binaural Beats on relaxation were examined. The objectives were to find if: A) Binaural Beats produced a significant change in relaxation measures, B) If this effect was amplified or diminished by the presence of audio and visual stimuli, and C) Which combination of stimuli yielded the most prominent results.

*Results:* The group exposed to all three components showed the greatest change in  $\alpha$  band EEG data.

*Conclusion:* Binaural Beats are effective in amplifying the effect of relaxing stimuli. Binaural Beats do not produce this effect on their own. (*Faculty sponsor: Marilyn Shea*)

11:40 - 12:00

### **What can the state of Maine do to help students apply for college?**

*Tyler Hadyaniak*

Faced with the looming problem of dropping college enrollment and declining high school graduates, Maine must address the issue of what it can do to help students apply to college. By guiding students through the application process, Maine can stem the growing "brain drain" to out of state schools, and retain students in Maine colleges, giving them the opportunity to contribute to the educational and economic health of the state. By integrating dedicated college counselors into Maine high schools, and ensure adequate information regarding financial aid, Maine will be able to help solve this growing problem in higher education. (*Faculty sponsor: James Melcher*)

12:00 - 1:00

### **Lunch Break**

*(Note late start time for the after lunch session in this venue)*

1:20 - 1:40

### **The End of an Era: Propaganda, Sentimentalism and the End of the Child Labor**

*Ryan Sucky*

The anti-child labor campaign in the United States gained its full force at the turn of the 20th century as activists relentlessly pursued legislation to abolish child labor. The Fair Labor Standard Act of 1938 officially prohibited most forms of child labor. Yet, by then, the number of laborers was but a fraction of those in 1910. This begs the question: how did child labor end? I argue that the methodology and tactics employed by committees such as the National Child Labor Committee became a propaganda campaign to foster sentimentalism in the public mind, and that this had a greater effect on ending child labor than any legislation offered at the time. (*Faculty sponsor: Allison Hepler*)

1:40 - 2:00

### **A Roman Plebeian Viewpoint of an Ideal Hero**

*Daniel Tosch*

While we know a good deal about the elites in Roman history and what characteristics they viewed as "heroic," we know less about how ordinary people, or plebeians, saw the world. Who or what did they admire as heroic? Part of the difficulty of answering this question, of course, lies in the dearth of primary sources by plebeians. Nevertheless, I argue that, from sources created by the elite, or patricians, a more complete picture can emerge. Sources such as artifacts from New York's Metropolitan Museum of Art, government documents, and Roman letters suggest that a plebeian's "hero" was self-sacrificing, strong, and loyal, traits not unlike those valued by the elite. (*Faculty sponsor: Allison Hepler*)

2:00 - 2:20

### **American History Carved by Maine Waters: A Study of the Maritime History of the Kennebec Region**

*Jonathan Roy*

The Kennebec region of Maine has long influenced the maritime history of America, since the beginning of colonization. I argue that the unique geographical characteristics and access to lumber has allowed the long history of ship building in this region to survive into modern day. Because of this long experience with ship construction, Kennebec area shipbuilders embraced innovation and produced ships of superior size, design, and technology, placing them at the forefront of the field of ship construction. Documents from the archives of the Maine Maritime Museum of Bath, Maine, yield ample evidence that this impact was felt nationally. (*Faculty sponsor: Allison Hepler*)

2:20 - 3:00

### **Burning for Judgment Day: Turner's Raid and its effects upon King Philip's War**

*Matthew Kuchinski*

Burning for Judgment Day: Turner's Raid and its effects upon King Philip's War. The conflict of King Philip's War is considered to be one of America's forgotten wars, for even though much has now been written about the conflict, little has been truly written about the decisive turning point of the war. Although many have argued that the turning point was the Great Swamp Fight or the war of attrition that took shape in the middle of the war, I argue that it was the Battle of Peskeopscut (Modern day Turner Falls, MA). I will present the evidence that the battle had the profound strategic, psychological and logistical impact that finally ended the conflict in favor of the English. (*Faculty sponsor: Allison Hepler*)

# Venue 7, Art Gallery and Emery Arts Center

*Senior Artist Talks, Paul Bunyan, Beethoven*

1:00 - 3:00

## **Senior Artist Talks for "Pardon My Tartle!"**

*Samantha Funk, Brian Gadberry, Alana Knapp, Ashley Lessner, Gina Spinelli, and Tobey Tozier*

