The 2013 Thirteenth Annual UMM Undergraduate Research Symposium (URS) celebrates student scholarly achievement and creative activities. Students from all disciplines participate in the URS. Types of presentations include posters, oral presentations, and short or abbreviated theatrical, dance, or musical performances. Presentations are accompanied by discussions and multimedia.

The University of Minnesota, Morris
- 2013 -
UMM Undergraduate Research Symposium
Featuring student research, creative, and scholarly work from across campus

Saturday, April 20, 2013

9:30 a.m. - 2:00 p.m. Registration, Science Atrium and John Q. Imholte Hall
9:30 a.m. – 11:00 a.m. Poster/Visual Display, Science Atrium
10:00 a.m. Welcome, Dillon McBrady, president, Morris Campus Student Association, Science Atrium
11:00 a.m. – 12:00 p.m. Oral Presentations Science Building, Rooms #1020, 1030, 2190, 2200
12:00 p.m. – 1:00 p.m. Lunch, Dining Hall (or on your own)
1:15 p.m. Welcome, Becca Gercken-URS co-chair, and Jacqueline Johnson, chancellor, John Q. Imholte Hall #109
1:30 p.m. Introduction of Featured Presentation-Bart Finzel vice chancellor for academic affairs and dean
1:30 p.m. – 2:15 p.m. Featured Presentation, John Q. Imholte Hall #109 Samantha Bruno and Megan Fitzgerald “VIII: Unfolding the Possibilities in Stop-Motion Filmmaking and Bookbinding”
2:30 p.m. – 4:30 p.m. Oral presentations: John Q. Imholte Hall, Room #s: 111, 112, 113 and 114
4:00 p.m. – 4:20 p.m. Performance Presentation, HFA Recital Hall #160
2013 Undergraduate Research Symposium

ORAL PRESENTATIONS
Science and Math Building, Room #s 1020, 1030, 2190, and 2200

Room #1020

11:00 Tamir Elhabarawy (Political Science): Political Source Cues: A Study of Partisan Opinion (Adviser: Roger Rose), abstract pg. 13
11:20 Evan C. Vogel (Political Science): Maintaining the Integrity of Minnesota Elections: An Investigation into the Effects Voter ID Legislation Could Have in Minnesota (Adviser: Sheri Breen), abstract pg. 24
11:40 Joshua Preston (Political Science): The President's Speech: Attention to Human Rights in Post-Cold War Presidential Rhetoric (Adviser: Roger Rose), abstract pg. 19

Room #1030

11:00 Andy Rosenthal (English): The Concept of Free Will in Shakespeare's Macbeth (Adviser: Julie Eckerle), abstract pg. 20
11:20 George/Anne Meyers-Welsch (English): The Mechanical Man for Modern Times: The New Nietzsche in Ralph Ellison's "Invisible Man" and Richard Wright's "The Outsider" (Adviser: Michael Lackey), abstract pg. 17
11:40 Rose Schwietz (Philosophy): Putting a Price Tag on Death: The Costs of Capital Punishment Considered (Adviser: Daniel Demetriou), abstract pg. 21

Room #2190

11:00 Joana Di Meglio (Psychology): Life as an Avatar: the Self, Virtual Social Interaction, and Implications for Consumption (Adviser: Dennis Stewart), abstract pg. 12
11:20 Toni-Ann Flower, Alex Hoyt, and Amanda Wiener (Psychology): The Effects of Hypocrisy Induced Cognitive Dissonance on the Consumption of Fruits and Vegetables (Adviser: Heather Peters), abstract pg. 14
11:40 Zachary Ahstrom, Haley Schwenk, and Lyndzie McIalwain (Psychology): Mental Illness Microaggressions: The Experiences of College Students with Mental Illnesses (Adviser: Heather Peters), abstract pg. 8

Room #2200

11:00 Kristofof Gieske (Digital Media): The Film Look: Cinematic Image Quality on a Shoestring Budget (Adviser: Barbara Burke), abstract pg. 14
11:20 Collin Ireland (Communication, Media, and Rhetoric): Visualizing from Concept to Screen: Directing a Student Produced Short Film (Adviser: Barbara Burke), abstract pg. 16
11:40 Daniel Stoterau (Visual Arts): Lowering the Bar: Art, Athletes and Masculinity (Adviser: Jessica Larson), abstract pg. 23
ORAL PRESENTATIONS
John Q. Imholte Hall, Room #s 111, 112, and 113

Room #111
2:30  John Bliss (English): Bi-Gendered Cross-Dressing as Strength (Adviser: Julie Eckerle), abstract pg. 10
2:50  Cassandra Hall (English): Magic, Mothering, and A Woman's Voice in Shakespeare's The Winter's Tale (Adviser: Julie Eckerle), abstract pg. 15
3:10 Rachel Balzar (English): A Time and Place for Premarital Desire: Positive Uses of Lust in Edmund Spenser's The Faerie Queene (Adviser: Julie Eckerle), abstract pg. 9

Room #112
2:30  Andreana Saunders (Political Science): Deconstructing Unarticulated Ecofeminist Themes in the Design of NGO-led Sanitation Programs in Rural Egypt (Adviser: Roger Rose), abstract pg. 20
2:50  Sienna Nesser (Interdisciplinary Studies): Dead and Defecated Matters: An Analysis of the Human Aversion to the Darker Side of the Nutrient Cycle (Adviser: Tammy Berberi), abstract pg. 19
3:10 Julie Arhelger (Honors): Abandonment and Tourism at Petra, the Musée D'Orsay, and Eastern State Penitentiary (Adviser: Tammy Berberi), abstract pg. 8
3:30  Rebecca Erickson (Biology): Investigating Factors that Influence Hemlock Woolly Adelgid Settlement Density (Adviser: Peter Wyckoff), abstract pg. 13
3:50  Alissa Melberg (Economics): Natural Resources a Curse or a Blessing: Evidence from Williston, ND (Adviser: Bibhudutta Panda), abstract pg. 17

Room #113
2:50  Kaitlyn Macheleidt and Leah Monette (Psychology): Artistic Expressions: Interactions between Art-Based Interventions and Motivations of Interpersonal Forgiveness (Adviser: Heather Peters), abstract pg. 16
3:10 Haley Van Cleve (Gender, Women and Sexuality Studies): Sex-Rebels: Re-Examining Sexualities through Feminist Porn (Adviser: Jennifer Rothchild), abstract pg. 23
3:30  Adiroopa Mukherjee (Honors): Adoption and its Reflection of Society through the Ages (Adviser: Tammy Berberi), abstract pg. 18
3:50  Samantha Stegura (Sociology): The Complexities of Surrogacy: A Look at the United States and India (Adviser: Jennifer Rothchild), abstract pg. 22
4:10  Jenny Morris (Communication, Media, and Rhetoric): An American Perspective: Intercultural Communication in China (Advisers: Barbara Burke and Anthony Ocaña), abstract pg. 18
ORAL and PERFORMANCE PRESENTATIONS
John Q. Imholte Hall, Room # 114
and
HFA Recital Hall, #160

Room #114

2:30  Kourtni Danielson (English): Building an Effective Rural Community Writing Center
(Adviser: Tisha Turk), abstract pg. 12
abstract pg. 11
3:10  Rose Schwietz (English): Alive in the Writing: The Ubiquitous Audience
(Adviser: Tisha Turk), abstract pg. 22
(Adviser: Brooks Jessup), abstract pg. 11
3:50  Colin Scheck (History): Sire, er zijn geen Belgen: The Development of the Flemish
National Idea (1896-1946) (Adviser: Benjamin Narvaez), abstract pg. 21
4:10  Will Hanson (History): The Easter Rising and the Press: The Influence of Print Culture on
Nationalism in Ireland (Adviser: J. Brooks Jessup), abstract pg. 15

PERFORMANCE PRESENTATIONS
HFA Recital Hall, #160

4:00  Anika Kildegaard (Music): "You Have Cast Me Into Many Calamities" Text Painting and
Historical Context in Libby Larsen's Try Me Good King (Adviser: Denise Odello),
abstract pg. 24
## POSTER PRESENTATIONS 9:30 a.m. – 11:00 p.m.

