

April 15, 2009

Members of the Southwestern and Georgetown Community,

It is my great pleasure to welcome you to the tenth annual Student Works Symposium: From Every Voice.

For the past nine years, the Symposium has been a place where students showcase their research and creative works. It serves as a physical display of the breadth and depth of the liberal arts education that students receive at Southwestern. Moreover, the Student Works Symposium reveals students' ability to utilize classroom knowledge to gain understanding of the world. Indeed, the Symposium is the byproduct of a wide range of interests, experiences, and fields of expertise.

This year, the symposium will showcase 101 presentations featuring the works of 119 students from 21 disciplines. The diversity of presentations will provide an opportunity for everyone to engage in conversations on thought-provoking topics, to question our own perspectives, and to see the world from a multi-faceted view.

Your attendance is appreciated immensely. It is my hope that you leave the Symposium with a wealth of new knowledge, and a new perspective on the world.

Sincerely,

Jennifer Howell
Program Chair
Student Works Symposium: From Every Voice

2009 STUDENT WORKS SYMPOSIUM: FROM EVERY VOICE

Southwestern University
Georgetown, Texas

Program Chair

Jennifer Howell
Department of Psychology
Southwestern University

Staff Support

Christine Vasquez
John McCann
Southwestern University

Special Thanks To:

Student Activities and Community Chest
The Paideia Program
Jim Hunt, Provost and Dean of the Faculty
Dirk Early, Associate Dean of the Brown College of Arts and Sciences
Paul Gaffney, Dean of The Sarofim School of Fine Arts
Dr. Paula Desmond, Assistant Professor of Psychology

SYMPOSIUM SCHEDULE AT A GLANCE

- 5:00–6:00 Oral Presentations in the McCombs Ballrooms, Margaret Shilling Room, and the Merzbach Room
- Panel Presentations in the Dan Rather Room
- 6:00 Welcome: Jake Schrum, President of Southwestern University
Jennifer Howell, Program Chair
- Refreshments served
- 6:00–7:00 Creative Works and Exhibitions in the Gallery of The Sarofim School of Fine Arts and in the Bishops Lounge
- Poster Presentations in the Bishops Lounge
- 7:00–8:45 Continuation of Oral Presentations in the McCombs Ballrooms, Margaret Shilling Room, and the Merzbach Room

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PROGRAM AGENDA

ORAL PRESENTATIONS

Lynda McCombs Ballroom

- 5:00 1. Chain Effect: The Consequences of the Decisions Made by Political Leaders
Elly Martinez
- 5:15 2. The Decisions behind the Iran-Contra Affair: How They Were Made and Are They Ethical? Charlie Bunnell
- 5:30 3. Just War Theory
Andrew Trevino
- 5:45 4. The Ethical Implications of Kakuei Tanaka and Japanese Money-Politics
Amy Hubbard

Marsha Shields Ballroom

- 5:00 5. Requirement of a C-terminal 22 Amino Acid Sequence within the Escherichia coli UmuC Protein Necessary for Lon-mediated Degradation
Lance Keller
- 5:15 6. Absence of *Wolbachia* Endosymbiont in Central Texas *Armadillidium Vulgare*
Taylor Jones, Alexis Ritzer
- 5:30 7. Investing Wisely: Education as a Means to Fund Sea Turtle Conservation on South Padre Island
Anna Frankel
- 5:45 8. Location, Location, Location: Laboratory Pviposition Preferences of the Exotic, Invasive Applesnail *Pomacea insularum*
Colin Kyle, James McDonough

Connie McNab Ballroom

- 5:00 9. "The Virgin and the Unicorn": The Conception and Birth of An Original Performance Piece in Smolyan, Bulgaria
Kinsey Keck, Delilah Dominguez. & Emily Everidge
- 5:15 10. Riverview Ghosts: A Play in Two Acts
Jessica Espinoza

Margaret Shilling Room

- 5:00 11. Studies in the South Indian Beauty Service Industry
Katie Glanz
- 5:15 12. Feminist Fatherhood: A New Face of Fatherhood in America
Charles Prince
- 5:30 13. Little Gay Gandhis: Providing a Safe Space and Empowering Sexual Minorities
Nicole Powell
- 5:45 14. Transitioning to Post-Monogamy: A Political and Literary Critique On Marriage Reform,
Remy Robertson, Andrew Dornon

Merzbach Room

- 5:00 15. Ariel: Ned Rorem's Setting of Poems by Sylvia Plath
Erin McHugh
- 5:15 16. George Antheil's Ballet *M'canique* and the Machine Aesthetic in the U.S. since World War I
Brooke Lyssy
- 5:30 17. Examining Schumann's Late Work: *Sechs Gedichte*, Op. 90
Michelle Perrin
- 5:45 18. From Jewish Folk Poetry: The Jewish Question in Russian Music
Stephanie Stewart

PANEL PRESENTATIONS

Dan Rather Room

- 5:00 54. Not-So-Secret Confessions of an Overlooked Reality: Four Students' Experiences at Local Abuse Agencies
Samantha Belicek, Jessica Domino, Cordelia Stough, Hailey Ormand
- 5:30 55. Insights into Domestic Violence and the Non-profit Sector: Students' Experiences Interning with Local Domestic Violence Agencies
Sarah Fritz, Travis Norton, Mariah Arispe

POSTER PRESENTATIONS

Bishops Lounge

- 6:00 Welcome: President Jack Schrum
Refreshments Served

Poster Presentations

CREATIVE WORKS AND EXHIBITIONS

Bishops Lounge

- 6:00 56. The Rubens Tube
Will Hardy, Sean Smith, Pelham Keahey
57. The Stylophone
Chris Elliott
58. An Untapped, yet Viable Energy Alternative: Solar Chimneys
Chris Elliott
59. Southwestern University Posters for the Environment (SUPE)
Ruben Torres
60. Infinite Chaotic Arcade Machine
Duncan Alexander, Lane S. Hill

Gallery of The Sarofim School of Fine Arts

- 6:00 61. Shades of Inequity
Casey Grier
62. Canine Casualties: Genetic Disorders and Health Problems in the Domestic Dog
Sarah Reesor
63. Metonymy
Bernardo Schirmer

ORAL PRESENTATIONS (cont')

Lynda McCombs Ballroom

- 7:00 19. Deep in the Heart of *Texas Monthly*: Glossy Cowboys and the Performance of Texanness
Brennan K. Peel
- 7:15 20. Comedic Intervention: A Rhetorical Criticism of T.I.'s Road to Redemption on MTV
Alex Caple
- 7:30 21. Bloom-ing in the Shadow of Milton: The Complex Anxieties of Philip Pullman
Courtney Stoker
- 7:45 22. Imaginary Realms and Fantastical Genres: Reading Orlando to Read Transgender Narratives
Brooke Calder

- 8:00 23. The East at Home: Orientalism in Jane Austen's Mansfield Park
Courtney Stoker
- 8:15 24. Republicanism's Unequal Promise in a Rising Nation: The Limits of Power and Popular
Sovereignty during Chile's Patria Vieja
Angelica Castillo
- 8:30 25. Doing it Louis XIV-style: Marie Antoinette's Three Feet of Pouf-oir
Lori Higginbotham

Marsha Shields Ballroom

- 7:00 26. Wetter isn't Better: Effects of Stress on Pomacea Insularum Egg Clutches
Matt Trawick
- 7:15 27. The Effect of Potassium Fertilization on Phenolic Content and Antioxidant Properties in
Basil (Ocimum basilicum L.)
Phuong Nguyen
- 7:30 28. Pink Eggs and Snails: Field Oviposition Patterns of Pomacea Insularum that May
Identify Wetlands or Shallow Lakes Susceptible to Invasion
James McDonough, Colin Kyle
- 7:45 29. Hypersexuality of Tibetan Women in China
Amy Hubbard
- 8:00 30. Life, Death, and the Inner Sense: Two Translated Fragments
Carolyn Acker
- 8:15 31. Testimonial Literature: The Cure or the Instigator of Political Upheaval?
Erin Osterhaus
- 8:30 32. Askatasuna Euskal Herrian: Nationalism and Basque Culture
Scott Petit

Connie McNab Ballroom

- 7:00 33. The Washington Consensus: A Critical Review After Nearly Three Decades of
Implementation
Derek Sample
- 7:15 34. Uncovering the Underground Economy: An Empirical Study of Prostitution Pricing in
the United States
Lisa Cummings
- 7:30 35. Flexible Work
Chloè Mott
- 7:45 36. The Socio-Economic Predictors of Childhood Obesity
Shannon Foster
- 8:00 37. The Southwestern University Student Book Exchange
Matt Vaughn
- 8:15 38. WELSH: An Easy-To-Learn Command Line Interface for Windows
Lane Hill
- 8:30 39. Building Nemo: The Development of a 3D Animated Mummichog to Study Various
Aspects of Schooling Behavior
Morgan Mingle

Margaret Shilling Room

- 7:00 40. The Ethics of Earmarks
Paige Ammons
- 7:15 41. Governor Perry's Decision to Mandate Gardasil Vaccination for Texas School Girls:
Good Policy? Good Politics? or an Ethical Dilemma?
Stephanie Seaman

- 7:30 42. The Second Gulf War and Personal Framing of a Security Threat
Drew Diamond
- 7:45 43. What Is the Ethical Decision to be Made with the Remaining Detainees at Guantanamo?
Taylor Spalla
- 8:00 44. Evaluating the Ethical Considerations in the Passage of the Oregon Health Plan
Stephen Higdon
- 8:15 45. Symbolic Art: Revolutionary Success and Failure
Amelia Shroyer
- 8:30 46. The Effect of Social Networks and Healthcare Interventions on Tobacco Use Outcomes
Wes Rivers, Eric Franco

Merzbach Room

- 7:00 47. Factors in Opinions on Childcare: Effects of Life Experiences on Views of Childcare
Jessica Herbst
- 7:15 48. Hispanics in the U.S. and Leading Health Indicators: Current State Health and Predicting Future Health
Lauren Hamlett
- 7:30 49. "Stand Up Straight:" The Significance of Networks, Framing and Collective Identity in Building a Straight-Gay Coalition
Tristine Baccam
- 7:45 50. From Bra Burning to Bible Study: Motivation for Political Activism and Polarization Among Female Activists
Grace Stafford
- 8:00 51. The Medical Institution and Transgender Bodies: Listening to the Words of Transgender Experiences Dealing with Medical Care
Nadia Alareksoussi
- 8:15 52. To Belong or Not to Belong: Identity Among Muslim Diasporas in the Netherlands
Tanlyn Roelofs
- 8:30 53. Huntington's Disease: A Case Study in Bioethics and American Healthcare
Lara Reinhard

Oral Presentations

1. Chain Effect: The Consequences of the Decisions Made by Political Leaders
Elly Martinez, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

I will analyze President Clinton's decision to use military force in Kosovo in March 1999. How did consequences from President Clinton's actions affect President George W. Bush's decision to use force in Iraq? I use the consequentialist moral theory, specifically, the application of utilitarianism, to determine whether Clinton and Bush made the "right" decisions. Examining how and why Clinton and Bush made their decisions to use military force will help us to understand the circumstances in which other political leaders will make similar decisions.

2. The Decisions behind the Iran-Contra Affair: How They Were Made and Are They Ethical?
Charlie Bunnell, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

My presentation is about the decisions made by Admiral John Poindexter and Lieutenant Colonel Oliver North regarding the Iran-Contra Affair. I will attempt to explain why they did not inform President Reagan of all the details regarding the covert sale of arms to Iran. I will also explain what led Reagan to design such a covert policy that ran contrary to the Arms Export Control Act, which forbid the sale of arms to terrorist nations such as Iran. My final objective of my research paper is to determine whether the decisions made by Reagan, North, and Poindexter were ethical according to the Utilitarian ethical system.

3. Just War Theory
Andrew Trevino, Department of Political Science
Dr. Tim O'Neill, Dr. Bob Snyder

My presentation will discuss whether or not the Afghanistan War adheres to the principles of the Just War Theory.

4. The Ethical Implications of Kakuei Tanaka and Japanese Money-Politics
Amy Hubbard, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

My capstone paper revolves around the actors in Japan's political machine. I will be investigating ex-Prime Minister Kakuei Tanaka ("The Shadow Shogun") and providing a case study of his role in the "Lockheed Bribery Scandals" of 1976. Briefly, the Lockheed Bribery Scandal occurred when information went public that Tanaka had accepted millions of dollars in bribes from the Lockheed Corporation in return for the Japanese government buying Lockheed's L-1011 aircraft. Tanaka was found guilty and sentenced to four years in jail, but remained a Diet member with the unwavering support of his district. I believe that Tanaka was acting within the boundaries of ethical behavior because he was only adhering to the norms of Japanese "money-politics"; a system in which maintaining political power required an enormous amount of financial support. In this case, Tanaka's seemingly corrupt actions did not lead to a decrease in political power because his constituency refused to hold him accountable. The paper will incorporate the broader topic of accountability in the Japanese political system as well as political ethics within the context of Japanese norms.

5. Requirement of a C-terminal 22 Amino Acid Sequence within the Escherichia coli UmuC Protein Necessary for Lon-mediated Degradation

Lance Keller, Department of Biology
Faculty Advisor: Dr. Martin Gonzalez

Following extensive DNA damage in Escherichia coli, the polypeptides UmuC and UmuD, which compose the error-prone DNA polymerase (polV) are expressed and one important consequence of this expression is an increase in mutation rate. Therefore, polV activity is highly regulated to minimize excessive mutations; especially after the DNA damage is addressed by the DNA repair mechanisms of the cell. Selective protein degradation of polV plays an important role in regulating activity of this enzyme. Previous work with protease knockout strains demonstrated the role of the Lon protease in UmuC degradation. Initial deletion analysis of the UmuC protein identified a C-terminal 67 amino acid region necessary for Lon-mediated degradation. Using deletion analysis and green fluorescent protein (GFP) fusions, we have further defined the degradation signal within UmuC to approximately 22 amino acids. Interestingly, no substantial similarity is evident between the 22 amino acid sequence within UmuC and the amino acid composition of other known Lon substrates.

6. Absence of *Wolbachia* Endosymbiont in Central Texas *Armadillidium Vulgare*

Taylor Jones, Alexis Ritzer, Department of Biology
Faculty Advisor: Dr. Ben Pierce

The terrestrial isopod *Armadillidium vulgare* has been found to display strongly skewed sex-ratios in natural populations. A cause of this sex-ratio bias is the widespread infection of *A. vulgare* populations by a maternally-transmitted cytoplasmic endosymbiont, identified as a member of the genus *Wolbachia*. In *A. vulgare*, *Wolbachia* infection induces the feminization of genetic males into fully-functioning phenotypic females. A non-Mendelian feminizing factor of unknown nature, called f, is thought to compete with and be more prevalent than *Wolbachia* infection in *A. vulgare* populations. We used the polymerase chain reaction (PCR) to analyze for the presence of *Wolbachia* three in Texas populations of *A. vulgare* known to possess female-biased sex-ratios. Possibly infected isopod DNA was amplified using 16S rRNA and Ftzs primers known to be specific to the endosymbiont, but no individuals from any population tested positive for infection. It is therefore likely that the sex-ratio skews found in the populations we sampled are due to another cause, such as the presence of the f feminizing factor.

