

RESEARCH HUMANITIES
FROM MUSIC ART
SOC EVERY IAL &
NATURAL VOICE
SCIENCES PERFO
RMANANCE 2008 EA

THE NINTH ANNUAL **STUDENT WORKS SYMPOSIUM**, "FROM EVERY VOICE,"
SPONSORED BY ALL UNIVERSITY DEPARTMENTS, "FROM EVERY VOICE" IS A VENUE FOR SOUTHWESTERN STUDENTS
TO PRESENT THEIR RESEARCH IN THE LIBERAL ARTS AND SCIENCES AND THEIR CREATIVE WORK IN MUSIC, STUDIO ART AND THEATER.

April 9, 2008

Members of the Southwestern and Georgetown Community,

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

For the past eight years, the Symposium has showcased the best work of Southwestern students. Its display of the various interests, expertise, and in and out-of-classroom experiences of Southwestern students encapsulates the spirit of a liberal arts education. The Symposium is a celebration of students' ability to utilize classroom knowledge to gain understanding of the world and affect change in Southwestern, the community, and the world at large.

This year, 81 presentations will be showcased featuring the works of 132 students from 22 disciplines. The diversity of presentations will hopefully provide an opportunity for the Southwestern and Georgetown communities to engage in conversations on thought-provoking topics.

We appreciate your attendance immensely and hope that you leave the Symposium with a wealth of new knowledge. Get ready to hear from every voice.

Sincerely,

Robynne Heymans and Jessica Bolton
Program Chairs
Student Works Symposium: From Every Voice

2008 STUDENT WORKS SYMPOSIUM: FROM EVERY VOICE

Program Chairs

JESSICA BOLTON
Animal Behavior Program
Southwestern University
Alpha Chi Honor Society
Beta Beta Beta Honor Society
Omicron Delta Kappa Honor Society
Psi Chi Honor Society
(boltonj@southwestern.edu)

ROBYNNE HEYMANS
Department of Communication Studies
Southwestern University
(heimansr@southwestern.edu)

Staff Support

CHRISTINE VASQUEZ
JOHN McCANN

TABLE OF CONTENTS

Letter of Welcome.....1

No table of contents entries found.SCHEDULE AT A GLANCE

6:00	Refreshments served
6:10	Welcome: Jake Schrum, President of Southwestern University
5:00-6:00	Oral Presentations in the McCombs Ballrooms and the Merzbach Room
5:15-6:00	Fine Arts Performances in The Cove
6:00-7:00	Poster Presentations in the Bishops Lounge
7:00-9:00	Continuation of Oral Presentations in the McCombs Ballrooms and the Merzbach Room
5:00-9:00	Fine Arts Exhibits set up for viewing in the Gallery of the Sarofim School of Fine Arts

2008 Program Agenda

FINE ARTS PERFORMANCES

McCombs Center, The Cove

- 5:15-5:40 Southwestern University Chorale Performance
5:45-6:00 **A Play in a Day: The 24-Hour Theatre Project**
Matthew Harper (Soph.), Department of Theatre

FINE ARTS EXHIBITS

Gallery of the Sarofim School of Fine Arts

- 5:00-9:00 Senior Fine Arts Exhibits

ORAL PRESENTATIONS

Session I: McCombs Center, Lynda McCombs Ballroom

- 5:00 **1. Pink Eggs and Snails: Comparison of Field and Lab Oviposition Behavior in *Pomacea insularum***
James McDonough (Jr.), Department of Biology
- 5:15 **2. Location, Location, Location: Laboratory Experiment Shows Invasive *P. insularum* Chose Elephant Ear as Oviposition Sites**
Colin Kyle (Jr.), Department of Biology
- 5:30 **3. Small Snails Grow Up Fast: Feeding Preferences, Habitat Choice and Growth of Juvenile Applesnails (*Pomacea insularum*) in the Presence of *Procambarus clarkia***
Sarah Hensley (Sr.), Colin Kyle (Jr.), & James McDonough (Jr.),
Department of Biology
- 5:45 **4. The Effect of Neotropical Migrants on Resident Bird Species Richness in Carara National Park**
Rachael Manly (Jr.), Department of Biology

Session II: McCombs Center, Marsha Shields Ballroom

- 5:00 **5. Basic Instinct: The Hunt for 'Piñata Colobus'**
Dominique Bertrand (Sr.), Animal Behavior Program
- 5:15 **6. Sniffing Out Mr. Right: The Role of the Medial Amygdala in Mate Preference of Female Rats**

- Katherine L. Siciliano (Sr.), Kristen Vonderheide (Sr.), & Kuan Hsien Lee ('07), Animal Behavior Program
- 5:30 **7. Stay in School or Drop Out: What's a Fish to Do?**
Delia Shelton (Sr.), Morgan E. Mingle (Soph.), Joe McDonald (Sr.),
Animal Behavior Program
- 5:45 **8. Measuring Response to Visual Point Light Predator Stimulus in Invertebrates**
Laura Everill (Sr.), Shane P. Littleton (Jr.), Erin E. Dammann (Jr.),
Department of Psychology

Session III: McCombs Center, Connie McNab Ballroom

- 5:00 **9. Plato's Symposium and the Theban Sacred Band**
Aaron Blair (Sr.), Department of Classics
- 5:15 **10. The Panathenaia and the 'Lysistrata': Aristophanes' Peplos**
Aine McVey (Sr.), Department of Classics Mary Kierst (Sr.),
Department of Political Science
- 5:30 **11. Origins of the Gospel of Thomas**
Kyle Simpson (Sr.), Department of Classics
- 5:45 **12. The Music of Ancient Roman Ritual**
Michelle Perrin (Jr.), Department of Music

Session IV: McCombs Center, Merzbach Room

- 5:00 **13. Attempted Preparation of Bis-Anthrapyrazoles**
Kyle A. Marshall (Sr.), Department of Chemistry and Biochemistry
- 5:15 **14. Ethanol Elimination Rates of Impaired Drivers from Time-Distinct Blood Draws**
Robert M. Lockwood (Sr.), Department of Chemistry and
Biochemistry

POSTER PRESENTATIONS AND CREATIVE WORKS

Charles & Elizabeth Prothro Bishops Memorial Lounge, McCombs Center

- 6:00-7:00 Session for Poster Presentations and Creative Works

Refreshments Served
- 6:10 Welcome: Jake Schrum, President of Southwestern University

(Oral Presentations Continued)

Session V: McCombs Center, Lynda McCombs Ballroom

- 7:00 **15. Native American and Archaeologist Relationships**
Miles Elsey (Sr.), Department of Sociology and Anthropology
- 7:15 **16. Rebuilding the House that Jack Built: Comparative Analysis of Immigration and Residential Crowding in the US**
Tristine Baccam (Jr.), Department of Sociology and Anthropology
- 7:30 **17. Examining Social Class: Comparisons Between Attitudes and Composition of a College Campus and the United States**
Nicole Powell (Jr.), Department of Sociology and Anthropology
- 7:45 **18. The SARAH Project and Hidden Homeless**
Erin Kamin (Sr.), Department of Sociology and Anthropology

Session VI: McCombs Center, Marsha Shields Ballroom

- 7:00 **19. Crafting Education Policies in Zimbabwe: Moving Beyond Modern Colonialism**
Charles B. W. Prince (Soph.), Department of Sociology and Anthropology
- 7:15 **20. Socioeconomic Status Influences on Learning Mathematics**
Meredith Scoggins (Jr.), Department of Education
- 7:30 **21. Educating China's Migrant Children: The Migrant-Run Schools of Shanghai**
Jessica West (Sr.), International Studies Program
- 7:45 **22. Health, Wealth and Wisdom: A Fledgling NGO's Hopes for the Future of an Impoverished Quarter of Bamako, Mali**
Kristen Dettloff (Sr.), Department of Business and Economics

Session VII: McCombs Center, Connie McNab Room

- 7:00 **23. Effects of Social Class in Elementary Math and Science**
Ted Wilson (Jr.), Department of Education
- 7:15 **24. Teacher Training and Effective Instructional Strategies for Students with Mathematical Learning Disabilities**
Mary Jansen (Jr.), Department of Education
- 7:30 **25. Balancing Gender Interest in the Science Classroom**
Kacie Wilson (Jr.), Department of Education
- 7:45 **26. Theater in Science Curriculum**
Amanda Morris (Jr.), Department of Education

Session VIII: McCombs Center, Merzbach Room

- 7:00 **27. Then They're Still Alive Today: Fairy Tales, Revision, and Literary Survival**
Amy Tanguay (Sr.), Department of Modern Languages (German)

- 7:15 **28. Phantasmagorical Frights with Concrete Consequences: The Inner Dualities of Villains in German Expressionist Film**
 Brian P. Gingrich (Sr.), Department of English and Department of Modern Languages (German)
- 7:30 **29. Domesticity and the World of Elizabeth Stoddard**
 Chelsea Edge (Sr.), Department of English
- 7:45 **30. My Lady's Malady**
 Kenneth Schreiber (Sr.), Department of English

Session IX: McCombs Center, Lynda McCombs Ballroom

- 8:00 **31. An Extensible Computer Game for Interactive Language Learning (And Other Areas)**
 Stephen Foster (Jr.), Tommy Rogers (Soph.), Carl West (Sr.), Whitney Johnson (Sr.), Bobby Potter (Sr.), Anna Prather (Soph.), Stephanie Taylor (Jr.), Claire McAdams (Jr.), Heather Lesieur (Soph.), Emily Gutzmer (Soph.), Matthew Scott (Sr.) , Jonathan McBride (Sr.), & Kyle Strine (Sr.), Department of Mathematics and Computer Science
- 8:15 **32. Well Routed?**
 Leslie Schwind (Sr.), Allie Stevenson (Sr.), Suzy Fudge (Sr.), & Sara Mar (Sr.), Department of Mathematics and Computer Science
- 8:30 **33. Enter: Japanese Cultural Ideology!**
 Alex Caple (Soph.), Department of Communication Studies
- 8:45 **34. Building Bridges: Discussing the Realities of an Israeli-Palestinian Peace**
 Andrew Mayo (Sr.), David Martin Stanberry (Sr.), Department of Political Science

Session X: McCombs Center, Marsha Shields Ballroom

- 8:00 **35. The New Deal and the New Frontier: An Analysis of Success and Failure**
 LaToya Alexander (Sr.), Department of Political Science
- 8:15 **36. Post-Socialism in Russia: The Experience of Transition and the Emergence of Civil Society**
 Dana Deane (Sr.), Department of Political Science
- 8:30 **37. Public Opinion, Policy Windows, and Going Public: The Cases of Ronald Reagan and George Bush**
 Clare Brock (Sr.), Department of Political Science
- 8:45 **38. A Study of Congressional Decision Making: The 2001 USA PATRIOT Act and 2006 Renewal**
 Mary Kierst (Sr.), Department of Political Science

Session XI: McCombs Center, Connie McNab Ballroom

- 8:00 **39. The Printed Voice**
Justin Thurman (Jr.), Department of English
- 8:15 **40. Bob on Brecht; The Influence of Bertolt Brecht on Bob Dylan in
New York City's Greenwich Village in the 1960s**
Delilah N. Dominguez (Jr.), Department of Theatre
- 8:30 **41. Animal Bodies and Memorial Function in Maus**
Elizabeth Graf (Sr.), Department of Art and Art History
- 8:45 **42. Teachings Collections in Early Christianity and Buddhism**
Kyle Simpson (Sr.), Department of Religion and Philosophy

PRESENTATIONS IN THE COVE

1. The Southwestern University Chorale

The Chorale will be performing selections from *The St. Paul Oratorio* by Felix Mendelssohn.

