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## University of Minnesota Morris Digital Well

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Undergraduate Research Symposium Abstract  
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4-4-2008

### 2008 Undergraduate Research Symposium Abstract Book

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The URS Organizing Committee would like to thank the **students** for participating in this year's symposium.

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Without the above people, this event would not have happened.

The 2008 URS Organizing Committee  
Sylke Boyd, Michael Eble, Mark Logan, Paula O'Loughlin,  
Jeff Ratliff-Crain (Chair), Adele Raymond, Kevin Whalen

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UNIVERSITY OF MINNESOTA

MORRIS

**UNDERGRADUATE  
RESEARCH  
SYMPOSIUM  
2008**



**Featuring student research and scholarship from across the campus  
Friday April 4, 2008**

**Schedule and Abstracts**

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

**Presenter:** KauChee Vang  
**Project Advisor:** Timna Wyckoff (Biology)  
**Title:** Distribution of lnu(A) in Macrolide-Lincosamide-Streptogramin (MLS) Resistant Strains of *Staphylococcus* from Cows' Milk collected on Conventional and Organic Dairies  
**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Previously, *Staphylococcus* strains were obtained from milk samples collected on conventional and organic dairy farms and phenotypically tested for antibiotic resistance (Bombyk et al. (2007) J. Appl. Microbiol. in press). There are 75 macrolide-lincosamide-streptogramin resistant (MLSR) strains. Of those 75 strains, 62 strains are resistant to erythromycin (a macrolide) and 29 strains are resistant to pirlimycin (a lincosamide). In this study, we determined the distribution of the lincosamide resistance determinant, lnu(A), in this population. We used multiplex PCR to test all MLSR strains for lnu(A) and for *Staphylococcus* rDNA as an internal control. We found 18 of the 29 pirlimycin resistant (pirR) strains tested positive for lnu(A). Surprisingly, three pirlimycin susceptible (pirS) strains also tested positive for lnu(A). We conclude that some pirR strains do carry lnu(A). However, there are pirR strains that do not have lnu(A). To further explore the pattern, the distribution of other lincosamide resistance genes such as erm(Y) will have to be determined. In addition, three MLSR strains not phenotypically resistant to pirlimycin tested positive for lnu(A). We are now determining the distribution of lnu(A) in the entire population of *Staphylococcus* in order to determine how common lnu(A) is in pirS strains and if a pattern exists.

The University of Minnesota, Morris

- 2008 -

UMM Undergraduate Research Symposium  
 Featuring student research and scholarship from across campus

Friday, April 4, 2008

- 12:30 p.m. – 1:15 p.m. Registration, John Q. Imholte Hall Atrium
- 1:00 p.m. – 1:30 p.m. Improv Performance, *Unusual Suspects*  
John Q. Imholte Hall, Room #109
- 1:30 p.m. – 1:50 p.m. Welcome-Dr. Roland Guyotte  
Interim Vice Chancellor for Academic Affairs  
and Dean
- 1:50 p.m. – 2:20 p.m. Featured Presentation:  
French Canadian Folk Songs – Brittany Stone
- 2:30 p.m. – 4:55 p.m. Oral presentations: John Q. Imholte Hall, Room #s:  
101, 109, 111, 112, 113, 114, 202, 203, 217
- 5:00 p.m. – 6:30 p.m. Posters/Visual Displays and Reception, Science Atrium

## 2008 Undergraduate Research Symposium

### ORAL PRESENTATIONS John Q. Imholte Hall, Room #s 101, 109

#### Room #101

- 2:30 Rebekah Ackerman (Art History): **The Oracle at Delphi: An Influential Factor in Determining the City's Historical Significance.** (Advisor: Jimmy Schryver), abstract pg. 8
- 2:55 Ryan Barland (Art History): **The National Museum of Ireland and Me.** (Advisor: Jimmy Schryver), abstract pg. 8
- 3:20 Katrina L. Flaig (Art History): **Greek Myth-History: The Cultural Movement from Ancient Reality to Ancient Myth.** (Advisor: Jimmy Schryver), abstract pg. 13
- 3:45 Melinda Kernik (History): **More than Just Demographics: The Indian School Service Roster as a Tool for Challenging Historical Models.** (Advisor: Wilbert Ahern), abstract pg. 18
- 4:10 Alice Shindler (History): **Survival Strategies of the "Progressive" Indian on the Omaha Reservatoin.** (Advisor: Wilbert Ahern), abstract pg. 24
- 4:35 Ruth Hamberg (Spanish): **Ritual and Identity in *El Entenado* and *Alvar Nuñez Cabeza de Vaca*.** (Advisor: Jacqueline Alvarez), abstract pg. 14

#### Room #109

- 1:50 Brittany Stone (Anthropology): **French Canadian Folk Songs.** (Advisor: Julie Pelletier), abstract pg. 7
- 2:30 Elisabeth Hampton (Anthropology): **Cultural Exploitation Through Popular Media: An Analysis of *Last One Standing*.** (Advisor: Julie Pelletier), abstract pg. 15
- 2:55 Kristi Kehrwald (Political Science): **Dinner Party Faux Pas: Religious Cues in Party Platforms 1920-2004** (Advisor: Paula O'Loughlin), abstract pg. 17
- 3:20 Nicole Fontanille (Psychology): **An Evolutionary Psychological Approach to Addiction.** (Advisor: Jeff Ratliff-Crain), abstract pg. 14
- 3:45 Elijah Mayfield and Nathan Dahlberg (Computer Science): **Optimization of Generic Types in the Java Programming Language.** (Advisor: Elena Machkasova), abstract pg. 21
- 4:10 Keven Deger (Philosophy): **Morality without Moral Responsibility.** (Advisor: Tammler Sommers), abstract pg. 11
- 4:35 Whitney Lawrence (History): **White Earth Reservation: Generational and Gendered Responses to Assimilation.** (Advisor: Wilbert Ahern), abstract pg. 20

## 2008 Undergraduate Research Symposium

**Presenter:** Sara Russell and Andrea Tomasso  
**Project Advisor:** Margaret Kuchenreuther (Biology)  
**Title:** **Effects of Point Source Groundwater on the Hydrography of a Marine System**  
**Type of presentation (Oral / Poster):** Poster

#### *Abstract:*

Marine systems exhibit physical properties (such as salinity and dissolved oxygen) in particular proportions. Organisms that inhabit marine environments rely on these proportions to sustain life comfortably. When the water column is mixed as a result of runoff or point source groundwater discharge events, these proportions are disrupted, which can stress organisms inhabiting the environment. In Discovery Bay, Jamaica, groundwater point source plumes mix in the water column. As a result, areas of the bay suffer from lower salinity and higher dissolved oxygen levels than what is considered average for a marine habitat. This mixing has the potential to dramatically change the ecological makeup of the area. In order to determine the fate of Discovery Bay as a result of this freshwater influence, it is important to appreciate the extent to which groundwater presently affects the bay itself. During January of 2008, we determined the physical effects of the groundwater influences on the existing marine habitat within the Discovery Bay cove. In doing so we were able to find the groundwater point sources. After creating a grid of the 160x200ft area using a global positioning system and taking 300 samples to analyze for dissolved oxygen, salinity, temperature, and relative density, we transferred the data into a marine graphing software program (Ocean Data View) and created a visual depiction of the areas receiving the greatest groundwater influence. This depiction can and will be used in assessing the effects of groundwater influences on marine organisms.

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**Presenter:** Ashley Satre  
**Project Advisor:** Mary Elizabeth Bezanson (Speech Communications)  
**Title:** **The Art of Persuasion Through Visuals: A Rhetorical Analysis of Political Cartoons**  
**Type of presentation (Oral / Poster):** Poster

#### *Abstract:*

This study is a rhetorical analysis of political cartoonist Steve Sack's seven best cartoons of 2007, as chosen by the Star Tribune. This analysis will cover the cultural context for each cartoon, descriptions of both the cluster and Medhurst's methodology used for visual analysis, descriptions of each artifact, and the analysis findings as found through the use of described methods. The findings will cover how the cartoons work to be persuasive, how the methods reveal intended persuasiveness, and how the study contributes to the rhetorical theory of method.

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## 2008 Undergraduate Research Symposium

**Presenter:** Benjamin Rislow

**Project Advisor:** Gordon McIntosh (Physics)

**Title:** Analysis of the Characteristic Lifetime of a Polarized Feature in the Ground State SiO Maser VY Canis Majoris

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

This paper examines both the informal process of labeling deviants as well as the formally established laws that further enable the labeling process to be enacted. By using Howard S. Becker's labeling theory and Richard Quinney's conflict theory, a new way of conceiving social deviance is constructed that problematizes the actions of the upper class in their attempt to preserve the existing social structure and the values that accompany it. This new theory is aptly supported by examining the evolution of the treatment of marijuana growers and users as well pornography producers. The American history of contraband and obscenity laws being enforced at the local level and being carried up all the way to the United States' Supreme Court show the way deviance is constructed is subjective. Further examinations of those laws reveal the functions that can be derived in the interest of the upper class. Americans need to view deviance as subjective because the typical objective stance acts as an impediment to beneficial social change and suppresses movements towards equality.

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**Presenter:** Charles P. Rudeen

**Project Advisor:** Peh Ng (Mathematics)

**Title:** Development of an Optimization Model for Bus Routes

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Due to the open enrollment policy in the school districts of west central Minnesota, bussing zones of multiple districts overlap each other. This has resulted in multiple buses going to the same area. A number of school districts have requested a solution to the bus routing problem which will limit route overlaps. The bussing problem can be thought of as an instance of a vehicle routing problem, VRP, which is a discrete optimization problem of finding the best routes originating from a "depot" visiting all "nodes" and returning to the depot. In general, a VRP is classified as an NP-Hard problem, meaning to this date there is no known time-efficient algorithm to solve it, and there probably never will be. In this research we defined a modified version of a VRP which includes multiple depots. We used this to model the bus routing problem of west central Minnesota schools where the depots represented schools while the nodes represented pick up points. We solved this modified VRP with different scenarios and constraints. The solutions of the optimization problem, as well as the analysis of our results, will be discussed. We will further show how these results translate to different possible solutions to the bussing problem of west central Minnesota.

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## 2008 Undergraduate Research Symposium

### ORAL PRESENTATIONS

John Q. Imholte Hall Room #s 111, 112, 113

#### Room #111

- 2:30 LeAnn Hedquist (Political Science): **How Late Is Too Late? Do Presidential Candidates' Dates of Declaration Influence the Likelihood of Winning the Nomination?** (Advisor: Paula O'Loughlin), abstract pg. 15
- 2:55 Talia Earle (Art History): **Marie Antoinette: A Deserving Victim?** (Advisor: Julia Dabbs), abstract pg. 12
- 3:20 Nastassia Fjestad (Art History): **Velazquez's Dwarfs: A Study of Sensitivity.** (Advisor: Julia Dabbs), abstract pg. 13
- 3:45 Ricky Noren (Art History): **Portraying Jesus: What Is the True Likeness?** (Advisor: Julia Dabbs), abstract pg. 22
- 4:10 Bailey Jelle (Art History): **The Gigantomachy of the Pergamon Altar.** (Advisor: James Schryver), abstract pg. 16
- 4:35 Kristen Wendlandt (Art History): **Pinkie and Blue Boy: Behind the Kitsch** (Advisor: Julia Dabbs), abstract pg. 28

#### Room #112

- 3:20 April Kummrow (English): **Writing without Authority.** (Advisor: Tisha Turk), abstract pg. 19
- 3:45 Rebekah Deutl (Political Science): **Minnesota Supreme Court Liberalism from 2005-Early November 2007: Applying a Modified Personal Attributes Model.** (Advisory: Paula O'Loughlin), abstract pg. 11
- 4:10 Nathan Swanson (Political Science): **The Hagel Effect: Do Party Constituencies Sway Incumbent Senators' Decision to Retire?** (Advisor: Paula O'Loughlin), abstract pg. 26
- 4:35 Kim Ukura (Political Science & Speech Communication): **Expanding the Scope of Public Journalism.** (Advisors: Paula O'Loughlin and Barbara Burke), abstract pg. 27

#### Room #113

- 3:45 Alicia Mengelkoch (Spanish): **The Complexity of Cannibalism Seen in los Colastiné of El Entenado, los Wari' of South America and the Aztecs.** (Advisor: Jacqueline Alvarez), abstract pg. 21
- 4:10 Alex Clark (Political Science): **Beyond Deterrence and Rhetoric: A Historic, Political, and Economic Analysis of the Taiwan Issue and U.S. – Chinese Relations.** (Advisor: Seung-Ho Joo), abstract pg. 10
- 4:35 Ben Beers (Political Science): **Islam, Liberalism, and Democratic Compatibility.** (Advisor: Christopher Brooks), abstract pg. 9