7. Investing Wisely: Education as a Means to Fund Sea Turtle Conservation on South Padre Island

Anna Frankel, Department of Biology
Faculty Advisor: Dr. Romi Burks

Informal science education represents a noteworthy aspect of marine conservation work at Sea Turtle, Inc. (STI). This presentation will describe the efforts of educating the public in conservation, its effects on patron donations, and uses of these funds. During daily tours, educational programs cover the mission and history of STI, basic sea turtle physiology, migratory patterns, diet and rehabilitation of sick and injured animals at the facility. According to visitor exit surveys (Spring 2006-January 2007), more than 90% of respondents reported an increased likelihood in leaving a donation in addition to their entrance fee when they had participated in an educational tour. With this substantial increase in revenue, STI sponsors sea turtle education and conservation programs in Mexico, Costa Rica and Sri Lanka. These programs directly protect nesting sea turtles and hatchlings all over the world by employing and training locals in techniques used at STI. Donations also provide funds to care for turtles living in the facility that cannot be released

back into the wild. With the financial support of the public, STI has been able to support the increase of Kemp's Ridley nests on South Padre Island. The past five years have witnessed a dramatic increase in nests from 9 to 52 nests on South Padre and from 6,000 to over 17,000 nests in Tepehuajes and Rancho Nuevo, Mexico. Therefore, STI advocates that education plays an imperative role in funding opportunities that considerably help further marine conservation.

8. Location, Location, Location: Laboratory Oviposition Preferences of the Exotic, Invasive Applesnail *Pomacea insularum*
Colin Kyle, James McDonough, Department of Biology
Faculty Advisor: Dr. Romi Burks

By investigating species habitat preferences and geographic distribution, ecologists can potentially determine population control methods. This technique may prove useful for combating the exotic invasive aquatic applesnail *Pomacea insularum*, recently found along the Gulf Coast. In Houston, Texas, researchers find *P. insularum* in clumped distributions around emergent structures. *P. insularum* deposits bright pink egg clutches above the water's surface on emergent objects. The snails' reliance on emergent objects for reproduction may attract them to preferred structures. To discover mechanisms underlying population distribution, we designed three lab experiments investigating what specific object qualities attract *P. insularum* (substrate material; substrate structure; exotic vs. native Texas plants). To better understand reproduction, we examined characteristics (height above water, dimensions, mass, approximate volume) and hatching efficiencies of clutches laid in experiments. We compared characteristics of lab clutches to eggs found in Houston. We found *P. insularum* preferentially oviposited on plants and ignored wood, metal or plastic ($p < 0.01$), chose round rather than flat ($p < 0.001$) but did not differentiate between tall or short structures ($p > 0.05$), and preferred exotic (*Colocasia esculenta*) to native (*Pontederia cordata*) Texas plants ($p < 0.001$). Interactions between *P. insularum* and *C. esculenta* indicate potential invasion meltdown in Houston. Clutch characteristics comparisons revealed similarities between lab and field reproduction ($p > 0.05$), validating our ability to apply our lab results to field populations. We conclude that *P. insularum* clusters around emergent plants, specifically *C. esculenta*, due to oviposition preferences for these objects. Removing egg clutches from areas dense with *C. esculenta* should slow *P. insularum* spread and damage.

9. "The Virgin and the Unicorn": The Conception and Birth of An Original Performance Piece in Smolyan, Bulgaria
Kinsey Keck, Emily Everidge, Department of Theatre; Delilah Dominguez, Department of English
Faculty Advisor: Dr. Sergio Costola

The Rhodopi International Theater Laboratory in Smolyan, Bulgaria attracts artists from around the world to participate in a four week intensive exploration of physical theatre. Situated in the Rhodopi mountains, the mythological birthplace of theatre, the program challenges participants to expand and internationalize their theatrical imaginations while exposing them to diverse theatrical traditions and philosophies. Each year the program centers on a cultural myth from which the participants draw their inspiration. The fourth RITL (July 11 to August 11, 2008) re-contextualized the myth of Ragnarok and its literary and cultural counterparts in order to create an original performance piece based loosely on Leonardo DaVinci's *A Maiden with a Unicorn*. Through the simultaneous, intertwined use of vocal performance, digital media, drama, and physical theatre, the production explored the limits of theatrical possibilities. This presentation will re-cap the struggles and rewards that

the production team experienced in creating this piece (from the intensive research that went into crafting the narrative to the physical demands of learning Commedia dell'Arte technique). Video clips and sections of the Hypermedia Text that document the process and the final performance will also be included.

10. Riverview Ghosts: A Play in Two Acts
Jessica Espinoza, Department of Theatre
Faculty Advisor: Dr. Kathleen Juhl

Riverview Ghosts is a play which chronicles the lives of five people institutionalized for the sole crime of difference. They are perceived to have failed in meeting society's standards of normalcy in social, racial, or intellectual realms. The idea was inspired by Jeff Garrison-Tate's phenomenal documentary "Forgotten Lives", a scathing examination of Texas state institutions for the intellectually disabled (euphemistically referred to as "state schools.") Accounts of abuse, neglect, and exploitation run rampant throughout these facilities, yet little or nothing is being done to close them down. Over 5000 people have lost their freedom for no other reason than being a few standard deviations away from the center of the bell curve. Mr. Garrison-Tate will be conducting an open workshop, "Acting and Activism", in early April as part of the play's rehearsal process.

11. Studies in the South Indian Beauty Service Industry
Katie Glanz, Department of Sociology and Anthropology
Faculty Advisor: Dr. Melissa Johnson

The Indian beauty salon can be viewed as a location to examine the nexuses of "Westernness," "Indianess," socio-economic class, gender, and race. Through the study of three socio-economic classes of Hyderabad beauty salons I have explored the influence of Westernization, patriarchal society, racism, and classism on the varying types of beauty salons and therefore on cross-class status salon culture in general. By researching the range and type of beauty services available in variously classed salons throughout Hyderabad, India, I explore how perceptions of beauty interplay with neo-colonial cultural and racial pressures, nationalist sentiments, classist notions, and personal expressions of female agency which often run counter to male expectations of the beauty salon industry.

12. Feminist Fatherhood: A New Face of Fatherhood in America
Charles Prince, Department of Education
Faculty Advisor: Dr. Alicia Moore

Fatherhood is an important time in a man's life. This is his time to be a role model for the next generation of children. Time and time again, the black community and other communities are seeing another role of the father. The father has taken a back seat in rearing his child by the few examples, or the lack thereof, of their fathers. He must acknowledge and engage in the responsibility that is bestowed upon him when he decides to bring a child in the world. However, in this century, the traditional view of fatherhood portrays the man as the breadwinner, a hard-worker and a patriarch of the family. This limited view of fatherhood should be expanded to include the father in more nurturing roles. I plan to expand the role of the father, by eliminating the stagnation of roles between woman and man that must be broken down to allow men to recast their masculinity so that child-rearing is in the hands of both parents as a unit. The only way to expand the father's role is to look at the feminist father as a new face of fatherhood in America. Feminist Fatherhood gives them the extra tools on the various roles a father plays in child-rearing. This new idea

of fathering is going against the dominant conception of what people consider the role of the father. The purpose of this new ideology is to stop the harsh criticism of the father and to open up the discussion of ways to be a father. This is not just an issue that is solely in a father's responsibility. It starts with the responsibility of the community.

13. Little Gay Gandhis: Providing a Safe Space and Empowering Sexual Minorities
Nicole Powell, Department of Sociology and Anthropology
Faculty Advisor: Dr. Maria Lowe

Through participant observation, in-depth interviews and informal conversations with activists, and a cursory content analysis, I address the ways in which OutYouth, a gay and lesbian organization in Austin, Texas, serves as a safe space for sexual minorities. I also examine the ways in which a collective identity, founded on the mutually informing ideas of empowerment and community, is maintained. Finally, I explore the ways in which OutYouth facilitates networking among its activists and with other organizations. Findings suggest that OutYouth maintains a collective identity through events explicitly related to gay and lesbian identities, as well as through informal fun events that contribute to building bonds among the activists. OutYouth also serves as a safe space for idea-sharing, particularly regarding gay-straight issues, identities, and alliances and bridge building among LGBT youth and their allies.

14. Transitioning to Post-Monogamy: A Political and Literary Critique on Marriage Reform
Remy Robertson, Andrew Dornon, Department of Political Science
Faculty Advisor: Dr. Shannon Mariotti

The marriage system of the United States has more restrictions than most other societies in history. This study uses literary texts and judicial history to show how the capitalistic system of the United States enforces a patriarchal, monogamous society. Our presentation has three tenets: (1) we critique the judicial system of the United States in its efforts to reform marriage; (2) we critique literary texts to show how literary movements in feminism are actually moving towards post-monogamy, in contrast to the judicial reforms; (3) we evaluate the judicial scope of how this transition to post-monogamy may be possible. We use political events in order to show the chronology of marriage reform in the United States and contrast it with other societal reforms throughout history. We critique literary texts under this scope (relational nomenclature) and look at how some literature is reactionary against the judicial restrictions and how other literature is supportive of the judicial restrictions. In performing this study we see an increasing gap between the judiciary reform of marriage and the literary-reactionaries that push toward post-monogamy. Reforms such as allowing same-sex marriage may be allowed relatively soon, but a real strive towards "post-monogamy" will take many more years, and many more literary reactionaries.

15. Ariel: Ned Rorem's Setting of Poems by Sylvia Plath
Erin McHugh, Department of Music
Faculty Advisor: Dr. Michael Cooper

Sylvia Plath's voice, silenced by her death in 1963, is considered by many to be that of a feminist poet. Her beautiful, yet haunting prose showcases the madness and bitter desolation of a woman struggling with boundaries imposed on her by society. It is of no small consequence, then, that the first openly gay American composer found her words to have significance. Ned Rorem's acceptance of his homosexuality allowed him to develop his own feminist conscience, which in turn allowed him to appreciate Plath's poetry, and to grasp the intricacies of her prose well enough to set them to music. In the setting of a cycle of 5 songs for soprano voice, clarinet, and piano, Ned Rorem's Ariel consists of five of Plath's poems: "Words", "Poppies in July", "The Hanging Man", "Poppies in October", and

“Lady Lazarus”. During the course of the cycle, the listener will notice that Rorem’s use of the entirety of the soprano range, as well as the use of virtuosic clarinet solos represent the intensifying degrees of madness in the lyric persona. While the strength of Plath’s voice is heard in the declamatory vocal lines in the first, middle, and final movements; the empathy that Rorem feels for the plight of Plath, and all women in her position, is represented by the hauntingly beautiful “Poppies” songs. Because of his sexuality, Rorem identifies with Plath and gives a voice to a generation of women struggling to be heard amid the roar of the sexual revolution.

16. George Antheil’s Ballet M’canique and the Machine Aesthetic in the U.S. since World War I
Brooke Lyssy, Department of Music
Faculty Advisor: Dr. Michael Cooper

In the 1920’s machines were beautiful and terrifying instruments that enabled humans to be more productive and therefore more powerful, and whose societal implications were just beginning to be coped with and understood. As the machine became prominent in everyday life, musical styles underwent a shift. Before World War I romantic expressionism, which emphasizes subjective artistic representation, was the norm. Afterward, a shift toward classicism and objectivity was prevalent. In musical works that coped with the ramifications of an increasingly mechanized culture, stylistic innovations and audiences’ reception and memory of them tell much about how a person in the 1920’s might have listened to music differently than we listen to music today, as well as why some pieces have more longevity in public memory. George Antheil’s Ballet m’canique is a work that, despite its seemingly direct confrontation with the timely issue of mechanization, is largely forgotten by the public today. This paper compares the Ballet m’canique with other machine-oriented pieces before and after World War I, noting stylistic differences between them and considering reviews written in the contemporary press in order to judge audiences’ reactions to and perceptions of the piece, as compared with their reactions to other pieces (like Stravinsky’s Rite of Spring) composed around the same time. This method places the musical instrument and mechanical instrument on the same stage. The comparison sheds light on important questions about the role of music in a mechanized world and suggests ways in which the issues raised by Ballet m’canique shed light on pervasive and rarely questioned aspects of our own musical world. The ambiguity of style in Antheil’s work may have contributed to the mixed responses it got, but it introduced distinct musical ideas that are still influential today. Looking at the ways music has become more mechanized over the years, it is clear that Antheil’s work, with its elements of both bold objectivity and bold subjectivity, and characterized by its fragmented, time-bending, rhythm-centric style, shares characteristics with DJ culture today. Looking critically at Ballet m’canique and how it was perceived by its original audiences can give us valuable information about how our changing lived experience has affected our musical experiences over time.

17. Examining Schumann’s Late Work: Sechs Gedichte, Op. 90
Michelle Perrin, Department of Music
Faculty Advisor: Dr. Michael Cooper

The unfounded belief that Schumann experienced a gradual creative decline after 1850 due to mental illness continues to influence the reception and treatment of his late works. Consequently, Schumann’s late works are still programmed significantly less frequently than those of the early 1840’s, for example. Sechs Gedichte von N. Lenau und Requiem, Op. 90 (1850) refutes all of these unsubstantiated attacks on Schumann’s late period artistry. In this

song cycle, Schumann not only refined his compositional technique by creating a thoroughly organic entity from disparate texts, but he also interwove his political passion with great care. This paper analyzes Op. 90 on several different levels. It first examines some of the devices of cyclicity and narrativity employed by Schumann. It also deals with issues of vocal and accompaniment persona in order to reveal the characters that Schumann is creating. Finally, there is a strong political element to this song cycle. Schumann carefully chose seven specific poems by Lenau, who was politically controversial, for this work. The words of the poetry are about a person who bids his final farewell to his beloved. By writing this cycle, Schumann himself embarked on this journey with the protagonist to leave the Germany and the Dresden he knew behind him. The paper closes by extrapolating some generalizations about Schumann's compositional style after 1850 in order to encourage familiarity with and appreciation for his later works.

18. From Jewish Folk Poetry: The Jewish Question in Russian Music
Stephanie J. Stewart, Department of Music
Faculty Advisor: Dr. Michael Cooper

In the late 1940s, Dimitri Shostakovich penned the music for the song cycle *From Jewish Folk Poetry*, but until 1955, only those individuals privileged to know Shostakovich heard the work. In this song cycle, Shostakovich set to music eleven Jewish poems translated from Yiddish into Russian by Y. M. Sokolov. Shostakovich repeatedly voiced his disdain for anti-Semitism with both his words and music, but in a country plagued by anti-Semitism, such sympathies were taboo. The issues of anti-Semitism and the Jewish Question were not a recent development in Soviet Russia. Due to a long history of conflict, animosity ran deep on both sides, and this made Shostakovich's obvious use of Jewish folk music idioms and lyrics a highly dangerous choice. The first performance took place at Shostakovich's apartment in late 1948, and the audience consisted of friends and fellow musicians. According to first-hand accounts by the performers, the audience was deeply touched by the work. Many of Shostakovich's friends and colleagues seemed to make the message of *From Jewish Folk Poetry* their own and use it to express their individual frustrations with the Soviet Union.