### Science Atrium

1. **Alex P. Kleinfehn (Biology):** Evolution of Protein Structure in a Biochemical Pathway  
   (Adviser: Christopher Cole), abstract pg. 30
2. **Katherine Schaefer (Biology):** Human Influence on the Population Ecology of Weasel species in the Prairie Pothole Region  
   (Adviser: Heather Waye), abstract pg. 34
3. **Abdala Bashir, Obas Bokku, Tiwa Ajibewa, Finhas Ogbazghi, and Melissa Denler (Chemistry):** Natural bond orbitals related to the pKa of carboxylic acids and phenols  
   (Adviser: Joseph Alia), abstract pg. 25
4. **Obas Bokku and Melissa Denler (Chemistry):** Linear relationship between computed energies and pKa for carboxylic acids and amides  
   (Adviser: Joseph Alia), abstract pg. 26
5. **Samuel N. Gockel (Chemistry):** Regioselective Suzuki-Miyaura Coupling to 2,4-Dihydroxyquinoline  
   (Adviser: Nancy E. Carpenter), abstract pg. 27
6. **LaNay Walker (Chemistry):** Comparison of two methods of monitoring corn mash at Corn Plus Ethanol Plant  
   (Adviser: Jennifer Goodnough), abstract pg. 35
7. **Luciana B. Ranelli and Ruth S. Potter (Biology):** Effects of plant community structure and experimental management of restored prairie on insect abundance and diversity  
   (Adviser: Margaret A. Kuchenreuther), abstract pg. 33
8. **Alice Toll and Sameeksha Mishra (Biology):** Best management practices for native perennial plants grown as an alternative bioenergy feedstock  
   (Adviser: Margaret Kuchenreuther), abstract pg. 35
9. **Tim Ginader and Alice Toll (Economics and Statistics):** Commercial Driver’s Licence Medical Exam: How Well Does it Predict?  
   (Advisers: Stephen Burks and Jon Anderson), abstract pg. 27
10. **Andrew Lexvold, Connor Lewis, Hong (Betty) Lin, and Jiachen (Joyce) Ning (Economics and Statistics):** Sleep Apnea and Accident Risk among Commercial Truckers  
    (Advisers: Stephen Burks and Jon Anderson), abstract pg. 31
11. **Jordan Wente (Economics):** Electric Vehicle Infrastructure Models for Grid Ancillary Services in Denmark  
    (Adviser: Arne Kildegaard), abstract pg. 36
12. **Nic Johnson (Statistics and Economics):** Jobs Don’t Grow On Trees: Hysteresis in Unemployment  
    (Adviser: Engin Sungur), abstract pg. 30
POSTER PRESENTATIONS 9:30 a.m. – 11:00 p.m.
Science Atrium

#13 Sarah Hanson (Theatre): Designing costumes for The King Stag (Adviser: Siobhan Bremer), abstract pg. 28
#14 Robert Smith (Physics): Computational Study of Elastic Constants for 1,3,5-trinitro-1,3,5-triazacyclohexane (Adviser: Sylke Boyd), abstract pg. 34
#15 Chad Reverman (Physics): Study on the Bulk Modulus of RDX Crystalline Structures (Adviser: Sylke Boyd), abstract pg. 33
#16 Emma Molden (Physics): Using the Radial Velocity to Search for Orbiting Planets Around Mira (Adviser: Gordon McIntosh), abstract pg. 31
#17 Zac Jesser and Rebecca Hanson (Anatomy/Physiology): Kinetic Chain injuries in the ACL injured patient: A preliminary report (Adviser: Rich Hardy), abstract pg. 29
#18 Ashley Woods (Geology): Sediment analysis to determine nature and source of chemical input, Lake Wakanda, Willmar, MN (Adviser: James Cotter), abstract pg. 36
#19 John Bliss (English): English Views of Foreigners as Reflected in the Stories of Sherlock Holmes (Adviser: Becca Gercken), abstract pg. 25
#20 Laura Holland (Sociology): Disastrous Discrepancies: Women's Unique Challenges and Natural Disaster Recovery (Adviser: Jennifer Rothchild), abstract pg. 29
#21 Elizabeth Pappenfus and Chelsea Walsh (Psychology): Psychological Factors, Health Care Knowledge, and Experiences and How They Impact a Student’s Illness Behaviors on a Rural Campus (Adviser: Jeffrey Ratliff-Crain), abstract pg. 32
#22 Emily Mutch, Sarah Kirchman, Rachael Blais, and Emily Szeliga (Psychology): Patterns of Jealousy as a Function of Gender and Sexual Orientation (Adviser: Jeffrey Ratliff-Crain), abstract pg. 32
#23 Kristina Grundmanis and Elizabeth Munson (Psychology): Emotional Expression in First-Generation Students (Adviser: Jeffrey Ratliff-Crain), abstract pg. 28
#24 Andrew Burroughs and Mitch Primus (Psychology): The Effects of Media Exposure on Male Body Satisfaction and Self Esteem (Adviser: Heather Peters), abstract pg. 26

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Featured Presentation
John Q. Imholte Hall #109
1:30 pm

Presenter(s): Samantha Bruno and Megan Fitzgerald
Project Adviser(s): Barbara Burke (Communication, Media, and Rehetoric) and Jessica Larson (Studio Art)
Title: VIII: Unfolding the Possibilities in Stop-Motion Filmmaking and Bookbinding
Type of Presentation: Performance, Artist Statement

Life’s but a walking shadow…
~William Shakespeare

Elegant silhouette images paired with the violent connotations of shadows inspired the volatile storyline of the pop-up book/stop-action film collaboration titled VIII. The project centers on a world lost in shadow where figures cannot talk or express themselves. Escaping the never ending cycles of the confining world becomes the main conflict for the characters, which is resolved by creating a pop-up book on screen and in reality. By entwining the physical object of the book with the film, a fusion is created that bridges both media while seamlessly joining two artists and ideas. The juxtaposition of a film playing within an interactive book is a visualization that has not been fully developed in the art world, one that we felt needed to be explored. Each aspect of the project can be appreciated and experienced alone, but they are stronger when viewed simultaneously. For the film, a group of actors performed the narrative of VIII while being photographically recorded with a high resolution camera. The 6,000+ still images were then loaded into video editing software and enhanced through digital effects to run fluidly as if they were filmed by a video camera. Developing the pop-up book addressed the definition of sculptural elements within a two-dimensional setting, moving the book form beyond traditional constructs. With technical influences from David Carter (1999), the designs of simple pop-ups were modified and applied to the original narrative of VIII. The book too introduces emotional context and characters and bonds the separate media by incorporating the film as the last page. VIII pushes the boundaries of both stop-motion film making and bookbinding providing a magnifying glass for the viewer to see expression as a way for individuals to escape their confining shell and explore new worlds and ideals.