## ORAL PRESENTATIONS

John Q. Imholte Hall, Room #s 114, 202, 203

## Room #114

- 2:55 Pam Lindenberg (English): **Beating Up Devils: A Model for Living in Cynewulf's Retelling of *Saint Juliana***. (Advisor: Janet Schrunk Ericksen), abstract pg. 20
- 3:20 Whitney Lawrence (English): **Negotiating Narratives: Audience and Adaptation in American Indian Literature**. (Advisor: Becca Gercken), abstract pg. 19
- 3:45 Kim Ukura (English): **Robinson Crusoe's Failed Spiritual Autobiography**. (Advisor: Tisha Turk), abstract pg. 27
- 4:10 Amanda Ochsner (English): **Reading Our Readings: Ideological Interactions between Authors, Characters, and Readers**. (Advisor: Tisha Turk), abstract pg. 22
- 4:35 Reed Schmidt (English): **The Necessity of a Two-Fold Trickster: Native American's Trope**. (Advisor: Becca Gercken), abstract pg. 24

## Room #202

- 2:30 Justin Kemppainen (Theatre): **Auditory Odyssey**. (Advisor: Siobhan Bremer), abstract pg. 18
- 2:55 Sarah C. Estep (Sociology): **Adoption and Families: The Codes of Silence in the 1950s and 1960s**. (Advisor: Jennifer Rothchild), abstract pg. 12

## Room #203

- 2:30 Graham Berg-Moberg (Philosophy): **"Fool's" Greatness: Anselm's Ontological Argument**. (Advisor: Pieranna Garavaso), abstract pg. 9
- 2:55 Eric Williams (Spanish): **Satirical Revision in Hispanic Literature**. (Advisor: Jacqueline Alvarez), abstract pg. 29
- 3:45 Michael Peterson (Sociology): **A Feminist Assessment of Corrective Programming for Female Gang Members**. (Advisor: Jennifer Rothchild), abstract pg. 23
- 4:10 Brittany Jablonsky (Sociology): **Body Image, Food Attitudes, and Eating Habits of Former High School Wrestlers**. (Advisor: Jennifer Rothchild), abstract pg. 16
- 4:35 Rachel Thole (Art History): **Odilon Redon - Reflections of French Society in the Nineteenth Century**. (Advisor: Joel Eisinger), abstract pg. 26

**Presenter:** Ted Nelson**Project Advisor:** Len Keeler (Physics)**Title:** Model of Experimental Acoustical Response of a Tube Resonator**Type of presentation** (Oral / Poster): Poster**Abstract:**

In this project the acoustical response of a tube resonator was measured and then predicted by modeling the propagation of sound particles, or phonon, paths. This research demonstrates our ability to successfully model complex wave-like behavior using the idea of classical paths, and is directly related to current research on the semi-classical modeling of electron paths within atoms (recurrence spectroscopy). Resonances associated with each possible phonon path were added and squared to obtain a prediction for the total frequency response. The complex and curious features of the experimental data could be fully explained by the model. The measurements were made using a 4ft tube with a small speaker on one end and a calibrated testing microphone on the other end. A computer was interfaced with both the speaker and microphone to coordinate the emission and recording of sound. The results demonstrate the model's capabilities and, in addition, suggest the existence of phase shifts upon reflection and an attenuation of signal associated with longer paths.

**Presenter:** Kelly Nygaard**Project Advisor:** Mary Elizabeth Bezanson (Speech Communications)**Title:** Crocodile Tears in Comic Settings**Type of presentation** (Oral / Poster): Poster**Abstract:**

With a new election drawing ever near, presidential candidates are trying to gain the support of as many potential voters as possible. It is well known that primaries have a huge impact on the election, but candidate's emotions are typically not considered part of the equation. Hillary Clinton was able to change that when just before the New Hampshire primaries, she cried on nation television. This opened her up praise and criticism from newspapers, columnists, and political cartoonists. Many media outlets chose to depict the event as showing a dual nature; part sincere, part cold and calculating. Using the method developed by Medhurst and Desousa (Medhurst & Desousa, *Communication Monographs*, Sep1981, 48. p197) designed to analyze political cartoons, I will analyze five political cartoons surrounding this matter and illustrate how the cartoons work to be persuasive and how the two methods reveal those attempts. This research is important to not only the field of Communications in gauging how emotions and behaviors in addition to speaking impact the audience reaction, but also to many other areas because of the media's role in effecting public viewpoints and the potential impact that this situation could have on the impending election.

## 2008 Undergraduate Research Symposium

**Presenter:** Jacob Lofquist  
**Project Advisor:** Bart Finzel (Economics)  
**Title:** **An Overview of the Bologna Process**  
**Type of presentation** (Qral / Poster): Poster

**Abstract:**

The Bologna Process is the first step in standardizing university education in a united Europe. There are four main points to the process; the creation of the European Higher Education Area by 2010, the European Transfer and Credit System of grades and credit, the new three year degree structure, and the diploma supplement. This research investigates whether the new shorter three year bachelor's degree will likely have a higher return than the traditional degrees of Europe. Since Europe is still transitioning into the new system, wage data from the US is used. The wages of four year bachelor's degree holders are compared with the wages of the holders of a two year associate's degree for various professions. Using a standard discount function, I discounted the earnings premium for each degree type to the present, and then compared this to the cost of obtaining the degree. The main result is that in the US, the last two years of a bachelor's degree has a 2.8% higher return than an associate's degree across all professions. This indicates that it is in the interest of European students to keep the traditional degree programs of five to seven years in place. Despite this drawback, this research also discusses some of the potential benefits of adopting the Bologna Process such as eliminating dual degree systems of tertiary education, lower public costs, and the non-binding nature of the process.

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**Presenter:** Meredith Lorig  
**Project Advisor:** Timna Wyckoff (/Biology)  
**Title:** **Characterization of Two Tetracycline Resistant Strains of *Staphylococcus* Lacking Common Tetracycline Resistance Determinants**  
**Type of presentation** (Qral / Poster): Poster

**Abstract:**

A total of 405 *Staphylococcus* strains were previously isolated from milk samples collected on organic and conventional dairy farms in west-central Minnesota. The samples were tested for tetracycline resistance by disc diffusion; 49 out of 405 are tetracycline resistant (Bombyk et al. (2007) *J Appl. Micro.* in press). The 49 phenotypically tetracycline resistant strains were subsequently genotyped using multiplex polymerase chain reaction. The predominant gene responsible for resistance is *tet(K)*, found in 44 of the 49 tetracycline resistant strains. Two other genes were found in the remaining strains; two strains contain *tet(M)* and one contains *tet(L)*. That left two strains (numbers 36 and 134) lacking the tetracycline resistant determinants commonly found in *Staphylococcus* (Bombyk et al. (2007), ASM 107<sup>th</sup> General Meeting). Here we report further characterization of strains 36 and 134. The remaining strains were tested for minimum inhibitory concentration (MIC) of tetracycline, for which 4 µg/mL is the cut off for sensitive strains. Strain 36 has a high MIC of 256 µg/mL tetracycline. This result suggests the strain 36 is protecting the ribosome against tetracycline. Strain 134 has a much lower MIC of only 16 µg/mL of tetracycline suggesting an efflux protein is responsible for the resistance. We are currently using PCR to search among the less common tetracycline resistant determinants, for both ribosomal protection and efflux genes that could be responsible for the tetracycline resistance of strains 36 and 134.

## 2008 Undergraduate Research Symposium

### ORAL PRESENTATIONS John Q. Imholte Hall, Room # 217

#### Room #217

- 2:30 Ashley Simpson (Speech Communications): **A Rhetorical Analysis of *Cinderella*: Archetype and International Versions.** (Advisor: Mary Elizabeth Bezanson), abstract pg.25
- 2:55 David Johnson (Speech Communications): **More than Mere Metaphors: A Rhetorical Analysis of Al Gore's Push to Adopt Stricter Nuclear Policies.** (Advisor: Mary Elizabeth Bezanson), abstract pg. 17
- 3:20 Amanda Warcken (Speech Communications): **The Right to Food Fight?: A Rhetorical Analysis of a Cartoon Controversy and the Free Speech Implications of Censorship in University Newspapers.** (Advisor: Mary Elizabeth Bezanson), abstract pg. 28
- 3:45 Maria Brun (Economics): **Can Gender-Based Public Policies Be Effective in Patriarchal Societies?** (Advisor: Pareena Lawrence), abstract pg. 10
- 4:10 Caitlin Siefkes (Anthropology): **Representation and Identity in French and West African Francophone Cinema.** (Advisor: Julie Pelletier), abstract pg. 25
- 4:35 Kim Radtke (Anthropology): **Adventures in Lithic Recreation and Analysis.** (Advisor: Donna Chollett), abstract pg. 23

### POSTER PRESENTATIONS 5:00 – 6:30 p.m. Science Atrium

- #1 Kelly Nygaard (Speech Communications): **Crocodile Tears in Comic Settings.** (Advisor: Mary Elizabeth Bezanson), abstract pg. 41
- #2 Ashley Satre (Speech Communications): **The Art of Persuasion through Visuals: A Rhetorical Analysis of Political Cartoons.** (Advisor: Mary Elizabeth Bezanson), abstract pg. 43
- #3 Brittany Kill (Sociology): **Communications and Interactions Among Coaches and Athletes: Social Constructions of Masculinity.** (Advisor: Jennifer Rothchild), abstract pg. 36
- #4 Ian Jentz (Sociology): **Gendered Health: Transgender People and the Health Care System.** (Advisor: Jennifer Rothchild), abstract pg. 36
- #5 Alex Clausen (Political Science): **Democracy Interrupted: Toward a Theory of Failed Transitions.** (Advisor: D. Christopher Brooks), abstract pg. 32
- #6 Maria Brun (Economics): **Biomass: What if? The Economics of Substituting Biomass for Natural Gas.** (Advisor: Arne Kildegaard), abstract pg. 31
- #7 Derek Ganzhorn (Economics): **Trust, Cooperation, and Reciprocal Altruism Amongst Truckers.** (Advisor: Stephen Burks), abstract pg. 34
- #8 Jacob Lofquist (Economics): **An Overview of the Bologna Process.** (Advisor: Bart Finzel), abstract pg. 40
- #9 Emma Cole and Aaron St. Aubin (Psychology): **Effects of Prenatal Stress on the Amount of Care Given to Newborn Mice.** (Advisor: Leslie Meek), abstract pg. 33

POSTER PRESENTATIONS 5:00 – 6:30 p.m.  
Science Atrium

- #10 Brenna Burns (Biology): **Invasive Earthworms in West Central Minnesota Forests.** (Advisor: Peter Wyckoff), abstract pg. 31
- #11 Meredith Lorig (Biology): **Characterization of Two Tetracycline Resistant Strains of *Staphylococcus Lacking Common Tetracycline Resistance Determinants.*** (Advisor: Timna J.O. Wyckoff), abstract pg. 40
- #12 KauChee Vang (Biology): **Distribution of lnu(A) in Macrolide-Lincosamide-Streptogramin (MLS) Resistant Strains of *Staphylococcus* from Cows' Milk Collected on Conventional and Organic Dairies.** (Advisor: Timna Wyckoff), abstract pg. 44
- #13 Sara Russell and Andrea Tomasso (Biology): **Effects of Point Source Groundwater on the Hydrography of a Marine System.** (Advisor: Margaret Kuchenreuther), abstract pg. 43
- #14 Julie Fox and Alexandra Pagel (Biology): **Circadian Rhythm Promoters for an Optimized Bioluminescent Gene in *Neurospora crassa.*** (Advisor: Van Gooch), abstract pg. 33
- #15 Bethany Hermanson (Chemistry): **Comparison of Fused and Non-Fused Tricyanovinyl-Substituted Ring Systems for Organic Materials Applications.** (Advisor: Ted Pappenfus), abstract pg. 35
- #16 Stuart Kohl and Laura Thoma (Chemistry): **Theoretical, Thermal, and Electrochemical Properties of Poly(3-Alkylthiophenes) for Undergraduate Lab Experiments.** (Advisor: Ted Pappenfus), abstract pg. 37
- #17 Janice Kyung Mee Lee (Chemistry): **Electrochemical Synthesis of Ammonia Using a Recyclable Room Temperature Ionic Liquid as an Electrolyte.** (Advisor: Ted Pappenfus), abstract pg. 39
- #18 Owen Kinsky and Rebecca Korth (Chemistry/Biology): **High Lipid Content Microalgae for Biofuels: Species Evaluation.** (Advisor: Nancy Carpenter), abstract pg. 37
- #19 Erik Baker (Geology): **Age and Deformational Characteristics of the Paleoproterozoic Denny Creek Grandodiorite, Collegiate Peaks Wilderness Area, Colorado.** (Advisor: Jamey Jones), abstract pg. 30
- #20 Megan Carlson (Geology): **Reconstruction of the Pre-Glacial Late Paleozoic Landscape of the Witmarsum Area, Parana State, Brazil Using GIS.** (Advisors: Jamey Jones and Jim Cotter), abstract pg. 32
- #21 Jacob Leader (Geology): **Age and Tectonic Significance of the CA 1.4 Ga Browns Pass Pluton, Collegiate Peaks Wilderness Area, Colorado.** (Advisor: Jamey Jones), abstract pg. 38
- #22 Jason Bonde (Physics): **The Characteristic Lifetime of Mira's SiO Maser Features.** (Advisor: Gordon McIntosh), abstract pg. 30
- #23 Brandon Lehner (Physics): **Investigation of the Correlation of R Cassiopeia's SiO Maser Properties.** (Advisor: Gordon McIntosh), abstract pg. 39
- #24 Ted Nelson (Physics): **Model of Experimental Acoustical Response of a Tube Resonator.** (Advisor: Len Keeler), abstract pg. 41
- #25 Benjamin Rislow (Physics): **Analysis of the Characteristic Lifetime of a Polarized Feature in the Ground State SiO Maser VY Canis Majoris.** (Advisor: Gordon McIntosh), abstract pg. 42
- #26 Charles P. Rudeen (Mathematics): **Development of an Optimization Model for Bus Routes.** (Advisor: Peh Ng), abstract pg. 42
- #27 Rae Fredrich (Mathematics): **An Existence Theorem for Minimal Normalized Matching Bipartite Graphs.** (Advisor: Mark Logan), abstract pg. 34
- #28 Sara Lahr (Computer Science): **Screensaver Serenity.** (Advisor: Jinzhu Gao), abstract pg. 38
- #29 Rachel Gilman (History): **Designing an Exhibit: "Who is John Q. Imholte?"** (Advisor: Bert Ahern), abstract pg. 35