19. Deep in the Heart of *Texas Monthly*: Glossy Cowboys and the Performance of Texanness
Brennan K. Peel, Department of Communication Studies
Faculty Advisor: Dr. Bob Bednar

Define Texan. Many people will, if given such a task, answer with a handful of stock descriptions and flat caricatures that fail to accurately represent the depth and breadth of people and identity in the state. However, these same stereotypes are the images that proliferate within and inhabit both native Texan and outsider's minds, and these images serve as proxies for the state, in spite of their insufficiencies and inaccuracies. My paper delves into this topic, entering the conversation of Texas identity, performance, discrepancy and interpretation through a discourse analysis of *Texas Monthly*, the upscale regional magazine. Noting that simply observing that the image of Texas does not mirror most Texan's reality is not enough, academically or pragmatically, I then advance from the bounds of the magazine and articulate potential reasons for why both Texans and non-Texans portray the state in particular ways. Raising questions and possible reasons for performance and then debunking them analytically, I propose my own creative possibility: the performance of "Texanness" is not merely a game of fitting in, but rather a complicated dance that ultimately enables individual creativity and agency. That is, I argue that for most Texans "acting Texan" actually increases and displays their agency and difference from the stereotypical images.

20. Comedic Intervention: A Rhetorical Criticism of T.I.'s Road to Redemption on MTV
Alex Caple, Department of Communication Studies
Faculty Advisor: Dr. Davi Thornton

Rhetorical Criticism provides a diffuse range of objective lenses with which to critique and analyze social discourse. To Kenneth Burke, social discourse could easily be critiqued through his self developed method of the "dramatistic perspective," which divides public rhetoric into tragic and comic frames. The frames act to explore how social discourses express and cope with individuals and actions that violate the hierarchy of consented public order. In this analysis, I utilize the comic frame to unravel what social "sins" MTV's new reality series Road to Redemption attempts to expose as it follows acclaimed rap-star T.I. on his court ordered community service ventures. I argue that Road to Redemption comically frames T.I. as a rhetorical symbol for our national guilt regarding inattention to youth related gang activities. As T.I. works with Atlanta youths he allows the public to participate with him vicariously to absolve their guilt and readmit T.I into the good graces of the public order. In a focused analysis of MTV's longest running advertisement for Road to Redemption I demonstrate how mass media addresses and works through national collective guilt. Additionally, I show how rhetorical criticism can highlight and expose mass media's persuasive ability to redefine situations and shift social discourse in the public sphere.

21. Bloom-ing in the Shadow of Milton: The Complex Anxieties of Philip Pullman
Courtney Stoker, Department of English
Faculty Advisor: Dr. Eileen Cleere

In 1973, Harold Bloom published "The Anxiety of Influence", a groundbreaking work that claimed that all poems are mis-readings of an earlier poem. Bloom argued that authors are involved in an oedipal family romance, and that by mis-reading the poem of their literary forefather, they are attempting to kill and replace him. However, as Sandra Gilbert and Susan Gubar declared in their response to Bloom, *The Madwoman in the Attic* (1979), this family romance is a thoroughly masculine one, involving only male authors. Their analysis of female authors led them to conclude that women writers have an anxiety of authorship in a patriarchal literary tradition. Philip Pullman's *His Dark Materials* series (1995-2000) indicates that these anxieties need not be traced only along gender lines. My essay will argue that his work falls into the family romance described by Bloom, but that his story is concerned with the authorship of women. Thus Pullman's anxieties are decipherable through the work of both Bloom and Gilbert and Gubar. Both of Pullman's anxieties concentrate on that most masculine of texts, John Milton's *Paradise Lost*. Pullman's mis-reading of Milton is most convincing in his female anxiety, and his reinvention of Eve suggests that a reinvention of female authors requires the mis-reading and destruction of the most influential and patriarchal text of all: the Christian narrative of the Fall.

22. Imaginary Realms and Fantastical Genres: Reading Orlando to Read Transgender Narratives
Brooke Calder, Program of Feminist Studies
Faculty Advisors: Dr. Julia Johnson, Dr. Helene Meyers

Virginia Woolf's *Orlando* is most famously remembered as "the longest love letter in history" (Nicholson 4). This whimsical description alludes to the fact that Woolf wrote the novel/biography as a thinly-veiled homage to her lover Vita Sackville-West. But the quotation also has a reductive nature. It diminishes the novel/biography to a fantasy valentine and ignores the text's very serious critiques of both gender and literary genres. Critiques of genre and gender that become particularly profound when considered in tandem

with transgender narratives. Drawing upon a critical reading of *Orlando*, I will argue that the text's deconstructions of gender and genre provide a foundation for the discussion and analysis of transgender narratives.

23. The East at Home: Orientalism in Jane Austen's *Mansfield Park*
Courtney Stoker, Department of English
Faculty Advisor: Dr. Eileen Cleere

A look at the scholarship about Orientalism--by which I mean the tradition of Western literary, artistic, and scholarly fascination with and depictions of the East--and Jane Austen reveals a significant gap. While much work has been done to explore the role of colonialism in her novels, almost no criticism explores Orientalism in Austen. Since Orientalism is intimately related to colonialism, a postcolonial examination of Jane Austen's work is incomplete without an analysis of how the East figures into her novels. Austen's *Mansfield Park* contains an anxiety about foreign-ness, but the dynamic does not suggest that this is about slavery or West Indian natives, the only colonial subjects explicitly mentioned in the novel, but about the danger of Eastern influence and practices in England. This essay will argue that Austen engages with Western stereotypes of Eastern people and dynamics in order to criticize Western men for envying or even adopting specifically "Eastern" oppression and subjection of women. Mention of the East has generally been required for a study of how the East/West dynamic affects a particular novel, but my analysis suggests that we must reach beyond these specific allusions. The East/West dynamic affects Western literature (and other cultural products) more broadly and less obviously than we have previously assumed.

24. Republicanism's Unequal Promise in a Rising Nation: The Limits of Power and Popular Sovereignty during Chile's *Patria Vieja*
Angelica Castillo, International Studies and Spanish
Faculty Advisor: Dr. Daniel Castro, Department of History

During the period known as the *Patria Vieja* (1810-1814), republicanism arose as the dominant discourse on power and government in the colony of Chile. Characterized by a series of progressive ideals, this discourse was utilized by Chilean colonists to gain greater political autonomy and later, independence from Spain. The nascent Chilean nation that emerged at the end of the 1810's was founded largely upon the republican ideals introduced during the *Patria Vieja*. This paper will explain the factors that contributed to the rise of republican discourse during the *Patria Vieja* as well as the effect that this discourse had on the Chilean society of the time. This paper will also attempt to answer the following questions: What forms of social power could people belonging to different sectors of Chilean society wield under the auspices republican discourse? And was republicanism as progressive in practice as it appeared to be in theory? I have relied on an analysis of diaries, newspapers, letters, and various historical works on the period to conclude that access to and application of republican ideals was very unequal across different sectors of Chilean society. Despite the egalitarian ideas which appear in republican newspapers, political pamphlets, and edicts, the ability to wield true popular sovereignty was limited to members of the merchant or aristocratic elite. The latter, in turn, utilized their newly grasped power to govern to ensure that the rest of the colony conformed to the same highly stratified social order and hierarchies of the previous Bourbon regime.

25. Doing it Louis XIV-style: Marie Antoinette's Three Feet of Pouf-oir
Lori Higginbotham, Department of History
Faculty Advisor: Dr. Thomas McClendon

My research focuses on both popular culture and history's perception of the young queen, and my own thesis regarding Marie Antoinette as an essential source of visual power in the French Revolution. Though there are countless biographies that focus on Marie Antoinette as a fashion icon and as France's best-known queen, and there are shelves of books focusing on power as visual, it is rare to find a source that provides a combination of the two: a focus on Marie Antoinette herself as the source of visual power. Today's biographies such as Marie Antoinette by Antonia Frasier tend to extol Marie Antoinette as the misunderstood queen. While earlier trends portrayed her as greedy and ignorant, the queen who's catchphrase was the scornful "Let them eat cake" □□, current sources tend to illustrate her as simply naive and young. Most of them have little mention as Marie Antoinette as a source of power, rather, they are preoccupied with listing her virtues and clearing her name. In October 2006, Marie Antoinette made her way from academic history and biographies into popular culture with Sofia Coppola's film Marie Antoinette, a playful, visually appealing and slightly fictionalized story of the young queen. For Marie Antoinette's comeback in fashion, John Galliano for Christian Dior created the Marie Antoinette gown in 2007, the very fabric of which tells the story of the queen's rise and fall. Her story, of course, is much more complicated than the gown illustrates, however intricate the weavings and sumptuous the colors.

26. Wetter isn't Better: Effects of Stress on Pomacea Insularum Egg Clutches
Matt Trawick, Department of Biology
Faculty Advisor: Dr. Romi Burks

The ability to successfully reproduce in a given environment represents one of the most important determinants of an organism's invasive capability. Reproductive plasticity and fecundity play critical roles for invasive success in mollusks. *Pomacea insularum*, a large freshwater gastropod native to South America that has successfully invaded several Texas waterways through multiple introductions, puts forth great effort to oviposit each egg clutch (often containing more than 2000 eggs) well above the waterline, where it fully dries before hatching. Our experiments sought to determine the effects of water exposure to egg clutch hatching efficiency, and to compare the quality and growth rates of stressed vs. unstressed hatchlings. In order to test the effects of stress on the hatching efficiencies of *P. insularum* egg clutches, we subjected egg clutches collected from Armand Bayou (Pasadena, TX) to water exposure at two levels of intensity: high (full submergence) or low, and three levels of frequency (low, medium, high). We found that clutches that we completely submerged for 24 hours/day did not hatch, nor did clutches that floated on water for 24 hours/day. Water exposure also significantly affected hatching efficiency at other frequencies. To assess growth, we measured change in operculum width in three samples of five hatchlings from each treatment over three weeks, and collected data on hatchling quality based on shell characteristics. Survival, and subsequent invasive capability do seem dependent on water exposure during egg clutch development.

27. The Effect of Potassium Fertilization on Phenolic Content and Antioxidant Properties in Basil (*Ocimum basilicum* L.)
Phuong Nguyen, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Emily Neimeyer

Basil is a popular culinary herb that has been shown to contain high levels of phenolic compounds. In the body, the antioxidant properties of phenolic compounds are associated

with various health benefits, such as reducing the risk of heart disease and some forms of cancer. In plants, phenolic compounds have widely varying functions, from chemical protection to serving as pollinator attractants. Environmental factors such as exposure to ultraviolet light, temperature changes, and nutrient fertilization levels have been previously shown to affect phenolic production in various plants. In the current research, the effect of potassium, applied during plant growth, on the phenolic compounds and antioxidants properties of three basil cultivars (Dark Opal, Sweet Thai, and Genovese) was studied. Total phenolic contents and antioxidant activities were determined for basil samples using spectrophotometric methods. Separation and quantification of individual phenolic compounds, such as rosmarinic acid, was accomplished by high-performance liquid chromatography (HPLC). Antioxidant activities of these individual phenolic compounds were also examined. In addition, total anthocyanin levels in Dark Opal basil was quantified using a colorimetric assay. This presentation will illustrate the effect of potassium fertilization on the phenolic, anthocyanin and antioxidant activity levels on the studied basil cultivars.

28. Pink Eggs and Snails: Field Oviposition Patterns of *Pomacea insularum* that May Identify Wetlands or Shallow Lakes Susceptible to Invasion
James McDonough, Colin Kyle Department of Biology
Faculty Advisor: Dr. Romi Burks

Wetlands and shallow lakes are among the world's most threatened ecosystems (Zedler and Kercher 2005). The spread of exotic invasive species represents one of the greatest threats to wetland communities throughout Texas. Aquatic invasive mollusks epitomize some of the most dangerous organisms to wetlands due to their high rates of reproduction and consumption. A recently identified invasive species of applesnail in Texas, *Pomacea insularum*, exhibits these alarming characteristics. As fecundity serves as the best indicator for invasive potential (Keller et al. 2006), understanding *P. insularum*'s reproductive behavior is key to predicting how *P. insularum* will spread within Texas and along the gulf coast. Identification of specific egg laying trends in *P. insularum* will play a key role in predicting future areas of invasion. Specific characteristics within Texas wetlands and shallow lakes may facilitate the invasion process of *P. insularum* by providing females with beneficial egg laying (ovipositing) conditions. To investigate this possibility, we studied *P. insularum* oviposition behavior in an invasive population found within Armand Bayou Nature Preserve (Houston, Tx). Surveys of ovipositing sites revealed clear egg laying substrate preferences for *P. insularum*. Our results showed that *P. insularum* prefers large aquatic macrophytes as substrates for ovipositing, specifically emergent macrophytes such as *Colocasia esculenta* (i.e. Taro) and that this preference persists across seasons and years. Wetlands and shallow lakes surrounded by large emergent macrophytes likely provide preferred ovipositing sites for *P. insularum* and may possibly facilitate their invasion into new aquatic ecosystems.

29. Hypersexuality of Tibetan Women in China
Amy Hubbard, Department of Political Science
Faculty Advisor: Dr. Patricia Schiaffini, Department of Modern Languages and Literatures

My paper revolves around the representation of Tibetan women by the Chinese media and culture. As gendered examples of "The Other," minority women all around the world have been subject to a hypersexualization of their identity, and the Tibetan ethnicity is no exception. I will be using visual examples as well as scholarly literature to provide a discourse for such a sensual representation of Tibetan women and discuss the implications for the Tibetan minority as a whole and its role in the People's Republic of China.

30. Life, Death, and the Inner Sense: Two Translated Fragments
Carolyn Acker, Department of Modern Languages and Literatures
Faculty Advisor: Dr. Erika Berroth

How can we have connections with the dead? This is a question posed by the German Romantic writer Karoline von Gunderode in her drama, "The Manes." The play is a conversation between a teacher and his student about death. The teacher also talks about the inner sense, intuition, and how it shapes our conception of the world. The other text I present is a product of this inner sense. Titled "An Apocalyptic Fragment," the piece is a first-person account in which the author finds the source of life. These two fragments are part of the text base of my Honor's Thesis in German. In this thesis, I argue that the author's suicide is based, in part, on her philosophy of about life, death, and love. I translated the two fragments from the original late 19th/early 20th century German to English using my own German skills and help from my advisor, Dr. Erika Berroth. In this presentation, I will read both of my translations and briefly discuss the idea of the "inner sense." Karoline von Gunderode argues that our inner sense enables us to feel connections and produce knowledge. Her idea works against the enlightenment ideal, which values reason and the five outer senses over feelings and intuition.