Conductor: Kenny Sheppard

Pianist: Pam Rossman

Sopranos: Rachel Barnes, Leslie Collie, Ashley Holland, Erin Holzum, Debra Kaminsky, Mary Kierst, Andrea Loer, Brooke Lyssy, Erin McHugh, Dolores Noel

Altos: Delaney Cade, Ashley Foster, Rachel Freeman, Alexandra Lannon, Morgan Mingle, Natalie Moore, Meredith Orf, Brittany Trinite

Tenors: Bradley Acree, Matthew Doris, Zach Zeman

Basses: Matthew Durrance, Connor Evans, Brian Miller, Philip Smith

2. A Play in a Day: The 24-Hour Theatre Project

Matthew Harper (Soph.), Department of Theatre,

Sponsor: Dr. Rick Roemer, Department of Theatre, *Southwestern University*

The intention of this project is to produce an entire theatrical production in 24 hours. Production in this sense encompasses all aspects of a play, which includes writing an original script, rehearsing said script, designing a set, costumes and lights for the production, and finally performing the play at the end of the 24 hours. The purpose of this project is to distill the essence of performance by condensing a six week process into 24 hours. By rehearsing a play for six weeks a certain level of artificiality enters the production due to the repetitiveness of such a long rehearsal process. A performance is no longer a representation of reality but instead a presentation of the rehearsal process. Hopefully, at the end of these 24 hours, the performance will regain the genuineness that is lost through conventional theatre production.

EXHIBITS IN THE SAROFIM SCHOOL OF FINE ARTS

1. Consumption and Waste: Reflections Through Food

Jaymie Teakell (Sr.), Department of Art and Art History

Sponsor: Victoria Star Varner, Department of Art and Art History, *Southwestern University*

For my exhibition, “Consumption and Waste: Reflections through Food,” I am creating a series of artworks that seek to evoke serious questions about our relationship with food, concentrating on the ethical and social questions that food waste raises. These artworks are meant to provoke and entice the viewer to consider his or her own experiences in the consumption of food. The series will be presented in two modes of expression. The first, a series of five large-scale paintings representing food found in the public sphere, examines the overabundance of readily available food in the United States. The second series encases a month's collection of my own daily food waste in thirty boxes of resin, exposing my own wasteful habits as a synecdoche for the larger societal problem. Through a constructed idealism, I intend to expose our collective delusions about food with a self-conscious knowledge of the philosophical ramifications of that choice. Ultimately, I hope to enact social change in food conservation.

2. Yo Muerdo

Lauren Cardenas (Sr.), Department of Art and Art History

Sponsor: Victoria Star Varner, Department of Art and Art History, *Southwestern University*

In creating the series of paintings, drawings and prints titled “Yo Muerdo” (“I Bite”), I intend to address issues surrounding verbal abuse while exploring the multiple visual languages of painting, such as realism, abstract expressionism, and photo realism to reveal different perspectives on a major socio-political problem. I use the image of a mouth, which I isolate on various rectangular surfaces (e.g., paper, canvas, embroidered cloth) to change the meaning of the image in subtle ways in each piece. The artworks in this series create a power exchange back and forth between the artwork and the viewer. The effect of the multiple images, made in different visual languages, implies the broader idea of verbal abuse coming in different forms, languages, and perceptions. I intend to affect an audience’s perspectives on a social problem that needs to be addressed.

3. Teranga

Shauna Davidson (Sr.), Department of Art and Art History

Sponsor: Victoria Star Varner, Department of Art and Art History, *Southwestern University*

My series of paintings, *Teranga*, is a combination of my dual interests in painting and anthropology and results from my separate experiences of living with families in Guatemala and Senegal. Through my paintings, I explore how to present the beauty of other cultures so that the public can understand how I experienced them. I bridge the gap between cultures in a way that cannot be expressed through the spoken or written language by glorifying two specific entities: people and their native fabrics. This series began as a means to make known to the American public the people I had met while traveling internationally. The attentive faces of the individuals I portray express that beyond culture we are all human and connected. Some of the paintings explore how we are created by (and sometimes held back by) our culture by my practice of integrating the portrait imagery with painted designs of native fabrics. *Teranga* is a Wolof word that is equivalent in English to a style of Senegalese hospitality, the cultural idea that everyone always looks out for and helps those around them. It is the thing I consider to be the most beautiful about people in Senegal and it is this appreciation of the diversity of cultural beauty that I want to share with others through my paintings.

ABSTRACTS: ORAL PRESENTATIONS

1. Pink Eggs and Snails: Comparison of Field and Lab Oviposition Behavior in *Pomacea insularum*

James McDonough (Jr.), Department of Biology

Sponsor: Dr. Romi Burks, Department of Biology, *Southwestern University*

Invasive exotic species represent a major threat to the world's ecosystems and cause approximately \$120 billion in damage annually in the U.S alone. Mollusk invaders appear particularly destructive due to their short life stages and high reproductive rates. A recently identified invasive species of applesnail in Texas, *Pomacea insularum*, exhibits these alarming characteristics. Native *P. insularum* occur in South America, but this species recently established reproductive populations along the Gulf Coast, ranging from Florida to east Texas. The egg stage, easily identified by its bright pink color, likely represents a bottleneck in survival. Egg removal might serve as an effective method of slowing the invasion of *P. insularum* in Texas. To investigate this possibility, we studied *P. insularum* oviposition (i.e. egg laying) behavior. Before we could conduct experimental studies, we needed to determine if the reproductive characteristics of *P. insularum* in the lab mirrored that from the field. We investigated oviposition behavior by comparing clutch dimensions and clutch height above the water line from clutches at Armand Bayou (Houston), with similar observations recorded from lab clutches. Through statistical analysis, we then tested to see if significant differences existed between oviposition behavior from the field and oviposition behavior in the lab. Our results revealed no significant differences in clutch length ($p>0.982$), width ($p>0.551$), depth ($p>0.388$), or clutch height ($p>0.469$) between lab or field data. We concluded that any future studies on *P. insularum* oviposition behavior done in the lab would be comparable to field behavior.

2. Location, Location, Location: Laboratory Experiment Shows Invasive *P. insularum* Chose Elephant Ear as Oviposition Sites

Colin Kyle (Jr.), Department of Biology

Sponsor: Dr. Romi Burks, Department of Biology, *Southwestern University*

Increasing globalization moves hundreds of organisms from their native habitat to other exotic ecosystems. In extreme cases, introduced organisms establish populations and spread to other areas. Mollusks have a long history of destructive invasions, and fecundity best represents a mollusk's invasive potential. Discovered in Houston in 1989, a recently identified species of South American applesnail, *Pomacea insularum*, poses a threat to aquatic and wetland habitats of the Gulf Coast. *P. insularum* represents such a threat due to unsettling traits such as large size, high fecundity, and ravenous whole plant consumption. To understand this new invader and slow its expansion, we studied *P. insularum* behavior and oviposition (i.e. egg laying) preferences. We presented captive breeding females four different structures on which

to lay eggs (elephant ear, wood, metal, Astroturf) in two light conditions (shaded or unshaded). In addition, we recorded the activity of each snail three times a day. We evaluated the results using Chi-Squared analysis tests. We found that females laid almost exclusively on elephant ear and ignored other structures ($p < 0.01$), with more clutches produced in unshaded versus shaded environments. From documenting their behavior, the results suggest that the snails spend most of their time feeding or searching banks for potential egg-laying surfaces ($p < 0.001$). Because egg number directly translates into population growth, this new knowledge of *P. insularum* behavior and oviposition preferences will improve our ability to slow down invading populations by locating and removing clutches before they can hatch.

3. Small Snails Grow Up Fast: Feeding Preferences, Habitat Choice and Growth of Juvenile Applesnails (*Pomacea insularum*) in the Presence of *Procambarus clarkii*
Sarah Hensley (Sr.), Colin Kyle (Jr.), & James McDonough (Jr.), Department of Biology
Sponsor: Dr. Romi Burks, Department of Biology, *Southwestern University*

Snails hold long-standing reputations as pests and problematic exotics. Some species spread over wide geographical areas, becoming invasive (EIS). Native to South America, large-sized and armed with high fecundity, *Pomacea insularum*, a channeled applesnail, epitomizes an EIS that warrants concern. The potential of established reproductive populations to become rice pests or compete with native species is enormous. However, scientists know very little about feeding and habitat preferences of *P. insularum*. To investigate this, we placed a single early ($10.7 \pm .9$ mm) or late (23 ± 2 mm) juvenile snail in one of 48 enclosures with three open compartments. Each compartment offered a different plant (*Colocasia sp.* [taro or elephant ear], *Eichhornia crassipes* [water hyacinth] or *Myriophyllum spicatum* [Eurasian water milfoil]). Twenty-four enclosures resided in a filtered pool containing crayfish (*Procambarus clarkii*) while another 24 lacked crayfish. We observed snail growth (change in operculum), percent plant consumption and habitat preferences in both pools over six weeks. Early juvenile snails grew significantly more than late snails. Presence of *P. clarkii* did not produce a significant effect on snail growth, plant consumption or behavior. A significant difference existed in percentage of elephant ear consumed between early versus late juveniles. Furthermore, neither size readily consumed *Eichhornia*. Our results suggest juvenile applesnails prefer less structurally and chemically defended plants and do not alter plant consumption with predator presence. These results reinforce the idea that small *P. insularum* consume substantial amounts of plants and should be taken seriously as a new EIS in Texas.

4. The Effect of Neotropical Migrants on Resident Bird Species Richness in Carara National Park
Rachael Manly (Jr.), Department of Biology
Sponsor: Dr. Romi Burks, Department of Biology, *Southwestern University*

For approximately 6 to 8 months of the year, forests throughout the neotropics experience an influx of migratory birds. These birds take advantage of the warm climate and abundance of food sources in the neotropics before returning to their winter breeding grounds. This study investigated the effects of migratory birds on the resident bird species of Carara National Park in the Puntarenas province of Costa Rica. We worked with mist nets and point counts to collect data on the composition of the winter bird population. We compared this data with similarly collected data from the summer season using chi square tests. No significant difference existed in species diversity and richness of the resident population between the migratory and non-migratory seasons. Our findings support previous research indicating that migrant birds participate in intraspecific competition rather than interspecific competition. Neotropical migrant and resident birds are able to coexist through mechanisms such as food and habitat niches and creation of mixed-species flocks. We conclude that the presence of migrants has no detrimental effect on the resident population of Carara. This study may serve as a basis for further research to determine which mechanisms of coexistence are used by migrant and resident birds in Carara National Park.

5. Basic Instinct: The Hunt for 'Piñata Colobus'

Dominique Bertrand (Sr.), Animal Behavior Program

Sponsor: Dr. Steve Schapiro, Department of Psychology, *Southwestern University*, and
The University of Texas M.D. Anderson Cancer Center in Bastrop, TX

Special thanks to Larry Williams and Susan Lambeth of the UT M.D. Anderson Cancer Center as well for their help with the experimental design.

Hunting is an important activity in the lives of chimpanzees (*Pan troglodytes*) and is crucial to their survival. Most people are surprised to learn that chimpanzees hunt and consume vertebrates (especially monkeys and a few other mammals) as a part of their diet. Usually, for this predation to be successful, multiple members of the social group must cooperate. Data from the Tai chimpanzees of West Africa show that they collaborate 63% of the time that they hunt (Boesch, 1994). Our study compared how hunting instincts and behaviors differ between captive and wild chimpanzees. We studied these behaviors by using mobile, monkey shaped piñatas in open roofed corrals that the subjects reside in, measuring instances of hunting and abnormal behaviors. The study used 80 chimpanzees total, separated out into 8 already formed social groups. No test ended until the majority of the piñata was either destroyed or taken into their interior enclosure. Our results show the importance of hunting in a chimpanzee society and serve to assess some important differences between captive and wild chimpanzee behavior. If captive chimpanzees do hunt cooperatively and it fosters unique social behavior, this study can open up new doors as to possible enrichment devices.

6. Sniffing Out Mr. Right: The Role of the Medial Amygdala in Mate Preference of Female Rats

Katherine L. Siciliano (Sr.), Kristen Vonderheide (Sr.), & Kuan Hsien Lee ('07), Animal Behavior Program

Sponsor: Dr. Fay Guarraci, Department of Psychology, *Southwestern University*; Dr. Russell Frohardt, Department of Psychology, *St. Edward's University*

Special thanks to Johanna Torres of St. Edward's University for her work on the project.