**Presenter:** Janice Kyung Mee Lee

**Project Advisor:** Ted Pappenfus (Chemistry)

**Title:** Electrochemical Synthesis of Ammonia Using a Recyclable Room Temperature Ionic Liquid as an Electrolyte Solution

**Type of presentation (Oral / Poster):** Poster

**Abstract:**

Ammonia is an important chemical for its use in agriculture and its potential use in renewable energy. Traditionally, ammonia has been produced by the Haber-Bosch process which utilizes methane, a fossil fuel, as a starting material in its synthesis. Because burning a fossil fuel generates greenhouse gases, the Haber-Bosch process has been one of the contributors to global warming. Therefore, we present an alternative, more environmentally-friendly way to synthesize ammonia. Our important goal was to use electricity to initiate a reaction between the starting materials—nitrogen gas and ethanol—to produce ammonia. Using electricity has an advantage that we can utilize renewable wind energy, which imposes no threat to the environment. To achieve this, we performed the electrochemical synthesis of ammonia using a room temperature ionic liquid (RTIL) as an electrolyte solvent in the presence of lithium ions. Besides synthesis of ammonia, another important goal of this project was to test whether the ionic liquid can be recycled. This has a significant application to a large scale production of ammonia because recycling a solvent can reduce the production cost and waste management. After the electrochemical reactions, the amount of ammonia synthesized was quantified by performing the Berthelot reaction. Current efficiencies at room temperature and atmospheric pressure will be presented.

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**Presenter:** Brandon Lehner

**Project Advisor:** Gordon McIntosh (Physics)

**Title:** Investigation of the Correlation of R Cassiopeia's SiO Maser Properties

**Type of presentation (Oral / Poster):** Poster

**Abstract:**

Theoretical developments and observations of long period variable stars suggest there may be a relationship between the kinematics of the circumstellar region and stellar phase. In order to test this relation, the silicon monoxide maser spectra of R Cassiopeia from 1984 to 2006 were acquired and statistically examined. The velocity centroids of the spectra have been determined and correlated with the flux densities. (Velocity centroids are the emission weighted average velocity.) Analysis of spectra acquired during 2003 - 2006 revealed no statistically significant correlations between the integrated flux density and the velocity centroids. To further investigate possible correlations, the data set has been supplemented using spectra acquired at the Centro Astronomico de Yebes (Guadajara, Spain) between 1984 and 1995 (Pardo et al. 2004 Astronomy & Astrophysics 424, 145). Interpretation and results from the statistical analysis of the entire data set will be presented.

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**Presenter:** Sara Lahr  
**Project Advisor:** Jinzhu Gao (Computer Science)  
**Title:** Screensaver Serenity  
**Type of presentation** (Oral / Poster): Poster

***Abstract:***

My presentation is a multimedia work of art that is the result of exploration in graphical design. The final result can be shown as a still image or as an animation. It can be used as a screensaver to prevent phosphor burn-in or image persistence, or it can simply be seen as decorative. All programs were implemented using OpenGL and C. The rendering process involves reading in models, transforming objects to the proper locations, specifying a lighting model, assigning material properties, and adding special effects such as transparency and fog. Not only is there animation of the objects to bring the image alive, there are also animated textures incorporated to create the illusion of an underwater scene.

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**Presenter:** Jacob Leader  
**Project Advisor:** Jamey Jones (Geology)  
**Title:** Age and Tectonic Significance of the CA 1.4 Ga Browns Pass Pluton, Collegiate Peaks Wilderness Area, Colorado  
**Type of presentation** (Oral / Poster): Poster

***Abstract:***

New field mapping and geochronology, a dating technique, have helped constrain the Mesoproterozoic (1600-1000 Ma (million years)) emplacement of granite in the Collegiate Peaks Wilderness Area, central Colorado. The Browns Pass body is composed of coarse-grained minerals to very large Potassium Feldspar crystals which crystallized around 1438 Million years ago. This body intrudes schists and gneisses and strongly deformed granodiorites (a type of rock) of the Paleoproterozoic (2500-1600 Ma) Denny Creek body of rock. The gneisses, schists, and granodiorites are found within the Browns Pass body constrained to the edges, or contacts. The alignment of minerals found within the rock is parallel to the well developed alignment of minerals found within the gneiss and granodiorite, which suggests that the deformation was constrained to the margins of the body after crystallization. The age of the Browns Pass tells us that it was emplaced during a widely recognized regional pulse of granite magmas between 1440-1430 Ma. The extent of the deformation within the Browns Pass is consistent with similar aged rocks within the area, but the alignment of the minerals is not consistent with Northeast pointing alignments found regionally in nearby ranges. Continued field mapping is expected to provide additional insights into the extent of these alignments in exposures of Browns Pass and the possible influence of the pre-existing rocks on the orientation of the alignments found at 1.4 Billion years ago.

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### Featured Presentation John Q. Imholte Hall Auditorium, Room #109 1:50 pm

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**Presenter:** Brittany Stone  
**Project Advisor:** Julie Pelletier (Anthropology)  
**Title:** French Canadian Folk Songs  
**Type of presentation** (Oral / Poster): Performance  
John Q. Imholte Hall, Room #109, 1:50 p.m.

***Abstract:***

This research investigates depictions of love and gender in French Canadian folk music. Folk music is a genre that expresses cultural and historical norms, values, as well as gender and class roles. I selected six folk songs and have analyzed the lyrics. I also reviewed the research of other scholars and folk musicians who have investigated French Canadian folk music. I identify the depictions of love and gender that are prevalent in this folk idiom, interpreting them within a historical and cultural context. As part of my research presentation I will give a public performance of two of the songs I analyzed, providing translation and interpretation for the audience

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**Oral Presentations**  
**John Q. Imholte Hall**  
**Room #s: 109, 101, 111, 112, 113, 114, 115**  
**2:30 – 4:55 p.m.**

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**Presenter:** Rebekah Ackerman  
**Project Advisor:** Jimmy Schryver (Art History)  
**Title: The Oracle at Delphi: An Influential Factor in Determining the City's Historical Significance**  
**Type of presentation (Oral / Poster):** Oral  
John Q. Imholte Hall, Room #101, 2:30 p.m.

**Abstract:**  
Greek mythology commonly recognized Apollo for his role as the sun god. Legend says that while searching for an earthly location for his temple, Apollo encountered the region now known as Delphi. Finding it quite a pleasing location, he set up a temple, staffed it with priestesses, and provided a method through which mortals could communicate with him. The presence of Apollo's oracle at Delphi was integral in giving the city its life. The unique characteristics and history of Delphi would not have happened were it not for the oracle's location there. This presentation will examine the importance of the Delphic oracle by analyzing its influence on the layout of the Sanctuary of Apollo, the games held in the town, and the economic relations Delphi had with other Greek towns.

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**Presenter:** Ryan Barland  
**Project Advisor:** Jimmy Schryver (Art History)  
**Title: The National Museum of Ireland and Me**  
**Type of presentation (Oral / Poster):** Oral  
John Q. Imholte Hall, Room #101, 2:55 p.m.

**Abstract:**  
When the public views a museum exhibition they often miss the work that got each piece into its case. Although some people may appreciate how the cases are arranged and how each piece relates to the others, few think about the large amount of research and scholarship behind the choice of each object. The exhibit 'Rites of Passage at Tara' at the National Museum of Ireland (NMI) is an example of the lessons learned from working on a major exhibit and the research in many fields that goes into making such a show happen. The exhibition is the first at the NMI to focus on an archaeological site. It displays Bronze Age finds from the 1955-59 dig at the Mound of the Hostages. My role allowed me to observe every stage of the process from design to conservation and assembling of the show, each of which is vital to the overall exhibition. The most important lesson to come from the 'Rites of Passage' concerns the decision making process regarding questions such as how much information to give, how to present it, and which objects to display. My presentation will discuss the remarkable amount of research that goes into an exhibition, how it affects the answers to these questions, and how this ultimately effects the display that is unveiled to the viewing public.

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**Presenter:** Owen Kinsky and Rebecca Korth  
**Project Advisor:** Nancy Carpenter (Chemistry/Biology)  
**Title: High Lipid Content Microalgae for Biofuels: Species Evaluation**  
**Type of presentation (Oral / Poster):** Poster

**Abstract:**  
Over the past summer, microalgae were grown and cells counted in order to determine which algal species had the fastest growth rate and under what conditions. This research was a small part of a bigger research project hoping to use microalgae for biofuels in the future. Biofuels can be harvested from certain types of algae, and the purpose of this research was to determine optimal growth conditions for rapid growth of these algae. Three types of high-lipid content algae were grown (*Chlamydomonas reinhardtii*, *Chlorella* species, and *Botryococcus sudeticus*) under various conditions in order to determine which cells multiplied the quickest. Samples were grown utilizing a growth medium, which was presumed to be similar in composition to wastewater. The algae were first grown under standard conditions of 16 hours of light and 8 hours of darkness at a constant temperature of 23±1°C while air was being bubbled into the sample. Algae were then subjected to certain variables, including a mixture of CO<sub>2</sub> and air, 24 hours of light, and agitation (achieved with a stir bar). Data were then compiled to deduce which species of algae grew at the fastest rate and under which conditions this occurred.

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**Presenter:** Stuart Kohl and Laura Thoma  
**Project Advisor:** Ted Pappenfus (Chemistry)  
**Title: Theoretical, Thermal, and Electrochemical Properties of Poly(3-Alkylthiophenes) for Undergraduate Lab Experiments**  
**Type of presentation (Oral / Poster):** Poster

**Abstract:**  
Synthesis of poly(3-hexylthiophene), a conducting polymer, has been incorporated previously into the undergraduate laboratory experience at our institution. In the current undergraduate curriculum, polymers get little emphasis. Due to the integral part of polymers in chemical industry and research, the goal of the research was to increase a student's exposure to polymers. For the first polymer experiment in Introduction to Research, refinements were made to the theoretical component of this experiment to analyze the physical properties of poly(3-hexylthiophene). Supplementary experiments were designed and added to the curriculum to better help the students understand polymer configurations. A differential scanning calorimetry (DSC) component was added in Physical Chemistry to give students further instrument experience. While several of the thermal values used in this experiment were available from literature sources, many were not. New thermal data for these polymers were accumulated during our research. Additionally, an electrochemical component was also added to give the students familiarization with thin film cyclic voltammetry. Thin film cyclic voltammetry has not been done in previous coursework at the University of Minnesota, Morris and substantially adds to a student's understanding and experience with cyclic voltammetry. This poster will highlight these new undergraduate laboratory experiments using poly(3-alkylthiophenes).

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## 2008 Undergraduate Research Symposium

**Presenter:** Ian Jentz

**Project Advisor:** Jennifer Rothchild (Sociology)

**Title: Gendered Health: Transgender People and the Health Care System**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Based on qualitative data gathered from interviews and surveys conducted in 2008, this research concentrates on the health care experiences of self-identified transgender and transsexual people in the upper Midwest in order to identify and promote practical policy and social change in regard to transgender health. Transgender people's access to health care is often limited by a lack of insurance coverage, transgender-competent health care providers, and physical location in relation to these providers (Feldman and Bockting 2003). Additionally, health care policies often explicitly exclude transgender related care in insurance plans, require approval and waiting periods for transgender related services, and are without health care protections for transgender people (National Coalition for GLBT Health 2004). Further, practices carried out by health care and insurance providers typically reflect negative attitudes about transgender people relative to positive ones, although increasing in frequency (GLBT Health Access Project 2000). Although similar research has contributed to knowledge about the individual areas of transgender health care access, policies, and practices, this research establishes a distinctive perspective on transgender health by researching these areas together and examining them in the context of the social construction of gender, standpoint feminist theory, and intersectionality theory.