Film Trailer: http://www.youtube.com/watch?v=rwM5gPmv5NE.
People living with mental illness are often faced with stigma and discrimination. Research has examined the similarities between stigmas faced by those with mental illnesses and racial and sexual minorities (e.g., Phelan, Link, & Dovidio, 2008). Other research has looked at a specific type of subtle discrimination known as microaggressions (e.g., Sue, 2010). To date research related to microaggressions has focused on people of color, people who identify as LGBT, and women. Our research seeks to extend the work on microaggressions to those who experience mental illnesses. The present study uses focus groups, a qualitative methodology, to collect data. The preliminary results provide evidence that support the existence of microaggressions towards individuals with mental illnesses. Several themes of microaggressions have been identified, such as the Misuse of Terminology, Assumption of Inferiority, Environmental Invalidations, and Expression of Stereotypic Beliefs (e.g., the belief that mental illnesses are used as an excuse for attention or laziness). Our study provides a base for future research related to mental illness and microaggressions. The results and implications for the general public as well as anyone who works with people who have mental illnesses will be discussed. For example, one implication for mental health professionals is gaining a better understanding of the subtle forms of discrimination faced by their clients. Future research could examine if this knowledge leads to improved effectiveness of treatment.

This essay gathers information about three very different tourist locations from a historical, architectural, and preservationist view, analyzes it, and examines what makes some destinations places of renewal, art, and learning, while others become disdained “tourist traps.” Detailed research into the tourism of many sites has already been done, but few scholars have drawn connections between sites in the way this essay does. Taken together, the sites reveal much more than they do alone. The essay argues that, by investigating and juxtaposing tourism sites, we can learn how to best preserve our history and culture through our places. The essay’s case studies include Petra in Jordan, a site of ancient ruins in the Middle East suffering from the effects of heavy tourism and poor preservation efforts; the Musée d’Orsay in Paris, France, a prominent museum in a retrofitted Beaux-Arts style train station; and Eastern State Penitentiary in Philadelphia, Pennsylvania, a prison-turned-museum. The fate of the Morris Elementary School is examined as an example of contemporary issues in preservation. Together, the sites provide success stories and problems that paint a picture of the preservation dilemma facing the world’s aging structures.
Title: Electric Vehicle Infrastructure Models for Grid Ancillary Services in Denmark

Type of Presentation: Poster or Visual Display #11

As the world’s leader in electricity from wind power, Denmark is the first nation to confront the system constraints caused by generation intermittency. A proposed path forward to alleviate this constraint and add more wind to the grid is based on switching the transportation fleet from gas to electricity, thus simultaneously increasing electric demand and providing a possible decentralized means of battery storage to solve the intermittency problem. Based on personal interviews with Denmark’s top energy systems researchers, and on written studies published at Risoe DTU, this study reports on and compares two proposals to implement infrastructure that would make the transformation of the transportation fleet to electricity possible. The first is a private-venture model pioneered by the Israeli company A Better Place. The second is a public sector model led by Energinet.dk. Key threshold levels of electric vehicle adoption necessary to realize grid savings on ancillary services are reported. Findings support Energinet.dk’s infrastructure model, consisting of private battery ownership, smart net metering agreements, large storage facilities, and quick charge stations.

Presenter: Jordan Wente
Project Adviser: Arne Kildegaard (Economics)
Title: Electric Vehicle Infrastructure Models for Grid Ancillary Services in Denmark
Type of Presentation: Poster or Visual Display #11

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Title: Sediment analysis to determine nature and source of chemical input, Lake Wakanda, Willmar, MN

Type of Presentation: Poster or Visual Display #18

This is an assessment of pollution entering Lake Wakanda via drainage ditch. In 1902, County Ditch 23A was excavated, transporting urban runoff and treated wastewater from Willmar, MN through 5.5km of agriculture land to Lake Wakanda, south of Willmar. Chemicals and sediments transported via runoff in the ditch enter the north side of the lake where suspended sediment is deposited, forming a delta. The lake association is concerned the input of sediment and chemicals are degrading lake water quality (specifically pesticides, fertilizers, and chemicals used to construct roads). In recent history the lake has undergone increased rates of fish kills and algae blooms, which maybe the result of cultural eutrophication. Delta sediment cores collected summer and fall, 2011 are being analyzed to determine if urban and/or agricultural runoff is contributing pollutants to the lake. Analysis of the cores includes: high-resolution magnetic susceptibility, heavy metal content, gamma radiation, clastic vs. organic content; and electrical conductivity to determine hardness. Visual analysis using high-resolution imagery, smear slide and sediment point counts and have also been conducted. Results show an abundance of diatoms in deeper, older sediments. Higher in the core there are fewer diatoms with less species abundance. Organic concentrations (plant material and shell fragments) increase upward in the core. Clastic sediment increases in size fraction from basal clays and silts to primarily sand containing abundant organics. These results suggest Lake Wakanda may be undergoing cultural eutrophication due to County ditch 23A inputs. Research supported by Center for Urban and Regional Affairs, CAP.

Presenter: Ashley Woods
Project Adviser: James Cotter (Geology)
Title: Sediment analysis to determine nature and source of chemical input, Lake Wakanda, Willmar, MN
Type of Presentation: Poster or Visual Display #18

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Title: A Time and Place for Premarital Desire: Positive Uses of Lust in Edmund Spenser’s The Faerie Queene

Type of Presentation: Oral Presentation

John Q. Imholte Hall, Room #111, 3:10 p.m.

Last plays a large role in Edmund Spenser’s famous 1590 poem The Faerie Queene—this much Early Modern scholars can agree on. Surrounding the purpose lust serves in this didactic tale, however, there is a good deal of contention. Some academics argue that Spenser uses his lurid descriptions of lust to reveal to readers their own sinful preferences. Others claim that Spenser uses lust simply to attract an audience. The list of differing interpretations of the text goes on. But one overarching theme can be seen in all of these unique analyses of lust: each operates on the assumption that Spenser intended lust to be an entirely wicked force in his romance. In my essay, I seek to challenge this assumption. I believe that in order to create more nuanced theories regarding desire in Spenser’s poem, it is necessary to move beyond the tendency to take the evil of lust as a given. Thus, in my own research, I have attempted to keep an open mind regarding the nature of desire in The Faerie Queene. Through close analysis of the tale’s wealthy heroes, who channel their sexual energies toward a higher cause, I assert that Spenser is proposing that lust can have a positive use when experienced by members of the upper-class. My theory is a unique but illuminating means of understanding Spenser’s poem.

Presenter: Rachel Balar
Project Adviser: Julie Eckerle (English)
Title: A Time and Place for Premarital Desire: Positive Uses of Lust in Edmund Spenser’s The Faerie Queene
Type of Presentation: Oral Presentation

John Q. Imholte Hall, Room #111, 3:10 p.m.

This set of presentations explores the rhetorical dimensions of first inaugurals given by U.S. presidents. A private individual becomes president by taking the oath of office. The new president becomes presidential in giving his first inaugural. Panel participants examine five presidential inaugurals through history by considering their rhetorical situations, textual characteristics, and genre membership. lnagurals to be explored include, Andrew Jackson, March 4, 1829 analyzed by Joe Feely; Herbert Hoover, March 4, 1929 analyzed by Becky Wielenberg; Franklin Delano Roosevelt, March 4, 1933 analyzed by Halee Morris; Harry S. Truman, January 20, 1949 analyzed by Taylor Barker; and Dwight Eisenhower, January 20, 1953 analyzed by Miranda Silewski. While each presentation analyzes a different inaugural, those attending will see the shared features that constitute the genre of presidential inaugurals. Please join us for an enlightening panel.