31. Testimonial Literature: The Cure or the Instigator of Political Upheaval?
Erin Osterhaus, Department of Modern Languages and Literatures
Faculty Advisor: Dr. Katy Ross

Due to the constant political unrest in Latin America in the mid-twentieth century, a new genre of literature emerged that is particularly Latin American: "the testimonial." It has been argued that this genre appeared in Cuba after the Cuban Revolution in the 1960's, a fitting place for its emergence due to the impact of the revolution in all of Latin America. It therefore should come as no surprise that this genre has also affected the political and literary tendencies of almost every other country in Latin America. In Cuba, a long history of unjust domination by a rich minority over a poor majority unleashed the revolutionary events of the 1950's. *Autobiography of a Runaway Slave* (1968) by Miguel Barnet is an early example of testimonial literature in Latin America. This text provides insight on the social and political conflicts that later would give rise to the events of the mid-twentieth century. This book is the product of various interviews that Barnet conducted with a former slave named Esteban Montejo. Through the experiences of Montejo, Barnet gives voice to a Cuban demographic that had never before been able to express its opinion. In the process, Barnet creates a literary genre that will later be used in other Latin American countries to communicate their own political and social struggles. What remains after Barnet's attempt to represent a new perspective of Cuban history is the question: Did this book and others like it change the world they describe?

32. Askatasuna Euskal Herrian: Nationalism and Basque Culture
Scott Petit, Department of Modern Languages and Literatures
Faculty Advisor: Dr. Katy Ross

Background and Rationale: After studying in Spain for six weeks during the summer of 2007, I became very interested in ETA (Euskadi Ta Askatasuna, Basque for Basque Homeland and Freedom), a Basque separatist group, and the Basque country in general. This interest led to my enrollment in an independent study of Basque Culture and Language with Dr. Ross. This course led to an even greater interest in ETA and their current status. This course and the resurgence of terrorism in media and everyday life truly led to the research that follows. In order to understand the issues, the reader is assumed to have a very basic level of knowledge about the Basque culture and the ETA movement.
Methods: The primary research for this work came from research of scholarly works on ETA

to provide a background for different reasons ETA was started and its original motives. This is supplemented by more current resources, such as newspaper articles, to find out where they are now and how supportive Basques are to the ETA movement. Along with these sources my independent study in Basque culture and language has led to a greater understanding of the ETA movement and is referenced in this work as well.

Results: I feel I accomplished a greater understanding of the ETA movement for myself which I feel will transfer over to my peers through this work. Readers should leave with a different understanding of what terrorism is as this presents a national view as opposed to an international view as we generally view it. The reader should also leave with an enhanced knowledge of Basque culture, both history and language, as these are the two most important factors of their culture.

Conclusion: In a world where terrorism has sadly become a part of our daily lives, my research presents terrorism in a light not typically seen by an American audience. This research presents terrorism as an act of violence by Basques onto other Basques, atypical to the idea that terrorism is an outside group attacking an opposing group. This research also examines how these terrorist acts have impacted and affected primarily Spain but also France and the European Union.

33. The Washington Consensus: A Critical Review After Nearly Three Decades of Implementation

Derek Sample, Department of Economics and Business
Faculty Advisor: Dr. Dirk Early

The early 1980's marked a paradigm shift in the economic strategies used by much of the developing world. The rise of Margret Thatcher and Ronald Reagan in 1979 and 1980 respectively, the replacement of Robert McNamara as the head of the World Bank, and a desire for Latin America and Africa to catch up to the developing economies of East Asia all played a major role in this transformation. The previous strategy of broad state control and the use of Import Substitution Industrialization, used most extensively in Latin America, was exchanged for more market-friendly developing strategies. This shift can be most clearly seen through the conditional Structural Adjustment Programs adopted by the World Bank and used as a means to strongly encourage the governments of developing nations to adopt "sound" economic principles. Under this new doctrine, which came to be known as neo-liberalism, many of the worlds developing nations in Latin America and Africa have experienced significantly lower growth rates than in the previous decades. This paper attempts to quantify the impacts that these policies have had on the developing world. Cross-sectional macroeconomic data, capturing the policies of the Washington Consensus, will be collected for a sample of developing nations and analyzed using OLS methods. In performing the empirical analysis, this paper will attempt to quantify the impact of tariff rates on economic growth that is a new contribution to the field because country-specific tariff data has only recently become widely available through the publication the World Tariff Profiles provided by the WTO. Empirical analysis and results are still in progress at this time.

34. Uncovering the Underground Economy: An Empirical Study of Prostitution Pricing in the United States

Lisa Cummings, Department of Economics and Business
Faculty Advisor: Dr. Dirk Early

This research examines the impacts of physical appearance, deviant behavior, and social influences on the pricing of prostitution services in the United States through the construction of a hedonic pricing model. Empirical evidence on the pricing of services is not available for the United States, due in part to the illegality of the sector and the scarcity of data. This research models a similar 2004 study of the United Kingdom by using individual-

level data collected from an online escort review site. Pending results, one policy implication could include the legalization and regulation of prostitution in order to recapture lost tax revenue.

35. Flexible Work

Chloè Mott, Department of Economics and Business
Faculty Advisor: Dr. Don Parks

Flexible work options prove an increasingly popular form of occupation among employers because this work option furthers organizational objectives. Subsequently, the arrangement benefits employees through higher morale and increased efficiency. The results of flexible work propel many companies towards the new type of work initiative. The purpose of this project is to explore the concept of flexible work and how the concept's pre-conditions and consequences affect organizations and their experience with FW (flexible work). Additionally, the project will examine the implementation of Flexible Work inside McGraw-Hill Publishing Company. Crucial elements for flexible work's success include a psychological contract between the respective groups, a formalized strategy, and defined policies and guidelines. An environment facilitating flexible work through the provision of resources and a supportive framework proves necessary. A conducive environment generally appears evident through utilization of an effective management style aiding flexible options. Flexible work is a growing form of employee benefits plan in the business world. A constantly diversifying workforce has led human resource managers to realize the need for more broad forms of employee compensation. Flexible work plans allow employees to create their own schedules within set parameters to accommodate their individual needs. There are several types of flexible work benefit plans: flextime, compressed workweek, job sharing, and home based work. The creative works project analyzes the implementation of flexible work inside McGraw-Hill, an information services provider/publisher based in New York City.

36. The Socio-Economic Predictors of Childhood Obesity

Shannon Foster, Department of Economics and Business
Faculty Advisor: Dr. Dirk Early

This paper explores the economic and social causes of childhood obesity and investigates whether childhood obesity has disproportionately affected certain "at risk" children who belong to low-income or minority groups. It examines the causes of childhood obesity as a product of a child's genetic predisposition, lifestyle habits, and economic environment. Using the sample of children aged 2 to 17 from the 2005-2006 National Health and Nutrition Examination Survey, the BMI score and the probability of obesity of a child are modeled. The data analysis includes race, gender, household income, household education, weight at birth, and frequency of physical activity as predictors of BMI and obesity. The results conclude that lower incomes, greater frequency of sedentary activity, and being either black or Hispanic are associated with a higher BMI and greater probability of obesity. Greater weights at birth are also associated with higher BMIs and greater probability of obesity in a child, and the effect of birth weight seems be greater for children over 6 years old.

37. The Southwestern University Student Book Exchange

Matt Vaughn, Department of Mathematics and Computer Science
Faculty Advisor: Dr. Suzanne Buchele

Each semester students must purchase textbooks for their classes. They must often choose between the high prices of the bookstore or wait for books purchased online to arrive. Often, a student will only use the books for a single semester before selling the book back to the bookstore for significantly less than they paid for it (even if the book is still in good condition), or they can attempt to sell the book online. Because in most cases students at

Southwestern could use these books the following semester, I am developing a web application which will facilitate the exchange of text books between students. This application will streamline the exchange of books at Southwestern while allowing students to get fair prices for their books. The system will allow users to login to the site and upload important information about a book that they are trying to sell and the price they would like for the book. Users who would like to purchase a book will be able search through the database to find the book they are looking for. When a user finds the book they want they will be given the contact information of the person who is selling the book. The contact information of a user is only available to other users of the site who are logged in. To ensure the privacy of its users, one must have a valid Southwestern email address to login to the site.

38. WELSH: An Easy-To-Learn Command Line Interface for Windows
Lane S. Hill, Department of Mathematics and Computer Science
Faculty Advisor: Dr. Suzanne Buchele

A CLI is an interface on a computer so that the user can type in commands to accomplish tasks. However, the problem with most CLI's is that commands differ from CLI to CLI and often use hard to forget commands. For instance, the search command on the BASH (Bourne Again Shell) is known as "grep." For a new user, this is hard to remember when (s)he wants to search for a file or search in text. Also, for Windows users who like to use CLIs, their range of choices is rather small. For years, the most famous CLI shell on Windows is cmd.exe, which is a DOS emulator. The upcoming Windows 7 comes with a new shell, called PowerShell v2, which some users find to be too powerful and complex. WELSH (Windows Easy Language SHell) is a shell that was developed to solve this problem – WELSH uses easy to remember commands (such as "change_directory" and "search"), as well as support for standard UNIX and DOS commands. Easy to read documents are also supplied to fill up an untapped market – the CLI that is easy to use, easy to learn, and can be used as a stepping stone for more complex CLIs.

39. Building Nemo: The Development of a 3D Animated Mummichog to Study Various Aspects of Schooling Behavior
Morgan Mingle, Department of Psychology
Faculty Advisor: Dr. Kevin Woo

Video animation playback is a technologically advanced tool that has been successfully used in various experimental contexts. The application of computer-generated animations has been demonstrated in studies of mate preference, social recognition, and opponent assessment. Moreover, animations have been modeled across several species, such as birds, lizards, and fishes. Here, we present the methodological approach taken to develop the animation of a schooling baitfish, the common mummichog (*Fundulus heteroclitus*). We employed a 3D animation software (Blender v2.48) to create a realistic representation of a mummichog with accurate morphological, textural, and movement features. We aim to apply our animation to investigate predator recognition, schooling behavior under selective pressures, and mate preference under predatory risks. Whereas previous studies have only examined the use of animated stimuli with single or pairs of individuals, our animation will provide a means to investigate interactions between many individuals (i.e., school) for the first time.

40. The Ethics of Earmarks

Paige Ammons, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

In the American Congress, funding pet projects or Pork Barreling is an accepted and arguably vital part of the political process. However, the concealed nature of earmarks, which are tacked on to congressional legislation, prevents open debate and publicity. Without an attentive audience requiring congressmen to think about other options and the layman's opinion of his actions, earmarks have an institutional tendency to allow corruption. This research focuses on the Abramoff scandal and specifically the actions of Former Representative Robert Ney (R-OH) as a case study evaluation of the relationship between the congressmen earmarking of bills and lobbying that occurs specifically to them. The primary focus is on the nature of institutionalized corruption as a link between lobbying and earmarks within the American government.

41. Governor Perry's Decision to Mandate Gardasil Vaccination for Texas School Girls: Good Policy? Good Politics? or an Ethical Dilemma?

Stephanie Seaman, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

Was Texas Governor Rick Perry's controversial decision to mandate the HPV vaccine for young girls entering the sixth grade motivated by the possible health benefits of the vaccine, by political considerations or by other factors such as connections between his administration and the Merck Corporation? While this decision was ultimately overturned by the Texas legislature, it provides an interesting case study where both real and perceived conflicts of interest, health issues, public passions over morality, and safety concerns about vaccinations combined to put this decision in the national spotlight. In this project I will analyze and describe the various influences of the decision to mandate the HPV vaccination and discuss the ethical dilemma that Governor Perry either faced or created. I will also discuss the role these ethical concerns played in the controversy that led to the ultimate overturning of the decision.

42. The Second Gulf War and Personal Framing of a Security Threat

Drew Diamond, Department of Political Science
Faculty Advisor: Dr. Bob Snyder

The call for war against Iraq and ousting Saddam Hussein was laid out and justified by the Bush Administration prior to their initial invasion. Yet the road to this war was paved long ago at the fall of the Cold War with initiatives and actions by past administrations and state actors which directly influenced the state of mind of many key Bush administration officials when it came time to push for offensive action against the rogue regime. My paper highlights the roles and experiences of Bush cabinet officials such as Donald Rumsfeld, Dick Cheney, and Colin Powell which molded and framed their initial analysis of Iraq as a threat to U.S. security. These experiences illustrate why such decisions and actions were made given the intelligence reports they received as well as what history, interests, and misconceptions impelled the state actors' actions and rational.

43. What Is the Ethical Decision to be Made with the Remaining Detainees at Guantanamo?

Taylor Spalla, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

During the *War on Terror*, President Bush and Vice President Cheney were required to find a location to house captured fighters in the *War on Terror*. As President Obama recently took the Oval Office, one of his first executive orders was to dismantle the prison system at

Guantanamo Bay, a step that will require a decision on what to do with the remaining detainees housed in the prison facility there. I will determine if the ethical and practical decision to be made by the Obama Administration with the remaining detainees will be to grant the freedom and the safe return of the detainees to their home state. I will evaluate my thesis through Mill's view of Utilitarianism, or for the greater good of America and the rest of the world. The examination of the future of these detainees is important in many ways, but most important to ensuring the continuing security sought after 9/11. President Obama's decision will have lasting effects on both the United States and the rest of the world. The issue on what to do with the remaining detainees will become a household conversation in the coming months, and Americans should pay attention to this topic because it affects the respect and cooperation we receive from foreigners and foreign governments on many fronts. President Obama's Administration has one chance to repair the damage brought forth by Guantanamo Bay Detention camp, and his decision will likely affect the respect given both his Administration and future Administrations to come.

44. Evaluating the Ethical Considerations in the Passage of the Oregon Health Plan
Stephen Higdon, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

This paper analyzes the ethical considerations present in Dr. John Kitshaber's passage of the Oregon Health Plan. The intended end is to construct a functional set of ethical considerations that takes into account the normative practices of legislative life, while prescribing a better function legislative body, thereby enhancing the democratic process. This accomplished via synthesis of the relevant literature on legislative ethics and the lessons gleaned from the case study of the Oregon Health Plan. The major finding is that an analysis of Kitshaber's actions suggest an appropriate mechanism for employing the ethical considerations of responsibility, autonomy, and appearance, and this framework of ethical considerations, therefore, constitutes a valuable conception of legislative ethics.

45. Symbolic Art: Revolutionary Success and Failure
Amelia Shroyer, Department of Political Science
Faculty Advisor: Dr. Eric Selbin

This project examines the revolutionary art of three revolutionary periods: the failed revolution of the Paris Commune in 1871, the failed revolution in Paris in May 1968, and the successful revolution of the Sandinistas in Nicaragua of 1979. The first two periods in France were the subject of my Capstone, in which I examined reasons why these revolutions failed as reflected in the artwork of the period. For this project, I am extending the study to examine the successful revolutionary case in Nicaragua, and would like to see whether or not a difference in revolutionary art can point to the difference between successful revolution and failed revolution. To do so, I'm examining paintings, photography, graffiti and other forms of street art, lithographs, caricatures, and political posters. Through these media, I plan to examine the differences in the depiction of leaders, female revolutionary bodies, barricades, death and destruction, and communal organization between the French cases and the Nicaraguan case.