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**Presenter:** Brittany Kill

**Project Advisor:** Jenifer Rothchild (Sociology)

**Title: Communications and Interaction Among Coaches and Athletes: Social Constructions of Masculinity**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Over the course of this 2008 spring semester, I have conducted direct observations of University of Minnesota, Morris men's and women's collegiate teams and administered open-ended surveys to UMM athletes to better understand the link between the interactive tools used in sports and their production and maintenance of masculinity. Researchers (e.g., Messner 1990; Hartmann 2003) have argued that organized sports socially construct and reinforce masculinity. This becomes problematic when masculinity embedded in sports leads to violence, homophobia, and sexism (Coakley 2007). Using feminist theories as a guide, this study explores how communication mechanisms, such as coaches' and athletes' use of language, gestures, and symbols, construct and reinforce masculinity. Do communication systems and interactions between coaches and players and among players themselves reinforce masculinity and issues of violence, homophobia, and sexism? Or, do they push against gender constructed and reinforced in sports, thereby encouraging new constructions of gender identity within the institution? At its conclusion, this study aims to develop a better understanding of gender in organized sports, as well in broader society, and in particular the complexities of masculinities that are constructed and reinforced in these public spheres.

## 2008 Undergraduate Research Symposium

**Presenter:** Ben Beers

**Project Advisor:** Christopher Brooks (Political Science)

**Title: Islam, Liberalism, and Democratic Compatibility**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #113, 4:35 p.m.

**Abstract:**

In this paper, I approach the question of whether or not Islamic thought is compatible with the tenants of liberalism defined by John Gray in order to make conclusions about the compatibility of Islam and democracy. In studying a variety of sources arguing both for and against democratic compatibility, looking for commonalities and differences between them, I found varying degrees of conclusions ranging from strict non-compatibility based on the core values of Islamic culture, to non-compatibility focusing on key unchanging points such as Islam's treatment of women. When studying arguments for compatibility, I found that some argued for complete compatibility, while others proposed a mixed system compromising some, but not all, of liberalism's tenants. From this I concluded that, depending on the conception of Islam one adheres to, it can be seen as either compatible or not. This is primarily because both sides ignore the implications of the other, the non-compatibilists dismissing the plausibility for change, and the compatibilists ignoring the significance of fundamentalist thought. A majority of the population does not fall in the fundamentalist conception; hence I conclude that Islam appears to be compatible with liberalism and democracy.

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**Presenter:** Graham Berg-Moberg

**Project Advisor:** Pieranna Garavaso (Philosophy)

**Title: "Fool's" Greatness: Anselm's Ontological Argument**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #203, 2:30 p.m.

**Abstract:**

Anselm's argument has the double distinction of being one of the oldest and most controversial arguments put forward. It is his attempt to prove God's existence by showing that the non-existence of the greatest conceivable being leads to a contradiction, and it has been commented on by everyone from Anselm's contemporaries such as Guanilo, to modern day philosophers like Plantinga, and on the way it has attracted the attention of some of the world's most famous philosophers, for instance Kant, Hume, and Augustine. One aspect of the argument that has received almost no attention, however, is what exactly Anselm means when he uses the word greatness. This presentation will argue that the property of "greatness", or as he sometimes calls it "worthiness," is essential to the ontological argument. Moreover that due to the nature of the claim being put forward, Anselm is committed to a very implausible, Platonic notion of greatness as a basic feature of the universe, and not a social construction. The presentation will then go on to argue on the grounds of Occam's Razor, that we have no good reason to believe in the concept of metaphysical greatness that Anselm must use, consequently we have no good reason to believe in the conclusion drawn about the Greatest Conceivable Being. This objection has one major advantage over the objections raised before it, namely, it applies even to the most sophisticated modern formulations, such as the one by Plantinga, which does not use existence as a predicate

**Presenter:** Maria Brun

**Project Advisor:** Pareena Lawrence (Economics)

**Title: Can Gender-Based Public Policies Be Effective in Patriarchal Societies?**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #217, 3:45 p.m.

**Abstract:**

This paper examines the impact of gender specific public policy in the context of India. In many cases, policy with gender specific goals is seen by policy makers as the end of the process towards solving gender inequities in society. However, in reality, policy is not made and implemented in a vacuum but is subject to the social norms and traditions of the society. Thus the effectiveness of policy must be examined by carefully investigating the process of implementation and the outcomes in achieving its intended goals. In this paper we examine the effectiveness of two major policies passed by the Indian policy makers, the first on womens' land inheritance rights and the second that reserves one-third of the presidential seats for women in the local village level governments called Panchayats. Further, we discuss means by which gender specific public policies can become socially recognized and more effective.

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**Presenter:** Alex Clark

**Project Advisor:** Seung-Ho Joo (Political Science)

**Title: Beyond Deterrence and Rhetoric: A Historic, Political, and Economic Analysis of the Taiwan Issue and U.S. – Chinese Relations**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #113, 4:10 p.m.

**Abstract:**

China has by now assumed a role as a major regional power in Asia, and may very well become the world's next superpower. Currently it is the only major power in the world capable of rivaling the United States either economically or militarily. In 1972 both sides realized and stated in a Joint Communiqué that "the Taiwan question is the crucial question obstructing the normalization of relations between China and the United States." Despite this, modern literature on the subject of the Taiwan issue rarely goes past examining Cold War deterrence politics and Chinese politburo rhetoric. Examinations of the situation from an economic perspective are often contained to publications dealing with economic issues alone. Despite the fact that China has claimed a historic right to Taiwan, seldom is the true nature of Taiwanese history looked at to determine modern affairs. Rarely, if ever, are these different perspectives combined into a single analysis; despite them all being equally important. My presentation examines the historical, political, and economic aspects of the Taiwan question in US-Chinese relations, and makes predictions about where this issue will lead all three parties in the future.

**Presenter:** Rachael Gilman

**Project Advisor:** Wilbert Ahern (History)

**Title: Designing an Exhibit: "Who is John Q. Imholte?"**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

This presentation will explain how I designed my upcoming exhibit, "Who is John. Q. Imholte? First I had to pick a topic people would be interested in. When UMM students go to class in the former Social Science building, some of them ask "Who is John Q. Imholte? Why is a building named after him?" John or Jack Imholte was one of thirteen faculty members teaching at UMM when the school opened in 1960. Nine years later, Imholte was named acting provost. He became chancellor of UMM in 1970. After serving as chancellor for twenty years, he returned to teaching history. Imholte remained very active within the University and from 1994-1995 he served as the interim vice president for student affairs on the Twin Cities campus. Imholte retired in 1999, after serving UMM for forty years. "Who is John Q. Imholte?" will consist of labeled objects and photos taken from the UMM archives and various offices around campus. It will include a bulletin board displaying selections of memories of Imholte from his former colleagues. This exhibit will be mini re-creations of the offices Imholte had as a professor of history and as chancellor. The exhibit then will be constructed and reviewed. Finally the exhibit can be opened to the public. "Who is John Q. Imholte?" will open in its display case in Imholte Hall on Beautiful U Day (April 17, 2008).

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**Presenter:** Bethany Hermanson

**Project Advisor:** Ted Pappenfus (Chemistry)

**Title: Comparison of Fused and Non-Fused Tricyanovinyl-Substituted Ring Systems for Organic Materials Applications**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

This investigation compares the effects of adding zero, one or two electron-withdrawing tricyanovinyl (TCV) groups on a variety of conjugated organic molecules. Fused ring and non-fused ring systems are of current interest. Fused ring systems investigated include an N-functionalized dithienopyrrole (DTP) and dithienothiophene (DTT). The non-fused system investigated includes an N-functionalized dithienylpyrrole (TPT). Unsubstituted and tricyanovinyl-substituted oligomers were prepared by literature methods. For example, a new molecule (TPT-TCV) was synthesized as part of the non-fused ring system and was compared to the unsubstituted (TPT) and disubstituted (TPT-BTCV) molecules. All molecules were compared using cyclic voltammetry and UV-Vis spectroscopy. These materials are promising candidates for a variety of materials applications including solar cells, semiconductors and magnetic materials.

## 2008 Undergraduate Research Symposium

**Presenter:** Rae Fredrich

**Project Advisor:** Mark Logan (Mathematics)

**Title:** An Existence Theorem for Minimal Normalized Matching Bipartite Graphs

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

There are many different situations in which we would like to obtain a matching from a smaller set into a larger set. Examples of these include men and women looking for marriage partners and admitting students into colleges. The latter example of college admissions serves as a good mathematical model. Suppose we have  $k$  students and  $n$  colleges, with  $n$  less than or equal to  $k$ . We will draw a connection between a student and a college to denote the admission of that student into that college. We recognize that, due to the qualifications of each college and the preferences of each student, each college may or may not admit all students, and likewise each student may or may not apply to all colleges. Can we obtain a situation where each college receives at least one student? To consider this question in a general sense, we will use a graph of vertices and edges to mathematically model the situation. We turn our attention to a special type of these graphs, called a matchweb, which has certain conditions that guarantee this property. In addition to its usefulness with college admissions, this property is helpful for assigning representatives to groups, designating partnerships within a population, etc.

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**Presenter:** Derek Ganzhorn

**Project Advisor:** Stephen Burks (Economics)

**Title:** Trust, Cooperation, and Reciprocal Altruism Amongst Truckers

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Other-regarding behaviors such as trust, reciprocity, and altruism are commonly observed in laboratory experiments in which the potential confounds with repeated-game explanations of cooperative choices can be designed away by removing repetition and imposing anonymity. Whereas the differences between self- and other-regarding behaviors can only be cleanly distinguished in the laboratory, there is very little direct evidence on the degree to which other-regarding behaviors occur in more complicated real-world social contexts. Using a unique data set, the Truckers & Turnover Project is able to compare experimental behavior with on-the-job performance among truckers. This paper provides new direct evidence on the external validity of laboratory measures of other-regarding behavior by using them to predict behavior in an important economic context: decisions on the job. We find that our laboratory identification of social preference types predicts nothing about whether workers will pay costs to be generous to their employer. However, our social preference types do predict strong differences in the willingness of drivers to engage in costly generosity towards other drivers.

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## 2008 Undergraduate Research Symposium

**Presenter:** Kevin Deger

**Project Advisor:** Tamler Sommers (Philosophy)

**Title:** Morality without Moral Responsibility

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #109, 4:10 p.m.

**Abstract:**

Many people believe that they possess free will and that if they stopped believing this their morality would suffer as a result. The idea that our behavior is completely determined by factors outside of our control is seen as dangerous and subversive. Some have even suggested that we would be better off ignorant of this fact, for it would undermine moral responsibility. This is Saul Smilansky's position—that even though we are not ultimately responsible for our behavior, “the fairy tale of free will is indispensable.” In his book *Free Will and Illusion*, Smilansky argues that, since the denial of free will would provide us with an excuse for immoral behavior (morally wrong actions are inevitable) and since it would make us feel morally worthless (morally right actions are inevitable, too), we are better off living under the illusion that we have free will. In my paper I argue that the most significant aspects of morality are compatible with the view that agents are not morally responsible for their actions. Central to my position is the idea that we are able to make moral evaluations of actions without assigning moral responsibility (i.e. without assigning praiseworthiness or blameworthiness). I go on to argue that there are certain types of behavior people (do or do not) want to exhibit and/or be associated with, regardless of beliefs about moral responsibility.

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**Presenter:** Rebekah Deutl

**Project Advisor:** Paula O'Loughlin (Political Science)

**Title:** Minnesota Supreme Court Liberalism from 2005-Early November 2007: Applying a Modified Personal Attributes Model

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #112, 3:45 p.m.

**Abstract:**

This paper addresses an enduring question for political scientists and the American public as well: what prompts judges to decide cases in the manner that they do? In an attempt to explain that judicial decision-making involves more than just interpretation of the law, C. Neal Tate (1981) developed the personal attributes model to predict the liberalism of the federal Supreme Court from 1946 to 1978 for civil rights and liberties cases and economics cases. He found this model able to predict the liberalism of the justices 87% of the time for civil rights and liberties cases and 72% of the time for economics cases during this time frame. This project examines how accurately the personal attributes model developed by Tate can be replicated at the state level, specifically with the Minnesota Supreme Court from 2005 to early November 2007, as well as exploring the difficulties in reproducing this study and offering modifications to the model that would help make the study more applicable to predicting judicial liberalism at the state supreme court level.

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**Presenter:** Talia Earle  
**Project Advisor:** Julia Dabbs (Art History)  
**Title:** Marie Antoinette: A Deserving Victim?  
**Type of presentation (Oral / Poster):** Oral  
John Q. Imholte Hall, Room #111, 2:55 p.m.

**Abstract:**

In this presentation I will be analyzing three contemporary portraits of Queen Marie Antoinette of France. Specifically, the works will be by Jacques Fabien Gautier d'Agoty, Louis Aguste-Brun, and Elisabeth Vigee-Lebrun. I will be examining them through visual, iconographic, and socio-historical analysis. In the art history field, this is something that has not been done before. I hope to shed light on the fact that after Marie Antoinette produced a male heir, her portraits became more controversial and the deteriorating public opinion of her was justified. They still thought of her as a frivolous and disinterested queen, through her excessive spending and ignorance of events that were happening to her public. Although she did try to make her public image more positive with her portraits, the damage was irreversible.

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**Presenter:** Sarah C. Estep  
**Project Advisor:** Jennifer Rothchild (Sociology)  
**Title:** Adoption and Families: The Codes of Silence in the 1950s and 1960s  
**Type of presentation (Oral / Poster):** Oral  
John Q. Imholte Hall, Room #202, 2:55 p.m.