Female rats display a marked preference for one male rat over another when given the opportunity to mate with two male rats simultaneously (Lovell et al., 2007). Pheromones, processed by the vomeronasal organ in the rat, provide one source of sensory information that rats can use to discriminate between potential mates. Receptors in the vomeronasal organ project to various brain structures including the medial amygdala (MeA). Experiment 1 examined the role of pheromones in mate choice of female Long-Evans rats by targeting the MeA. Half of the subjects received neurotoxic lesions of the MeA, and the other half received sham lesions. One week following surgery, the female rats were tested in the two-male preference test. Rats with sham lesions preferred one male over another during the test and returned to their preferred mate faster than their nonpreferred mate following intromissions. Although female rats with MeA lesions also preferred one male over another, they returned to their preferred mate at the same rate as their nonpreferred mate after receiving intromissions. Experiment 2 examined female rat preference for bedding soiled by intact males. Female rats display a weak preference for the soiled bedding of one male rat over another when given the opportunity to spend time in the vicinity of bedding of two male rats. Experiment 2 found that rats with either sham lesions or MeA lesions prefer the soiled bedding of one male over another. In conclusion, these results suggest the MeA is involved in regulation of mate choice, and this structure may enable female rats to determine the quality of sexual stimulations.

7. Stay in School or Drop Out: What's a Fish to Do?

Delia Shelton (Sr.), Morgan E. Mingle (Soph.), Joe McDonald (Sr.), Animal Behavior Program

Sponsor: Dr. Jesse E. Purdy, Department of Psychology, *Southwestern University*

In three experiments, we evaluated the hypothesis that learning plays a role in the development of defensive behavior in mummichogs, a gulf coast killifish (*Fundulus heteroclitus*). In two experiments, groups of fish received paired presentations of a yellow light and an aquatic predator (Exp 1) or a purple light and an aerial predator (Exp 2). Control subjects received unpaired presentations of the light and predator. When the yellow light was presented, fish in the paired condition startled, moved away from the light and schooled significantly. To the purple light (aerial predator) fish startled, moved away, and descended in the water column, but did not school. Control subjects showed no reliable responses. In Experiment 3, mummichogs received paired

presentations of the yellow light with a marine predator and paired presentations of a purple light with the aerial predator. When presented individually, mummichogs showed the same responses to the lights as observed in Experiments 1 and 2. Interestingly, during test trials, when both lights were presented simultaneously predicting a simulated attack by two different predators, mummichogs startled and moved away, but neither schooled tightly nor descended. The response appeared to be a hybrid containing elements of both conditioned responses. The findings support the hypothesis that learning can influence defensive behavior and are considered in light of how anti-predatory responses in fish develop in environments where fish are subject to predation by a variety of predators.

8. Measuring Response to Visual Point Light Predator Stimulus in Invertebrates
Laura Everill (Sr.), Shane P. Littleton (Jr.), & Erin E. Dammann (Jr.), Department of Psychology
Sponsor: Dr. Jesse E. Purdy, Department of Psychology, *Southwestern University*

The perception of biological motion has been studied extensively in vertebrates using point light animation sequences (Blake, 1993; Sumi, 1984; & Cutting, 1978). Surprisingly there are no published reports of the detection of biological movement in invertebrates using this methodology. The present study established the initial procedures for using point light stimuli to study motion detection in cuttlefish. We presented cuttlefish film clips of either a predator (great white shark attacking the camera) or prey (shrimp, fish, and crabs). Preliminary results demonstrated that a film clip of an attacking great white shark elicited defensive behavior (startle, aggressive posturing, color changes, and movement away) whereas film clips of prey elicited predatory behavior (orientation, movement toward, and attack). The results demonstrate that cuttlefish will respond reliably and appropriately to a two-dimensional moving image of either a predator or a prey. Results are then discussed in light of the next procedures needed for systematic analysis of biological movement perception in cuttlefish, i.e., using point light stimuli to determine the necessary and sufficient stimuli for detection of biological movement.

9. Plato's Symposium and the Theban Sacred Band
Aaron Blair (Sr.), Department of Classics
Sponsor: Dr. Hal Haskell, Department of Classics, *Southwestern University*

The Sacred Band of Thebes was composed of 150 pairs of male lovers formed in 378 B.C. by Gorgidas (Plutarch, Pelop. 18.1). However, the erotic aspects of the Sacred Band have been called into question by David Leitao in his article, "The Legend of the Sacred Band." A closer look into the possible date of Plato's Symposium may provide a better understanding of the Sacred Band. The passage in question is Phaedrus's proposal that "if there were some way of arranging that a state, or an army, could be made up entirely of pairs of lovers[...]in battle, this kind of army, though small, fighting

side by side could conquer virtually the whole world” (Plato, *Symp.* 178e-179a). The dialogues of the *Symposium* were deliberately set in 416 B.C. by Plato. K. J. Dover placed the date of Plato’s *Symposium* after 384 B.C., but he found the particular passage in question to be unrelated to the Sacred Band (Dover, “The Date of Plato’s *Symposium*,” 10). James G. DeVoto proposed in his article, “The Theban Sacred Band,” that Phaedrus’s speech was indeed a reference to the Sacred Band. DeVoto believes that Plato was making a specific allusion to the Sacred Band’s victory at Tegyra in 375 B. C. David Leitao proposes that this comment in Phaedrus’s speech and other references of a similar nature are a part of a utopian philosophical trend in 4th century discourse in which Eros was believed to create civic harmony within the polis (Leitao, 161-162).

10. The Panathenaia and the 'Lysistrata': Aristophanes' Peplos

Aine McVey (Sr.), Department of Classics

Sponsor: Dr. Hal Haskell, Department of Classics, *Southwestern University*

My paper examines the practice of weaving in Ancient Greece within the context of literature, ritual, and festival, discussing the relationship that exists between the Panathenaia and Aristophanes’ *Lysistrata*. Aristophanes invokes the Panathenaia in the *Lysistrata* as a response to the Peloponnesian War, recalling lost ideals that stood in stark contrast to contemporary events. After a brief summary of the history of the festival, I will examine two different types of references to the Panathenaia within the play. The first type of reference calls to mind the festival itself, the focus of which was the ritual weaving of a robe for Athena. The act of weaving is by nature reconciliatory and unifying, indicative of the “synoecism” (unification) of Attika by Theseus, the ideals of which differ sharply from the later “imperial” Periklean Panathenaia. The second type of reference, epithets of Athena, alludes to specific physical representations of the goddess on the Acropolis. Athena Polias represents the original synoecismic significance of the Thesean Panathenaia, while Athena Parthenos and Athena Promachos represent the subsequent imperial significance of the Periklean Panathenaia. These different aspects of the goddess signify the corruption and replacement of the Thesean ideals by those of Perikles.

11. Origins of the Gospel of Thomas

Kyle Simpson (Sr.), Department of Classics

Sponsor: Dr. Hal Haskell, Department of Classics, *Southwestern University*

Borrowing on the accounts of the cosmos’ origins by Plato and Plotinus, Gnostic Christians developed a cosmology that defied early proto-orthodox Christian sects by positing that there were many gods, rather than one, and that only by possessing gnosis, or knowledge, rather than faith in Jesus, could people attain salvation. With the discovery of the Nag Hammadi library in 1945, scholars recovered a number of texts which were grouped into the vague category Gnosticism. However, some have suggested that not all of the texts from that collection belong in that grouping. The

Gospel of Thomas in particular has generated an intense debate because although the manuscript was found with a collection of Gnostic documents and a Gnostic cosmology may easily be read into it, forcing such an unwarranted understanding onto the text may be just that. Opponents, such as Steven Davies, argue that the themes found in Thomas are best understood as resulting from the Jewish wisdom tradition and point to a number of features frequently found in Gnostic texts that are absent from Thomas. For instance, other Gnostic texts such as the Gospel of Truth are loaded with Christological titles such as Christ, messiah, or Son of God. Additionally, given the traditional dating for these texts, the Gospel of Thomas would have been composed over a century before other Gnostic texts begin to emerge. This presentation will argue that the term Gnosticism has been wrongly imposed upon the Gospel of Thomas, and that the cryptic statements contained therein may be better explained by using themes from the Hebrew Bible than Plato and Plotinus.

12. The Music of Ancient Roman Ritual

Michelle Perrin (Jr.), Department of Music

Sponsor: Dr. Michael Cooper, Department of Music, *Southwestern University*

The paper on which this presentation is based is an original documented program essay. Thus, the presentation will be conducted in the form of a lecture recital in which there is commentary supplied for each piece of music on the program (note: music will be audio recordings, not live performances). Because the topic of ancient Roman ritual music is exceedingly broad, this paper's scope is limited to the music used in the rituals of the "mystery" cults in ancient Rome. These cults were separate from and less mainstream than the Roman state religion, which included the worship of Roman versions of the Greek Olympian gods. The "mystery" cults which are discussed in this presentation are that of the Great Mother Cybele, of Bacchus (or Dionysus), and of Isis. By listening to the audio reconstructions (provided by Synaulia), the attendees of this "concert" will learn about ancient Roman music in the context of several different rituals: a spring festival, an orgiastic ritual in honor of the god of wine, an initiation ceremony, and a funeral lamentation. Each piece was chosen for its distinctive musical elements, which lead listeners to draw very specific parallels between ancient Roman ritual and present-day Christianity. The inspiration behind the crafting of this particular program with its highly specific scope is two-fold: not only is it an attempt to provide insight as to the extent to which the Roman sense of ritualistic worship permeates the Christian tradition, but it also seeks to examine, and even challenge, the use of music in modern worship services from the perspective of the Roman concept of music's significance and function in worship.

13. Attempted Preparations of Bis-Anthrapyrazoles

Kyle A. Marshall (Sr.), Department of Chemistry and Biochemistry

Sponsor: Dr. Frank S. Guziec, Jr., Department of Chemistry and Biochemistry,
Southwestern University

Anthrapyrazoles are planar, heterocyclic, antitumor molecules that have been studied as less toxic alternatives to anthracyclines. Anthrapyrazoles, like anthracyclines, exhibit their cytotoxic properties by intercalating into DNA. We have hypothesized that the efficacy of anthrapyrazoles could be significantly increased by connecting two anthrapyrazole molecules with various flexible linkers, forming bis-anthrapyrazoles. Based on DNA computational docking studies, new anthrapyrazoles and bis-anthrapyrazoles were designed and prepared. We have examined the binding of anthrapyrazoles to linkers through three different bond types. The synthetic compounds were evaluated for DNA binding by measuring DNA melting temperature increase. A number of the bis-anthrapyrazoles bound more strongly than their monomer counterparts, suggesting that the molecules bis-intercalate into DNA. Furthermore, the bis-anthrapyrazoles strongly inhibited cancer cell growth. Details of the computational studies, preparations, and evaluations of the various types of bis-anthrapyrazoles are presented.

14. Ethanol Elimination Rates of Impaired Drivers from Time-Distinct Blood Draws
Robert M. Lockwood (Sr.), Department of Chemistry and Biochemistry
Sponsor: Dr. Emily Niemeyer, Department of Chemistry and Biochemistry, *Southwestern University*; Michael Frontz & Rod McCutcheon, *Bexar County Medical Examiner's Office Toxicology Laboratory, San Antonio, TX*

We reviewed 172 cases from 2003-2007 where blood specimens from male suspected impaired drivers were submitted to our laboratory. Since 2002, the Bexar County District Attorney's Office has requested that two blood specimens be obtained for a suspected impaired driver with an intended elapsed time interval of two hours between the blood draws. The actual average elapsed time was 104 minutes for the cases studied. The blood samples were analyzed for ethanol concentrations using a direct-injection gas chromatography (GC) method. The method parameters consisted of an isothermal analysis at 40°C for 3 minutes on a Hewlett Packard 6890 GC. Ethanol elimination rates were calculated as follows:

$$\frac{[BAC]_1 - [BAC]_2}{\Delta T}$$

where $[BAC]$ represents the reported ethanol concentrations in g/dL and ΔT equals the elapsed time between the two draws in hours. The range of calculated ethanol elimination rates was 0.0005 to 0.0682 g/dL/hr. The mean, median, and mode ethanol elimination rates were 0.0197, 0.0175, and 0.0175 g/dL/hr, respectively. Initial blood alcohol concentrations reported in the study ranged from 0.018 to 0.397 g/dL. A correlation was not observed between a person's age and their elimination rate, however an increase in the rate of ethanol elimination was observed with increasing initial blood alcohol concentrations.