What happens in social situations when you are suddenly struck with momentary vacuity? Why, you simply say, "Pardon my tartle!" Which, coincidentally, is the name of the capstone show for senior art students, as they find awkwardness to be a defining element of their collective work and artistic personalities. In this collaborative show, Ashley Lessner, Samantha Funk, Gina Spinelli, Tobey Tozier, Brian Gadberry and Alana Knapp present a diverse body of work that engages conversations of labor dynamics, power plays, the male gaze, interpersonal relationships, facets of justice, and feminine identity. They will discuss the ways these ideas function in their work, contextually and aesthetically. They will address personal practice and production as influenced by dialogues in contemporary art and culture. The talks will begin in the UMF Art Gallery and continue in the Emery Community Arts Center as each artist presents their work. *(Faculty sponsor: Katrazyna Randall)*

*(Among the senior art majors are the following Wilson Scholars)*

### **Artist Talk by Senior Arts Administration Major, Tobey Tozier**

*Tobey Tozier*

Senior arts administration major, Tobey Tozier, produced and directed a series of short films as part of his senior capstone. These films serve as investigations of the complexities and unexpected frailties of interpersonal relationships. As a transgender filmmaker, Tozier examines these shifts in relationships through minimalistic, open-ended narratives that question the ideas of language and intimacy through a poststructuralist lens. He will be presenting his work in a 10 minute artist talk with the other senior art majors in the Emery Community Arts Center, and will be available for questions during and afterward. *(Faculty sponsor: Katrazyna Randall)*

### **Fashioning Female Identity: The Role and Relevancy of the Costume in Art**

*Alana Knapp*

What do teapots, manatees, and gummy worms have in common? In my work, I use these and other costume creations to examine the visual language of cultural consumption as it appears in the context of contemporary femininity. I do this primarily in the form of kitsch, using bright colors, gaudy baubles, and copious amounts of glitter as signifiers of the way consumption has informed image as well as feminist ideology. Through the creation of absurd and fantastical characters, I am able to engage in an investigation addressing faceted complexities of "being female," particularly in the wake of third wave feminism. *(Faculty sponsor: Katrazyna Randall)*

## **Objects of Consumption**

*Mallory Smith*

Mallory Smith, senior arts administration major, curated *Objects of Consumption* as her senior thesis project. The show is an investigation of objects through the lenses of nostalgia, feminism and commodification. Mallory sent out a call for art and received works from artists across Maine and other parts of the northeast. She will introduce her exhibition in company with the senior art majors in the UMF Art Gallery. (*Faculty sponsor: Sarah Maline*)

3:00 - 4:00

### **The non-harmonious, unproductive productiveness of going against . . .**

*Steven Pane, Gustavo Aguilar, Kristen Case, Matthew Houston*

Steven Pane - piano performance - Beethoven Opus 111; Gustavo Aguilar - The Visible and Invisible; Kristen Case - poetic reading - Arietta: Fragments after Beethoven's Sonata 32 in C minor; Matthew Houston - reading - "The Play of Difference." Edward Said describes Beethoven's late style as "non-harmonious," engaging a "deliberately unproductive productiveness going against." How does Beethoven create this place of contradictions—non-harmonious harmonies—in the sounds of Opus 111?

4:00 - 5:00

### **Re-Thinking Paul Bunyan: A Presentation of Outcomes**

*Marina Belanger, Sarah Coston, Finn Hopkins-O'Neil, Alyssa Ladd, Ashley Libby, Sarah Manley, Sarah Marshall, Brandon Monroe, Frank Parsons, Gabriel Perkins, Lauren Scheidegger, Anna Soule, Ryan Sucy, and Erin Zuidema*

'Re/Thinking Paul Bunyan' was a seven-week course meant to activate dialogue about creation myths, ideological signs of the nation-state, borders as frontiers of identity, and the friction of global social interaction--all through the lens of the legendary logger. Come and hear students talk about how we turned our classroom into an interdisciplinary learning environment, connecting our lectures, labs, readings, discussions, and fieldwork to the larger world by designing and carrying out a parade across the Canadian border. (*Faculty sponsors: Gaelyn Aguilar, Gustavo Aguilar, Jesse Potts, and Michael Romanyshyn*)