**Abstract:**

In the decades between World War II and the decision of Roe v. Wade, the issue of adoption affected many young women and their families. Cultural norms and predominant family values in America at that time compelled many unwed young women to believe they should not keep their children to raise as their own. Belief systems and social work practices encouraged keeping unwed pregnancies and adoptions confidential and concealed from public awareness. In other words, societal beliefs and practices largely shrouded adoption in secrecy. The cultural practices of this time not only affected all of those involved in the adoptions and social work, but also created perspectives on adoption that shaped the future of adoption. This study is a theoretical analysis of adoptions in mainstream American society during the time period of the 1950s to the 1970s. Specifically, this study argues that two sociological paradigms used together provide the best avenue to understand the secrecy surrounding so many adoptions during this time period: Various forms of the conflict paradigm must be applied to understand the dynamics of the family members involved and structural functional paradigm to explore the role adoption played with society. Analyzing adoptions during this time period with these particular theoretical frameworks gives us the best lens to understand the way that individuals operated under these circumstances. The debates about sealed adoption records continue today, and by analyzing the past issues in this way, we can better understand the repercussions those decisions have today.

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**Presenter:** Emma Cole and Aaron St. Aubin  
**Project Advisor:** Leslie Meek (Psychology)  
**Title:** Effects of Prenatal Stress on the Amount of Care Given to Newborn Mice  
**Type of presentation (Oral / Poster):** Poster

**Abstract:**

Research has shown that prenatal stress has many effects, including efficiencies in learning and maturation, however, there has been little research to show how mothers react to stressed pups. Our experiment sought to investigate whether or not dams mothered stressed pups differently than non-stressed pups. Thirty dams mated with thirty males. Ten dams were subject to different kinds of stress, including loud noise, bright lights, and handling for forty-five minutes, three times a day. One week after the dams gave birth and there were enough non-stressed and stressed pups, they were cross-fostered. Five non-stressed dams received eight non-stressed pups each. Five non-stressed dams received eight stressed pups each. Three days later the dams and pups were videotaped for two hours each during the night. From each video we calculated the amount of time the dam spent in the nest. The results from the calculations supported the hypothesis that non-stressed dams would spend significantly less time with stressed pups than with non-stressed pups.

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**Presenter:** Julie Fox and Alexandra Pagel  
**Project Advisor:** Van Gooch (Biology)  
**Title:** Circadian Rhythm Promoters for an Optimized Bioluminescent Gene in *Neurospora crassa*.  
**Type of presentation (Oral / Poster):** Poster

**Abstract:**

Recently, the optimized firefly bioluminescent gene, luciferase, was inserted into the mold *Neurospora crassa*. This bioluminescence was used to monitor the circadian rhythms of *Neurospora* which, in this case, correspond to the rhythm of spore formation. The success of inserting luciferase encouraged us to explore the use of other circadian regulated promoters to control this luciferase reporter. Six new promoter-luciferase constructs were successfully created and studied in *Neurospora*. These clock-controlled genes were chosen based on their underlying biology and so that different peak times of their corresponding mRNA accumulation are represented. The circadian rhythms and bioluminescent outputs of these promoter-luciferase systems seem to correspondingly reflect the function of the individual clock genes. For example, two of the reporters displayed high amplitudes of bioluminescence and appeared to be extremely light responsive. In addition, one particular promoter-luciferase construct only expressed circadian rhythms in one of the two mating types (genders), which is something not previously seen in *Neurospora*. Furthermore, close-up time-lapse video was collected of the various constructs to monitor their mycelial growth and bioluminescent expression. These new bioluminescent constructs may advance our understanding of the molecular mechanisms underlying these, and others, clock-controlled genes.

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## 2008 Undergraduate Research Symposium

**Presenter:** Megan Carlson

**Project Advisor:** Jamey Jones and Jim Cotter (Geology)

**Title: Reconstruction of the Pre-Glacial Late Paleozoic Landscape of the Witmarsum Area, Parana State, Brazil using GIS**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Mapping and the analysis of glacial features of the Late Paleozoic Itararé Subgroup; Witmarsum area, Paraná State, Brazil; indicates multiple advances of the Paraná Glacial Lobe into the southeastern portion of the Paraná Basin. Striae on bedrock (Devonian Furnas Formation) and soft sediment glacial furrows on multiple substratum in the Itararé Subgroup (Carboniferous) suggest that ice flow directions varied both geographically and temporally. The goal of this project was to determine the influence of pre-glacial topography on Late Paleozoic glacial flow and to reconstruct the pre-glacial landscape. For this study, exposures of the pre-glacial bedrock surface and stratigraphic horizons within the Itararé Subgroup were located, described and elevations were recorded. If glacially sculpted, elongate features (striae or furrows) were present they were described and their orientations were measured. The data collected was then entered into a database format and maps showing striae and furrow location and directions were generated using ArcGIS software. Additionally a triangulated irregular network (TIN) that models the pre-glacial topography was generated using the modern elevation values for each of the pre-glacial outcrop locations. Evaluation of the reconstruction of the pre-glacial topography of the Witmarsum area indicates a topographic low (possibly a valley or fjord) was present in the area. Maps of striae and furrow trends suggests that this topographic low may have influenced glacial flow during the Itararé Subgroup glacial advances. However, more data are needed to increase the resolution of the geodatabase and maps created and to determine the magnitude of offset by post-glacial tectonism.

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**Presenter:** Alex Clausen

**Project Advisor:** D. Christopher Brooks (Political Science)

**Title: Democracy Interrupted: Toward a Theory of Failed Transitions**

**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Comparative literature on third and fourth wave democratic transitions has been preoccupied with the task of explaining how democratization occurs and identifying what positive factors contribute to the consolidation of democratic institutions and practices. As a result of our efforts, we understand better the relationship between economic development and democracy, the roles of elites in processes from regime collapse to consolidation, the relationship of political institutions to political culture, and how important the resolution of stateness issues are for successful democratization. Conversely, we know very little about why and how attempts to democratize fail. The study of failed transitions is generally framed in the context of the absence of a situation advantageous to democratization; that is, comparativists have tended to view the failure of democratization primarily as a failure to realize positive prescriptions for the successful establishment of a democracy. This single-perspective approach has left the comparative study of democratization with a significantly under-theorized feature. This project is a first step towards rectifying that theoretical lacuna by identifying theoretical variables thought to undermine democratic transitions, such as petrochemical wealth, ethnic and sectarian conflicts, stateness issues, levels of development and modernization, a lack of horizontal accountability, and exogenous influences, among others. Employing qualitative and Boolean methodologies, we systematically compare these variables across cases of failed democratization from the third and fourth waves in order to identify what, if any, patterns persist. The inclusion of those variables thought to facilitate democratization with factors that hinder democratization should afford us the opportunity to develop a more comprehensive and accurate model of transitology.

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## 2008 Undergraduate Research Symposium

**Presenter:** Nastassia Fjestad

**Project Advisor:** Julia Dabbs (Art History)

**Title: Velazquez's Dwarfs: A Study of Sensitivity**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #111, 3:20 p.m.

**Abstract:**

The art of the Baroque period is known for its intense naturalism and drama. Artists were encouraged to produce art that touched viewers deeply and communicated messages without words. Above all, beautiful images were revered. Yet, amongst all this beauty, there was ugliness present in the great aristocracies of Europe. This ugliness manifested itself in the form of "the others," as scholars often refer to them. These physically and mentally impaired individuals became the objects of intense curiosity. With a growing sense of scientific and humanist curiosity many of these human oddities were recorded. One of the most commonly collected others was the dwarf. In fact, it was considered customary to employ dwarfs as entertainers at court. They were often subjected to severe treatment and social stigma. The portrayals of dwarfs in this period often reflect this with one rather notable exception: Diego Velazquez, court painter of the Spanish King, Phillip IV. A large majority of art historians see Velazquez as sympathetic to his dwarf subjects. Though there is no way to definitively prove that Velazquez was in reality sympathetic to his subjects as he left no journals or accounts of his feelings, there is a great deal of visual evidence to be found in his portraits of Francisco Lezcano, Sebastian de Morra, and "El Primo." Along with other paintings of the time period, these paintings will be analyzed through both a historical and visual lens to illustrate that Velazquez's portrayals were particularly sensitive in light of contemporary Baroque portrayals of dwarfs.

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**Presenter:** Katrina L. Flaig

**Project Advisor:** Jimmy Schryver (Art History)

**Title: Greek Myth-History: The Cultural Movement from Ancient Reality to Ancient Myth**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room 101, 3:20 p.m.

**Abstract:**

The *Iliad* and the *Odyssey* have been staples in western society to such a degree that nineteenth century Classical scholars, such as Heinrich Schliemann, used the epics as a window into the ancient Aegean world. Schliemann, an amateur archaeologist, used the *Iliad* to find Troy, a city he is also criticized for partially destroying through his investigations. The goal of my presentation is to present my research into this window as to the location of where reality meets myth. Where is the everyday cultural evidence from the ancient Aegean located in Homer's epics? How do these pieces match with the physical evidence of various Classical archaeological sites located in and around Greece? Through this line of questioning, it is my aim to explore the relationship between the physical artifacts from the Bronze Age (3000-1200 BCE) through the Iron Age (1200-1000 BCE) in the ancient Aegean, and the myths which formed around them.

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**Presenter:** Nicole Fontanille  
**Project Advisor:** Jeff Ratliff-Crain (Psychology)  
**Title:** **An Evolutionary Psychological Approach to Addiction**  
**Type of presentation** (Oral / Poster): Oral  
John Q. Imholte Hall, Room #109, 3:20 p.m.

**Abstract:**

Many theories and models of addiction have been developed, but none have attained broad, long-lasting acceptance in the psychological community. In my present review on addiction I examined a broader and more applicable theory of addiction, focusing on the neurobiology of addiction and psychotropic drug use of early hominids. Researching the ultimate causation of addiction rather than the proximate shifts emphasis away from how addiction develops, to answer a more important question of why addiction develops. The goal in applying an evolutionary psychological perspective to the area of addiction is to develop a new approach and understanding of an old disease. A great deal of current research suggests the possibility of addiction having evolutionarily important biological roots. Understanding what many have coined a psychological "disease" from a biological perspective may prove beneficial in developing new models and therapies not otherwise considered.

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**Presenter:** Ruth Hamberg  
**Project Advisor:** Jacqueline Alvarez (Spanish)  
**Title:** **Ritual and Identity in *El Entenado* and *Alvar Nuñez Cabeza de Vaca***  
**Type of presentation** (Oral / Poster): Oral  
John Q. Imholte Hall, Room #101, 4:35 p.m.

**Abstract:**

This paper explores the relationship between ritual and identity in Juan José Saer's novel *El Entenado* and the film *Alvar Nuñez Cabeza de Vaca*, both works focused in the interactions between the Spanish conquistadores and the indigenous peoples of the Americas. First, I examine the processes through which group identity is formed, giving special attention to the relevant factors of ethnocentrism and inter-group conflict. Next, I explore the nature of identity and the results of interaction between groups and individuals. Rituals both create and are created by identity; they serve to unite, create connections within and between groups, and between groups and individuals. They may also serve to divide, aiding the formation of identity in opposition to that of other groups. They have the power to impose the identity of a group onto another group or place, as in the Spanish conquest of the Americas, and to impose the identity of a group onto an individual, as in the case of *Alvar Nuñez Cabeza de Vaca*. As collective experiences and powerful agents of culture, rituals are necessary in order to form, impose and, ultimately, maintain an identity.

**Presenter:** Maria Brun  
**Project Advisor:** Arne Kildegaard (Economics)  
**Title:** **Biomass: What if? The Economics of Substituting Biomass for Natural Gas**  
**Type of presentation** (Oral / Poster): Poster

**Abstract:**

The University of Minnesota, Morris biomass plant is designed to reduce the campus' natural gas usage and is a leap forward towards making the campus carbon neutral. But its purpose reaches beyond making the campus more environmentally friendly; it is an experiment within the entirety of the green revolution of technology that could, in theory, reduce the human impact on the environment. It also represents one potential solution to the growing world energy crisis and the struggle over oil and other energy resources. A key component to the experiment thus is to test the biomass plant's potential for more widespread application and use. This ultimately depends on more than just the success or failure of the technology, but on its financial practicality. This project is designed to be a "what if" scenario, assessing the economic costs and benefits as well as the raw savings the University of Minnesota, Morris, would have seen had the biomass plant been up and running for the 2006-2007 fiscal year, under three different pricing and contracting scenarios. Further, the project examines the ethical considerations of using biomass as an energy source.