15. Native American and Archaeologist Relationships

Miles Elsey (Sr.), Department of Sociology and Anthropology

Sponsor: Dr. Melissa Johnson, Department of Sociology and Anthropology,
Southwestern University

In this paper, I examine the daily discourse engaged in by white archaeologists regarding Native Americans in the office and during field work. Drawing from ethnographic fieldwork conducted during a two month internship with an environmental planning firm, I show how the archaeologists unwittingly reproduce dominant and exclusionary stereotypes and misunderstandings of the current situation of the Navajo, Hopi, and Hualapai Tribes and reaffirm unequal power relationships. This discourse negatively affects the relationships between the two groups, and serves as an obstacle to the goals both groups have regarding the archaeological sites of the Southwestern United States. In particular, the Native Americans affected continue to harbor mistrust of the archaeologists. I aim to show that this situation could be improved through a more public recognition and understanding of the power dynamics that mark native and archeologist relationships.

16. Rebuilding the House that Jack Built: Comparative Analysis of Immigration and Residential Crowding in the US

Tristine Baccam (Jr.), Department of Sociology and Anthropology

Sponsor: Dr. Ed Kain, Department of Sociology and Anthropology, *Southwestern University*

This study examines the effects of immigration on residential crowding in the United States. Using data collected from Historical Statistics of the United States and Statistical Abstracts of the United States, I examined the percentage of foreign born and the percentage of crowded households for all fifty states during 2000, as well as the US overall from 1940 through 2000. While previous research attributed the rising rate of residential crowding to being simply a part of the assimilation process, not many researchers have taken into consideration the adverse effects of the already established social constraints that restrict immigrants from rapid upward mobility in the United States. Conscious of the different regions in which there are higher percentages of foreign born and their region of origin in each state, I consider the percentage of the population who are unemployed and the percentage of the population below the poverty line. I expect that there are significant differences in states with higher foreign born population that will determine higher percentages of residential crowding, as well as being affected by the region of origin of foreign born persons. Policy implications and future research suggestions are also discussed.

17. Examining Social Class: Comparisons Between Attitudes and Composition of a College Campus and the United States

Nicole Powell (Jr.), Department of Sociology and Anthropology

Sponsor: Dr. Ed Kain, Department of Sociology and Anthropology, *Southwestern University*

Previous research conducted by sociology students at a liberal arts college has revealed a common misconception that all or most students there are wealthy. The researchers conducted a survey to determine the accurate social class composition and attitudes about social class on campus. This paper presents the analyses of these data in a liberal arts setting and compares them to those of a national sample.

18. The SARAH Project and Hidden Homeless

Erin Kamin (Sr.), Department of Sociology and Anthropology

Sponsor: Dr. Maria Lowe, Department of Sociology and Anthropology, *Southwestern University*

How does homelessness affect the lives of school children and what is being done about it? This article connects the reauthorization of the McKinney-Vento Homeless Assistance Act and the rise of peer led homeless awareness groups. The SARAH Project, as a peer-led homeless awareness group is studied. Since The SARAH Project is relatively new, other local organizations are responsible for many aspects of assistance with the Project. It is my contention that there are specific biographical characteristics of those who are drawn to working with this Project and movement. Thirteen hours of observations with various areas of The SARAH Project were conducted with four in-depth interviews from September 2007 until late November 2007. The basic themes found through research were The McKinney-Vento Act's Influence of the SARAH Project and how recruitment tactics affected mobilization and recruitment of individuals and groups.

19. Crafting Education Policies in Zimbabwe: Moving Beyond Modern Colonialism

Charles B. W. Prince (Soph.), Department of Sociology and Anthropology

Sponsor: Dr. Melissa Johnson, Department of Sociology and Anthropology, *Southwestern University*

In this paper, I critically evaluate both the Zimbabwe educational system and the ideas a variety of scholars have to reform it. In 1980 with independence and the visions of a radical new leader determined to overthrow a century of colonial rule, there was great hope that the Zimbabwe educational system would radically redefine independent African educational systems. However, by the mid 90's as Mugabe's revolutionary vision turned instead to a dictatorship, the educational system suffered. During the early years of independence, critics and scholars debated what type of educational system the country should embrace. In their commentaries, they explore the idea of building better school structures, the impact of education on economic growth, what the government's priority should be when reforming the educational system and finally, how, despite independence, the educational system continues to follow colonial

patterns, with the only change being that Africans are in charge. Ten years later, in the early to mid 1990s, critics turned to predicting the problems the educational system would encounter in the 21st century, as the inflation rate began to skyrocket. As time passed, much pressure from the global community was used to try to fix these educational problems but eventually failed. I trace these concerns and critiques in this paper through the history of educational policies before independence and after independence, using insights from recent reports from both national organizations and UNESCO and identifying possibilities for positive change in the education system of this once revolutionary country.

20. Socioeconomic Status Influences on Learning Mathematics

Meredith Scoggins (Jr.), Department of Education

Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

There are a disproportionate number of students that come from low socioeconomic backgrounds that perform poorly on standardized testing in mathematics. Factors that have been proposed to influence this outcome include teacher attitudes, school curriculum, student attitudes and classroom procedures. This research has been conducted to determine what teacher's attitudes and approaches to teaching children from different socioeconomic statuses are and how they affect children's achievement in mathematics.

21. Educating China's Migrant Children: The Migrant-Run Schools of Shanghai

Jessica West (Sr.), International Studies Program

Sponsor: Dr. Ken Roberts, Department of Business and Economics, *Southwestern University*

This paper explores the issues surrounding the education of migrant children in China. In recent years the extent of this problem has become abundantly clear: the children of migrants have poor educational opportunities in rural areas, but if they migrate to the cities they face not only discrimination by urban residents but high financial barriers to their enrollment in urban schools. Beginning in the late 90's the national government has been trying to address these issues, but due to poor enforcement and a lack of financial support the problem remains unsolved. This paper focuses on the role that migrant-run schools in Shanghai have played in filling the educational void for migrant families, what challenges they have faced in providing this service, and also investigates how these schools might be utilized by the government to help resolve the problem of educating China's migrant children.

22. Health, Wealth and Wisdom: A Fledgling NGO's Hopes for the Future of an Impoverished Quarter of Bamako, Mali

Kristen Dettloff (Sr.), Department of Business and Economics

Sponsor: Dr. Don Parks, Department of Business and Economics, *Southwestern University*

The seventh largest nation in Africa, landlocked in the north-western body of the continent, Mali is considered the fourth poorest nation in the world (“Mali,” *World Development Indicators*, 2006.). On the outskirts of Bamako—Mali’s capitol—lies one of the town’s oldest quarters: Mekin Sikoro. Heavily impoverished, marginalized and caught in limbo between urban and rural settings, Sikoro is commonly excluded from projects designated for the development of Bamako and the surrounding area unless concerted efforts and appeals are made by local non-governmental organizations (NGOs) and local leaders to draw in necessary resources. The small, recently founded American-Malian community empowerment project, Sigida Keneyali (or Mali Health Organizing Project), had constructed a mission to build health networks and promote social action in Sikoro. In the spring of 2007, Sigida Keneyali commissioned a study of the overarching concepts of microfinance, focusing specifically on local microfinance projects to determine the feasibility of branching out Sigida Keneyali’s activities to include microlending, or lending relatively small amounts of money to the poor. This study examines the current socio-economic conditions existing in Sikoro and the methods and effectiveness of existing microfinance organizations in Sikoro and in general throughout the world. Included in this study are: a review of current literature on the subject of microfinance, the researcher’s on-site observation and participation with Sigida Keneyali, seven interviews with operators of local branches of microfinance organizations, an interview with the chief or traditional leader of Sikoro, and an interview with the president of Sikoro’s development association.

23. Effects of Social Class in Elementary Math & Science

Ted Wilson (Jr.), Department of Education

Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

Studies of test score averages have shown a difference in scores between children that come from different social classes. Current classroom practice has often discriminated against the underrepresented population. This can be seen specifically in the subjects of science and mathematics. Curriculum and society has been geared toward the dominant social class, making success difficult for the rest of the students that are served by our educational system. This study hopes to provide insight as to what can be done to change this gap in our education system. This study focuses on the specific ways in which math and science curriculum materials contribute to this problem and the practical methods that can be implemented to move toward a less biased educational experience for those who are disadvantaged by the system. As well as having a specific focus on educational bias, this study hopes to provide insight into the broader social construction and its implications within our society.

24. Teacher Training and Effective Instructional Strategies for Students with Mathematical Learning Disabilities
Mary Jansen (Jr.), Department of Education
Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

When students are diagnosed as having a learning disability, the majority of the focus is placed on reading while very little attention and remediation is given for mathematical difficulties. Math-related learning disabilities, such as Dyscalculia, affect roughly 6% of children in the United States. The purpose of this study is to become knowledgeable of effective instructional strategies for teaching students with diagnosed and/or displayed mathematical learning disabilities. Instructional strategies were gathered through teacher interviews and observation. Information pertaining to the teachers' mathematics training was also collected, seeking to better understand the differences in teachers', of varying qualifications/certifications, ability to effectively develop and implement various strategies.

25. Balancing Gender Interest in the Science Classroom
Kacie Wilson (Jr.), Department of Education
Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

In past studies, it has been noted that students' interest in science can be connected to their gender, with typically more interest coming from the boys. This study expands previous investigations of gender differences related to interest in elementary school science and explores strategies for teachers that may support girls to become more interested in science. It also examines what measures teachers are currently taking for students, especially girls, to become more interested in science. Methods of teaching science in the classroom have not yet been fully implemented so that both genders are supported; however, in other subjects in elementary school teachers have already made this accommodation, for example, by providing books that are of interest to boys in English/Language Arts. Additionally, this study investigates how students' interest or lack of interest affects their grades in science.

26. Theater in Science Curriculum
Amanda Morris (Jr.), Department of Education
Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

Science curriculum inside the elementary classroom is often found with hands-on experimental activities, large group discussions, and text book questions. In doing research I found that there is another element to science education that is present all over the nation, and that is theater. Science theater has been a part of the entertainment industry for several decades, and I have found that it remains strong today. I am interested in finding how science theater fits within the classroom. I will be studying various forms of science curriculum as well as interviewing teachers about their

use of theater to teach science. In doing this research I will also analyze how theater, as a process skill, influences the child's understanding of science concepts. My presentation will, therefore, provide insight into how often theater appears in science curriculum and the effects it has on the child's knowledge of science.

27. Then They're Still Alive Today: Fairy Tales, Revision, and Literary Survival

Amy Tanguay (Sr.), Department of Modern Languages (German)

Sponsor: Dr. Erika Berroth, Department of Modern Languages, *Southwestern University*

We are all quite familiar with the characters and stories of the Grimms' fairy tales. Characters such as Little Red Riding Hood, Snow White, Cinderella, and Sleeping Beauty are so well-known to us that we recognize even minute references to them in books, movies, commercials, etc., even if they are divorced from their traditional contexts (i.e., even if it is Snow White and not her stepmother who is looking into the mirror, we know that the story "Snow White" is being referenced). However, no matter how familiar the stories seem to us, closer inspection reveals just how little we really know about them. The majority of the folk fairy tales that the brothers Grimm collected began as oral literature, whose original audience, tellers, and intended purpose remain murky at best. The Grimms, however, did not record their tales directly from this oral tradition. Even though most people think of the Grimms' tales as the originals, theirs are not even the first written versions, as other European authors such as the 17th century French author Charles Perrault penned versions of the same fairy tales that would later be found in the Grimms' collection, albeit in a different form. Contemporary retellers such as Walt Disney and Angela Carter only add to the already complex questions of authorship that surround fairy tales. Folk fairy tales, then, are perhaps best understood as a form of literature in diaspora, having no definitive "original" author or audience, they are instead forever resituated in new contexts.