# Venue 9, Dearborn Gym

## 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 Rome-Norridgewock pluton, west-central Maine; evidence for two distinct intrusive events**

*Carlee Knox*

The Rome-Norridgewock pluton (RNP) outcrops in west-central Maine and is depicted as a single homogeneous granitic intrusion on the 1985 Maine bedrock geology map. Preliminary fieldwork has revealed that there are distinct petrographic and geochemical variations within this intrusion. In the northern outcrops the rocks are medium grained granodiorite to granite in composition and contain plagioclase, biotite, hornblende and sphene, with possible epidote. However, the southern exposures of the pluton are granitic with biotite and muscovite along with microcline, and displays microscopic deformation features. It is more likely that the RNP is two separate intrusions. (*Faculty sponsor: David Gibson*)

poster #2

### **Petrographic and Geochemical Characterization of the Mafic Dike Swarm, Grindstone Neck, Coastal Maine**

*Sean Slattery*

Two major sets of mafic dikes, related to Mesozoic rifting, are distinguished in New England and adjacent Canada - the Central New England (CNE) and Eastern North America (ENA) suites, each with a distinctive geochemical signature. Our preliminary data demonstrate that representatives of both the CNE and ENA suites are present in the Schoodic dike swarm, although the majority has a CNE affinity. The CNE and ENA dike suites can be distinguished geochemically using TiO<sub>2</sub> wt. %, MgO wt. % and Zr levels. This extends the geochemical coverage of both Mesozoic and syn-plutonic mafic magmatism along the central Maine coast. (*Faculty sponsor: David Gibson*)

poster #3

### **Connecting watershed characteristics to lake behavior: Do bedrock and vegetation influence the stability of subalpine lakes in response to storm events?**

*Ruby Rockwell*

This project investigates the potential links between the thermal stability of small subalpine lakes in western Maine and their watershed characteristics. During mixing events, oxygen and nutrients can be re-distributed throughout the water column with potential for changing the aquatic environment

abruptly. In this project, we try to better understand which watershed characteristics (bedrock, size, vegetation) are associated with lake stability. The preliminary results suggest that a better understanding of major controls on headwater lake chemistry could facilitate forecasting the future stability of these lakes in response to large events (storms) and climate warming. *(Faculty sponsor: Julia Daly)*

poster #4

### **An Observational Study of School Readiness Skills for Toddlers**

*Brittany Hoffman*

The UMF PIWI-Inspired Playgroup provides naturally occurring activities to ease the transition for children and families who are exiting playgroup. Families report that the transition process from birth-to-three services to preschool settings is stressful. However, there are readiness skills identified in the professional literature that may support children and families during this transition. Playgroup facilitators and their mentor are conducting an ongoing qualitative study in which they are gathering and analyzing observational data of readiness skills to achieve inter-rater reliability. In this poster presentation, preliminary findings are presented that illustrate readiness skills demonstrated by children at playgroup. *(Faculty sponsor: Dolores Appl)*

poster #5

### **Maine Tourism's Strategic Plan for the Next Five Years**

*Tyler Brown, Cody Burrows, Joshua Everett, Patrick Hunt, Calvin Lord, Kory Scarponi, and Jasmine Strout*

On March 19, 2014, the Maine Department of Tourism presented its Five Year Strategic Plan, 2014-2019, at the 2014 Maine Governor's Conference on Tourism. We attended the conference in order to learn more about the industry, and to find out where it's heading. We're interested for two reasons: tourism is one of the most important sectors in Maine's economy; and, as prospective graduates (2014) of UMF's Outdoor Recreation Business Administration program, our careers depend on the future of tourism. Our objectives are to share our findings, analyze the department's plan, and to share our perspective. *(Faculty sponsor: Frank Engert)*

poster #6

### **Coordinated School Health Programs**

*John McCullagh, Molly Menice, Logan Nichols, Laura Lacasse, Trevor L. Hisler, Amy E. Jones, Taylor Marie Harris, Austin Dooley, Joseph Doughty, and Tess Perry*