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**Presenter:** Brenna Burns  
**Project Advisor:** Peter Wyckoff (Biology)  
**Title:** **Invasive Earthworms in West Central Minnesota Forests**  
**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Pleistocene glaciations drove all North American earthworms out of Minnesota. The earthworms present today are of Eurasian origin, brought over since European settlement began in the 1800s. Eurasian earthworms are spreading throughout Minnesota, spread via horticulture, agriculture, logging, fishing, compost material, leaves, mulch, and tire treads. Many forests in Minnesota are just beginning to be surveyed for the presence of earthworms, but it has become apparent that invasive earthworms have negative effects on soils and native vegetation. Recent studies have found a possible positive correlation between Eurasian earthworms and the invasive plant *Rhamnus cathartica* (European buckthorn). We surveyed invasive earthworms in various plots at three West Central Minnesota forests. To survey the earthworms we used the hot mustard liquid extraction method. Earthworms collected in the field were brought back to the lab and characterized to species. We compared results to two prior local surveys, and found that local species and abundances are reasonably steady. At one of our sites, we surveyed the number and basal area of buckthorn trees and compared these with the earthworm data. The results showed a negative correlation between earthworms and buckthorn. These results are consistent with work done locally by UMM students in 2005 and 2006, but stand in contrast to expected patterns based on the published literature.



**Poster Presentations**  
**Science Atrium**  
**5:00 – 6:30 p.m.**

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**Presenter:** Erik Baker  
**Project Advisor:** Jamey Jones (Geology)  
**Title:** Age and Deformational Characteristics of the Paleoproterozoic Denny Creek Grandodiorite, Collegiate Peaks Wilderness Area, Colorado  
**Type of presentation** (Oral / Poster): Poster

**Abstract:**

New field mapping and geochronology help to constrain the age and tectonic significance of Paleoproterozoic (ca. 1.65 billion year ago) magmatism and deformation in exposures in the Collegiate Peaks Wilderness Area, central Colorado. This study focused on the Denny Creek pluton, a widely exposed igneous intrusive unit dominated by medium- to coarse-grained granodiorite with feldspar megacrysts up to 3 cm in size. U-Pb zircon geochronology indicates that granodiorite crystallized ca. 1656 million year ago, and the pluton is cut by granodiorite of the Paleoproterozoic Kroenke pluton and numerous Mesoproterozoic granitic plutons. Exposures of Denny Creek granodiorite were observed to contain a solid-state foliation defined by biotite and recrystallized and elongated quartz and feldspar phenocrysts. However, exposures of Denny Creek granodiorite along Clear Creek preserve a km-thick high strain zone characterized by a penetrative, subvertical mylonitic foliation that strikes north–northwest (avg. 349/81SW). Asymmetric shear fabrics are locally present, but extensive boudinage of cm-thick mica-poor layers and folding of cross-cutting veins suggest that flattening strain was dominant during deformation. High-strain rocks are primarily found within a few kilometers of the contact between the Denny Creek and Kroenke plutons. This spatial association, combined with the observation that the orientation of mylonitic fabrics is subparallel to the mapped pluton contact, suggests that deformation occurred locally during emplacement of the Kroenke pluton.

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**Presenter:** Jason Bonde  
**Project Advisor:** Gordon McIntosh (Physics)  
**Title:** The Characteristic Lifetime of Mira's SiO Maser Features  
**Type of presentation** (Oral / Poster): Poster

**Abstract:**

Silicon monoxide (SiO) maser spectra of the long period variable star Mira have been observed for over five stellar periods in the  $v = 1, J = 1 - 0$  transition and a characteristic maser lifetime has been extracted. It has been suggested that the maser emissions of long period variables are reset at a certain phase of the star by the passage of a shock wave through the circumstellar region. To test this suggestion the linear polarization parameters of the SiO emission were extracted and a time series cross correlation of the parameters was performed. A characteristic lifetime of 470 days was determined. This lifetime is considerably longer than Mira's optical variation period of 332 days and suggests that the masers are not reset at a particular stellar phase.

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**Presenter:** Elisabeth Hampton  
**Project Advisor:** Julie Pelletier (Anthropology)  
**Title:** Cultural Exploitation through Popular Media: An Analysis of *Last One Standing*  
**Type of presentation** (Oral / Poster): Oral  
 John Q. Imholte Hall, Room #109, 2:30 p.m.

**Abstract:**

My paper examines the anthropological politics of the “lens” through which we view the exotic Other, and the effects of colonialism and the commodification of culture. My research is a content analysis of the recent reality television show *Last One Standing*, where six European athletes compete in the traditional sports and games of six cultures around the world. Reality television shows have taken the place of the sensationalized cultural performances of the last century, such as Buffalo Bill's Wild West Show. This popular trend has brought anthropology full circle in a very interesting way, by democratizing “armchair anthropology,” making it available to a vastly larger audience through television. My research shows that reality television, by taking and shaping images of Other cultures, has the power to commodify culture and to exert a dominant force on cultural representation, thereby participating in the ongoing process of colonialism. My argument and research supports the central thesis that colonialism is not “post” but continues to work, in part, through entertainment and educational media, such as reality television. *Last One Standing* demonstrates the exoticization and commodification of Other cultures, the implications of which may be lost on the viewer who is seduced by the beautiful settings and unaware of stereotypical representations of static Other cultures.

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**Presenter:** LeAnn Hedquist  
**Project Advisor:** Paula O'Loughlin (Political Science)  
**Title:** How Late Is too Late? Do Presidential Candidates' Dates of Declaration Influence the Likelihood of Winning the Nomination?  
**Type of presentation** (Oral / Poster): Oral  
 John Q. Imholte Hall, Room #111, 2:30 p.m.

**Abstract:**

This research examines the relationship between presidential candidates' dates of declaration and winning the nomination as well as success in the New Hampshire Primary. Using Republican and Democratic candidates from 1972-2004, logistic regression analysis predicts relationships between the dependent variables winning the nomination, winning the New Hampshire Primary, and top five finish in the New Hampshire Primary and independent variables date of announcement, coded date of announcement, year. Tests are run on three data sets, Democrats only, Republicans only, and all candidates together, and using each of the three dependent variables separately. The results show that Republican candidates produce a negative relationship between date of announcement and winning the nomination while Democrats show a nearly significant positive relationship when tested with other variables. Winning the New Hampshire primary increases candidates' likelihood of winning the nomination in both parties in all tests.

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## 2008 Undergraduate Research Symposium

**Presenter:** Brittany Jablonsky

**Project Advisor:** Jennifer Rothchild (Sociology)

**Title: Body Image, Food Attitudes, and Eating Habits of Former High School Wrestlers**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #203, 4:10 p.m.

**Abstract:**

This qualitative study explores how masculinity is socially constructed in the context of sports, particularly masculinity's influence on body image, food attitudes, and eating habits. This research project centers on the consequences of socially accepted disordered eating later in life for former high school wrestlers. High school wrestlers often use unhealthy eating and exercise practices in order to "cut weight," that is, lose several pounds to qualify for a lower weight class and gain a competitive advantage over their opponents (Kinningham and Gorenflo 2001; Oppliger et al. 1993). There is evidence that the weight fluctuation between the wrestling season and the off-season, generally referred to as "weight cycling," is physically harmful to these athletes (Pihl and Jürimäe 2001; Prouteau et al. 2006; Saarni et al. 2006); despite this, it is often still encouraged by the athletes' peers (e.g., teammates) and authority figures (e.g., coaches or parents). In addition, these early messages about food, eating, exercise, and bodies often have an effect on former wrestlers' eating and exercise habits and weight later in life (Saarni et al. 2006). I will conduct 14-18 life history interviews with men who wrestled in high school, paying close attention to connections between the messages of masculinity that high school wrestlers receive from family members, peers, and authority figures and former wrestlers' body image, food attitudes, and eating habits later in life. Studying gender in this localized context will help us better understand the implications of hegemonic masculinity for broader society.

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**Presenter:** Bailey Jelle

**Project Advisor:** James Schryver (Art History)

**Title: The Gigantomachy of the Pergamon Altar**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #111, 4:10 p.m.

**Abstract:**

The presentation will focus on the unique and intricate incorporation of Classical Greek elements into the Hellenistic Baroque friezes of the Pergamon Altar of Zeus and their symbolic meaning. The Hellenistic period of Ancient Greece produced scores of fine works of art that included highly exaggerated emotional and physical states as common themes. In the ancient city of Pergamon (modern day Bergama, Turkey), the arts thrived on these themes and the city became well known for its interest in the sub-category of Hellenistic style known as Hellenistic Baroque. Pergamene artists pushed the boundaries of Hellenistic art even further with their Baroque style, adding more exaggerated elements with an undertone of theatrics. One of the greatest examples of this trend was created in the form of an altar on the Pergamene Acropolis. The Great Altar of Zeus was built between 180 and 150 B.C. to commemorate Pergamon's power. Even though the altar itself was monumental, it is the friezes, located on the external sides of the altar, which make it legendary. The friezes depict the theme of the epic battle between the Olympic gods and their rivals, the giants. This was a popular theme in Ancient Greek art, meant to embody the triumph of Greek power over barbarian chaos, and it is referred to as Gigantomachy. The Hellenistic Baroque elements create an atmosphere of emotion that allows the viewer to feel as though they are actually witnessing this event before their eyes. This high level of emotion and theatricality set it apart from works of the past as well its contemporaries. However, close examinations of the altar have revealed uncanny similarities to Classical sculpture, specifically ties to the Parthenon.

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## 2008 Undergraduate Research Symposium

**Presenter:** Eric Williams

**Project Advisor:** Jacqueline Alvarez (Spanish)

**Title: Satirical Revision in Hispanic Literature**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #203, 2:55 p.m.

**Abstract:**

This paper explores how satire was used to reexamine the often violent truth behind Latin America's colonial past. It compares modern and pre-modern Latin American writer's works, such as Agustin Cuzani's *Los indios estaban cabreros* and Arenas's *La Loma del Angel*, with satirists of the Classical Greek and Roman times. Satire is used to expose and unmask violent, but often hidden and unspoken truths within a society. During the modern and pre-modern times in Latin America, satire has been used to reveal and reexamine the glossed over truth behind her colonial past. However, this method of unmasking hidden truths with satire is not a new concept nor is it unique to Latin America. History shows that the classical Greco-Roman world was no stranger to this confrontational art, and that universal satirical themes can be found in almost any satirical work. In this present work, the more obscure satire in the Latin American world will be contrasted with established Classical thinkers, with an emphasis on their universal similarities.

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## 2008 Undergraduate Research Symposium

**Presenter:** Amanda Warcken

**Project Advisor:** Mary Elizabeth Bezanson (Speech Communication)

**Title:** **The Right to Food Fight?: A Rhetorical Analysis of a Cartoon Controversy and the Free Speech**

**Implications of Censorship in University Newspapers**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #217, 3:20 p.m.

**Abstract:**

In September of 2007, senior Grant Woolard was fired from the University of Virginia's daily newspaper for his cartoon entitled "Ethiopian Food Fight." Though it was intended to be satirical, dissenters felt the cartoon was racist, demeaning, and warranted the creator's prompt removal. The severity of the situation surrounding this one cartoon prompts a number of questions: if Woolard's intent for this cartoon was to raise awareness of an international problem, how and why was the cartoon misinterpreted by the newspaper's readership? Does Woolard's forced resignation from the paper violate his First Amendment rights? Finally, when it comes to censoring content in college newspapers, who has the final word? To answer these questions, a three-part analysis will be performed: first, a rhetorical analysis of the controversial cartoon using Medhurst and Desousa's Taxonomy of Graphic Discourse, which applies the five classical canons of rhetoric (invention, disposition, style, memory, and presentation) to the modern-day editorial cartoon; second, two legal analyses of the Supreme Court cases, *Papish v. Board of Curators of The University of Missouri* (1973) and *Board of Regents of the University of Wisconsin System v. Southworth* (2000). These cases directly concern censorship and freedom of expression in a university setting. Finally, the rhetorical and legal analyses will be combined to evaluate the University of Virginia's response to the Woolard cartoon with special attention paid to the constitutionality of that response.

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**Presenter:** Kristen Wendlandt

**Project Advisor:** Julia Dabbs (Art History)

**Title:** ***Pinkie and Blue Boy: Behind the Kitsch***

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #111, 4:35 p.m.

**Abstract:**

My paper analyzes the histories of two Old Master paintings, Thomas Gainsborough's *Blue Boy* (ca. 1770) and Sir Thomas Lawrence's *Pinkie* (1794). These two paintings were not intended to be a pair, but they are commonly portrayed side by side. They are so popular that they have also spawned a lot of kitsch, which refers to art that appeals to popular or lowbrow taste and is not always of the highest craftsmanship (such as a dime store knick-knack). These two paintings' popularity and coupling has not been previously addressed in art historical literature. By analyzing the two paintings using visual analysis, background information on the artists, the historical backgrounds, and the subject matter, I propose that Gainsborough's *Blue Boy* and Lawrence's *Pinkie* are a popular couple because they are paintings that are easy to comprehend for the general viewer, they complement each other well, and because they are kitsch in themselves.

## 2008 Undergraduate Research Symposium

**Presenter:** David Johnson

**Project Advisor:** Mary Elizabeth Bezanson (Speech Communications)

**Title:** **More Than Mere Metaphors: A Rhetorical Analysis of Al Gore's Push to Adopt Stricter Nuclear Policies**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room 217, 2:55 p.m.