46. The Effect of Social Networks and Healthcare Interventions on Tobacco Use Outcomes
Wes Rivers, Eric Franco, Department of Economics and Business
Faculty Advisor: Dr. Mary Young

Tobacco-related illness is the most preventable cause of death in the United States and poses a large economic burden to tobacco users and society at large. Research findings on the dynamics of tobacco use may help create more efficacious cessation programs which mitigate these costs. Using primary data, this study examines the social dynamics of tobacco use along with several other factors and characteristics. The following tobacco use outcomes are examined: (1) the probability of habitual use, (2) the probability of successful cessation, and (3) the total time abstained from use. Findings on social dynamics suggest an incidence of peer effect or social multiplier associated with tobacco use. Findings also suggest dental care visits are a significant deterrent of tobacco use. In summary, the study suggests that programs which (1) capitalize on the positive collateral health effects of cessation as well as (2) interventions by health care providers may be more effective than programs which do not take these factors into account.

47. Factors in Opinions on Childcare: Effects of Life Experiences on Views of Childcare
Jessica Herbst, Department of Sociology and Anthropology
Faculty Advisor: Dr. Edward Kain

This research examines factors that contribute to an individual's opinions on childcare. More specifically, the study examines the relationship between military experience and experience of being abused as a child and their effects on an individual's opinions on spanking and government intervention during specific situations, such as repeated child abuse by the parent and failure by the parents to provide their child with adequate food and clothing. Data will be analyzed using secondary analysis of the five most recent years of the N.O.R.C. General Social Survey that obtained the applicable data, including 1989, 1990, 1991, 1993, and 1994. The respondents of the GSS were asked specific questions about military employment, abuse experience, and their opinions on spanking and government intervention in three specific situations. The researcher expects that longer experience in the military and more frequent experiences of being abused as a child will result in viewing spanking as an effective childcare method and government intervention as less necessary.

48. Hispanics in the U.S. and Leading Health Indicators: Current State Health and Predicting Future Health
Lauren Hamlett, Department of Sociology and Anthropology
Faculty Advisor: Dr. Edward Kain

The proportion of the Hispanic population that is young in the United States is greater than the total young population in the United States. For this research an analysis was performed on state data to examine how Hispanic-American population percentages are correlated with several health indicators (insurance coverage, homicide, physical activity, obesity, cigarette use, binge drinking, suicide and pneumonia vaccination rates) in each state in the U.S., while controlling for median household income. Due to constraints affecting quality of care and access to care for Hispanics in the U.S. compared to non-Hispanics in the U.S., it was expected that states with higher percentages of Hispanics would have less favorable health indicators. The results show that states with higher percent Hispanic population have lower overall health insurance coverage and lower rates of people 65 years and older having had the pneumonia vaccination. This information may be useful especially for those states with high percentages of Hispanics and for those with rapidly changing Hispanics populations.

49. "Stand Up Straight:" The Significance of Networks, Framing and Collective Identity in Building a Straight-Gay Coalition.

Tristine Baccam, Department of Sociology and Anthropology
Faculty Advisor: Dr. Maria Lowe

The creation and strengthening of relationships and resources becomes imperative in the continuation of the Lesbian Gay Bisexual Transgender (LGBT) movement. New organizations fighting for LGBT rights are able to advance to the national forefront by building coalitions with other well-established LGBT organizations. Using participant observation and interviews, I examined a straight-gay alliance in Austin, Texas, and two of its partner gay organizations. Findings suggest that social networks provide the foundation in which coalitions are built and in turn facilitate the creation of collective identity. In addition, collective identity and framing worked in tandem to reproduce one another to be inclusive of LGBT and straight families in the progression of the LGBT movement in Austin, Texas.

50. From Bra Burning to Bible Study: Motivation for Political Activism and Polarization Among Female Activists

Grace Stafford, Department of Sociology and Anthropology
Faculty Advisors: Dr. Maria Lowe, Dr. Sandi Nenga

The 2008 presidential campaign year marks a historical election in which people have been more involved than ever before. Due to the heightened interest in politics in the 2008 campaign season, it is an ideal time to explore how self-defined Democratic and Republican female activists are involved in the 2008 political elections and ways in which their involvement informs their ongoing participation in other forms of grassroots activism. Through interviews, participant observation and examination of campaign and grassroots materials, this study will examine female activists in Williamson County, Texas, in order to see how the campaign season has effected their participation and perception of the political parties as well as increase understanding of how their unique backgrounds and experiences inform their activism and their involvement in their political party.

51. The Medical Institution and Transgender Bodies: Listening to the Words of Transgender Experiences Dealing with Medical Care

Nadia Alareksoussi, Department of Sociology and Anthropology
Faculty Advisor: Dr. Melissa Johnson

The medical institution is thought to be a safe place, where people of any shape, size, gender or status can go to for assistance in improving their health, body and wellbeing. Transgendered bodies use this institution to alter their physical self to construct the body they feel they should have. However, "transgender individuals experience a variety of challenges in gaining access to primary health care, and although research on this topic has been sparse, it is clear that transgender and gender-nonconforming individuals experience profound health disparities compared with the general population" (Hanssmann, Morrison & Russian, 2008). The following study uncovers transgender experiences navigating the medical institution through interviews, in order to discover what transgender people themselves feel about how the medical institution hinders or assists their needs. Through looking at historical and contemporary text, this paper will look at what has been written in the past as well as what is being written in recent years about transgender experiences in the medical community. Then the methods of research will be examined followed by what was found throughout interviews about experience. This work tries to uncover the differences between what the medical institutions feels about transgender bodies and what transgender people feel about the medical community.

52. To Belong or Not to Belong: Identity Among Muslim Diasporas in the Netherlands
Tanlyn Roelofs, Department of Sociology and Anthropology
Faculty Advisor: Dr. Melissa Johnson

The Netherlands has the highest percentage of Muslims of any Western European country, and Muslims in the Netherlands, as in other European countries, experience resounding institutional racism and public discrimination. Based upon two months of ethnographic research in the Netherlands and a visit to Turkey, in this paper I analyze how Muslims in the Netherlands negotiate maintaining their varied Muslim identities, deal with the barriers of racism that confront them, and attempt to craft a way to live in this northern European country. My findings suggest that those migrants who are able to simultaneously express their Muslim identity and embrace a sense of Dutchness are able to most effectively navigate life as a Muslim immigrant in the Netherlands.

53. Huntington's Disease: A Case Study in Bioethics and American Healthcare
Lara Reinhard, Department of Biology
Faculty Advisor: Dr. Andrew Woodward

Huntington's disease is an inherited disorder that disrupts the nervous system and eventually causes patient death. Inheriting only one mutated copy of the Huntington gene is sufficient to cause Huntington's disease. The signs and symptoms of Huntington's are neurological and physical in nature and are normally seen during middle age (late 30s to 40s), but can sometimes be seen in younger individuals, as well. Although there are some preventative measures that can potentially delay the onset or progression of Huntington's disease symptoms, including maintaining exercise and counseling, other aspects and implications of disease management should be explored. I am researching both the biology of the disease itself and how it affects individual lives and broader society. Further, I am examining the ethics of modern genetic testing and treatment regimens for Huntington's disease. Not only is it important to provide aid to the individuals who have Huntington's, but also to their family or support groups. In addition to reviewing current literature, I will be polling individuals from various countries to relate how they feel their home countries would manage the disease, and to identify opportunities for improvement of the system in the United States. The overall objective is to introduce a general understanding of Huntington's disease and explore how the care and daily life of Huntington's patients can be improved. Taken as a case study, this examination of Huntington's disease has implications for many other human genetic disorders.

Panel Presentations

54. *Topic: Civic Engagement - Abuse and Violence*

Not-So-Secret Confessions of an Overlooked Reality: Four Students' Experiences at Local Abuse Agencies

Samantha Belicek, Jessica Domino, Cordelia Stough, Hailey Ormand, Office of Civic Engagement

Staff Advisor: Suzanna Pukys

This past summer, Suzanna Pukys obtained a grant from Verizon to place nine Southwestern students as paid interns at local abuse agencies. As a result of their experiences, the Verizon interns gained an understanding of the causes and effects of various types of violence and abuse. They also learned about the transmission of abusive tendencies through families and the importance of intervening in this destructive cycle. Most importantly, they now understand that it is the responsibility of the community as a whole to both recognize the existence of these issues and seek to prevent their occurrence. While the interns were left with many stories and a wealth of information concerning abuse and violence, they will focus on the following in the panel:

- a. The connection between the education system, social services, and abuse agencies
- b. The immense emotional and psychological impact on children who pass through the foster system
- c. How to raise awareness and productive conversation regarding domestic violence
- d. Challenges that nonprofit organizations face, including monetary needs and volunteerism

This presentation is just a small part of the plethora of valuable experiences and insight the Verizon interns gained during the ten weeks of the internship. They seek to improve the Georgetown community's consciousness and involvement in abuse prevention by bringing attention to the realities of abuse and violence.

55. *Topic: Domestic Violence and Non Profits*

Insights into Domestic Violence and the Non-profit Sector: Students' Experiences Interning with Local Domestic Violence Agencies

Sarah Fritz, Travis Norton, Mariah Arispe, Office of Civic Engagement

Staff Advisor: Suzanna Pukys

Students who were provided summer 2008 internships with Verizon's domestic violence grant will describe (in a panel) their experiences with their respective agencies (i.e., Williamson County Children's Advocacy Center, LifeSteps, Hope Alliance) in order to educate the community about domestic violence, especially within Williamson County. Each intern will describe his or her agency (e.g., mission, target population) and his or her responsibilities as an intern. In addition, each intern will discuss certain insights gained for his/her experiences. Specifically, the Williamson County Children's Advocacy Center intern will explain the prevalence and causes of child abuse, the cyclic nature of violence, and the challenges in breaking the cycle. Next, the LifeSteps intern will discuss the close connection between domestic and family violence, and the influence of substance abuse on violence. Finally, the Hope Alliance intern will reflect upon the relationship between non-profit organizations and the community, especially the critical economic implications and burdens that that influence non-profit agencies, which ultimately determine the agency's success or failure in achieving goals.

Creative Works and Exhibitions

Bishops Lounge

56. The Rubens Tube

Will Hardy, Sean Smith, Pelham Keahey, Department of Physics
Faculty Advisor: Dr. Steven Alexander

Our group seeks to connect physics and music through this project. To this end, we built a Rubens tube, a device that represents sound waves visually using flames. It has three main parts: a pipe with holes drilled in a line down its length, a flammable gas source (a propane tank), and a frequency source (a speaker in one end cap pointed into the tube). When we open the propane tank valve, gas fills the pipe and exits through the holes drilled in the top. We light the gas, which makes one flame from each hole on top of the tube. The speaker introduces a sound wave into the tube, and the sound creates areas of high and low pressure in the gas. This makes a pattern in the flames that represents the sound. The sound source can be a frequency generator, a musical instrument, a microphone, or a recorded media source, like a computer or digital music player.

57. The Stylophone

Chris Elliott, Physics
Faculty Advisor: Dr. Steven Alexander

In an attempt to revive a once popular children's toy from the 1970's, we have created a stylophone, which is an electronic musical instrument that generates various tones based on an oscillating voltage. This is made possible by resistors of different ratings that can have current running through them. When the stylus is touched to a key, it completes a circuit running through a particular resistor which in turn passes through a speaker producing a monotone sound.

58. An Untapped, yet Viable Energy Alternative: Solar Chimneys

Chris Elliott, Department of Physics
Faculty Advisor: Dr. Steven Alexander

A solar chimney is a way of harnessing the sun's light energy in the form of heat that can be magnified using special magnifying glass or clear plastic. This amplified energy is used to heat up air under this magnifying plate. Hot air naturally tends to rise and can be redirected upward through a chimney in the center of the apparatus to drive a turbine, which in turn produces electricity. Solar chimneys are largely untapped energy resources that have much potential for working toward solutions for the world's energy crisis. The most wondrous part of this sort of energy production is that solar energy is free. This means that any energy produced from this solar chimney comes at relatively low cost once the apparatus is built. Some simple designs have already been constructed in the past but this project's intention has been to generate a higher energy output. This project has allowed me to get a hands-on experience with designing, building, and testing models in a real world setting. The integration of computer science in optimizing the shape of the cone using algorithms developed by myself and others along with the physics of this energy generator has made for a very interesting project and an unparalleled learning experience.

59. Southwestern University Posters for the Environment (SUPE)

Ruben Torres

Faculty Advisor: Dr. Laura Hobgood-Oster, Environmental Studies Program

SUPE is the creation of some motivational and environmental posters with the purpose of enhancing the appearance of the main recycling areas in the academic buildings as well as promoting student work, student life and achievements, on campus. The purpose of this project is to inspire and motivate the Southwestern community to care more for the environment, to move beyond the waste we create and the recycling containers and onto the many issues of sustainability connected to recycling. In addition, the purpose is to bring out the collective creativity and diverse perspectives on environmental issues in a positive way that promotes a sense of accountability for environmental issues. It is way of bringing all of our departments and students together for the purpose of promoting positive environmental actions. The posters would be displayed as a decorative background to improve the appearance of the main recycling collection areas in all academic buildings. Each poster will be rotated monthly between recycling areas to keep a fresh and interesting message displayed. After a poster finishes its cycle life, it will be given to the person/department that created it. The following year we would start over with a new set of posters, pictures and messages.

60. Infinite Chaotic Arcade Machine

Duncan Alexander, Department of Art and Art History; Lane Hill, Department of Mathematics and Computer Science

Faculty Advisor: John Ore, Department of Theater

Art on the cutting edge is always intertwined with technology. New Media Art, the result of this combination, is underrepresented on the Southwestern University campus in comparison to the more traditional arts. The Infinite Chaotic Arcade Machine seeks to change this, functioning as an experiment in digital media that the traditional viewer can interact with. We went about creating the machine by designing and building a custom arcade cabinet. One of the roadblocks we met was that neither of us were particularly skilled in carpentry, and so the cabinet assembly was instructive as we became more familiar with the tools and planning necessary. Next, Lane wrote the software and Duncan designed pixel art to facilitate the user's experience with the machine.

Gallery of The Sarofim School of Fine Arts

61. Shades of Inequity

Casey Grier, Department of Art and Art History

Faculty Advisor: Victoria Star Varner

Through a series of paintings, I intend to exemplify the inequalities that are subtly reinforced in schools, including those deriving from racism, sexism, heterosexism, and ableism. While it would be comforting to dismiss these issues as issues from America's past, the sad reality is that they continue to affect America's future because they continue to affect America's schools. This series serves as documentation for the inequities I routinely witness in public schools as part of my field-based preparation for teaching. By the particular and specific use of the elements of color and line, I aim to translate a social reality into the abstract language of painting, creating aesthetically pleasing and conceptually engaging works of art. I want to stimulate the viewers to consider the following question: "What biases are we unintentionally teaching our children?" My immediate goal, of course, is to invite the viewers to think about these biases, but my broader hope is that my paintings will set them on a path to living for social justice.