Presenters: Taylor Robert Barker, Joe Feely, Becky Wielenberg, Halee Morris, and Miranda Silewski
Project Adviser: Mary Elizabeth Beanson (Communications, Media, and Rhetoric)
Title: Being Presidential: Rhetorical Analysis of Five Presidential Inaugurals Through History
Type of Presentation: Oral Presentation – Panel Discussion

John Q. Imholte Hall, Room #111, 3:30 p.m.
As research in the area of sexuality expands, more interest has grown in understanding how various social influences relate to people's sex practices (e.g., Ahrold & Meston 2010; Davis & Friel 2001; Meier 2003; Potard, Courtois, & Rusch 2008). However, very little research has been done on how these factors influence cognitions about sexuality. Therefore, this study examined the relationships between peer and parental attitudes toward sexuality, experiences with sex education, religiosity, and participants' awareness and acceptance of their own sexuality. A convenience sample of 77 college students completed eight surveys related to the above topics. All scales used a 5-point scale. Results indicate a positive correlation between peers' attitudes toward sexuality and participants' sexual awareness, as well as a negative correlation with participants' religiosity. Religiosity negatively correlated with sexual monitoring and sexual preoccupation. Surprisingly, parental attitudes toward sexuality did not significantly correlate with anything. Additionally, there was a positive correlation between religiosity and sex education. These results suggest that social factors have varying degrees of influence on how people perceive their sexuality. The results and their implications will be discussed.

Many interpretations of the character of Britomart in Edmund Spenser's The Faerie Queene portray her cross-dressing in armor as an artistic choice meant to suppress her female authority with masculine ideas of mainstream purity. The prevailing theory is that Spenser made this choice in order to criticize the rule of Queen Elizabeth I. However, while I believe that Spenser was critical of some of Elizabeth's decisions, notably in remaining a virgin, I do not believe that he intended to criticize his queen through his heroine’s cross-dressing. Instead, I believe that Britomart’s dressing in armor was intended to show the weakness inherent in the traditional protection of chastity and to propose a new and more powerful substitute through a blending of the genders. The allegorical nature of Spenser's text allows Britomart's donning of the armor to be viewed as combining masculine traits with her naturally feminine identity. While she is dressed in armor, she is nigh unstoppable in her quest to protect her own virtue, or the virtue of those around her. However, once she removes her armor, becoming wholly feminine, she is wounded by lust, the same lust that plagues many interpretations of the character of Britomart in Edmund Spenser's The Faerie Queene portray her cross-dressing in armor as an artistic choice meant to suppress her female authority with masculine ideas of mainstream purity. The prevailing theory is that Spenser made this choice in order to criticize the rule of Queen Elizabeth I. However, while I believe that Spenser was critical of some of Elizabeth's decisions, notably in remaining a virgin, I do not believe that he intended to criticize his queen through his heroine’s cross-dressing. Instead, I believe that Britomart’s dressing in armor was intended to show the weakness inherent in the traditional protection of chastity and to propose a new and more powerful substitute through a blending of the genders. The allegorical nature of Spenser's text allows Britomart's donning of the armor to be viewed as combining masculine traits with her naturally feminine identity. While she is dressed in armor, she is nigh unstoppable in her quest to protect her own virtue, or the virtue of those around her. However, once she removes her armor, becoming wholly feminine, she is wounded by lust, the same lust that plagues all of the men in the text. This rampant lust can only be contained by a bi-gendered defender: Britomart. The rhetorical use of a bi-gendered warrior is not unusual, as other scholars have devoted similar examination to other literary figures, determining that they also excel once they are able to become a bi-gendered being.

Native perennial prairie plants are an alternative bioenergy feedstock. Unlike popular monocrops, such as corn and soybeans, prairie plants preserve biodiversity and provide ecological services. We explored the effects of nitrogen fertilizer and annual harvest in an attempt to develop on-farm management practices that make the stand economically productive while maintaining native diversity. Experimental plots are located on a farm in Starbuck, MN in a restored prairie planted in 2008 with a mix of 10 native grasses and forbs (wildflowers). In June 2011 we applied four nitrogen treatments (full recommended, half recommended, manure, none) and have annually applied two harvest treatments (harvest, no harvest) to 32 plots in a randomized split plot design. In early August we sampled the plots, estimating plant cover by species (later used to calculate frequencies) and aboveground biomass with legumes separated from other species. Results from summer 2012 represent the third year of a five-year study. Biomass, percent cover, and frequency measurements statistically support the conclusion that the presence of nitrogen fertilizer removes the ability of legumes to compete against grass species, thereby reducing the biodiversity of those plots. Harvest significantly increased the cover and frequency of native legumes, helping to preserve diversity. Additionally, across all fertilizer levels we observed that harvest produced significantly more biomass than the no harvest treatments. The full nitrogen treatment also produced the greatest biomass, but the difference in treatment means was fairly small, causing us to question the economic benefit to the farmer of purchasing and applying expensive fertilizers.

In the ethanol industry, several variables affect the amount and grade of ethanol that is produced which affects a plant’s ability to make a profit. This research is focused on one of those variables, ‘corn mash solid content’, which must be closely monitored before the fermentation step. If the mash out of the mix tank is the wrong consistency, the alpha-amylase and gluco-amylase enzymes will not efficiently break the starch into simple sugars that yeast can consume which will decrease the amount of ethanol produced. The mash solid and moisture content is measured daily in order to ensure that the plant will produce on average 2.8 gallons of ethanol for every bushel of corn ground. This places a large significance on the accuracy of the instruments used to analyze these samples. This research involved ten days of data collection followed by statistical analysis to compare the accuracy of an infrared light instrument with a forced air drying oven used at Corn Plus Ethanol Plant in Winnebago, MN. The results of this study determined that the two instruments were not consistent with each other. This led to further investigation and consultation with the instrument manufacturer and ultimately the infrared light instrument was re-calibrated. By correcting an instrument that the plant depended on for data, the operators were able to more confidently and efficiently make adjustments throughout ethanol production process and ensure more consistent ethanol quantities and quality.
Unlike most carnivores, little is known about the ecology of the Long-tailed weasel and Short-tailed weasel. Although there is minimal data throughout much of their range, they are thought to play an important role in their ecosystems.

Weasels are an indispensable species due to their regulatory effects on the meadow vole, their major source of prey. The meadow vole is a common North American rodent species which has been noted as an agricultural pest in high numbers, but is an important species with regard to the spreading of wild grass seed and impeding the succession of tree species by consumption of the seedlings. Discovering more about the habitat preferences of weasels and the consequences of human land use and non-consumptive recreation is necessary for a comprehensive understanding of the ecosystem. Without knowledge of all elements, an effective conservational approach cannot be developed. I looked for weasel tracks in the snow in areas of differing human use. I will proceed to place tracking tunnels in the aforementioned areas and areas of differing habitat types, then I will analyze relative track frequency for different habitats and human use. Overall frequency will be used to explore species composition and total population estimates. The findings will indicate which habitats and micro-environments are of greatest importance to the conservation of weasel species, and whether human influences are important to take into consideration for land management. These results will contribute to the minimal information existing for the Long-tailed weasel and Short-tailed weasel in west central Minnesota.
Although there has been the beginning of a conversation amongst composition studies experts that blends both service learning and composition studies together with the intent to create social change within a community through writing centers, the conversation has excluded the prospect of the construction of a community writing center in a rural location and the benefits and struggles it may face during its establishment. A community writing center in a rural town such as Morris, Minnesota would open the doors for intercultural literacy in the form of dialogue among the diverse demographics and allow for a stronger bond within the small community. My presentation advocates for the development of a community writing center in Morris, Minnesota that may help create a multicultural discourse that ultimately helps solve local social issues. First, my presentation analyzes the four fundamental principles that successful writing centers should be founded on including: intellectual inquiry, community literacy, multiculturalism, and the search for a public discourse that reaches out to all members. After an explanation of why these four elements are crucial in the construction of a community writing center, I then examine logistical aspects involving administrative issues, geographical space, the community and university relationship, and member outreach. Finally, using the four fundamental principles and logistics together, I construct a hypothetical, functioning rural community writing center for Morris, Minnesota.