**Abstract:**

Al Gore, former Vice President of the United States and recent Nobel Prize recipient, has always been a strong advocate for protecting the environment. He has also given dozens of speeches before, during, and after his years in office. In 1997, he spoke as part of the U.S.-Ukraine Bi-national Commission in order to persuade other world leaders to adopt stricter nuclear policies. This will be a content analysis of that speech using a Neo-Aristotelian (Neo-classical) critique. The three canons of the Classical Model critiqued in this analysis are Invention, Arrangement, and Style, with an emphasis on the canon of Style. Because of Gore's creative use of metaphor, as well as his obviously premeditated word choices and arrangement, other critiques can be used to further analyze this speech. Foss' Metaphoric Critique works nicely to assess not only the impact of the metaphors on the audience, but also Gore's intended impact on the audience. This analysis will also include a Cluster Criticism, or a systematic overview of the speech highlighting important key terms and identifying other words Gore relates to those key terms. By using that technique, I should be able to identify Gore's underlying world view.

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**Presenter:** Kristi Kehrwald

**Project Advisor:** Paula O'Loughlin (Political Science)

**Title:** **Dinner Party Faux Pas: Religious Cues in Party Platforms 1920-2004**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #109, 2:55 p.m.

**Abstract:**

This paper will examine the interplay between religion and politics by studying religious cues in party platforms-partisan language from primary sources. As parties and candidates vie for the presidency in election years like this one, much attention and care is taken in presenting the place of religion in politics. Current research on the relationship between religion and politics has focused upon the heavy involvement of conservative Christian groups-such as Jerry Falwell's well known success with the Moral Majority movement. While many scholars conflict in their understanding of the beginning of the relationship between religion and politics, I have used one of the earliest dates for my research-as according to Bolce and De Maio the formal involvement of religion in partisan politics began slightly before the Scopes trial in the United States. This study uses both quantitative and qualitative analysis to trace the frequency of religious cues in recent American political history through Republican and Democratic Party platforms from 1920 to 2004 (most recent platform). The frequencies of religious cues, as well as the contextual analysis of religious language have led to understanding of the bipartisan relationship with religion, and the use of these cues in party statements relating to issues such as foreign relations, traditional family values and social programs.

## 2008 Undergraduate Research Symposium

**Presenter:** Justin Kemppainen

**Project Advisor:** Siobhan Bremer (Theatre)

**Title:** **Auditory Odyssey**

**Type of presentation** (Oral / Poster): Performance

John Q. Imholte Hall, Room #202, 2:30 p.m.

**Abstract:**

Typically, the world of theatre and acting is seen as a blending of body and voice to create a character. However, certain forms of entertainment do not require a physical body on stage (or on the TV Screen). In this case, the voice has to serve as the nuance and individuality of the character. This is my interest when it comes to theatre, and thus I will explore the use of my own voice in a unique performance. I will research and learn how to perform a number of accents. I will also research and experiment with my voice to emulate certain stock characters (like a surfer, or a country lawyer), and other various characters (Gollum, Robot Santa) and perform these as well. This performance, although involving a great number of individual quotations and lines, is made cohesive through an original script. Everything is carried along by the “narrator” character (another voice) who deals with the transitions between accents and characters.

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**Presenter:** Melinda Kernik

**Project Advisor:** Wilbert Ahern (History)

**Title:** **More than Just Demographics: The Indian School Service Roster as a Tool for Challenging Historical Models**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #101, 3:45 p.m.

**Abstract:**

The Indian School Service (ISS) experienced significant changes in its organization and objectives, often paralleling discussion of the national debate of how best to assimilate the native population into the rest of society. The desirability of a stable versus interchangeable staff, type of school, and distance between schools and home reservations favored by the service are examples of issues involved in this debate. The Indian School Service employee rosters found within the Annual Report of the Commissioner of Indian Affairs have long been available for studying these changes but were difficult to take full advantage due to their size and microfilm format. Current efforts in digitizing these records offer new possibilities for studying demographic patterns among employees over time. Linking between the 1894 and 1900 lists of employees has provided an estimate of turnover rate as well as a set of individuals distinguishable by their continuity within the service. The ability to quickly separate and analyze subsets allows much easier investigation of questions. What set these individuals apart from other employees? Especially regarding native employees, is duration of employment linked to a measurable improvement of position and salary? How does this data correspond with existing suggestions of the motivations of ISS employees? This project hopes, through examining this smaller subset, to demonstrate the value of the increased access to ISS employee rosters in confirming and challenging historical models of philosophical attitudes toward and bureaucratic management of the school service.

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## 2008 Undergraduate Research Symposium

**Presenter:** Kim Ukura

**Project Advisor:** Tisha Turk (English)

**Title:** **Robinson Crusoe’s Failed Spiritual Autobiography**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #114, 3:45 p.m.

**Abstract:**

Daniel Defoe’s *Robinson Crusoe*, considered by many to be the first novel, has garnered much critical attention and cultural interpretation. Popular adaptations of the novel focus almost exclusively on the story of a man trapped alone on an island who is rescued after many exciting adventures – a classic travel narrative story. Academic scholarship on the novel also privileges the travel narrative at the expense of the spiritual autobiography, an equally important literary tradition Defoe drew on when crafting the novel. My research project seeks to explain the ways that Defoe was influenced by the spiritual autobiography, and why our current memory of *Robinson Crusoe* ignores this tradition. To answer these questions I first researched the history and conventions of the spiritual autobiography tradition. Then, I examined the use of these conventions by Defoe in crafting the novel as a whole and how readers during Defoe’s time would have responded to the text as a fictional spiritual autobiography. My argument is that modern interpretations of the novel ignore this tradition because *Robinson Crusoe* is not well-executed as a spiritual autobiography, which makes understanding it in that context more complicated than most readers are willing to consider.

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**Presenter:** Kim Ukura

**Project Advisor:** Paula O’Loughlin and Barbara Burke (Political Science & Speech Communication)

**Title:** **Expanding the Scope of Public Journalism**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #112, 4:35 p.m.

**Abstract:**

My research project seeks to understand the ways both literary journalism and campaign journalism have developed historically, and how they have diverged as different forms. The public journalism movement is one that seeks to treat readers and community members as participants in rather than just as receivers of the news. Further, advocates of public journalism believe that journalism has an obligation to the public that extends beyond just repeating the news and towards making news useful for consumers. Most often, public journalism philosophies and practices find themselves utilized in the opinion and editorial sections of newspapers through town meetings or education programs. However, this conception of public journalism is limited, and newer types of journalistic endeavors should be considered as developing forms of public journalism. Since the 1960s and 70s, both literary journalism and campaign journalism have evolved rapidly; however, both forms have historical roots going back as far as the 1860s. I argue that by considering the historical development and modern techniques of these forms through the lens of public journalism, we can gain a better understanding of how these forms work and how they can continue to improve.

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## 2008 Undergraduate Research Symposium

**Presenter:** Nathan Swanson

**Project Advisor:** Paula O'Loughlin (Political Science)

**Title:** **The Hagel Effect: Do Party Constituencies Sway Incumbent Senators' Decision to Retire?**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #112, 4:10 p.m.

**Abstract:**

This paper builds on previous political science research on “strategic retirements” from the U.S. Congress. This area of the literature posits that politicians are just as strategic in their decision to seek re-election as they are in crafting campaign tactics to win their seats initially. The earliest research studied retirement decisions in the context of the election year economy, presidential popularity, and perceptions of self-efficacy in government (Jacobson and Kernell 1981). Wolak (2007) extended the focus by testing whether public opinion affects aggregate retirement rates. This paper furthers Wolak’s question by studying if senators consider their support within their party constituency when preparing for re-election. This study examines U.S. Senate primary campaigns from 1972-2006 which include incumbents seeking re-nomination by their party. The support of the party constituency is represented by the senator’s rating by the American Conservative Union (ACU) from the year preceding the primary and the year at the mid-point of the incumbent’s term. If the senator perceives significant opposition within their party as signified by a substantial change in their ACU rating, the incumbent would choose to not seek re-election and thereby avoid an embarrassing primary campaign that resulting in defeat. The results of the data analysis indicate the absence of a significant relationship between the decision to seek re-election and the senator’s ACU rating. Subsequent logistic regressions, however, reveal a significant relationship between the senator’s most recent general election and their ACU rating at the mid-point of their term.

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**Presenter:** Rachel Thole

**Project Advisor:** Joel Eisinger (Art History)

**Title:** **Odilon Redon - Reflections of French Society in the Nineteenth Century**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #203, 4:35 p.m.

**Abstract:**

Odilon Redon was a French Symbolist artist of the late nineteenth century who used his art, particularly his lithography, to consider some of the most advanced issues in the scientific and metaphysical discussions of his time. His first three lithographic albums, published between 1879 and 1883, demonstrate a clear understanding of psychology, metaphysics, and biology. Concerning psychology, Redon examined the unconscious and its effects on an individual in his first album, *In The Dream* (1879). In *To Edgar Poe* (1882), he demonstrated the new level of attention being given to the possibility of extra-terrestrial life and the metaphysical questions that this possibility raised. Redon's third album, *The Origins* (1883), is shaped by Charles Darwin's theory of evolution. Together, these three collections of lithography present a detailed record of this exciting and revolutionary period in French thought as filtered through the imagination of a penetrating and original artistic mind.

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## 2008 Undergraduate Research Symposium

**Presenter:** April Kummrow

**Project Advisor:** Tisha Turk (English)

**Title:** **Writing without Authority**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #112, 3:20 p.m.

**Abstract:**

Discussions within composition studies about ways to help students write with authority often focus on allowing and encouraging students to write about a nonacademic subject on which they are already an authority. The assumption is that high school and college students who write about a subject in which they are already an expert will automatically write from a position of authority and will then be able to transfer that authority to other, more academic, writing. My paper examines this solution and tests its practical implementation and success through a case study of a discourse community of music fans interacting on a social networking website. My analysis of forum transcripts confirms that group members’ rhetorical strategies demonstrate their knowledge of and expertise on this nonacademic subject. I argue that although these students possess authority, they still fail to write with authority and would not transfer their authority in this subject to more scholarly writing. Although students would be more engaged and interested in writing about a nonacademic topic they like, interest and expertise in a subject is irrelevant to the issue of writing with authority because students of this age group fundamentally misunderstand the nature of knowledge as defined by composition scholars Penrose and Geisler. Until students learn to see knowledge as constructed, they will not be able to write with authority, regardless of how much they like the subject on which they are writing.

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**Presenter:** Whitney Lawrence

**Project Advisor:** Becca Gercken (English)

**Title:** **Negotiating Narratives: Audience and Adaptation in American Indian Literature**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #114, 3:20 p.m.

**Abstract:**

In this presentation I explore the role of audience in American Indian Literature in Louise Erdrich's *Tracks* and Thomas King's *Green Grass, Running Water* by examining who the audience is and how different readers are interpreting, experiencing and engaging with these texts. Both novels are constructed to create an experience of either marginality or inclusion for readers from both ethnic groups. Erdrich and King construct their experiences of marginality with the physical structure of their narratives as well as through the characters that occupy their pages. Erdrich creates an encoded experience of marginality with sets or series of inconsistent cultural coding for both white and Native readers so that the same conclusions can logically be drawn by both readers. King differently negotiates the space between his Euro-American and Native audience. King interrogates the assumption that the subjugated culture is the only participant in colonization that experiences adaptation. King confronts Euro-American epistemologies and creates a Native space by producing characters and a text who colonize the dominate cultures creation stories, understanding of time and space, and creates an experience of marginality for the Euro-American reader and inclusion for the American Indian reader. Gaining an awareness of how Native authors are working to negotiate the spaces between their audiences is necessary to understanding how the process of colonization is being confronted in Native texts.

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## 2008 Undergraduate Research Symposium

**Presenter:** Whitney Lawrence

**Project Advisor:** Wilbert Ahern (History)

**Title:** **White Earth Reservation: Generational and Gendered Responses to Assimilation**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #109, 4:35 p.m.

**Abstract:**

My presentation focuses on White Earth Reservation and gendered reactions to assimilation attempts made during the Allotment Era of United State Indian Policy. I explore men and women's reactions to assimilation in order to discern through what means of resistance and adaptation men and women of White Earth reservation were able to maintain traditional roles in Anishinaabe society and how the interpretation of traditional roles varied as a result of generational experience. Men and women of all generations were able to maintain a traditional understanding of the world, although to varying degrees. Women were able to effectively maintain traditional gender roles because of the nature of both Anishinaabe and European understandings of gender roles. Men were also able to manipulate the roles made available to them by the assimilation process. However, while differences in the reactions to the assimilation experience fell along gender lines, generational and ethnic difference seem to have been larger determining factors of degree of assimilation on White Earth Reservation. The geographic make-up of the reservation as well as the factional divisions that existed on White Earth operated in a manner that allowed individuals to choose their level of assimilation and adaptation. The survival of traditional norms and continued adaptation were dependent on all sectors of society and both were integral to the survival of the Anishinaabe culture and people.

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**Presenter:** Pam Lindenberg

**Project Advisor:** Janet Schrunk Ericksen (English)

**Title:** **Beating Up Devils: A Model for Living in Cynewulf's Retelling of *Saint Juliana***

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #114, 2:55 p.m.