28. Phantasmagorical Frights with Concrete Consequences: The Inner Dualities of Villains in German Expressionist Film

Brian P. Gingrich (Sr.), Department of English and Department of Modern Languages (German)

Sponsor: Dr. Erika Berroth, Department of Modern Languages, *Southwestern University*

In my research I seek to investigate the dual images of a group of notorious characters in German Expressionist films of the early 20th Century. Emerging from a long strand of predecessors in 19th Century Romantic and Gothic traditions, they imitate figures such as Goethe's 'Erlkoenig' and Hoffmann's 'Sandmann' by evoking a fear that is simultaneously chaotic and authoritarian, imaginary and real, playful and deadly. Though past works have already focused on the psychological implications of these images, attempting to connect them to their historical contexts, I focus my study on the importance of film as an ideal means of portraying their chimerical natures. It was the magical potential of this young medium that enabled both the phantasmagorical and

the realistic horrors of films such as *Nosferatu*, *Das Kabinett des Dr. Caligari*, and *Der Muede Tod* to inhabit the same body. At the same time, it was this very potential that made the medium itself so controversial.

29. Domesticity and the World of Elizabeth Stoddard

Chelsea Edge (Sr.), Department of English

Sponsor: Dr. Elizabeth Stockton, Department of English, *Southwestern University*

Elizabeth Drew Barstow was born May 6, 1823 in Mattapoisett, Massachusetts to a family of ship builders. Her family maintained a precarious financial, and thus social, position, creating an environment of anxiety for Elizabeth. Her marriage to small-time writer Richard Stoddard in 1852 continued this cycle of poverty and disappointment. Most traumatic for Elizabeth Stoddard, however, were the deaths of all three of her children. These experiences Stoddard had in which home and family couldn't function as safe havens from a troubling outside world resulted in a disdain for and distrust of the Victorian idea of the domestic sphere. These factors served to give her a certain disregard for the powers of domesticity, as seen in her most popular novel, *The Morgesons*. Through her characters' relationships in the novel, Stoddard reveals how impossible and ultimately how unsatisfactory the domestic model truly is.

30. My Lady's Malady

Kenneth Schreiber (Sr.), Department of English

Sponsor: Dr. Eileen Cleere, Department of English, *Southwestern University*

The Victorian era served as a hotbed for speculation into the realm of psychology, giving rise to the prevalent subject of the madwoman. But were these women truly mad, or did they represent a challenge to the established system? This paper will first examine the definition of insanity, as well as the conditions of facilities of the time period. Then, through close analysis of Charlotte Bronte's *Jane Eyre*, Wilkie Collins' *The Woman in White*, and Mary Elizabeth Braddon's *Lady Audley's Secret*, it will explore the social implications of female insanity, whether it was a medical malady, or a way of disposing of unruly women.

31. An Extensible Computer Game for Interactive Language Learning (and Other Areas)

Stephen Foster (Jr.), Tommy Rogers (Soph.), Carl West (Sr.), Whitney Johnson (Sr.), Bobby Potter (Sr.), Anna Prather (Soph.), Stephanie Taylor (Jr.), Claire McAdams (Jr.), Heather Lesieur (Soph.), Emily Gutzmer (Soph.), Matthew Scott (Sr.), Jonathan McBride (Sr.), & Kyle Strine (Sr.), Department of Mathematics and Computer Science

Sponsor: Dr. Barbara Owens, Department of Mathematics and Computer Science, *Southwestern University*

Given the rapid growth of the American gaming culture, many educators and businesses have sought to harness this pastime for various purposes. The Alice project

at Carnegie Mellon University seeks to teach the basics of computer programming through a game-like interface. The United States Army spent several million dollars on an online computer game called America's Army, which they are currently using as a successful recruiting tool. Community-building games like Guildwars and World of Warcraft fulfill an undeniable social need for a large number of people. (According to DFC Intelligence, the online game market was worth \$4.5 billion in 2006.) Harnessing a portion of this cultural phenomenon for pedagogical purposes is what we have begun to do with a special kind of game that not only facilitates interaction between the user and the computer, but also between the user and a community of users. This is key. We believe that an inability to interact with other human beings is where many other pedagogically motivated games tend to fall short. Our game allows teachers to work together in a collaborative virtual environment to build 3D worlds complete with characters that speak and respond intelligently to students. Moreover, students can interact with other students, working together to solve problems within the virtual environment. Students must become immersed in a foreign language in order to talk to each other and to the characters that their teachers have placed in the game.

32. Well Routed?

Leslie Schwind (Sr.), Allie Stevenson (Sr.), Suzy Fudge (Sr.), & Sara Mar (Sr.), Department of Mathematics and Computer Science

Sponsor: Dr. Therese Shelton, Department of Mathematics and Computer Science, *Southwestern University*

Using graph theory, the study of graphs, or mathematical structures, that represent relations between objects from a given collection, we create a model of a college campus in order to calculate the shortest pathways of routes based on whether or not they are accessible per ADA standards. We compare the two types of routes and identify problem areas.

33. Enter: Japanese Cultural Ideology!

Alex Caple (Soph.), Department of Communication Studies

Sponsor: Dr. Hector Amaya, Department of Communication Studies, *Southwestern University*

The anime cartoon show Naruto has been entertaining American audiences since 2005. The fast paced cartoon follows young Uzumaki Naruto in his quest to become a ninja in his village. The episodic adventures of Uzumaki Naruto and his classmates has enticed a loyal viewership among American children, and has spread its influence as a new transmedia narrative. Naruto follows a similar business strategy to its anime predecessors and achieves a transmedia narrative form by integrating products such as action figures, clothing and videogames in order to continue the world of Naruto beyond the cartoon. However, Naruto deviates from its predecessors as an anime by incorporating Japanese myth and identity into the cartoon, instead of relying completely

upon the imagination. I assert in my thesis that Naruto influences American society as a transmedia narrative by importing Japanese cultural ideology. I believe this is achieved through the creative use of Japanese identity and myth, in tandem with a vertical business structure and the emotional drawing style of anime. I also raise the question of what effect the importation of Japanese culture and ideology might have upon American children, as they are Naruto's primary audience.

34. Building Bridges: Discussing the Realities of an Israeli-Palestinian Peace

Andrew Mayo (Sr.), David Martin Stanberry (Sr.), Department of Political Science

Sponsor: Dr. Jennifer Suchland, Department of Political Science, *Southwestern University*

This presentation will cover a two day conference on the Southwestern University campus discussing a critical geo-political issue of our time, the Israeli-Palestinian Conflict. Through widening the range of voices of peace and reconciliation, the conference aims to expand Southwestern community awareness of the Israeli-Palestinian conflict and examine practical avenues for a peaceful resolution. We have two days of events planned, March 5th and 6th. In addition to the speakers, of particular interest is our "Wall." Eight feet tall and twelve feet across, the wall refers literally to the security barrier separating the Palestinian territories and Israel; however, it also symbolizes the role of walls in conflicts around the world. Students and the Southwestern community can write their thoughts about walls and artificial divisions within humanity on the exterior of the wall. Bringing together a broad range of viewpoints will help us both educate and discuss real avenues towards peace. When dealing with such a highly contentious issue such as this, it is necessary to hear constructive views. Accordingly, this conference focuses on realistic and sustainable peace rather than holding ideological allegiance to one particular side or pointing the finger of blame. In the words of Naomi Shihab Nye, renowned Palestinian-American author and casual advisor for our project, "I'm not interested in who suffered the most. I'm interested in people getting over it." Keeping this in mind, our speakers will not refrain from challenging both apathy towards, and assumptions about, this highly contentious debate.

35. The New Deal and the New Frontier: An Analysis of Success and Failure

LaToya Alexander (Sr.), Department of Political Science

Sponsor: Dr. Alicia Gaunder, Department of Political Science, *Southwestern University*

The Constitution of the United States was meant to restrict the power of the presidency, to make it difficult for presidents to pass their agendas and pieces of legislation with ease. For this reason, the skills of presidential leaders have been investigated by many scholars in order to determine how it is that they are able to pass their legislation and why some succeed and others fail. Two sets of legislation that seem suited to examine the above questions are the policies of the New Deal of Franklin Delano Roosevelt's presidency and those of the New Frontier of John F. Kennedy's

presidency. Both deal with welfare reform and with granting more power to the executive, and yet the majority of New Deal policies passed, while those of New Frontier did not. I argue that the reason behind the success of one and failure of another is largely due to the presiding President's ability to persuade and bargain. According to Neustadt, "Policy is kept alive by a sustained transformation of intent into result" (Neustadt 137). To that end, the ability of one's persuasion will be measured by whether or not they succeeded in passing what they stated they would pass, basically, whether or not they were able to back up what they declared they would. This will be determined by examining key components of their Democratic nomination speeches and then following whether or not they succeeded in passing what they advocated for.

36. Post-Socialism in Russia: The Experience of Transition and the Emergence of Civil Society
Dana Deane (Sr.), Department of Political Science
Sponsor: Dr. Jennifer Suchland, Department of Political Science, *Southwestern University*

There are many ways to consider post-socialism and the various economic, political, social, and cultural changes. Traditional discourses concerning the transition from communism to capitalism focus on macro-level technical changes such as the transition from a planned economy to a private economy or from a politically controlled government to a democracy. An alternative way to study the transition is to recognize the real changes occurring in the everyday lives of people living through transition. Experiences which characterize the transition to people living within it are daily activities such as the privatization of employment and living spaces, social interactions in the public sphere, consuming, and income earning in a second economy. Some of these experiences fundamentally change the way people live. My research specifically considers the changes occurring in post-socialism and explores how these changes, which are widespread in the larger cities of Russia, affect people's socialization, creation of identities, and the emergence of civil society or the organization of people outside familial, market or political association. I further attempt to put these considerations in the context of "Russian democracy" by focusing on alternative theories of democracy such as those asserted by Frances Lappé and Joseph Schumpeter.

37. Public Opinion, Policy Windows, and Going Public: The Cases of Ronald Reagan and George Bush
Clare Brock (Sr.), Department of Political Science
Sponsor: Dr. Alisa Gaunder, Department of Political Science, *Southwestern University*

Presidential leadership frequently presents the problem of high public expectations for assertive policy, but limited abilities for policy passage. One possible approach to the difficulties of presidential power is through 'going public'. This concept, as presented by Kernell, is one where the president goes directly to the public for support, bypassing Congress and other channels of negotiation. Unfortunately, this strategy does not always succeed. Why then, do presidents succeed or fail in going

public? This paper argues that presidents are more or less likely to succeed in getting policy passed based on the environment in which they 'go public' and their ability to recognize and utilize policy windows. This theory will be applied to the case of Ronald Reagan's 1986 Tax Reform Act and George W. Bush's 2005 Social Security Reform Act. Reagan was successful while Bush was not. I argue that in both cases the policy outcome was largely influenced by the environment in which the presidents chose to go public. This paper finds that it matters less in what manner a president chooses to try to promote his policy agenda. 'Going public's' success or failure is primarily dependent on the environment in which the president chooses to go public, far more than on his public speaking abilities or the amount of effort he spends touring to promote his agenda. By operationalizing the concept of Policy Entrepreneurship as a practical method of addressing policy concerns, this paper suggests ways in which leaders can more aptly achieve success in policy passage.

38. A Study of Congressional Decision Making: The 2001 USA PATRIOT Act and 2006 Renewal

Mary Kierst (Sr.), Department of Political Science

Sponsor: Dr. Tim O'Neill, Department of Political Science, *Southwestern University*

This paper is an in-depth study of the factors affecting congressional decision making in the case of the 2001 USA PATRIOT Act and its 2005 renewal. Through a combination of content analysis of committee hearing transcripts, the Congressional Record, elite media sources, and interviews with members and their staffs, existing theories of congressional decision making, and especially crisis decision making, are tested. The goal of the paper is to determine if the two separate legislative processes paralleled each other in significant ways. The sense of urgency that previous literature uses to explain the passage of crisis legislation had abated by the time of the renewal in 2005, yet all the sunsetted provisions were renewed by significant margins of victory, despite continuing civil liberties concerns. Factors such as national security concerns, the Bush administration, constituents, and institutional loyalties help to explain the passage of these two pieces of legislation.