62. Canine Casualties: Genetic Disorders and Health Problems in the Domestic Dog
Sarah Reesor, Department of Art and Art History
Faculty Advisor: Patrick Veerkamp

For my senior exhibition, "Canine Casualties," I have created a body of work that examines the health problems that are particularly prevalent among purebred dogs and addresses how kennel clubs and breed registries have contributed to these problems. I chose to explore this particular facet of the relationships between humans and animals because domestic dogs are an important part of my own personal experience, and are creatures I care deeply about. In order to examine these health problems, I researched disorders known to occur in specific breeds of dogs, and then developed images that I then carved into the surfaces of my vessels. Some are more diagrammatic in the manner of a medical illustration, while some depict the resulting effect on the dog. Creating these images of pedigree dogs and their potential health problems highlights the existence of the many inherited disorders in the dog population; the concept of purebred dogs that developed in kennel clubs and resulted in limited gene pools for most breeds has contributed to the current situation. My objective is to create interesting, visually stimulating, tactile art, while simultaneously increasing the audience's awareness of these problems.

63. Metonymy
Bernardo Schirmer, Department of Art and Art History
Faculty Advisor: Victoria Star Varner

The concept of metonymy perfectly fits the function still lives served during the Dutch baroque period, when objects in paintings could serve as symbols for larger social, religious or political concepts. Metonymy also describes how I have approached my use of still life. I choose objects that I find in my everyday experience and place them in my still lives as contemplations of my identity, especially as an identical twin. Each arrangement of objects addresses either a personal experience, traumatic and otherwise, or my thoughts on the twin experience within the singleton world. I purposefully force the relationships between two objects by situating them within the syntax of the painting language to create metonymies, homonyms or metaphors for my life experiences as a twin. This series of paintings emerged from my realization of how tenuous and dependent on my brother's existence my own sense of singular self was and just how little of my own body I considered personally mine. I chose still lives as my painterly vehicle because of their intrinsic enigmatic qualities. In this series, these mundane and unusual objects take the role of my thoughts and even myself and my brother, the thus far inseparable we.

POSTER PRESENTATIONS

64. The 'Real Bedik' -Authenticity, Identity, and Agency in Marketing Culture for the Tourist Gaze

Eryn Snyder, Department of Sociology and Anthropology
Faculty Advisor: Dr. Melissa Johnson

Global tourism is a vast enterprise emerging within Third-world economies, wherein authentic culture has become a highly valued and sought after commodity. This emergence of authentic culture as a commodity raises complications and conundrums centering on how authenticity is defined and marketed, especially within the context of historical inequality. Through an analysis of ethnographic fieldwork among the Bedik, a small ethnic minority in southeastern Senegal, I seek to critically examine how the Bedik have come to be represented as having an 'authentic' culture; and how the Bedik are positioned by others, and position themselves, as purveyors of "real" Africa. I show how these processes of creating Bedik culture entail a hybridization between tradition and Western expectations and aesthetics. I found that Bedik understandings of image production and the tourist gaze frame what they wish to present as authentically Bedik and how they wish to market it. Furthermore, the sustained presence of spectatorship within their villages has had complex effects on how the Bedik view their own culture. My analysis ultimately investigates the agency the Bedik have in these cultural exchanges, and what role tourism is playing in the Bedik's conception of their cultural identity.

65. Getting Closer: Investigating Natural and Induced Aggregation in Applesnails (*Pomacea insularum*)

Scott Manusov, Department of Biology
Faculty Advisor: Dr. Romi Burks

Aggregations commonly occur across a suite of species. Aggregations aid routine tasks such as protection from predators, food gathering, or finding a mate. Depending on purpose, animals utilize different signals for aggregation or environmental cues such as season, temperature or resource presence to know when and where to aggregate. Studying mechanisms behind aggregation tests alternate hypotheses for patterns ecologists see in the field. To explore relationships between behavior and life history, we measure degree of aggregation exhibited by juvenile applesnails, *Pomacea insularum*. *P. insularum* occurs as an exotic invasive species in Texas. Sampling efforts often encounter a *hit or miss* pattern, especially as snails tend to aggregate near bases of certain plants. To assess aggregation, we developed a method to measure distance to the nearest neighbor for three snail densities (3 snails = 3.33 snails m⁻²; 6 snails = 6.7 snails m⁻²; and 9 snails = 10 snails m⁻²). Inflatable pools (122 cm diameter) provide our experimental arena where we observe snail interactions. For each pool, we take digital pictures (640 by 480 pixels taken every 15 minutes) that we can then measure digitally on the computer. After one hour, we add 30g of lettuce to examine if the presence of a resource influences aggregation for an additional hour. Comparison of actual measurements versus imaging data quantifies an error rate of less than 1.5%. After documenting default aggregation patterns, we plan to investigate multiple chemical cues. Such insight may help predict patterns of snail invasions and hopefully contribute to management efforts.

66. The Persistence of Pink: Potential Ecological Influences of Ovorubin in Egg Clutches of *Pomacea insularum*
Olivia Stanzer, Department of Biology
Faculty Advisor: Dr. Romi Burks

Exotic invasive species can be difficult to remove because they often disappear or merge into the landscape. *Pomacea insularum*, a large, cryptically brown applesnail, recently established reproductive populations across the Gulf Coast. This applesnail lays incredibly noticeable vibrant pink clutches on emergent vegetation. Cheesman (1958) originally discovered that ovorubin constitutes the chromoprotein within clutches giving them that flashy pink color. Nearly 50 years later, Argentinean biochemist Dr. Marcus Dreon found that ovorubin allows egg clutches of a related applesnail, *P. canaliculata*, to withstand varying environmental conditions (i.e. oxidative stress from light). Mitochondrial DNA work recently genetically distinguished *P. insularum* as a separate, yet close-related species to *P. canaliculata*. Such protection confers a greater chance of egg survival. Management efforts suggest submerging recently laid eggs under water as a means to slow hatching success. Despite their color, clutches rarely exhibit predation damage and speculation exists that ovorubin makes eggs unpalatable to predators. However, no research exists investigating how ovorubin ecologically affects predation susceptibility. Using methods that I have modified and validated, I plan to test the influence of this protein on consumption by aquatic predators and hypothesize that the protein chemically deters predators from ingesting food sources that contain ovorubin. I will use a 2x2 factorial design (N=5) consisting of predators (*Procambarus clarkii* crayfish versus juvenile applesnails) and protein (absence versus presence of ovorubin additive). These results help in determining costs and benefits of possible management strategies in locations where invasive *P. insularum* or *P. canaliculata* have negatively impacted environments.

67. Ecology in the Public Sphere: Hands-On Experience Accuring Bio-Assessment Data of Local Stream System
Alonzo Thomas, Department of Biology
Faculty Advisor: Dr. Romi Burks

As a discipline, Ecology examines interactions between abiotic and biotic factors that influence distribution and abundance of organisms across habitats. Ecological investigations increasingly appear intimately connected with proximal urban environments. In Georgetown, two forks of the San Gabriel River, the North and South, converge at the confluence, collectively carrying all the water in a single channel. Each branch contributes to the ecology of the lower reaches of the stream through different resources. Water management decisions for Lake Georgetown dictate fluctuations in the North fork flow, while South fork fluctuations occur more naturally due to precipitation and spring flows. Although the USGS monitors stream flow, very little other biological information exists on this dynamic system. With funding from the 3M Corporation, three teams of 5-6 ecology students conducted weekly water quality assessments which included visual evaluation, discharge, alkalinity, water conductivity, total suspended solids, concentrations of dissolved nutrients, and macroinvertebrate identification and quantification. Teams also developed and implemented protocols for sampling fecal bacteria, net primary production, and algal productivity. The semester-long Stream Ecology lab included three main objectives: (1) application of research and analysis techniques to actual fieldwork; (2) introduction of stream ecology to middle-school students through partnership with the After School Action Program; and (3) synthesis and distribution of an assessment of overall health of the San Gabriel River. In addition to this forum, ecology students will present their findings to local community stakeholders. From this work, we developed a sense of how human activity can impact local freshwater systems.

68. Domestic and Sexual Violence in our Community: The Findings of Interns
Lindsey Smith, Office of Civic Engagement
Staff Advisor: Suzanna Pukys

Domestic and sexual violence accounts for at least \$4.1 billion in health costs every year. Thus it is imperative that both preventative measures and treatment be provided in every community. Last summer 9 Southwestern students were given the opportunity through a Verizon grant written by Suzanna Pukys to intern at 5 different non-profits dealing with domestic and sexual violence in our community. These non profits included Hope Alliance, Williamson County's domestic violence and sexual assault program, Children's Advocacy Center, Williamson County's center for abused children and their families, STARRY, Williamson County's youth crisis center, Lifeworks, Williamson County's center for families dealing with substance abuse, and Safe Place, Travis County's domestic and sexual assault program. The students spent 10 weeks at one of these locations during the summer of 2008 providing services to clients through a variety of responsibilities. The 9 students who participated learned about the prevalence of domestic and sexual violence in our community, and the lack of resources available to both prevent the violence and provide services to survivors. Through work in the field we were able to connect stories of people we met and helped to structural changes that need to take place for the violence to end. This poster will address the statistical and anecdotal reality of sexual and domestic violence, and the steps that can be taken to continue ending it.

69. Characterization of Micellar Systems and Comparison to Aquatic Toxicity Mechanisms Using the Abraham Model
Jennifer Gibbs, Department Chemistry and Biochemistry
Faculty Advisor: Dr. William Acree, Jr, University of North Texas

Background and Rationale: The Abraham model is a linear free energy relationship correlation used model solubility of compounds in a specific solvent. One such system is the solubility of compounds in surfactant micelles. Micelles imitate living systems because of their similarity to the lipid bilayer.

Methods: Experimental gas-to-micellar partition coefficient ($\log P$) and micellar electrokinetic chromatographic (MEKC) retention factor ($\log k$) values were compiled from two different surfactants, hexadecyltrimethylammonium bromide (CTAB) and sodium dodecyl sulfate (SDS). For each, a linear regression was formed using the statistical program SPSS. The expressions obtained were compared to expressions modeling the solubility of toxic compounds in fish and the solubility of compounds in organic solvents by PCA analysis.

Results: The expression formed for CTAB predicted $\log P$ and $\log k$ values well with a standard deviation of 0.171 and a R^2 value of 0.990. The expression for SDS also predicted experimental values well with a standard deviation of 0.153 and a R^2 value of 0.991. PCA analysis showed that the surfactants closely modeled the aquatic systems, but were not similar to the organic solvents further showing the similarity of surfactants to biological systems.

Conclusions: Solubility of compounds in surfactants can help in deciding which ones to use for specific applications such as drug delivery systems and remediation of contaminated waste sites. Their similarity to biological systems also means surfactants can be used to model solubility of compounds in biological systems.

70. Formation of a triplex using ds-DNA and a peptide nucleic acid-anthrapyrazole conjugate
Carlos Cardenas, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Kerry Bruns

Anthrapyrazoles (AP) are intercalating agents that have been proven to be potent cytotoxic compounds. Peptide Nucleic Acids (PNA) have recently become interesting to scientists because of their peculiar resemblance to DNA and their sometimes beneficial differences. By duplex invasion, PNA can bind more strongly to DNA, forming a DNA triplex. We hypothesized that an AP/PNA conjugate would form a triplex with ds-DNA, allowing for better intercalation of the anthrapyrazole. We used various techniques involving absorbance and fluorescence to suggest that a triplex was, in fact, formed. If these AP/PNA conjugates allow for better intercalation of AP and heightened cytotoxic ability, they can be used in the future as an alternative method for the preventing replication of various forms of cancer.

71. Interaction of Dichloro (dipyridylquinoxaline) Platinum(II) with DNA
Carissa Fritz, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Gulnar Rawji

The interaction of $[Pt(dpq)Cl_2]$ (dpq = dipyridylquinoxaline) with DNA has been studied by a variety of techniques. The results suggest that the Pt(II) complex binds noncovalently to DNA. Absorbance titrations show a large hypochromism in the absorption for the complex upon addition of DNA giving a binding constant of $\sim 10^5$. In gel electrophoresis experiments, with increasing concentration of the complex, complete unwinding and subsequent rewinding of double stranded DNA is observed while resulting in no cleavage. These results suggest that the binding is through intercalation. The DNA melting data shows only a slight increase in the melting temperature of the DNA in the presence of the complex and is thus, less conclusive. These results together with changes in viscosity of DNA caused by binding of the complex will be discussed with respect to the possible binding modes of the complex to the DNA.

72. Unwinding and Rewinding of DNA by Binding to Platinum Metallointercalator
Tammy Nguyen, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Gulnar Rawji

The interaction of $[Pt(bzimpy)Cl]^+$ ($bzimpy$ 2,6-bis(benzimidazo-2-yl)pyridine) with DNA was investigated using fluorescence titrations, DNA melting, and gel electrophoresis. The Pt(II) complex exhibits strong fluorescence which diminishes significantly upon binding to DNA. A binding constant calculated from these changes is $\sim 10^5$. The melting temperature of the DNA is significantly increased (~ 12 deg C) in the presence of the complex. Gel electrophoresis experiments show complete unwinding and subsequent rewinding of double stranded DNA, with increasing concentration of the complex. These results will be discussed with respect to binding of the complex to the DNA through intercalation.

73. Attempted Synthesis of Novel Bis-Anthrapyrazoles
Jennifer Pitzen, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Frank Guziec

Anthraquinone-based drugs have been investigated as possible anti-tumor drugs and show good biological activity. Anthrapyrazole (AP) derivatives have similar structures without the cardiotoxic side effects associated with anthraquinone use. APs intercalate into DNA, preventing replication. This interaction is reversible, as no covalent bond is formed. By modifying the substituents on anthrapyrazole base, steric and electronic interactions with DNA are altered, changing the biological activity of the molecule. In order to increase

biological activity, we hypothesized that two AP molecules can be linked with a flexible carbon chain, forming a bis-anthrapyrazole compound. A previous study linked two anthrapyrazole monomers with ester bonds, but little to no increase in activity was observed, possible due to the presence of cellular esterases which cleaved the molecule. Amide bonds, therefore, should be more stable under cellular conditions. Various bis-anthrapyrazole derivatives were synthesized, coupled, and purified to be tested for biological activity.