**Abstract:**

Stories of virgin martyrs, as a subgenre of medieval saints' lives, generally follow predictable themes and plot conventions. They tend to stress the importance of maintaining a virginal state by whatever tactics necessary, but this is not the main focus of the story of Saint Juliana, particularly in Cynewulf's Old English version. The basic plot points of the Old English poem are consistent with other female saints' lives, but my interest in Juliana lies in what separates her story from those conventions, specifically the extensive conversation between Juliana and a demon while she is imprisoned by the heathen Eleusius. The poet Cynewulf expanded this dialogue extensively, so understanding why he so valued this scene is vital to understanding the poem's appeal to both him and his Anglo-Saxon audience. The dialogue between Juliana and the demon places responsibility for the audience's souls in their own hands, provides a model for successfully protecting one's soul, and reduces the threat of evil into something manageable for the audience. By examining this central dialogue of Cynewulf's *Juliana* in relation to the theological and historical landscape in which it was written, it becomes clear that the poem provides more than a model for female sanctity, as many tales of virgin martyrs do--it promotes an active resistance to evil to protect one's soul, even if it requires manhandling a demon.

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## 2008 Undergraduate Research Symposium

**Presenter:** Caitlin Siefkes

**Project Advisor:** Julie Pelletier (Anthropology)

**Title:** **Representation and Identity in French and West African Francophone Cinema**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #217, 4:10 p.m.

**Abstract:**

The French are known for their cutting-edge work in the cinema, but their former colonies in West and North Africa have received far less recognition for their work in creating powerful films which attempt to recreate images of their cultures and of Africa by fighting against Eurocentric images of Africa. By using primary sources – French and West African Francophone films - I examine issues of neocolonialism, representation, and identity. Both French and African filmmakers have represented themselves and the other in a stereotypical manner, sometimes intentionally, sometimes not. My research addresses the representations of French and African peoples both by themselves and by the other group in the wake of the dissolution of France's formal colonial power in Africa. Despite this lack of formal political control, France still plays a large role in shaping African cinema through funding and educating directors. However, African filmmakers represent themselves, their cultures, and their countries by (re)constructing the African identities they present to the world, this time on their own terms instead of as they are perceived by others. As a cultural medium, film provides rich data for anthropological analysis significantly in the study of representation and identity.

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**Presenter:** Ashley Simpson

**Project Advisor:** Mary Elizabeth Bezanson (Speech Communications)

**Title:** **A Rhetorical Analysis of *Cinderella*: Archetype and International Versions**

**Type of presentation (Oral / Poster):** Oral

John Q. Imholte Hall, Room #217, 2:30 p.m.

**Abstract:**

This paper will not only show the shared features of archetypes and how they work rhetorically, but will go further by looking at the rhetorical construction of women in *Cinderella*. *Cinderella* is a timeless story that has occurred in various locations overtime. Most cultures have some type of variant. The goal is to see how the archetype expresses itself in other cultures. The archetype, as captured by Bruno Bettelheim, is Cinderella the French story by Charles Perrault. In order to understand the stories from a persuasive perspective, two types of rhetorical criticism will be used. Domination criticism, analyzing the rhetoric behind the words, demonstrates how the story increases or decreases domination of marginalized groups within the story. Special attention will be paid to the portrayal of women. Picture criticism, focusing of the rhetoric of the pictures, will examine how illustrations within the tales support or defuse the rhetorical message of the text. The international artifacts represent six sub areas of the world including: Europe, The Baltic, Asia, Africa, Indigenous North America, and Central/South America.

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## 2008 Undergraduate Research Symposium

**Presenter:** Reed Schmidt

**Project Advisor:** Becca Gercken (English)

**Title:** **The Necessity of a Two-Fold Trickster: Native American's Trope**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #114, 4:35 p.m.

**Abstract:**

In the Native American Oral tradition, the trickster is primarily a linguistic construct, a writing device used to interrupt narratives and provide disruptions that will thicken a story's plot. In contemporary Native Literature, it is essential that both the trickster's function as a device and his importance as a character be acknowledged. The trickster is a figure who resists what is accepted, brings plurality to our perceptions, and turns his nose at convention. The trickster not only resists colonization, but also imposed definitions and static truths: the nature of the trickster is to be transitory and subversive. In reading Thomas King's *Green Grass, Running Water*, it is essential that the reader have an understanding of the dynamics of the trickster as both a character and a device. King's anthropomorphosis of the trickster, Coyote, is a force of negation against the colonizer's mentality. Through Coyote's mimicry, distortion, and misunderstanding of the colonizers, King shows cracks in both Native and Western cultures, which invites change and reexamination of accepted truth-constructs. The trickster, by mimicking man and mocking his stories, becomes a part of man's story.

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**Presenter:** Alice Shindelar

**Project Advisor:** Wilbert Ahern (History)

**Title:** **Survival Strategies of the "Progressive" Indian on the Omaha Reservation**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #101, 4:10 p.m.

**Abstract:**

This paper focuses on the different ways in which a certain generation of Omaha Indians and their children fought to preserve their people and their culture. This project explores the interplay between pre-existing attitudes about relationship with whites and the experience of non-reservation schooling at Hampton institute in explaining the strategies that helped the Omaha survive. To do so, it, describes the backgrounds of 78 Hampton students and their activity on behalf of the Omaha tribe. Upon arriving on the reservation these Omaha divided into three different villages. First, Win-dja'ge where Omaha lived in log cabins and voluntarily took up farming. Secondly, Bi-Ko-de a village of Omaha that chose to live in the traditional way, and lastly Jan-(th)ca'-te which was led by Henry Fontenelle. Residents of both the La Flesche and Fontenelle villages adopted some of the residential and economic habits of the white settlers that surrounded them and thus were labeled as "progressive". The 78 students came from these two factions of the Omaha. Despite divisions, many Omaha, such as members of the La Flesche family, found a way to hold on to what was important to them and preserve the rights and customs of their people. Although labeled as progressive, with the implication that they discarded their tribal community and its traditions, they found ways to promote the survival of their people in the face of a crushingly dominant culture.

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## 2008 Undergraduate Research Symposium

**Presenter:** Elijah Mayfield and Nathan Dahlberg

**Project Advisor:** Elena Machkasova (Computer Science)

**Title:** **Optimization of Generic Types in the Java Programming Language**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #109, 3:45 p.m.

**Abstract:**

Generic Types, a feature of modern programming languages, are a way to reduce redundancy of program code. Without generic types, it is necessary to write certain programming functions separately for each type of data, such as numbers or text, used in a program. Generic Types allow the programmer to write these functions only once and use them for different types of data. This makes writing programs simpler and saves time for a programmer, but has its downsides. In the Java programming language, heavy use of Generic Types may noticeably increase program running times. We propose several ways of changing programs that use Generic Types to make the programs run faster. These changes are referred to as "optimizations." We replace Generic Types that can be used on many types of data with those that are more specific. The program can then utilize the more specific information to improve performance. Our optimizations differ in the amount of specific information they introduce. We applied the optimizations to several programs to compare their effects. The effects of these optimizations are complex; some optimizations perform better on some programs and worse on others. However, we discovered that a particular optimization, which we call "interface," improves running time on all programs we studied by between fifteen and twenty percent, a significant improvement.

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**Presenter:** Alicia Mengelkoch

**Project Advisor:** Jacqueline Alvarez-Ogbesor (Spanish)

**Title:** **The Complexity of Cannibalism Seen in los Colastiné of *El Entenado*, los Wari' of South America and the Aztecs**

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #113, 3:45 p.m.

**Abstract:**

This paper analyzes the references to cannibalism in the Argentinean novel *El Entenado* (by Juan José Saer) and its actual practice among the Wari' of Brazil, and the Aztecs. It also examines parallels between the three cultures. The novel narrates the story of a European man residing among a South American tribe known as Los Colastiné and his role as witness to their cannibalistic traditions. For some, the act of eating human flesh is a representation of aggression and the ultimate revenge, and for others it is affectionate, where the ritual preserves the memory of the deceased. For the Wari', Colastiné, and the Aztecs, cannibalism encompassed both extremes. The actions were both funereal and meant to satisfy the spirit of the dead and as a consequence for captured enemies. Cannibalism is of great complexity and represents more than a simple act of eating another human being. Though a difficult topic to talk and write about since it defies the definition of what is acceptable human behavior, cannibalism has actually appeared in Hispanic American literature since the time of Christopher Columbus and the conquest of the New World.

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## 2008 Undergraduate Research Symposium

**Presenter:** Ricky Noren

**Project Advisor:** Julia Dabbs (Art History)

**Title:** Portraying Jesus: What Is the True Likeness?

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #111, 3:45 p.m.

**Abstract:**

Contemporary artists are faced with a dilemma when portraying the likeness of Jesus Christ based on the fact that there is no undisputed recording of his physical features. Although many works of art have come forward since the days of the early church, not one can fully claim to show what he actually looked like. The earliest Christian art failed to produce an accurate depiction of Jesus because of various reasons, ranging from the persecution of Christianity in Rome, departure from classical influence in art, and debates over the 2nd commandment in the early church. Since the church failed to produce a true likeness, stories emerged over the next thousand years about works of art that were divinely created. These works each claimed to show what Jesus actually looked like. From here the idea of a Euro-centric Jesus emerged, which is still present today. As history shows, we have no true way of knowing what Jesus actually looked like. We can only assume that he was a Jew from the Middle East. So the contemporary artist should look beyond using the traditional definition of a portrait (recording one's physical features) when trying to depict Jesus. They should consider a more abstract definition of a portrait, in which they try to represent the essence of a person, what they stood for. I will argue that the sculpture *Sweet Jesus* (2005) by Cosimo Cavallaro follows these parameters and creates the most accurate portrait of Jesus the art world has yet to see.

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**Presenter:** Amanda Ochsner

**Project Advisor:** Tisha Turk (English)

**Title:** Reading Our Readings: Ideological Interactions between Authors, Characters, and Readers

**Type of presentation** (Oral / Poster): Oral

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

**Abstract:**

*Wide Sargasso Sea* by Jean Rhys and *Robinson Crusoe* by Daniel Defoe are novels largely concerned with imperialism. However, the authorial messages contained within these works are in ideological opposition. Both novels share at their core an English male attempting to colonize islands which function as imperial space. Within my paper, I compare the English male's approach to colonizing the native people and his reactions to the imperial space. With *Robinson Crusoe*, Defoe represents the imperial project as natural by creating a protagonist who successfully recreates England on his island with little opposition. However, by placing Rochester on an island with an existing culture and with a woman who defends her humanity, Rhys forces him to take a defensive approach to the island. This allows her to represent imperialism as an unnatural act of violation. Most of my research consists of analyzing articles that present theories and interpretations on *Wide Sargasso Sea* and *Robinson Crusoe*. These readings enrich my analysis of how the rhetorical representation of the imperial project has a different function for each of the novels. I use these opposing portrayals of imperialism to explore the ideological interactions between authors, characters and readers in literature. I argue that ultimately the readers' pre-existing ideology determines the readers' reaction to the authorial messages. My conclusion is that readers interact with literature in the same way that the characters in Rhys and Defoe's novels interact with their environments by preserving and defending their views, or by confirming and expanding them.

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## 2008 Undergraduate Research Symposium

**Presenter:** Michael Peterson

**Project Advisor:** Jennifer Rothchild (Sociology)

**Title:** A Feminist Assessment of Corrective Programming for Female Gang Members

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #203, 3:45 p.m.

**Abstract:**

The last decade saw increases in arrests of young females for violent behavior, prompting a societal concern that their involvement in violent crime was increasing in America. It is also known that there is a relationship between this violent crime and gang affiliation yet the base of corrections programming is built upon a male-centered model. The body of empirical research dedicated to this female, as opposed to male, dynamic of gang affiliation and its relationship to violence is minimal. Because of this small body of research, policy-makers and advocates of violence prevention and intervention programs currently have little to support the development of gender appropriate strategies. This paper presents the results of a feminist analysis of case studies of female gang members, and will approach the body of knowledge through a social construction of gender framework. This framework will be utilized to develop a model of the female gang member. This model will examine the relationships between gang activity, violent behaviors, and histories of victimization. This will lead to recommendations for corrections programming that focus on establishing, continuing and enhancing positive relationships with other female family members and their peers.

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**Presenter:** Kim Radtke

**Project Advisor:** Donna Chollett (Anthropology)

**Title:** Adventures in Lithic Recreation and Analysis

**Type of presentation** (Oral / Poster): Oral

John Q. Imholte Hall, Room #217, 4:35 p.m.

**Abstract:**

The human ability to adapt to environmental pressures through culture and technology rather than biology is, arguably, the most important adaptive advantage within our history; because of this, anthropologists and archaeologist study and strive to understand the origins of our modern cognitive ability through a variety of means. Lithics, as one of the earliest tangible expressions of this adaptation, are of particular interest. This study represents two avenues of lithic investigations: replication and analysis. The recreation/replication process is presented as a demonstration of production and use. Short films demonstrating flint knapping and tool use through butchery will be shown. The analytical section includes a description and review of the Howiesons Poort industry as well as a discussion of the on going debate surrounding the possible symbolic role of the industry.

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