The coordinated school health program is a systemic, effective, and efficient model designed to encompass school and community resources to maintain and/or improve all students' health and learning. The model is designed to connect health and learning. Participating school health students will demonstrate how the model components can be helpful for addressing health issues as well as meeting the mission of education. *(Faculty sponsor: Stephanie Swan)*

poster #7

### **The Moral Theories of Immanuel Kant and Lawrence Kohlberg**

*Angela Hall*

This will be a study of Immanuel Kant's moral theory and Lawrence Kohlberg's moral development theory, the latter of which resembles, and provides empirical support for, Kant's evolutionary anthropology. The presentation will include visuals and an interactive demonstration of Kohlberg's methodology. *(Faculty sponsor: Frank Underkuffler)*

poster #8

### **Field Experiences in Community Health and Recreation**

*Holly Ames-Allan, Kelsey Arsenault, Allison Berry, Nichole Berry, Mallory Bonnevie, Matthew Clark, Margaret Daley-Dolloff, Haley Davis, Brittany Errington, Hope Gould, Allison Hodge, Devon Jones, Amanda Klug, Raymond Linck, Mckenzie Parr, Michelle Paul, Reid Plimpton, Ian Raymond, Ellen Thorne, Kate Thorne, and Amanda Wiley*

As the culminating experience of their careers at UMF, students majoring in Community Health Education carefully select field placements which mirror professional interests and career or graduate school aspirations. For decades students have shared these experiences with each other and program faculty members. We are excited to share with the campus community, the collective knowledge, skills and research in the areas of health and recreation program planning, implementation and evaluation. *(Faculty sponsor: Denise Boothby and Kelly Bentley)*

poster #9

### **Summertime Oxygen Fluxes in Three small Lakes in the Rangeley Region**

*Leon Leary and Brian Scholten*

The Rangeley, ME region is an internationally known tourist destination with its many waterways and native brook trout and land-locked salmon fisheries. The larger lakes in the area are classic oligotrophic lakes with above average secchi transparencies and water quality. In local smaller ponds conflicting water quality data was gathered that appears to be primarily influenced by lake morphology. Smaller lakes in the region are characterized by shallower epilimnions during the summer stratification, decreased secchi transparencies and significant hypolimnetic oxygen declines. Increasing water temperatures could result in further declines in hypolimnetic oxygen values, threatening the salmonid populations in these ponds. *(Faculty sponsor: Daniel Buckley)*

poster #10

### **Damselfly and Butterfly Fauna Associated with the Rangeley Lakes Region: Biophysical and Historical Comparisons**

*Ronald Butler, Natalie Dumont, Patrick Kelly, and Sarah Pokorny*

High altitude biophysical regions often differ dramatically from those at lower altitudes in terms of annual temperature regimes, growing seasons, and species diversity. By their very nature, these high

altitude regions may also be more sensitive to the complex impacts of climate warming. Damselflies and butterflies offer the potential for short and long term monitoring of the impact of changing land use practices and climate change on both aquatic and terrestrial ecosystems. As part of UMF's ongoing National Science Foundation funded sustainability science research initiative, we assessed insect assemblages at over 100 sample sites in the Rangeley Lake region of Maine from 2011-2013. Important correlates of insect abundance and diversity in the Rangeley region were determined, and distribution results were compared to similar data collected from low altitude biophysical regions in central Maine. We also examined historical data related to insect distributions in the two regions to determine potential temporal changes in geographic ranges. Damselfly distributions differed dramatically as a function of biophysical region. However butterfly distributions appeared to change largely as a function of time, probably related to climate warming and/or changing land use patterns. *(Faculty sponsor: Ronald Butler)*

poster #11

### **Ice Out, Spring Mixing, and Dissolved Oxygen Trends: Comparing Headwater and Flow-Through Ponds in Western Maine**

*Kelsey O'Connor*

This project investigates the relationship between dissolved oxygen, ice out, and spring mixing in small ponds in western Maine. Using high-resolution water temperature data, we determined the timing of ice out and mixing events at multiple locations in 2012 and 2013. In 2012, temperature records indicate mixing following ice-out and higher summer dissolved oxygen concentrations. Following ice-out in 2013, temperature data show limited or delayed mixing in several ponds, and lower summer dissolved oxygen values. We continue to further develop a better understanding how both weather and lake position in the watershed are driving oxygen levels and lake stability. *(Faculty sponsor: Julia Daly)*