74. Development of a New Bis-Anthrapyrazole as a Potential Anticancer Drug

Mary Pennington, Department of Chemistry and Biochemistry

Faculty Advisors: Dr. Sandra Ludwig, Dr. Frank Guziec

Anthrapyrazoles are heterocyclic, planar molecules that are currently being studied as less cardiotoxic alternatives to anticancer drugs. They are intercalating agents that insert between the base pairs of DNA and electrostatically bind to nucleotides causing cytotoxicity in proliferating tumor cells. It has been hypothesized that the binding efficiency can be increased by connecting two anthrapyrazole molecules with a molecular spacer arm. Previously prepared bis-anthrapyrazoles with ester-linked spacer arms have shown better DNA binding efficiency than a single anthrapyrazole, but the effect on the growth of tumor cells was not as significant as predicted. This could be due to the hydrolysis of ester bonds in the linker arm by *in vivo* enzymes called esterases. Therefore, the ester linkage will be replaced by amide and amine bonds, which are more resistant to hydrolysis. In addition, the spacer will be replaced by polyglycol and polyamine derivatives to make the drug more water soluble and potentially more bio-available.

75. Synthesis of Seleno-Dapsone

Natalie Sanders, Department of Chemistry and Biochemistry

Faculty Advisor: Dr. Lynn Guziec

Dapsone, 4,4-diaminodiphenylsulfone, is a sulfonamide antibacterial agent that is primarily recognized for its ability to treat Hansen's disease (leprosy). Synthesized in 1908, Dapsone has been proven to be effective against bacterial infections such as tuberculosis, staph infection, and strep throat. Unfortunately this antibacterial agent is only effective in high doses which often result in serious side effects including anemia and hemolysis. Our research objective was to replace the central sulfur atom in Dapsone with a selenium atom, creating Seleno-Dapsone or 4,4-diaminodiphenylselenide. Elemental selenium has similar properties to sulfur and is known to control free radicals, reducing certain kinds of cancer. In addition many organic selenides are now recognized for their antioxidant and antibacterial properties. Most importantly, however, selenium analogues of other sulfonamide drugs have been proven more effective and less toxic than their sulfur counterparts. For these reasons we hoped that by synthesizing Seleno-Dapsone, we could create a selenium analogue of Dapsone that was equally effective but less toxic. Our synthetic approach began with precursor 4,4-dinitrodiphenylselenide which was subsequently reduced to 4,4-diaminodiphenylselenide using zinc and acetic acid. The light sensitive amino groups were then protected using Boc anhydride, followed by the oxidation of the central selenium atom with *m*-CPBA. The structure of the final precursor to Seleno-Dapsone has been confirmed by NMR, IR, and elemental analysis. The last step of deprotecting the amino groups was accomplished using trifluoroacetic acid. However the final product has been difficult to completely purify. Once purified, elemental analysis of Seleno-Dapsone will unequivocally confirm its structure.

76. Impact of Cultivar Selection on Phenolic Content and Antioxidant Properties of Basil (*Ocimum basilicum* L.)

Eileen Kwee, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Emily Niemeyer

Basil (*Ocimum basilicum* L.) is a common culinary herb that is known to contain high levels of polyphenolic compounds. In the current study, we determine the effects of cultivar on phenolic contents and antioxidant properties of 20 different basil genotypes. For all basil samples, total phenolic levels were quantified using the Folin-Ciocalteu method and antioxidant capacities were determined using the ferric ion reducing antioxidant power (FRAP) assay. The total anthocyanin concentrations of all red and purple basil cultivars were determined using a colorimetric assay with a cyanidin-3-glucoside analytical standard. High performance liquid chromatography was also used to quantify individual concentrations of the two most abundant basil polyphenols, rosmarinic and caffeic acid. This presentation will examine the impact of cultivar and general plant characteristics (such as color, growth habit, and heirloom vs. hybrid) on the antioxidant levels and phenolic contents of basil.

77. Heavy Metal Toxins in Dillo Dirt

Matthew Dorris, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Willis Weigand

In the late 1970s, the Environmental Protection Agency (EPA) started encouraging using processed sewage as recovered soil. Since then, there have been discoveries of toxic substances, such as heavy metals, present in sewage. Dillo Dirt is a product distributed by the city of Austin, TX Waste and Wastewater Utility. Dillo Dirt consists primarily of processed sewage and yard clippings collected from various parts of Austin, TX, and is sold as 'organic soil conditioner.' This study is being conducted to determine if Dillo Dirt contains toxic levels of heavy metals, specifically lead and cadmium. To this point, research has centered on finding an effective means of extracting the heavy metals from the soil. Preparations that have been tested include homogenizing, drying, and grinding the Dillo Dirt. Extraction methods have included mixing with dilute acetic acid, sonicating with dilute acetic acid, and performing a full acid digestion with EPA method 3050B. Method 3050B is an acid digestion using repeated additions of concentrated nitric acid and heat, repeated additions of 30% hydrogen peroxide and heat, and then an addition of concentrated hydrochloric acid and heat. Currently, treatment with ethylenediaminetetraacetic acid at differing pH values is being tested for its extraction efficiency. To this point, results indicate that cadmium and lead are probably present in Dillo Dirt; it is unclear in what concentrations they are present. Future research includes testing extractions using calcium chloride or 2,4-pentanedione and determining concentrations of chromium and iron in Dillo Dirt.

78. The Synthesis and Characterization of Select Cobalt (II) Complexes

Tiffany Salazar, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Willis Weigand

It is known that cobalt is a constituent of the vitamin B12 molecule and that the presence of this trace element is essential to many living organisms. Current research indicates this cation may have potential for anti-tumor or anti-parasitic activity. Cobalt ethylenediamine complexes have been found to be potent anti-microbial agents. The anti-bacterial and anti-fungal activities of some complexes have been studied against some of the pathogenic bacteria and fungi including: *C. diphtheria*, *E. coli*, *S. typhi*, *S. dysenteriae*, *S. aureus* and *V. cholerae*. The purpose of this work was to synthesize cobalt (II) complexes with select ethylenediamine derivatives from cobalt (II) acetate to then further investigate their anti-cancer activity. Complex 1 was obtained with 1:2 molar ratio of metal to ligand, and complex 2 and 3 were synthesized with a 1:3 molar ratio. The ethylenediamine derivatives

used in this study behave as neutral bidentate ligands that coordinate with cobalt (II). Cobalt (II) complexes of N, N-dibenzylethylenediamine, N, N-dimethylethylenediamine, and N, N-diphenylethylenediamine were synthesized and characterized by IR, UV-Vis and ¹H NMR spectra as well as physical properties such as melting point and color. Complex 1 was also characterized by X-ray crystallography. The IR suggests that the acetate groups behave as carboxylate ions. Further characterization of complex 1 will be done as chemical analysis is obtained. Future work will involve further characterizing complex 2 and 3.

79. DNA damage mediated by a naphthalene diimide bis-intercalator
Donato De Luca, Department of Chemistry and Biochemistry
Faculty Advisor: Dr. Maha Zewail-Foote

Here, we examined the DNA damage profile photoinduced by a novel bis-intercalator containing peptide-linked naphthalene diimide (NDI) units. Using agarose gel electrophoresis, we show that irradiated NDI bis-intercalator cleaves DNA in the presence and absence of oxygen while oxidative base damage and abasic sites were not substantially produced. The results from this study will provide insight into the unique intercalation properties of the NDI bis-intercalator.

80. Case Study and Analysis: The University Programming Council
Denielle Waite, Department of Economics and Business
Faculty Advisor: Dr. Don Parks

As a business major, I have learned many ways to evaluate industries and companies. In the case study and analysis, I evaluate my organization, UPC, which I have been apart of for four years. As the current president, I have a particular interest in UPC. Although I already had a lot of knowledge of UPC, I decided to interview people who have been a part of it longer than I have. I also applied business evaluation models such as SWOT, PEST, and Porter's 5 Forces. Although I was not able to compare everything directly from business to UPC, I was surprised to learn how similar UPC is to a small business. These results have benefited me because I will be leaving Southwestern with a more "real world" experience. This will make me more competitive in the tight job market.

81. Understanding Intercultural Experiences
Robert Saucedo, Department of Economics and Business
Faculty Advisor: Dr. Michael Kamen

Study abroad and intercultural experiences have been well supported and encouraged by SU. Many students who participate in these programs report both benefits and challenges. During my time at Southwestern, I have embraced several opportunities to study in other countries. I have studied in Valparaiso, Chile, Madrid, Spain, and Lima, Peru. After my time abroad, I became interested in learning more about how these experiences have impacted other students. Six college juniors and seniors who recently studied abroad for a semester were selected and interviewed about their experiences. The purpose is to learn more about how intercultural/study abroad experiences have impacted six SU students. A semi-structured interview protocol was used. Topics discussed include preparation, adjustment issues, financial issues, changes in perspective and views, what the participants learned, and the problems they encountered. The themes that emerged will inform future students and faculty about benefits, challenges, and appropriate preparation for intercultural experiences.

82. What About Math? An Investigative Study Centered on Effective Teaching Practices for Including Children with Mathematical Disabilities
Kelly Anderson, Department of Education
Faculty Advisor: Dr. Patti Baran

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If a student is struggling in reading and is significantly behind his peers in acquisition of reading and language skills, he may eventually be tested for dyslexia. This is due to the fact that this specific learning disability has been in the spotlight for quite sometime and had some very extensive research conducted on it. However, such is not the case with mathematics. In fact, if a child struggles in mathematics, the typical assumptions are that they do not like math or are not normal to struggle with math because a lot of people do and they make it through just fine. However, what if there is more to it than that? According to Shalev, Developmental Dyscalculia is a specific learning disability affecting the normal acquisition of arithmetic skills that affects 5 to 6% of school age children (2004). Although much research has been done about what dyscalculia is and what causes it, it is the aim of this on going study to critically examine effective instructional strategies for this particular group of children as well as how those strategies can be used to make the math classroom more enriching for all students. This study will use qualitative data which will consist of surveys and teacher interviews. It is the hope that this study will uncover effective instructional practices that will help all students become successful mathematical thinkers.

83. When Small Numbers can Mean Big Results: Small Group Instruction in Mathematics
Sara Braeutigam, Department of Education
Faculty Advisor: Dr. Patti Baran

Since No Child Left Behind was implemented in 2001, teachers and schools have been under increased pressure to perform well on standardized tests. According to Academic Excellence Indicator System (AEIS) scores for Texas, in recent years state mathematics scores have risen slightly. AEIS evaluates a range of variables to determine performance scores for schools, district scores, and state scores. There remains a large gap between reading scores and mathematics scores. What is the connection between instructional methods in each subject and the gap between the two scores? Small group instruction in reading is an accepted practice in many elementary school classrooms. This research seeks to investigate if small group instructional practices can be transferred to mathematics instruction. Additionally this research will address issues of implementing small group instruction including possible challenges that may arise. Through this ongoing research, a qualitative literature review and teacher interviews will be conducted to inform the study. Other limited quantitative research such as AEIS scores may also inform the conclusions. This study hopes to describe the value of small group mathematics instruction as well as spark interest in implementing such instruction in classrooms.

84. What are We Recognizing by Identifying Students as GT?
Lisa Leininger, Department of Education
Faculty Adviser: Dr. Patti Baran

Statistically, ten percent of any population is gifted and/or talented. During my time spent in schools, I have begun to notice trends and patterns of who populate these gifted and talented classes. In the local classes I observed, I noticed a disproportionate number of white students that did not reflect the schools' overall demographic population. Through this study I seek to answer the question: What populations are isolated within these gifted/talented classrooms? Also, what factors contribute to the misrepresentation of school population within gifted and talented classrooms? This study uses a combination of qualitative and quantitative research to answer these questions. Through the use of research of articles, documents, and interviews with local teachers this

study will attempt to determine if there are specific reasons for this underrepresentation of demographic populations within these upper level classes. This research is in progress; therefore, the results of this study are pending.

85. Supporting Inclusion Hands-On Science Lessons
Angela Lumpkin, Department of Education
Faculty Advisor: Dr. Patti Baran

Traditional elementary science lessons that involve reading and writing have developed into more active hands-on activities that encourage children to be more active participants in the classroom. These lessons must now begin to integrate the needs to students with special needs. Teachers do not always have the resources or knowledge they need in order to create engaging science lessons. Different kinds of support to form lessons that will meet the needs of all students in different ways, so teachers must be willing to vary in their teaching styles. In my research I hope to find the ways in which teachers find support and resources to teach science in an inclusion classroom. It will be helpful for pre-service teachers to know how teachers find the support they need to teach hands-on inclusion science lessons, and how they learn about inclusion and how to meet the needs of their students in an inclusion classroom. In this research, I will interview elementary science teachers and science coordinators who demonstrate what strategies need to be taken in order to teach effective science lessons. Through my research I hope that other beginning teachers and pre-service teachers will be able to use this information to find support and know where to look for resources in teaching science in a hands-on approach that will service students with special needs.

86. What are Children Learning about Culture Through the Textbook Series “Think Math!”?
Mikki Moffitt, Department of Education
Faculty Advisor: Dr. Patti Baran

In an increasingly diverse student population it is important to remember the background and cultures of students in order to provide more culturally responsive problems and teaching strategies. The general use of Arabic numbers and cross-cultural concepts in math often lead to the assumption that math is taught across cultures. The Third International Math and Science Study explored similar culturally-specific elements of math word problems and explores their impact on children's math learning and their impact on children's connections to cultural values. This research investigates the word problems and pictures used in local math textbooks and analyzes their implicit and explicit cultural context. By using both qualitative and quantitative methods I will explore the cultural assumptions embedded in math word problems in the Think Math! textbook series recently adopted by a local school district. I will also examine the degree to which the context, language, names, and type of problem are culturally responsive and relevant. This ongoing research will uncover whether there are any racial biases or stereotypes and check for equal representation of all races and ethnicities in the math textbooks. This research might be beneficial for school districts when adopting new math textbooks and the qualities they look for in a textbook series.

87. Parent Involvement in Student Work at the Elementary Level
Laura Potter, Department of Education
Faculty Advisor: Dr. Patti Baran

There are many benefits of parent involvement in their child's education. If a student exhibits signs that may be indicative of learning disabilities, the process of testing and assessing the student will be much more beneficial if the parent(s) are actively engaged. Additionally, it can be advantageous for parents to check their children's homework or be involved in

projects. Teachers are responsible for assessing what each student truly knows and understands, and that can be difficult when well-intentioned parents do more than their share in helping with homework and school projects. This research is important to future and current teachers who will or currently do struggle with the problem of having parents who are actively involved in their student's education. Through on-going research based on interviews of current elementary school teachers this study hopes to provide insight about methods to assess students' understanding in order to compensate for parent involvement in schoolwork.

88. TAKS Standards

Maria Vega, Department of Education
Faculty Advisor: Dr. Patti Baran

As the number of English Language Learners (ELL) increases in Texas the amount of support these students need in preparing for the Texas Achievement Knowledge Skills (TAKS) also increases. According to the results published by the Texas Education Agency (TEA), an alarmingly large number of ELL students failed to meet the standards resulting in unacceptable levels. How can we better support ELL students so that they can succeed on the TAKS test? What strategies are being used in Texas using that are making more ELL students meet the standard and pass the TAKS test? In order to find an answer to these questions I will use qualitative and quantitative research by interviewing teachers and looking at TEA TAKS results. This research will inform educators of the different ways to help ELL students do better on the TAKS test. This is an ongoing research that will inform educators of the support that they could be giving to ELL students to meet passing expectations on the TAKS test.