Presenter: Joana Di Meglio
Project Adviser: Dennis Stewart (Psychology)
Title: Life as an Avatar: the Self, Virtual Social Interaction, and Implications for Consumption
Type of Presentation: Oral Presentation
Science Building, Room #2190, 11:00 a.m.

Internet and subsequent virtual environment consumption has increased in the past two decades. As a result, humans are being represented more online. This literature review seeks to analyze the underlying factors of avatar influence on human behavior. Avatars are human-controlled customizable graphical representations of humans capable of interacting within a virtual environment. There is no existing literature review of avatars available; therefore this review is a compilation of most applicable avatar research completed thus far. Results and theoretical backgrounds of 36 avatar-related peer-reviewed studies were synthesized and organized by area of psychological interest, namely the self, social interaction, and consumer behavior. Synthesis of the current literature shows evidence is available in existing psychological theory that can be used to explain the relationship between human behavior and avatar behavior in virtual environments. This research gives an overview of avatar psychology but its limited scope enforces the need for further avatar research.

Presenter: Kourtni Danielson
Project Adviser: Tisha Turk (English)
Title: Building an Effective Rural Community Writing Center
Type of Presentation: Oral Presentation
John Q. Innholte Hall, Room #114, 2:30 p.m.

33 avatar-related peer-reviewed studies were synthesized and organized by area of psychological interest, namely the self, social interaction, and consumer behavior. Synthesis of the current literature shows evidence is available in existing psychological theory that can be used to explain the relationship between human behavior and avatar behavior in virtual environments. This research gives an overview of avatar psychology but its limited scope enforces the need for further avatar research.

Presenter: Luciana B. Ranelli and Ruth S. Potter
Project Adviser: Margaret A. Kuchenreuther (Biology)
Title: Effects of plant community structure and experimental management of restored prairie on insect abundance and diversity
Type of Presentation: Poster or Visual Display #7

Farmland restored from monocultures to diverse, native perennials can serve multiple purposes. Benefits of restoration include an alternative biomass energy source, farm income, and diversity in the landscape that provides ecosystem services such as supporting insects, which serve as natural predators and pollinators. We surveyed insect communities to: (1) evaluate arguments for growing native perennial plants in the landscape from an insect perspective, and (2) measure insect response to management strategies likely to be employed in a crop slated for biofuel production. To do so, we compared insects in: (1) conventional soybeans and native prairie, (2) communities (native prairie, low-diversity restored prairie, high-diversity restored prairie) and (2) experimental plots of different fertilizer and harvest treatments within the low-diversity restored prairie. We trapped ground-dwelling insects in pitfall traps once in August 2012, and sampled canopy-associated insects with sweep nets in both early August 2012 and in mid-September. Insect abundance and diversity was greater in native perennial plants than in soybeans. Native plants hosted herbivores (i.e. grasshoppers, seed bugs, leaf beetles, plant hoppers) and also beneficial groups of insects like pollinators (i.e. hover flies, honey bees, bumble bees), predators (i.e. assassin bugs, ground beetles, parasitoid wasps) and decomposers (i.e. carrion beetles). Within the experimental management area, we predict that ground-dwelling insects will be more abundant in non-harvested plots. It is harder to predict differences in insects based on nitrogen application: insect abundance and diversity could increase with the increased plant biomass or it could decrease with the decreased plant species richness.

Presenter: Kourtni Danielson
Project Adviser: Tisha Turk (English)
Title: Building an Effective Rural Community Writing Center
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John Q. Innholte Hall, Room #114, 2:30 p.m.

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Presenter: Joana Di Meglio
Project Adviser: Dennis Stewart (Psychology)
Title: Life as an Avatar: the Self, Virtual Social Interaction, and Implications for Consumption
Type of Presentation: Oral Presentation
Science Building, Room #2190, 11:00 a.m.

Internet and subsequent virtual environment consumption has increased in the past two decades. As a result, humans are being represented more online. This literature review seeks to analyze the underlying factors of avatar influence on human behavior. Avatars are human-controlled customizable graphical representations of humans capable of interacting within a virtual environment. There is no existing literature review of avatars available; therefore this review is a compilation of most applicable avatar research completed thus far. Results and theoretical backgrounds of 36 avatar-related peer-reviewed studies were synthesized and organized by area of psychological interest, namely the self, social interaction, and consumer behavior. Synthesis of the current literature shows evidence is available in existing psychological theory that can be used to explain the relationship between human behavior and avatar behavior in virtual environments. This research gives an overview of avatar psychology but its limited scope enforces the need for further avatar research.

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Project Adviser: Tisha Turk (English)
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Type of Presentation: Oral Presentation
John Q. Innholte Hall, Room #114, 2:30 p.m.

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John Q. Innholte Hall, Room #114, 2:30 p.m.

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By assessing influences of behavioral intentions, we will be better able to understand effects on students’ illness behavior choices; while a rural setting could create negative barriers and predict lower health care utilization. Experiences, strong social support, and stable psychological variables (i.e. attitude) will better predict a student’s illness behavior choices, regardless of sexual orientation, would be more threatened by competitors who are considered to be highly attractive while males, regardless of sexual orientation, would be more threatened by competitors who are perceived as having higher resources. Surveys were given to students, aged 18 or older, at two Midwestern Universities. Participants included heterosexual men (N = 116), heterosexual women (N = 240), homosexual men (N = 26) and homosexual women (N = 45). The main hypotheses were tested using repeated measures analyses of variance (ANOVA). Results do not support predictions by evolutionary psychologists with gender failing as a predictor for jealousy patterns. Instead jealousy was a socially shaped construct where the partner’s gender tended to determine reactions to infidelity regardless of sexual orientation, would be more threatened by competitors who are considered to be highly attractive while males, regardless of sexual orientation, would be more threatened by competitors who are perceived as having higher resources. Surveys were given to students, aged 18 or older, at two Midwestern Universities. Participants included heterosexual men (N = 116), heterosexual women (N = 240), homosexual men (N = 26) and homosexual women (N = 45). The main hypotheses were tested using repeated measures analyses of variance (ANOVA). Results do not support predictions by evolutionary psychologists with gender failing as a predictor for jealousy patterns. Instead jealousy was a socially shaped construct where the partner’s gender tended to determine reactions to infidelity regardless of sexual orientation, would be more threatened by competitors who are considered to be highly attractive while males, regardless of sexual orientation, would be more threatened by competitors who are perceived as having higher resources. Surveys were given to students, aged 18 or older, at two Midwestern Universities. Participants included heterosexual men (N = 116), heterosexual women (N = 240), homosexual men (N = 26) and homosexual women (N = 45). The main hypotheses were tested using repeated measures analyses of variance (ANOVA). Results do not support predictions by evolutionary psychologists with gender failing as a predictor for jealousy patterns. Instead jealousy was a socially shaped construct where the partner’s gender tended to determine reactions to infidelity.
Previous research suggests that exposure to hypocrisy will increase pro-social behaviors such as increased condom use (Stone, Aronson, Crain, Winslow, & Fried, 1994). The present study explored whether hypocrisy can be used to increase the pro-social behavior of consuming fruits and vegetables. Hypocrisy is the combination of a public commitment to support consumption of fruits and vegetables (i.e., creating a video message to be shown to the public) and being made mindful of past failures to do so (i.e., identifying reasons why they failed to eat fruits and vegetables in the past). This exposure to hypocrisy creates a psychological discomfort from the two conflicting cognitions, which is called cognitive dissonance. This present study used a 2 x 2 factorial design. Combining the two factors produced four groups: 1) committed and mindful (hypocrisy); 2) commitment only; 3) mindful only; 4) a control group (i.e., neither mindfulness nor commitment). The dependent variable was type and quantity of snacks taken: fruits, vegetables, crackers, and candy. Contrary to previous literature cognitive dissonance did not increase the targeted healthy behaviors, in that there were no differences found between the groups in the amount of fruits and vegetables taken by participants. Surprisingly, preliminary results suggest that cognitive dissonance increased the likelihood of participants taking crackers and candy. Explanations and implications of these findings will be discussed.
Most contemporary macroeconomic models account for unemployment by making the simplifying assumptions that 1) there is an equilibrium level of unemployment and that 2) when the economy is not at that level it will tend towards equilibrium. Implicit in these models is also the assumption that the actual behavior of unemployment does not affect the equilibrium level. This paper joins a growing number of economists pointing out that such assumptions are false: the equilibrium does depend on past behavior, a trait called hysteresis. This paper considers the hysteresis hypothesis by using an iterated version of OLS to construct a series for equilibrium unemployment. Regression analysis shows strong evidence that actual unemployment does affect its equilibrium level. This paper also focuses on one of the specific channels through which hysteresis supposedly works, called ranking. The ranking hypothesis asserts that when average duration of unemployment rises, workers are less hirable and the equilibrium level of unemployment should also rise. Using statistical filtering to analyze changes in unemployment duration and the equilibrium level, this paper finds evidence for the ranking hypothesis and the hysteresis hypothesis. However, incorrect timing of events provides strong evidence against the connection between the ranking and hysteresis hypotheses, despite both hypotheses likely being true. Since unemployment is not self-correcting, policy must step in.