39. The Printed Voice

Justin Thurman (Jr.), Department of English

Sponsor: Dr. Michael Saenger, Department of English, *Southwestern University*

Walter Ong's work has problematized the inauguration of "print culture" and its consequent displacement of an oral-manuscript culture which preceded it. As Ong and others have pointed out, the division between these two cultures is not as distinct as originally assumed. As print culture emerged, the author's "voice" was reconstituted, as the text became substantial. But as oral culture persisted well into the era of print, the figure of the oral voice remained a potent reference point in authorial self-definition. The printed book accomplished new sorts of mediation between an author and his

intended audience. In short, the text became a commodity and an author's status was defined by his supposed superiority to the capitalism which both surrounded and shaped the book trade. I intend to explore how this phenomenon presents itself in early printed books in England. In John Eliot's prefatory epistle to his *Ortho-Epia Gallica*, for instance, Eliot stages a doppelganger author as a sardonic advocate of print which debases oral language teachers. Those oral teachers as textual characters become objects incapable of speaking for themselves which are used to elevate the author and esteem him in the eyes of the reader. The reader is hesitantly of the mind that language acquisition through print is more effectual than through vocal/oral means. Thus the reader is not excluded from the text by Eliot's textual assault on orality – indeed, the very act of *reading* the insult exempts one from it. The simulated Eliot's value as an author is elevated only in reference to some other equally simulated object – in this case, an oral, linguistic one.

40. Bob On Brecht; The influence of Bertolt Brecht on Bob Dylan in New York City's Greenwich Village in the 1960s

Delilah N. Dominguez (Jr.), Department of Theatre

Sponsor: Dr. Sergio Costola, Department of Theatre, *Southwestern University*

In 1963, Bob Dylan's girlfriend Suze Rotolo worked as a set designer for a production of George Tabori's 1961 'Brecht on Brecht: An Improvisation'—a compilation taken from Bertolt Brecht's poems, plays, and excerpts from his appearance before the House Un-American Activities Committee. Seeing and hearing Brecht's 'Pirate Jenny' in New York City's Greenwich Village expanded Dylan's notion of what his folk songs could accomplish by showing that they could achieve levels of sophistication beyond those that his hero Woody Guthrie had implicitly created. Brecht's method of defamiliarization as experienced in 'Pirate Jenny' enabled Dylan to re-evaluate his relationship with his audience and to adopt what can be described as a Brechtian attitude toward audience expectations of his work. While Brecht's direct influence is not explicit in much of Dylan's songwriting or performing, applying a Brechtian paradigm to his work following his 1963 exposure to 'Pirate Jenny' allows songs such as 'When The Ship Comes In' and 'The Lonesome Death of Hattie Carroll' to be understood as folk songs of different complexities than Dylan had created before. This discussion will explore how Brecht factors into Dylan's development as a songwriter in his early years, with a specific focus on the album 'The Times They Are A-Changin.'

41. Animal Bodies and Memorial Function in *Maus*

Elizabeth Graf (Sr.), Department of Art and Art History

Sponsor: Dr. Kimberly Smith, Department of Art and Art History, *Southwestern University*

In Art Spiegelman's graphic novel *Maus: A Survivor's Tale*, species of animals with alternately mythical and practical conflict are used to represent the participants of

the Holocaust. Spiegelman has said that he believes the representation of people as animals in his graphic novel allows him to deal with the story and trauma more directly, noting that if he had used people, it would have seemed “corny...as some kind of odd plea for sympathy.” Because it was Spiegelman’s father, not the artist himself, who held the primary source material for the work, the staging abandons any struggle for authenticity and instead uses the “ciphers” of cats and mice to construct a narrative. Playing on racial stereotypes of the time, Spiegelman uses cats and mice for Germans and Jews, pigs for Poles, dogs as Americans, and frogs to represent the French. Spiegelman’s work, by using animals and a format similar to comic books, places itself outside the conventions of official memorial culture and avoids the mythologization of conflict. If there is an aesthetic convention of imposing human conflict into the animal sphere, this use of animal imagery avoids it, instead using the cartoonish bodies of animals as mimetic agents of memory. I will explore how animal imagery has historically functioned in negotiating collective memory and how animal bodies were used during wartime or shortly thereafter, when oral history is seen as unreliable or transient.

42. Teachings Collections in Early Christianity and Buddhism

Kyle Simpson (Sr.), Department of Religion and Philosophy

Sponsor: Dr. Laura Hobgood-Oster, Department of Religion and Philosophy,
Southwestern University

This presentation emphasizes part of a broader paper which argues that Jesus and the Buddha underwent parallel transformations in the early centuries after their deaths which are evidenced by the types of literature written about them. In both cases, an early set of teachings attributed to the teacher came to be encased in a collection of life stories that reframed the teachings and their consequences. These life stories of an earthly and material nature were later overshadowed by texts that focused on the non-worldly feats of these characters and their continuing relevance to their followers even after death. Due to time constraints, the presentation will focus on the first of the three layers observed in both traditions: sayings/teachings collections. This genre includes the Four Noble Truths on the Buddhist side and the Gospels of Q and Thomas from early Christian circles. Each of these texts depict a central figure whose primary role is that of a teacher and whose primary function is to say more than it is to do. The wisdom of each teacher is compiled into a list format that lacks the surrounding biographical narrative of later texts. Issues raised will include the challenge to contemporary scholarship on transformations. Most scholars link such changes to regional and local influences. If, however, two analogous transformations did take place though separated by centuries and hundreds of miles, then what new insights may be gained?

ABSTRACTS: POSTER PRESENTATIONS

1. "Worms, Worms Everywhere!": Regenerative Capabilities of *Lumbriculus variegatus*
Emily Schmidt (Sr.), Department of Biology
Sponsor: Dr. Veronica Martinez, Department of Biology, *Southwestern University*

Lumbriculus variegates (California Blackworm) is an oligochaete, or segmented worm, that is found in shallow freshwater in the northern climates of the United States and Europe. An individual worm can consist of 250 segments, each of which can regenerate into an entirely new worm. While regeneration research is being carried out using high order vertebrates, we utilize an invertebrate model to understand the mechanisms for regeneration at a simplified level. Because of great homology and conservation of mechanisms between these invertebrate worms and vertebrates, we believe that genes and proteins, which are expressed during the processes of regeneration in *Lumbriculus*, can be used to help us understand the conditions necessary for regeneration in more complex systems. My current research focuses on developing new techniques for labeling cell proliferation in *Lumbriculus* during regeneration. Adapted from work with Planaria, we have successfully labeled new cell growth during regeneration with bromodeoxy-uridine (BrdU), incorporated through a food paste. Additional research has focused on determining what types of cells are being regenerated, specifically cells utilized for neural regeneration. Utilizing the fluorescent dye, rhodamine, as well as a nervous system specific marker, to label the nervous system at a specific time of injury, we will determine the absence or presence of proliferating cells at the wound site. These experiments will lead to further understanding of the cellular components and processes involved in the regenerative capabilities of *Lumbriculus*.

2. Protein Degradation in the Ventral Nerve Cord of *Procambarus clarkii*
Amanda Mohammed (Sr.), Department of Biology
Sponsor: Dr. Rebecca Sheller, Department of Biology, *Southwestern University*

Neurons of all animals are specialized to use electrochemical signals for fast communication with other neurons, muscles, and glands. Neurons have specific structures for specific functions. The axon of a neuron rapidly carries electrical signals from the cell body toward target cells, and therefore can be a very long cytoplasmic process. When a mammalian axon is severely injured, and therefore isolated from the cell body, degeneration is a rapid process that involves protein degradation. However, the pathways for protein degradation in injured axons are not understood. In contrast to mammalian axons, the severed Medial Giant Axon of the crayfish Ventral Nerve Cord degrades slowly and can remain viable for months in vivo. We investigated the slow degeneration of the Ventral Nerve Cord of *Procambarus clarkii* by applying aspartame to the Ventral Nerve Cord in order to stimulate apoptosis and the production of caspase-3, a protein associated with apoptosis. We hypothesized that we would observe an

increase in immunoreactive products of caspase-3 at 36 kDa and 20 kDa. During this one-semester study, we did not observe immunoreactive bands for caspase-3 in the protein samples obtained from treated Ventral Nerve Cords.

3. Abnormal Over-expression of Claudin-3 Tight Junction Protein in MCF-7 and MDA-MB-415 Breast Cancer Cell Lines

Brytanie N. Piana (Sr.), Department of Biology

Sponsor: Dr. Maria C. Todd, Department of Biology, *Southwestern University*

Tight junctions function both to connect adjacent endothelial and epithelial cells and to regulate the flow of molecules through the transcellular pathway. The 24-member claudin family of proteins are integral to tight junction structure and function. Claudins are expressed in a tissue and developmental stage-specific manner. Recent findings of abnormalities in claudin expression in tumors of different types, including elevated claudin-3 expression in ovarian cancers, have indicated a possible role for tight junction disruption in the metastasis of tumor cells. In the current study, our primary objective was to compare the levels of claudin-3 protein expressed by a panel of normal reproductive tissues with those expressed by breast and ovarian cancer cells. Using western blot analysis, we found that the basal level of claudin-3 expression was barely detectable in all of the normal tissues assessed (with the highest levels in normal breast tissue). In contrast, we observed markedly elevated (over 40-fold) expression of claudin-3 in two breast cancer cell lines, MCF-7 and MDA-MB-415. In order to determine if the over-expression of claudin-3 deregulates tight junctions, we have used siRNA to suppress claudin-3 expression to that of near normal levels in the MCF-7 cells. This will enable us to perform future studies comparing both the transepithelial resistance and invasiveness of MCF-7 cells that express either elevated or suppressed levels of claudin-3.

4. Economics of Ethanol

Natalie Kay Mahlberg (Sr.), Department of Business and Economics

Sponsor: Dr. Dirk Early, Department of Business and Economics, *Southwestern University*

Ethanol has become an important component of America's energy policy. Political support for ethanol over the past 30 years has manifested in federal as well as state subsidies, import tariffs, and alternative fuel standards. Currently there exists a federal subsidy of 51 cents per gallon, an ad valorem tariff of 2.5% of the product value, and a secondary duty of 54 cents per gallon. In addition, the 2005 Energy Policy Act established the Renewable Fuel Standard that requires 7.5 billion gallons of ethanol to be blended with gasoline by 2012. Many hope that a move to ethanol will lower green house gas emissions, decrease our dependence on foreign oil, while providing a stimulus for the agricultural community. Despite the increasing policy support and production, many are skeptical about the net benefit (if any) of ethanol. Some estimates of the energy return to energy invested in ethanol production are negative indicating that it may take more energy from fossil fuels to produce ethanol than is possible to extract. In

addition, many recognize that corn ethanol will never be physically capable of substantially reducing our demand for foreign oil. For these reasons and more a careful evaluation of the economics of ethanol production is necessary.

5. Photoexcitation of Daunomycin Leads to Oxidative DNA Damage That Is Dependent on Molecular Oxygen

Radhika Kainthla (Sr.), Department of Chemistry and Biochemistry

Sponsor: Dr. Maha Zewail-Foote, Department of Chemistry and Biochemistry,
Southwestern University

The damage profile of photoactivated daunomycin-DNA complexes has been quantitatively assessed using a plasmid relaxation assay coupled with DNA repair endonucleases. Photoexcitation of daunomycin leads to oxidative DNA damage, including strand breaks, abasic sites, and a substantial amount of guanine specific oxidized damage, in a dose and irradiation time dependent manner. DNA damage was also inhibited by argon degassing, indicating that the damage arises from an oxygen dependent mechanism. In addition, photoexcitation of daunomycin generates superoxide anion as detected by cytochrome c reduction. Our results are consistent with the photoinduced charge transfer mechanism, which may explain the enhanced cytotoxicity of daunomycin in the presence of light.