89. Amplifying SU Radio's Capabilities

Kaitlyn Dennis, Brooke Lyssy, Vickie Valadez, Office of Information Technology
Staff Advisor: Neal Mann

The objective of this project was to make SU Radio a more professional station, one capable of aiding student creativity by providing more resources, both technical and musical, to the students involved with the station. One aspect of the project was to obtain recording equipment that would allow us to make high-quality recordings from around and outside of campus to incorporate as a part of shows and other audio segments. Another part of the project was to obtain audio files and literature that benefited the station and its DJs. This included such steps as purchasing a subscription to emusic, an online music store that operates on a subscription service that provides a certain number of songs for a certain amount of money. Another resource is a subscription to College Music Journal (CMJ), a publication that provides college radio stations with information about the world of college radio and new, groundbreaking music. The final part of this project was to educate the members of SU Radio on the new equipment and resources available to them, and to fully incorporate these resources into the day-to-day running of the station.

90. Latency on Wireless Sensor Networks

Dak Erwin, Department of Mathematics and Computer Science
Faculty Advisor: Dr. Barbara Anthony

We study the latency of sending data across wireless networks. Consider a collection of wireless devices that communicate by sending data to all other receivers within a specified 'communication radius'. If a device is communicating (sending or receiving), then no other device within its radius can communicate, as the signals would conflict. The goal is to transfer all data stored by the sensors to one root sensor. We want to develop and evaluate algorithms for the order in which sensors should transmit to minimize latency, i.e. the total

time it takes for all data to reach the root, and acquire other information concerning the transmission process. One focus has been exploring lower bounds, formulas for the lowest latency to send data to a root. One of the more obvious lower bounds explored is the number of packets. Briefly, it takes at least one time step for each data packet to send from one sensor to the next, so even if each packet was on a sensor adjacent to the root, it would still take time equal to the number of packets to send them. Other lower bounds are tighter, but less intuitive. A major algorithm for dealing with transmission is called greedy from root. This is where the sensor with data closest to the root will send before any other sensor. It has proven to perform well with respect to lower bounds on some categories of sensor configuration. We continue to develop and analyze algorithms, seeking better, provable guarantees.

91. Mind Over Music

Andrea Plybon, Rachel Freeman, Ashley Holland, Brian Miller, Department of Music
Faculty Advisor: Dr. David Asbury

We started an after-school program called Mind Over Music for fifth graders from Williams Elementary School that combines music with what they are learning in their classes at school in a fun and educational way. They do activities such as relating characters in their books to music, drawing what they see in the music, and learning basic acoustics about instruments, such as watching the strings in a piano vibrate and how those vibrations function. This small group of children meets once a week for two hours to create these connections, have fun, and grow within their educational environment. Its goal is to promote good study skills, help develop memory, and promote the fine arts within the classroom.

92. Did Tom DeLay's Alleged Involvement in the Texas Redistricting Process Violate Legislative Ethics According to Dennis Thompson?

Lindsay Loocke, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

Former House Majority leader, Tom DeLay, was openly involved in the 2003 Texas congressional redistricting which openly favored the Republican party and greatly helped the party to bolster their majority in the 2004 election cycle, both on a state and national level. Although such blatant gerrymandering is not illegal, accusations of unfairness surrounding DeLay bring up questions about what ethical standards DeLay and subsequently other legislators should be held to. In order to advance this analysis, I will use content analysis by examining popular media and scholarly literature. I will use Dennis Thompson's book "Political Ethics in Public Office"; as a starting point to model my examination of whether or not DeLay acted correctly in regards to legislative ethics. Furthermore, by using Thompson and other authors, I will seek to gauge a nuanced understanding of what constitutes ethical behavior by legislators.

93. The City of God and the Parody of Torture

Nicholas Parker, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

Relying on a case study put forth by Michael Otterman in his book *American Torture*, this essay looks at the nature of torture through two unique lenses. The first lens examines torture using the theory put forth by St. Augustine in his *City of God* analogy. Torture is of the material world and thus should not exist within the realm of power or decision making for those two processes are suggested to be derived from a purely "good" entity which happens to be an antithesis to the idea of original sin and its place within the material world. The second lens provides the reader with pathways to understand not only why torture is at times permissible, but also why it is a necessary circumstance that proves beneficial to

national interest and the well being of the public. Using these two polarizing ideas, I construct an argument in which I put forth my personal opinion about torture in the case of Khalid Shaikh Mohammed, Abu Zubaydah, Walid Bin Attash, and twelve others, all of whom were subjected to torture acts in CIA black site prisons.

94. Government Responsibility and Accountability in the Wake of Hurricane Katrina
Darlene Thompson, Department of Political Science
Faculty Advisor: Dr. Timothy O'Neill

I will be investigating the decisions of Mayor Ray Nagin of New Orleans, Louisiana and his response to Hurricane Katrina. I will be seeking to answer the following questions: Did Nagin respond to Hurricane Katrina in a quick and successful manner to protect the citizens of New Orleans? And ultimately, did Nagin fulfill his responsibility to the people of New Orleans? I will explore Nagin's decisions in an ethical framework to test my thesis. With these ethical principles in mind, I will determine if Nagin was responsible and if his decisions were justified. To provide evidence for the outcome of Nagin's decision making, I will explore how the response to Hurricane Katrina affected race and class relations in the US. I will look specifically at Louisiana and then the US as a whole. I will assert that it is important to look at Mayor Nagin's response to Hurricane Katrina in order to attain governmental responsibility and accountability. Furthermore, it is important to look at the responses to Hurricane Katrina in order to understand the new social framework, whether based on common interest (the needs of the people), race, or class, which was left in the wake of Hurricane Katrina. It is important to understand this concept if the US is to be a model for the rest of the world.

95. Memogate: Ethical Considerations in Reporting Political News
Matthew Maschino, Department of Political Science
Faculty Advisor: Dr. Tim O'Neill

Individual journalists, editors, and news anchors must make ethical judgments when deciding what leads deserve to be pursued and which news stories should be published. This study focuses on the planning and fallout associated with an erroneous news report in 2004 by CBS anchor Dan Rather regarding former President George W. Bush's national guard record. The incident, termed "Memogate" by other media outlets, led to an internal investigation and a number of employee reassignments and resignations. Using classic writings on ethics as a foundation, this study seeks to discover what moral duties Dan Rather was bound to follow and how those duties compare to past conceptions of a responsible press.

96. Emotional Intelligence and Health Locus of Control
Margaret Durham, Department of Psychology
Faculty Advisor: Dr. Paula Desmond

The present study investigated the relationship between emotional intelligence (EI) and health locus of control (HLC). EI is identified as a set of skills that allows individuals to recognize, integrate, and control emotions; EI facilitates the use of emotions to resolve dilemmas and regulate behavior (Salovey & Mayer 1990; Zeidner, Roberts, & Matthews, 2008). HLC, on the other hand, identifies which possible causes of health outcomes (internal, external, or powerful others) individuals attribute to their overall health (Wallston, Wallston, & DeVellis, 1978). Previous research suggests a link between EI and HLC as both of these constructs can be related to positive health behaviors (Saklofske, Austin, Galloway, & Davidson, 2007). Therefore, it was hypothesized that dimensions of EI (attention, clarity, and repair) would be positively associated with internal HLC. Participants were 133 undergraduate students (47 men, 86 women), who completed a questionnaire including the

Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). and the Multidimensional Health Locus of Control Scale (Wallston, Wallston, Kaplan, & Maides, 1976; Wallston et al., 1978). Although the results did not show a statistically significant correlation between an internal HLC and EI (clarity of feelings, attention to feelings, and mood repair), a negative correlation was found between external HLC and attention and repair to emotions. Moreover, a negative correlation was found between clarity and stress. In sum these findings provide further support for the relationship between EI and stress related traits.

97. Scandal in the Schoolhouse: Initiation, Power, and Perceptions of Student-Teacher Relationships

Jennifer Howell, Patrick Egan, Braden Ackley, Department of Psychology
Faculty Advisor: Dr. Traci Giuliano

Although there is a large body of research indicating that men are generally granted more sexual freedom than are women (consistent with a traditional sexual double standard), other research suggests that, in certain contexts (such as student-teacher relationships), men are punished more for their sexual behavior than are women (e.g., Fromuth et al., 2001). In an effort to reconcile conflicting lines of research, we propose that there exists a reverse sexual double standard in which men in power are judged more harshly than are women in power for sexual contact with a subordinate when they are perceived to be exploiting their power to gain sexual gratification. By contrast, when there is no perceived exploitation of power, we predict that men and women are judged equally for their participation in sexual contact. To test this hypothesis, 187 adults (116 women, 71 men) were asked to read and respond to one of four fictitious newspaper articles involving either teacher-initiated or student-initiated sexual contact, and either a male teacher/female student dyad or a female teacher/male student dyad. Consistent with predictions, a two-way interaction, $F(1,179) = 8.85, p = .004$, revealed that, in teacher-initiated situations, participants believed that situations involving male teachers ($M = 3.71$) were more exploitative than were situations involving female teachers ($M = 4.35, t(96) = -3.57, p = .001$). However, in student-initiated situations, participants believed that situations involving male ($M = 4.35$) and female ($M = 4.82$) teachers were equally exploitative $t(87) = 1.35, ns$. In short, the present study supports the notion that men are perceived more negatively than are women for participating in inappropriate sexual relationships (i.e., they are judged by a reverse sexual double standard) only if they are perceived to be using their power over another individual to gain sexual gratification.

98. Driving Behavior

Jaclyn Kramer, Department of Psychology
Faculty Advisor: Dr. Paula Desmond

The theoretical literature by Gerald Matthews concerning stress and driving performance was examined. Theoretical literature on emotional intelligence by Peter Salovey and John D. Mayer was also reviewed in addition to a review of scales assessing driving anger by Jerry L. Deffenbacher, Gail S. White, and Rebekah S. Lynch. Altogether, the understanding of the biological and cognitive framework of the brain, of scales assessing driving anger, and of recent insights about emotional intelligence provide a greater understanding of driving behavior and how researchers can improve safety on the roadways, specifically focusing on the aggressive driver and how to improve maladaptive driving behavior.

99. The Effects of Music Tempo on Self-Regulation

Erika Anderson, Kelly McWhorter, Chris Hlavinka, Department of Psychology
Faculty Advisor: Dr. Jacqueline Muir-Broaddus

Self-regulation involves the control of prepotent thoughts, emotions, and impulses in order to behave flexibly in the pursuit of goals (Baumeister, Heatherton, & Tice, 1994). According to the self-regulatory strength model, self-control is a limited capacity system akin to a muscle such that exerting self-control depletes one's limited pool of resources and thereby impairs subsequent attempts at self-control (Baumeister, Muraven, & Tice, 2000). Studies of the cognition-emotion interaction show that self-regulation is positively related to positive emotions and negatively related to negative emotions, with some evidence that positive affect can reduce ego-depletion (Posner & Rothbart, 2007). Furthermore, it has been shown that faster music tempo can increase arousal and musical mode can affect mood (Husain, Thompson, & Schellenberg, 2002). This study aimed to determine whether faster music tempo enhances mood and consequently restores self-regulation resources. During individual testing, college students completed the Affect Grid as a measure of their mood and arousal four times throughout the study. They also completed three standard ego-depleting tasks, including circling letters in a passage that met specified criteria using their non-dominant hand, completing the Stroop test, and squeezing a hand grip as long as possible. Next, half the participants listened to a Mozart piece at a fast tempo and half listened to the same piece at a slow tempo. The three ego-depleting tasks were then repeated. Statistical analyses will test the hypothesis that performance on the three ego-depleting tasks will decline more after listening to music at a slow tempo than a fast tempo.

100. The Effects of Presentation Speed on Mood and Creativity

Marcos Duran, Melanie Wilmoth, Erika Anderson, Department of Psychology
Faculty Advisor: Dr. Jacqueline Muir-Broaddus

Observing that people with mania exhibit rapid thinking and report more positive mood, Pronin and Wegner (2006) hypothesized that inducing rapid thinking in a non-clinical population would increase positive mood as well. As predicted, participants reported more positive mood and also greater feelings of creativity after statements that were presented at a fast (i.e., 0.3 sec between slides) than at a slow (i.e., 4 sec between slides) rate. The present study was designed to extend Pronin and Wegner's findings by examining whether faster presentation rates led to an increase in creativity scores on a standardized creativity test. 47 undergraduates (44 women) completed an activity from the Torrance Tests of Creative Thinking (TTCT; Torrance, 1974) after watching a powerpoint presentation of single neutral words at both a fast (.7 sec per word) and a slow (4 sec per word) pace. Mood was assessed at baseline mood and following each presentation using the Positive and Negative Affectivity Schedule (Watson, Clark, & Tellegen, 1988). Results show that positive mood was greater after the fast presentation than after the slow presentation and that verbal creativity was also greater after the fast presentation than after the slow presentation. These results have important implications for education because they suggest the counterintuitive hypothesis that faster presentation of curricula may lead to enhanced performance.

101. The Rainbow Program of Nutrition

Gillian Graham, Department of Sociology and Anthropology
Faculty Advisor: Dr. Dan Hilliard

The health of the modern world is declining. Diabetes, cancer, heart disease, and other obesity-related illnesses are appearing at a rapidly increasing pace, especially in children and teenagers. These conditions are most prevalent among lower socio-economic groups and minorities. Early prevention that targets diet and lifestyle change is the most effective

way to reduce the risk of developing these dangerous conditions. The Rainbow Program aims to improve nutrition in low socio-economic communities by targeting children and teenagers. It is designed to create convenient lifestyle changes that will lead to subtle, sustainable health improvements. The program's core message is: "Rainbow foods are healthy." This maxim highlights the concept that richly colored, natural foods are necessary components of good health that should be consumed daily. The Rainbow Program targets children from pre-school through elementary school with an interactive curriculum designed to teach the Rainbow concept and encourage students to implement these healthy habits at home. In this eight-week study, sixty second-graders at Duck University in Taylor, Texas attended weekly workshops where they prepared healthy snacks that incorporated all of the colors of the rainbow. The children participated in crafts and activities to teach them how to adopt long-term healthy dietary practices at home. They were encouraged to share what they learned with their families, leading to health improvements over several generations. Before and after the program, each student and their parent were surveyed to assess the effectiveness of the program. These results will be used to modify the Rainbow program in order to create a 'Rainbow Package' that can be distributed to children's clinics and at elementary schools as part of a nutrition curriculum. By developing a generic package that can be used in a wide variety of settings where children learn and play, more children can be exposed to the Rainbow concept of nutrition, and the obesity epidemic of America can slowly be reversed.

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