We are examining variation and evolution of enzyme structure in Populus tremula, the European aspen, a close relative of the North American quaking aspen (P. tremuloides). These trees are foundation species for forest ecosystems covering much of the northern hemisphere. The enzymes make up a pathway to synthesized condensed tannin and lignin precursors. Tannin is used as a defense mechanism against fungi and herbivores, but high tannin levels inhibit the growth of P. tremuloides. Ten steps are in this pathway, each catalyzed by a family of one to ten enzymes. Based on DNA sequence data from a dozen Swedish aspens, and online database information, we compared the amino acid sequence and 3-D structure of these enzymes to those carrying out the same reactions in other species. These comparisons identify the structural features of the enzymes that are conserved and those that are variable. From our current results most coding regions show conservation of DNA sequences between P. tremula and P. trichocarpa, the first tree whose genome was completely sequenced. Most amino acid replacements are structurally similar (e.g. valine to leucine), which suggests the protein structure is conserved. We are currently doing further comparison of the most highly variable sequences to other plant species’ known structures. This is important because condensed tannin levels are both highly heritable and highly variable, and the strong conservation of amino acids and enzyme structure suggests that the evolution of expression levels of this major pathway arises from differences in regulatory genes, rather than structural genes.

The Winter's Tale

The Easter Rising and the Press: The Influence of Print Culture on Nationalism in Ireland

We are examining variation and evolution of enzyme structure in Populus tremula, the European aspen, a close relative of the North American quaking aspen (P. tremuloides). These trees are foundation species for forest ecosystems covering much of the northern hemisphere. The enzymes make up a pathway to synthesized condensed tannin and lignin precursors. Tannin is used as a defense mechanism against fungi and herbivores, but high tannin levels inhibit the growth of P. tremuloides. Ten steps are in this pathway, each catalyzed by a family of one to ten enzymes. Based on DNA sequence data from a dozen Swedish aspens, and online database information, we compared the amino acid sequence and 3-D structure of these enzymes to those carrying out the same reactions in other species. These comparisons identify the structural features of the enzymes that are conserved and those that are variable. From our current results most coding regions show conservation of DNA sequences between P. tremula and P. trichocarpa, the first tree whose genome was completely sequenced. Most amino acid replacements are structurally similar (e.g. valine to leucine), which suggests the protein structure is conserved. We are currently doing further comparison of the most highly variable sequences to other plant species’ known structures. This is important because condensed tannin levels are both highly heritable and highly variable, and the strong conservation of amino acids and enzyme structure suggests that the evolution of expression levels of this major pathway arises from differences in regulatory genes, rather than structural genes.

Title: Magic, Mothering, and A Woman's Voice in Shakespeare's The Winter's Tale

Type of Presentation: Oral Presentation

John Q. Imholte Hall, Room #114, 4:10 p.m.

The question this study attempts to answer is to what extent newspapers in Ireland contributed to or impeded the rise of Sinn Féin through their interpretation and coverage of the Easter Rising in 1916. This presentation is primarily a study of newspaper archives and other sources of print pertinent to the study, thus creating a survey from the two month period following the Rising. While there is work in the field on the reasons for the advancement of nationalism following the Easter Rising as well as histories of the media in Ireland, there has yet to be a full historical inquiry into how the media itself interacted, changed and eventually contributed to the cultural shift towards nationalism. In my research, I have found that it is necessary to divide the shift into three phases. These phases are based in the sources of print and their interaction. I will argue the first signs of the shift came through street memorabilia and propaganda. This then affected the rhetoric and overall reportage of the regional press, which then affected the rhetoric and overall reportage of the national press. These changes then created the perception of widespread support for nationalism and thus significantly contributed to the overall rise of nationalism in Ireland.
Although I’ve studied stage directing and been in several productions, with this project I learned through my readings, research and experience that the process of “independent-film” directing is different than stage directing. Film directing involves: creating a specialized script in collaboration with others; casting, actor training and rehearsals; production meetings discussing locations, costumes, and props with the staff-volunteers; and during filming, working with actors, blocking the scenes, and collaborating with the cinematographer. Throughout the process I used DeKoven’s Changing Direction that says “the director’s work calls for an overview of the material and an awareness…(of all components)” as guidance. I also evaluated and reviewed and corrected my directing notes. My goals were to create a portfolio-worthy film for myself and for the student-filmmaker, and to gain further knowledge of all components” as guidance. I also evaluated and reviewed and corrected my directing notes. My goals were to create a portfolio-worthy film for myself and for the student-filmmaker, and to gain further knowledge of the creative process. Because the producer wanted a finished video that was visually creative, engaging, and cinematically significant I was motivated to work to a high standard. In this presentation I will discuss the creative choices and decisions used to accomplish the finished product. I will also show a few short clips from the film to demonstrate directing techniques used and the results achieved. Directing a short film as part of a fellow-student’s Digital Media Studies senior capstone project involved meeting my goals and learning additional skills involving innovation, problem-solving and solid teamwork, adapted from my stage experience onto this new context and further developed through the experience of creating this project.

Presenters: Kaitlyn Macheledt and Leah Monette
Project Adviser: Heather Peters (Psychology)
Title: Artistic Expressions: Interactions between Art-Based Interventions and Motivations of Interpersonal Forgiveness
Type of Presentation: Oral Presentation
John Q. Innolte Hall, Room #113, 2:50 p.m.