6. Approaches to the Synthesis of Selenium Analogs of Dapsone

Jessica Hoch (Sr.) & Kim Le (Sr.), Department of Chemistry and Biochemistry

Sponsor: Dr. Lynn Guziec, Department of Chemistry and Biochemistry, *Southwestern University*

Dapsone, 4,4'-diaminodiphenylsulfone, is an antimicrobial drug most commonly prescribed for Hansen's disease, yet it has also been known to be effective against other pathogenic diseases. Dapsone is administered in high doses, often resulting in serious side effects. Our objective was to synthesize a selenium analogue of dapsone, 4,4'-diaminodiphenylselenone, in hopes that the derivative would be more effective and less toxic. Two different approaches were used to prepare the desired product from a common synthetic precursor, 4,4'-dinitrodiphenylselenide. Both approaches involved selectively reducing the nitro groups and oxidizing the selenium to achieve the selenium analogue of dapsone. One approach involved completely oxidizing the selenium atom, and subsequently reducing the nitro groups to the corresponding amines. The other method required the reduction of the nitro groups before oxidizing the selenium. Details of the key synthetic procedures will be presented.

7. DNA Binding and Cleaving Properties of Intercalating Copper Complexes

Carissa Fritz (Soph.) & Tammy Nguyen (Fr.), Department of Chemistry and Biochemistry

Sponsor: Dr. Gulnar Rawji, Department of Chemistry and Biochemistry, *Southwestern University*

Copper(II) complexes can interact with DNA and promote its cleavage through metal-mediated processes. The cleavage of DNA may be achieved by hydrolysis of the phosphate backbone, through generation and involvement of reactive oxygen species, or by reduction to copper(I). In this investigation, three copper(II) complexes with different intercalating ligands have been investigated for their DNA binding properties and nuclease-like activity in the presence of a reducing agent, ascorbic acid. All complexes bind to DNA to different degrees depending on the nature of intercalating ligands and cleave the DNA only upon reduction to copper(I) by ascorbic acid. The DNA binding properties of the complexes were investigated by absorbance titrations and DNA melting, and DNA cleavage activity by gel electrophoresis. The results of these studies will be presented together with the syntheses and characterization of the copper complexes.

8. My Southwestern: Admissions Materials from the Student Perspective

Jennifer Allen (Sr.), Department of Communication Studies

Sponsor: Dr. Dan Hilliard, Department of Sociology and Anthropology, *Southwestern University*; Dr. Bob Bednar, Department of Communication Studies, *Southwestern University*

An individual's perception of Southwestern differs greatly depending upon their relationship to the University. A variance in point-of-view particularly interesting and relevant to the field of communication is that of applicant versus student. High school students often depend on the admissions materials they are given to provide an accurate depiction of what life is like at a given school. These glossy brochures and pamphlets sit on their kitchen counters for constant review, eventually playing a major role in how each school is remembered and distinguished in their minds. With this in mind, I often wonder what our admissions materials would look like if produced by Southwestern students themselves. In an effort to explore this idea, I am using photography and writing skills developed as a Communication Studies major to design an admissions magazine exhibiting the perspective of current students. The stories and lives of eight students from different realms of the Southwestern community are represented in this project, and their uninhibited voices shine through each word and image used. The students interviewed were specifically asked not to sell Southwestern, but to genuinely express their daily experience of it. The photography used borrows inspiration from their passions, interests, and memories. With the hope of being true to my own perspective, stories and photos inspired by my four years here are also employed. Through a weaving together of my own voice and those of eight others, this magazine serves as an authentic representation of Southwestern from the student perspective.

9. How Much for a Constructivist Curriculum?

Tracey Ryan (Jr.), Department of Education

Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

“Constructivism rejects the notion that children are blank slates. They do not absorb ideas as teachers present them. Rather children are creators of their own knowledge.” (VDW, 22) The purpose of this study is to investigate how socioeconomics in a school or school district affects the want and implementation of a constructivist guided curriculum. I also hope to inquire more about their instruction styles and if having extended funds from either the parents of the children or the district, or the teachers having extended funds themselves, affects or improves this at all.

10. Gender Stereotypes in the Elementary Science Classroom

Michelle Biermacher (Jr.), Department of Education

Sponsor: Dr. Michael Kamen, Department of Education, *Southwestern University*

There has always been a gender stereotype that men are more interested in and excel to a higher degree in science both in careers and the classroom than women. This idea begins at a very young age when gender stereotypes are strictly held to. Are boys in elementary school more interested in science because the stereotype tells them that they are? Does this give them the drive to excel in the subject over girls? Do these ideas have the opposite effect on girls' attitudes toward science? If so, then this greatly affects the ways that the children will think about their future and what to do. There is a need to look at the atmosphere in the elementary science classroom and the teacher's attempts to change this stereotype. Research needs to be done to see what the teacher can do to help close the gap that exists so that both boys and girls are interested in science and to help them to progress together.

11. A Microhistorical Look at Isabella Bird's Travels in the United States

Anna Beal (Sr.), Department of History

Sponsor: Dr. Elizabeth Green Musselman, Department of History, *Southwestern University*

Travel narratives have long played an important role in historical studies. They provide valuable information not only about the places visited, but also about the mindsets of their authors and/or the audience for which the travel narrative was intended. A look at travel writer Isabella Bird's journeys in the United States raises a number of questions pertinent to the study of nineteenth century women's travel writing and beyond. Isabella Bird traveled to numerous destinations around the world, but this study will focus on her travels to the United States, and especially on her voyage to the Western states, recounted in her narrative "A Lady's Life in the Rocky Mountains". Bird was an exceptional case for her time, not only as a woman travel writer, but as a woman who often traveled completely alone. Nonetheless, she was a figure who achieved popular acclaim and whose books were widely read. This study will consider Isabella Bird by using microhistorical methods, which seek to understand the

past by studying relatively obscure events or people in great detail. Generally this event or person has an exceptional aspect which conflicts with largely accepted ideas about what was “normal” for a given time period. This study intends to capitalize on the exceptionality of Isabella Bird to shed light on scholarship pertaining to such issues as women’s history, nineteenth century American history, and historiography.

12. Effect of Reduced Treadmill Size on Running Gait

Eric Sterner (Sr.), Ben Hoffman (Sr.), & Lauren Arrowood (Sr.), Department of Kinesiology

Sponsor: Dr. Scott McLean, Department of Kinesiology, *Southwestern University*

Presently, the design of the treadmill used on the International Space Station provides a tread size that is ~45% of commercially available treadmills. The physiological and biomechanical consequences imposed on the gait of someone running on such a small treadmill are unknown. The purpose of this study was to examine the effect of treadmill surface area on mechanical and physiological characteristics of running gait. It was hypothesized that constraining the size of the treadmill surface would decrease stride length, quadriceps EMG activity at impact, and peak tibial acceleration at impact, while increasing steady state VO₂ and HR. It was further expected that runners would perceive running on a smaller surface to be more strenuous. Ten experienced distance runners (19.6±1.0 yrs, 167.3±5.8 cm, 60.6±7.2 kg) ran for a minimum of 6 minutes at 2.9 m/s until a steady state was achieved using three treadmill sizes (111.8x33.0 cm, 132.1x55.9 cm, and 152.4x55.9 cm). Presentation of the treadmill conditions was randomized. Stride length, tibial accelerations, quadriceps EMG activity, VO₂, and HR were monitored continuously during each trial. Data from the final 30s of each trial were chosen for analysis. Upon completion of each trial a rating of running comfort (rating of normalcy) was recorded. No significant differences in stride length, tibial acceleration or EMG activity were observed. Furthermore, running on a treadmill with a constrained size had no effect on steady state physiological measures. However, participants reported more discomfort when running on the smallest treadmill size. Therefore, constraining the surface size of a treadmill has no deleterious effects on mechanical and physiological characteristics of running gait. Use of a larger treadmill only enhances the comfort of the runner.

13. The Effects of Carbohydrate Consumption on Fat Oxidation during Low Intensity Exercise

Kelyn Rola (Sr.), Department of Kinesiology

Sponsor: Dr. Jimmy Smith, Department of Kinesiology, *Southwestern University*

The role of exercise in weight loss has become more important as the obesity epidemic has become more widespread. Sport drink sales are a multi-billion dollar market largely because of successful marketing campaigns aimed at convincing the general population that consumption of such drinks is a healthy adjunct to exercise.

However, these drinks contain a relatively high carbohydrate concentration which affects both substrate utilization during exercise and overall energy balance. The purpose of this study was to determine the effects of the consumption, during exercise, of a typical sport drink on substrate utilization and net energy expenditure. Eight untrained women participated in the study. On 3 separate trials they ingested either ~74 mL of water (Condition W), placebo (Condition P), or Gatorade™ (Condition C) every 5 min over a 45 min bout of low-intensity exercise. The results of the rANOVA suggested that there was a significant difference among RER values for each condition ($F_{2, 56} = 10.72$, $p < 0.001$). Furthermore, about 28% of the change in RER was due to the testing condition ($\eta_p^2 = 0.28$). The results of a Tukey post hoc test suggested that the RER in Condition C was significantly different than in Condition W ($p < 0.001$). A 20 fl oz bottle of Gatorade™ contains 543.92 kJ. During the water and Gatorade™ trials, the mean (s) energy expenditures were 860.50 (132.48) kJ and 850.19 (130.64) kJ, respectively. The mean net energy balance of the Gatorade trial was 306.27 kJ, suggesting that 64% of the kJ expended were re-consumed. This alone suggests that consuming sports drinks during exercise is an ineffective way to lose weight.

14. *Women Dou Hui Shuo Zhongwen!*: Educational Video Curriculum for Beginning Students of Chinese

Emily Brandt (Soph.), International Studies Program

Sponsor: Dr. Patricia Schiaffini, Department of Modern Languages, *Southwestern University*

Women dou hui shuo Zhongwen! is an educational video curriculum designed for first year students of Mandarin Chinese . It combines dialogue scenes, vocabulary, “sing-along” songs and poetry to interactively engage students with the lesson material. The video is comprised of a series of 22 lessons, based on the beginning Chinese textbook “Chinese Link – First Edition,” published by Pearson Prentice Hall. The video curriculum will increase student involvement in the Chinese language program at SU, both during and following production. During production, it has provided current students the opportunity to explore Chinese outside the classroom in a creative and interdisciplinary setting, including acting, singing, traditional calligraphy, and cultural research. Following production, it will increase students’ comprehension of material by combining audio (spoken vocabulary, songs, poetry and dialogues) and visual (“sing-along” style pinyin Romanization and characters), a format not currently found in the classroom. It will also enhance student engagement and enjoyment of material through humor. *Women dou hui shuo Zhongwen!* combines the challenges of producing an artistic, entertaining and useful video, and compounds them by requiring that it be done in a foreign language. With the exception of the closing credits, there is absolutely no English throughout the video. Because the video is shot entirely in Chinese, the imagery and acting have to be vivid and clear enough to engage and instruct the student audience, and keep their attention, despite the language barrier.

15. Performing Monte Carlo Calculations on a Cheap Grid

Sean Smith (Jr.), Department of Physics

Sponsor: Dr. Steven Alexander, Department of Physics, *Southwestern University*

Distributive computing is a processing environment where multiple CPUs operate in parallel under the control of a single machine. For this project we assimilated 57 PCs in labs throughout Southwestern into our cluster by simply inserting a CD into each machine and rebooting. Each CD contains SLAX, a modular distribution of Linux and all the software needed to facilitate client-server communication. The status of each job is managed by a MySQL database on the server. The goal of this project is to visualize the distribution of electrons in a series of homonuclear diatomics. For each molecule we calculated the values of several properties at 400 points in the plane of the molecule and then graphed the results. For each of these 400 points, the server sent a FORTRAN executable and an input file to a client over a socket. Once this calculation finished, the client returned the output file to the server and requested a new job.

16. Efficient, Low-Cost Solar Water Heaters

Pelham Keahey (Jr.), Department of Physics

Sponsor: Dr. Steven Alexander, Department of Physics, *Southwestern University*

In an era of rising energy costs, any device that can replace expensive fossil fuels should have a large potential market. Last year I received a King Creativity grant to produce an inexpensive, easy to make solar water heater. I was able to achieve both of these objectives; unfortunately, my design wasn't meeting the standards I would have liked, for reasons I am still trying to determine. As part of this investigation I began to look at more conventional designs – many of which are able to easily heat water by 20 degrees Celsius or more. For this King Creativity grant I would like to look at which design features of solar water heaters yield the highest efficiencies while still keeping in mind low cost and easy construction. The performance of the newly constructed model will again be tested under different weather conditions to determine how practical such a device would be for central Texas or other similar climate zones. The design which we believe will meet these criteria that is currently being constructed will utilize a 'snaked' copper pipe running along a metal plate that will hopefully absorb enough heat from the sun to substantially heat the water traveling through the copper pipe. Unlike last year's design, which utilized a parabolic reflector focused on a single metal pipe, this design will absorb the heat directly in order to heat the water, which preliminary tests have shown to be more effective.