poster #12

### **The Fate of Agricultural Phosphate in the Gulf of Mexico**

*Joshua Bishop*

In the Mississippi River Basin more land is dedicated to agriculture than any other endeavor. Agriculture accounts for 75% of phosphate washed downstream which not only places a nutrient load on the Gulf of Mexico but causes a dead zone due to increased oxygen consumption from decaying organics. As phosphate is a limiting nutrient in the ocean it enters the biosphere and cycles through the thermocline ~100 times before reaching the sea floor. Once there, if conditions are reducing, dissolution of iron oxyhydroxides releases the phosphate, which diffuses out of the sediment into the ocean's biosphere and the cycle continues. *(Faculty sponsor: Douglas Reusch)*

poster #13

### **Magnesium (Mg) Sources and Sinks through Time in Western Vermont**

*Leon Leary*

The geology of western Vermont is dominated by limestones and dolostones, rocks composed of carbonate minerals that precipitate from ocean water. It is generally accepted that dolomite forms by through replacement of calcium by magnesium in calcite minerals in the presence of Mg-rich brines. Highly soluble Mg-rich mantle rocks were present during early Appalachian mountain building and would have provided a localized influx of Mg-rich water to the remnants of the Iapetus Ocean. The significance of this Mg source in relation to formation of western Vermont dolostones through replacement as well as potentially direct precipitation will be evaluated. (*Faculty sponsor: Douglas Reusch*)

poster #14

### **CO<sub>2</sub>- Ocean Chemistry for High School Students**

*Bianca Stoutamyer*

Carbon dioxide uptake by the oceans is an important step in the carbon cycle, which plays a vital role in maintaining the habitability of Earth. As recently as the 1950s, scientists thought that the ocean would quickly soak up the majority of carbon emissions. Such is not the case. I will present a sequence of lessons and activities for students to develop their understanding of this process and its significance, including the related phenomenon of ocean acidification. (*Faculty sponsor: Douglas Reusch*)

poster #15

### **Feasibility of Oxide Capture of Rare Earth Elements in Seawater**

*Sean Slattery*

Among potentially valuable ions occurring naturally in seawater are those of the rare earth elements, essential components of many modern electronics. As desalinization of water becomes more widespread in response to drought in the western United States, extraction of valuable compounds from the seawater can aid in increasing the profitability of the desalinization plants. This study explores the preliminary economic feasibility of using an oxide-REE flocculation chamber to capture rare earth element ions in useful concentrations based on the effects of oxide dust input on the natural oceanic residence times of the ions. (*Faculty sponsor: Douglas Reusch*)

Poster # 16

### **The Son-Rise Program: An Alternative Approach for Working with Children on the Autism Spectrum.**

*Hannah Goodenow*

The Son-Rise Program is a home based one on one intervention to help children who have autism spectrum disorders to grow and develop with the primary goal of social development. In this poster presentation a model of the Son-Rise program will be provided and briefly compared to Applied

Behavioral Analysis (ABA). Video clips will demonstrate how the playroom is a special and safe place for a child on the spectrum to learn how to become spontaneous, flexible, and more social. Come learn about a UMF student's experience in working in this very unique program that is having an amazing impact on a child's life. *(Faculty sponsor: Grace Eason)*

poster #17

### **Research Methods in Psychology: Spring 2014 Independent Research Researcher Projects (Poster Presentations)**

*Melissa Cyr, Mariah Duncan, Michelle Greenleaf, Madeline King, Chelsea Leblanc, Holly Legere, Emily Marron, Kellsey Metzger, Kendra Newman, Haley Nutter, Daniel Poulin, Shannon Roche, Carolyn Springford, and Alexa Wyman*

This Spring 14 Psychology and Business Psychology students conducted independent research projects and their results will be displayed in individual poster presentations. The students conducted research on parental divorce and attachment style; the role of parents' moral instruction on evaluations of adult dishonesty; handedness and dreaming; weight and perceptions of morality; exercise and self-esteem; perceptions of using pharmaceuticals to aid studying; sleep habits and anxiety; among other interesting topics. *(Faculty sponsor: Karol Maybury)*

poster #18

### **Topics in Planetary Science**

*Students of Descriptive Astronomy, 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, Pluto, meteors, the Galilean moons of Jupiter, Enceladus, Saturn's rings, the aurora borealis, and terraforming. *(Faculty sponsor: Christopher Magri)*

poster #19

### **Topics in Modern Physics**

*Students of Einstein's Physics, 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 -- such as quantum teleportation, or the implications of quantum mechanics for free will -- and will present them in poster form. *(Faculty sponsor: Christopher Magri)*

## **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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