Forgiveness has been linked to aspects of the creative processes (e.g., mood, motivation, cognitive resources etc.) yet there is little research on the interaction of artistic expression and forgiveness. To evaluate the interaction between artistic expression in enabling interpersonal forgiveness, 62 undergraduate students were primed with unforgiveness by an eight minute conflict recall writing task adapted by Karremans, Van Lange, and Holland. The participants were randomly assigned to 3 conditions which each lasted 20 minutes. The conditions included Metaphor art making, Free drawing and Metaphor art making conditions that indicated they had not forgiven their offender were more likely to express revenge and avoidance towards their offender than those in the control condition. These findings support that the act of drawing may increase unwillingness to forgive especially in the realm of revenge seeking and avoidance behaviors. This finding has implications for art therapists when working with clients who are working towards forgiving an interpersonal conflict.
Research suggests emotional expression is a successful tool for reducing stress in the short term (Pennebaker et al., 1990). The current study applied this approach to first generation students (FGS). We hypothesized that emotional expression would reduce stress in FGS, and that the stress reduction would last longer in association with the number of emotional expression writing sessions. Although no group in showed a significant decrease in stress over the semester, having greater levels of social support was associated with lower anxiety.
This project describes my review of 21st century intercultural communication in China, compared with current theories and research in the Communication/Rhetoric/Field. Although there have been many excellent studies, (e.g., Lustig & Koester, 2011), generalizations comparing Eastern and Western cultures, are questionable because of recent differing circumstances in China. To complete this project, I reviewed relevant literature and “travel guides for visitors to China” and then adopted a qualitative and evaluative/critical method to my cultural studies-focused research. Through analysis and evaluation of my thirty-plus pages of field notes, fifty blog entries and reports of differing circumstances in China. To complete this project, I reviewed relevant literature and “travel guides for visitors to China” and then adopted a qualitative and evaluative/critical method to my cultural studies-focused research. Through analysis and evaluation of my thirty-plus pages of field notes, fifty blog entries and reports of the challenges of developing an emerging intercultural competence. Analyzing and documenting these differences between advice, theories and practices I focus this report on: political and environmental sensibilities; personal topics such as body image and filial piety; and gender roles. My conclusions are that intercultural communication competence regarding these domains involves an on-going skill set that relies on several of the lessons learned in-country, rather than those from (older) textbooks and travel guides.

Time has influenced and changed the meanings and perceptions of adoption drastically through the ages. This research project examines these changes and traces different events that have defined adoption as a whole. It also pays some attention to characteristics of and reasons for gender-based adoptions. This is important since there are continuous discrepancies between adoption levels of girls versus boys as social customs create trends in gender based adoption. By examining these differences, I have drawn some conclusions on gender equality (or inequality), and the shifts in attitudes of society with the passage of time that have caused certain trends to arise. An appreciation of these differences is important to a society that continually stresses gender equality. This project begins by examining concepts of adoption as early as Classical Antiquity, then moving on to the Middle Ages before finally examining adoption in the twentieth and twenty first centuries. Being able to understand the formative process of existing adoption laws causes an appreciation of how much we, as a society, have progressed in just the last two decades. It is my hope that I can build on this research, and eventually work on narrower Human Rights issues, both for research and career purposes. I would like to begin by raising awareness in Morris’ involved community. This research can also hopefully also add to the limited English materials available on adoption.

To be employed using a commercial driver’s license (CDL), each truck driver must complete a Federal Motor Carrier Safety Administration (FMCSA)”Form 649” medical examination every two years. This examination is conducted by a qualified medical examiner, who certifies that the driver is medically able to drive safely, and each motor carrier is required to keep a copy of this Form 649 certification on file. Because the requirements to become a medical examiner are not especially stringent, and because historically there has been little oversight of examiners, many in the industry have speculated that this exam does not adequately screen out drivers with medical conditions that make them unfit to drive safely. In cooperation with a major motor carrier the Truckers and Turnover Project (T&T) collected data to measure how well the CDL medical exam identifies dangerous medical conditions. Data from a set of scanned Form 649 records were keypunched, interpreted with the assistance of co-investigators from Harvard Medical. This was merged with data on the same individuals from the firm’s medical insurance manager; health care reimbursement claims thus provide a separate and objective measure of the drivers’ medical diagnoses. We examine four safety-related conditions: hypertension, diabetes, sleep apnea, and obesity. We find that the CDL exam statistically under-identifies these four conditions according to their appearance in the medical claims data. This suggests that the commercial driver’s license exam is not a very accurate screening tool. Sponsors include the Truckers and Turnover Project and Morris Academic Partners.

- 18 -

- 27 -
The pKa of an acid can be directly for an accurately computed AG for the acid dissociation reaction. AG has several energy contributions to pKa values. In this work we studied computed electronic energies for carboxylic acids and amides with and without use of the CPCM solvent model for water. Hartree-fock and DFT/LSDA approximations were made with several basis sets. Linear relationships with pKa improved with better approximations and use of solvent model. we are currently making quantitative pKa calculations that include waters of hydration and investigating which energy contributions are needed for accurate computation of pKa.

Presenters: Andrew Burroughs and Mitch Primus
Project Adviser: Heather Peters (Psychology)
Title: The Effects of Media Exposure on Body Satisfaction in Males
Type of Presentation: Poster or Visual Display #24

Current literature on media and body image has focused primarily on females. Comparatively, research on men has been limited in scope. The goal of the current project was to examine the effects media has on body satisfaction in males. We hypothesize that exposing males to advertisements containing male models will increase body dissatisfaction. A group of 64 male UMM students were randomly divided into control and experimental groups. Each participant completed the Rosenberg Self-Esteem Scale, The Body Parts Satisfaction Scale for Men, and the Swansea Muscularity Attitudes Questionnaire both before and after media exposure. Participants also completed a measure that assessed average time per week spent consuming different forms of media. The experimental group was exposed to advertisements containing muscular male models and the control group was exposed to advertisements that contained only products and non-human characters. Based on preliminary results, the findings do not support the hypothesis. However, relationships between different aspects of body dissatisfaction and consumption of different media formats have been identified. One implication of this project is that brief media exposure on its own may be insufficient to change body satisfaction. Additional results and implications of this study will be discussed.

Presenters: Obsa Bokku and Melissa Denler
Project Adviser: Joseph Alia (Chemistry)
Title: Linear relationship between computed energies and pKa for carboxylic acids and amides
Type of Presentation: Poster or Visual Display #4

The pKa of an acid can be directly for an accurately computed AG for the acid dissociation reaction. AG has several energy contributions to pKa values. In this work we studied computed electronic energies for carboxylic acids and amides with and without use of the CPCM solvent model for water. Hartree-fock and DFT/LSDA approximations were made with several basis sets. Linear relationships with pKa improved with better approximations and use of solvent model. we are currently making quantitative pKa calculations that include waters of hydration and investigating which energy contributions are needed for accurate computation of pKa.
The debate on free will goes back to Aristotle and has been addressed by many philosophers and writers throughout the ages; William Shakespeare is no exception. As Stephen Greenblatt claims, “there is evidence that autonomy as a concept interested Shakespeare...He reflected repeatedly in his plays on at least three different ways in which one might be at liberty to live after one’s own law” (Shakespeare’s Freedom, 94). However, Greenblatt does not discuss the thinkers who may have influenced Shakespeare’s concept of free will. Understanding influences on a writer is important because it helps highlight what they may have meant in their work. Therefore, the significance of my research is to help illuminate the influence Aquinas and Erasmus had on the free will debate in the early modern period as well as their influence on the Bard himself. Both Aquinas and Erasmus’s views assert a kind of compatibilist view of free will; compatibilism is a theory that says free will can co-exist with determinism/fate. I will argue that Macbeth makes an argument for soft determinism, which is a particular kind of compatibilism. This claim rests on a close analysis of the prophecies from the weird sisters and a close look at Macbeth and Banquo. Comparing this conclusion to the arguments from the above philosophers seems to suggest that there may be some echoing of Aquinas and Erasmus’s views of free will in Shakespeare’s Macbeth.

Globally, the interpretation of access to clean water as a human right is increasingly common. However, so is the Western perception that all Muslim women are oppressed by patriarchs. This paper discusses how both perspectives influence the design of water and sanitation projects conducted by Western non-governmental organizations (NGOs) in rural Egypt. Although educational sanitation campaigns directed by NGOs intend to help rural Egyptian girls and women achieve greater health and autonomy, these NGOs define the supposed needs and desires of these women based on Western cultural biases. NGOs employ normative judgments very similar to the core tenets of ecological feminism (ecofeminism), but do not critically evaluate their paternalistic assumption that sanitation reform programs liberate oppressed women. A literature review was performed to investigate the global water resource management paradigm, and Islamic feminist interpretations of rights in rural Egypt. Sanitation projects conducted in low-GDP Islamic countries were then qualitatively evaluated. From the vantage point of these projects, I find that NGOs fail to acknowledge the compatibility of Islamic interpretations of women's rights with community sanitation projects. Research of NGOs supporting sanitation projects suggests that their Western "rights" rhetoric and assumptions should be modified to reflect Islamic ideals of community service and family. Such a reframing of sanitation projects would enhance collaboration with community members.
In Darkness Let Me Dwell

Katherine of Aragon wrote from her deathbed to her ex-husband, King Henry VIII. Through extensive text painting, Minnesota composer Libby Larsen set to music the letter. In one element of the musical set Libby Larsen's Try Me Good King, she captures the emotional content of the story of a woman who remained faithful to her traitorous husband up to her last moments on earth. Larsen uses extensive quotation to place her music within a historical context: in this case using quotations from the John Dowland lute carol In Darkness Let Me Dwell. It is very likely that this evocative tune might not be recognized by an audience without some focused attention from a musical tour guide. By means of a short lecture recital, I will contextualize Katherine’s words within a historical framework, and illustrate the way in which Larsen employs melodic tools to effectively portray Katherine’s character. At the end of my discussion, I will conclude that the added expense of capital punishment indeed counts as a good reason against the practice.
For decades, scholars in Composition Studies have discussed the relationship between writers and audiences and debated the effect of this relationship on composing processes. Current scholars express a spectrum of opinions about writing methods in light of an audience’s position relative to that of a writer. This spectrum ranges from a totally external focus on the physical audience to a focus on an audience completely internalized by the writer, including a middle ground that incorporates both ends. Peter Elbow’s proposition that expresses the benefits of ignoring the audience during the writing process is related to this spectrum in that it offers a different option of relationship between a writer and an audience. The research presented here addresses this spectrum and the abstract nature of the audience question, specifically in terms of the effects an audience has on the writer while writing, and the implications these effects have for the writer’s ownership of his work. In a compilation and extension of the existing conversation, I make the following argument: because of the complex interconnectedness of audience and written word, the audience is not only something constructed by the writer but also consequently a ubiquitous presence, and thus something that can never fully be ignored, as Elbow proposes. These claims offer an original perspective on the audience question, significant for those who write, who teach writing, and who are interested in the writing process.

Presenter: Samantha Stegura
Project Adviser: Jennifer Rothchild (Sociology)
Title: The Complexities of Surrogacy: A Look at the United States and India
Type of Presentation: Oral Presentation
John Q. Imholte Hall, Room #113, 3:50 p.m.

From a Western perspective, the growing trend of outsourcing surrogacy to India often carries a negative stigma, but when examined more closely, we see it is actually quite complex. To best understand and address this issue, we have to examine it from both a macro-level and a micro-level, particularly from individual women’s stories and experiences. Specifically, we should examine the social institutions involved (economy, family, and political systems) and focus on the individuals these reproductive technologies serve. This presentation will give audience members a brief description of the different types of surrogacy. It will cover who can benefit from surrogacy and what type of hurdles may present themselves while engaging in the surrogacy process. I will also compare the costs between hiring a surrogate in the United States and hiring a surrogate from India. Along with this, I will discuss various motivations for becoming a surrogate and how U.S. and Indian surrogates are treated. This study has implications for broader society because reproductive technology is changing rapidly, and consequently, diverse family structures are emerging.

Presenter: Rose Schweitz
Project Adviser: Tisha Turk (English)
Title: Alive in the Writing: The Ubiquitous Audience
Type of Presentation: Oral Presentation
John Q. Imholte Hall, Room #114, 3:10 p.m.

The American world of sex is inherently masculine and hetero-centric. This not only characterizes our mainstream culture and media, but also what our society considers to be “obscene.” The pornography industry glorifies masculine and heterosexually-identified sexualities, mirroring the way in which these same sexualities are given institutionalized power in our society. However, a specific avenue for reforming this phenomenon has grown within the pornography industry with increasing strength since the 1980s. Along the historical divisions of the “Feminist Sex wars,” feminist pornographers are enacting a radical defiance of masculine-centric and hetero-centric sexual representation and imagery by creating pornography that features diverse sexualities. My research analyzes secondary literature within a framework that defines gender and sexuality as being socially constructed. Through this process I am able to define those feminist pornographers seeking to reform the sex industry as “sex rebels” who are re-negotiating what kinds of sexualities are “acceptable” in our society. Their work constitutes one facet of a larger movement to validate feminine and non-heteronormative sexualities. I consider this to be particularly rebellious in that it is being achieved from within a historically male dominated industry that is often labeled “misogynist.” The implications of reforming pornography may also reach beyond that specific industry; it may also provide a model for changing the way we represent sexuality in the mainstream media. Feminist porn may therefore empower individuals as well as collective groups by modeling alternative sexualities within a society that offers few realistic or diverse representations of sexuality.

Presenter: Daniel Stoterau
Project Adviser: Jessica Larson (Visual Arts)
Title: Lowering the Bar: Art, Athletes and Masculinity
Type of Presentation: Oral Presentation
Science Building, Room #2200, 11:40 a.m.

Inspired by my distinct experiences as a collegiate athlete and as an artist working in what is historically seen as a feminine medium, I examine the intrinsic sexual nature of men’s sports culture by conveying conventional images of male athletes exercising via textiles. My intent is to advance a discussion about the unrealistic standards of masculinity enforced by magazines like Men’s Health and the paradoxically homoerotic imagery through which these standards are presented. My work consists of various instructional illustrations of common weight room exercises that are machine-embroidered on flowered patterned handkerchiefs. Viewed through the lens of heteronormative masculinity, the sexually charged character of these images is readily ignored, but by simply changing their context I draw attention to the often-unacknowledged presence of homoerotic themes in sports. By recognizing homoeroticism in sports, men may be able to break away from the constraints of a masculine ideal.

Presenter: Haley Van Cleve
Project Adviser: Jennifer Rothchild (Gender, Women and Sexuality Studies)
Title: Sex-Rebels: Re-Examining Sexualities through Feminist Porn
Type of Presentation: Oral Presentation
John Q. Imholte Hall, Room #113, 5:10 p.m.

The American world of sex is inherently masculine and hetero-centric. This not only characterizes our mainstream culture and media, but also what our society considers to be “obscene.” The pornography industry glorifies masculine and heterosexually-identified sexualities, mirroring the way in which these same sexualities are given institutionalized power in our society. However, a specific avenue for reforming this phenomenon has grown within the pornography industry with increasing strength since the 1980s. Along the historical divisions of the “Feminist Sex wars,” feminist pornographers are enacting a radical defiance of masculine-centric and hetero-centric sexual representation and imagery by creating pornography that features diverse sexualities. My research analyzes secondary literature within a framework that defines gender and sexuality as being socially constructed. Through this process I am able to define those feminist pornographers seeking to reform the sex industry as “sex rebels” who are re-negotiating what kinds of sexualities are “acceptable” in our society. Their work constitutes one facet of a larger movement to validate feminine and non-heteronormative sexualities. I consider this to be particularly rebellious in that it is being achieved from within a historically male dominated industry that is often labeled “misogynist.” The implications of reforming pornography may also reach beyond that specific industry; it may also provide a model for changing the way we represent sexuality in the mainstream media. Feminist porn may therefore empower individuals as well as collective groups by modeling alternative sexualities within a society that offers few realistic or diverse representations of sexuality.