17. Solar Thermal-Powered Refrigerator

Melanie Loop (Sr.), Department of Physics

Sponsor: Dr. Steven Alexander, Department of Physics, *Southwestern University*

A small absorption refrigerator was set up with alternate power sources. The refrigerator will be mainly run off of solar thermal heat with backup power systems,

including a solar cell and a bicycle power generator. The backup systems for the refrigeration system would work to charge a battery so that the refrigerator would still operate under conditions that the thermal solar collector would not. These two forms of energy would charge deep-cycle batteries. If neither of these two options were usable for any reason, there would still be a choice to plug the refrigeration unit into a wall socket and have it run off of the conventional AC current or be operated by propane.

18. Electricity-Generating Wind Turbine

Marisel Kerbacher (Sr.), Department of Physics

Sponsor: Dr. Bill O'Brien, Department of Physics, *Southwestern University*

The project is to design and build a functioning vertical axis windmill (Savonius wind turbine) that can generate electricity for various applications, then to focus on how to make it more efficient. The rotor will be placed on top of the Fondren Jones Science Building to be exposed to sufficient amounts of wind and various designs may be employed to maximize energy output.

19. Working-Class Support for Leftist Parties in U.S. and U.K. General Elections

Jeremy Battle (Sr.), Department of Political Science

Sponsor: Dr. Ed Kain, Department of Sociology and Anthropology, *Southwestern University*

Studies have shown that most Americans do not identify themselves as working-class. Instead, most Americans, who in fact earn working-class wages, identify as middle-class persons. There is a continuum of research in the study of politics that strives to analyze class group-voting patterns. Subsequently, producing group-voting theories of class is quite complex and arduous due to the evolving and vicissitudinous nature of groups. This is especially true of low-income Americans who once strongly identified with leftist parties, but have slowly begun to shy away from such ties. Several scholars have argued that such an anti-economic class political alignment is a uniquely American phenomenon, as opposed to the populations of other industrialized democratic nations (Burns and Peltason; Janowitz and Segal). This research seeks to outline (1) the factors that explain the major difference between low-income Americans' hesitance to identify as working class, versus that of Britain's low-income population's strong identification as working-class. (2) Given the complexity of assigning persons to class groups, this research will assess the efficacy of existing class measurement models to accurately predict class-voting trends. (3) This study will also examine a hypothesized correlation between working-class identification and one's support for leftist parties. Most importantly, this research seeks to answer a greater question: What core politico-social preferences account for the voting behavior of the majority of American working-class?

20. Scandal in the Schoolhouse: The Reverse Sexual Double Standard in Perceptions of Student-Teacher Relationships

Jennifer L. Howell (Sr.), Patrick M. Egan (Jr.), & Braden D. Ackley (Sr.), Department of Psychology

Sponsor: Dr. Traci A. Giuliano, Department of Psychology, *Southwestern University*

The popular notion of a sexual double standard (SDS), in which men are perceived to have more sexual freedom than are women, has received mixed empirical support over the past few decades. However, research on the “reverse SDS,” which states that men are punished more than women for sexual activity in situations involving a perceived imbalance of power (such as student-teacher relationships), has yielded more consistent empirical support. To investigate potential moderators of the reverse SDS, a pilot study was conducted in which 95 adults (52 women, 43 men) evaluated three variations of a scenario that described an instance of student-teacher sexual contact. In each variation, participants made judgments about the scenarios, first assuming the situation involved a male teacher and a female student, and then assuming that the situation involved a female teacher and a male student. In addition, half of the participants received scenarios that involved a student initiator, a one-time occurrence of sexual contact, and student-performed oral sex, whereas the other half of the participants received scenarios involving a teacher initiator, a 6-month relationship, and teacher-performed oral sex. The results revealed that the reverse SDS is present more often when (1) the teacher initiates the sexual contact, (2) when the relationship is a one-time occurrence, and (3) when a teacher is the recipient of oral sex. These results contribute to the growing body of research on the reverse SDS and have practical implications for how the legal system should handle cases of student-teacher sexual contact.

21. “Battle” of the Sexes: Sex Role and Attitudes toward War

Kathryn L. Bollich (Soph.) & Whitney L. Laas (Soph.), Department of Psychology

Sponsor: Dr. Traci A. Guiliano, Department of Psychology, *Southwestern University*

In light of the ongoing military conflict in the Middle East and the approaching presidential election, policies and attitudes toward war are passionate issues for many people. In general, research has shown that conservatives are typically more supportive of war than are liberals (Jayaratne, Flanagan, & Anderman, 1996) and that men are more supportive of war than are women (Jayaratne et al., 1996; Hull, Hurd, & Margolis, 1993). Whereas previous literature relating sex role and attitudes toward war has involved nuclear warfare (Pearson, Lawrence, & Dawes, 1990), the current study extended this research to general warfare. We surveyed the political attitudes and behaviors of 111 individuals (53 men, 57 women, 1 unreported) at a small, private liberal arts college in central Texas. The 79-item questionnaire evaluated femininity using 5 items from the Bem Sex-Role Inventory (1974; $\alpha = .83$); attitudes toward war were assessed using a 3-item index ($\alpha = .70$) that measured the participants’ support or opposition to war (e.g., “I feel that military combat is effective foreign policy”). As predicted, the greater the participants’ femininity was, the more likely they were to

oppose war, $r(108) = -.19$, $p = .046$. Interestingly, the participants' level of feminism was an even stronger indicator of their opposition to war, $r(108) = -.26$, $p = .046$. In short, our results suggest that qualities beyond individuals' gender and political attitudes (i.e., conservative or liberal) should be considered when evaluating the leaders of war policy and electing the next commander-in-chief.

22. The Politics of Facebook: Gender and Political Orientation on a Social Networking Website

Whitney L. Laas (Soph.) & Kathryn L. Bollich (Soph.), Department of Psychology
Sponsor: Dr. Traci A. Guiliano, Department of Psychology, *Southwestern University*

As the 2008 Presidential Election fast approaches, Americans—for the first time—are faced with the real possibility of electing a female commander-and-chief, and it comes as no surprise that her political alignment is a liberal one. Studies throughout the years have shown that women are more likely to be liberal than are men (Delucchi, 1993; Eisenman & Sirgo, 1991; Heingartner & Wetherell, 1982). In an effort to further explore the relationship between gender and political orientation, a naturalistic observational study was conducted. Using a popular online college community (Facebook.com), the political orientations of 418 students (151 men, 267 women) were unobtrusively observed. Students were defined as liberal if they listed their political view as *liberal* or *very liberal*, whereas students were classified as conservative if they listed their political view as *conservative* or *very conservative*. A chi-square test of independence revealed a significant relationship between gender and political orientation, $\chi^2(1, N = 418) = 20.8$, $p < .05$. As hypothesized, women were more likely to label themselves as liberal (71.91 %) than conservative (28.09 %), whereas men were equally likely to label themselves liberal (50.33%) or conservative (49.67%). Overall, the findings support the hypothesis that women are more likely to report being liberal than conservative, a notion that is consistent with previous research (Delucchi, 1993; Eisenman & Sirgo, 1991; Heingartner & Wetherell, 1982). Importantly, these findings have the potential for influencing political campaigns on both sides of the political spectrum. Candidates who utilize gender-focused advertising campaigns would likely increase their number of supporters.

23. Physically Fit Females and Muscular Males: Identifying the Relationship Between Gender and Exercise

Julia M. P. Poritz (Soph.) & Marcos Duran (Soph.), Department of Psychology
Sponsor: Dr. Paula Desmond, Department of Psychology, *Southwestern University*

Body image is an issue for both men and women alike, and those who are dissatisfied with their bodies often exercise to obtain their ideal body type. Previous research on gender differences in body image has shown that men view their ideal body type as muscular (Ridgeway & Tylka, 2005), whereas women prefer a thin body type (Dittmar, Halliwell, & Ive, 2006). In order to examine this relationship further, a

naturalistic observation study was conducted to compare the differences between male exercise preferences and female exercise preferences. The exercise habits of 78 women and 147 men were naturalistically observed and recorded at five gyms at the time of the observers' entry to the gym. Aerobic exercise was defined as the use of a treadmill, elliptical machine, or stationary bicycle. Anaerobic exercise was defined as the use of free weights or machines that involve lifting weights. A chi-square test of independence revealed a significant relationship between gender and type of exercise (anaerobic or aerobic) performed, $\chi^2 (1, N = 225) = 20.41, p < .05$. As predicted, men performed anaerobic exercise 71% of the time and women performed aerobic exercise 60% of the time. Thus, men executed anaerobic exercise more than aerobic exercise, and women executed aerobic exercise more than anaerobic exercise. The results of this study are consistent with previous findings, and imply that body image and social norms are closely associated with exercise preferences.

24. Putting the News to Good Use: The News Media and Volunteerism

Kristen Davenport (Soph.), Department of Psychology

Sponsor: Dr. Traci A. Giuliano, Department of Psychology, *Southwestern University*

Every day, television news describes death, disease, and tragic events that may be prevented by citizens through volunteering. Indeed, there are many people who volunteer their time and effort, which is a decision that may result from watching the news. Specifically, much research indicates that viewers who watch visually arousing video tend to develop emotion-laden thoughts (Zhou, 2005). Such emotion may bring about empathy for subjects in news stories, which has been shown to induce helping behavior (Dovidio, Allen, & Schroeder, 1990). To investigate whether watching the news is related to viewers' inclination to volunteer, a survey was distributed to 111 participants (57 women, 53 men, 1 unreported) at a liberal arts university in Texas. Contrary to predictions, those who spent more time engaging in the news were not more likely to spend time volunteering, $r (109) = .15, ns$. However, the results showed that participants who felt it was important to follow the news were more likely to find volunteering important and spent more free time doing so, $r (109) = .24, p < .05$. Our findings suggest that those who find the news important, relative to those who watch it indifferently, may be more likely to volunteer because they are more aware of societal issues. That is, they may realize the importance of getting involved to address those issues. In short, the more that people get involved in issues they are interested in (e.g., by following the news closely), the more likely they may be to volunteer.

25. Unaccommodating Attitudes: The Interaction Between Accommodations and Test Performance on Perceived Intelligence

Patrick Egan (Jr.), Laura Everill (Sr.), & Vicky Reeves (Sr.), Department of Psychology

Sponsor: Dr. Traci A. Guiliano, Department of Psychology, *Southwestern University*

Academic accommodations are commonly used in universities to allow students with learning disabilities to take exams in an optimal environment. However, despite

evidence suggesting that academic accommodations can be beneficial (e.g., Baker, 2005), many eligible students choose not to take them (Horvath, Kampfer-Bohach, & Kearns, 2005), perhaps because they fear being perceived negatively by other students. As such, the present study examined the effects of accommodation use and test performance on perceptions of a student's intelligence. Sixty-nine undergraduates (31 women, 38 men) read about a hypothetical student who either received or declined accommodations and who was described as having performed either better or worse than the participant on an exam. As expected, hypothetical targets who performed better than the participant were perceived to be more intelligent when they declined accommodations ($M = 4.36$) rather than received accommodations ($M = 3.44$), $t(28) = -3.67$, $p < .001$. Conversely, targets who performed worse than the participant were perceived to be equally intelligent, regardless of whether they received ($M = 3.46$) or declined ($M = 3.69$) accommodations, $t(24) = -1.02$, ns. One potential explanation for these results is that when the target outperformed the participant, the target's success was attributed to the use of accommodations when they were taken, whereas the target's success was attributed to intelligence when no accommodations were taken. Our results imply that accommodations should be destigmatized in academic settings in order to prevent students from perceiving accommodations and the students who utilize them in a negative manner.

26. Shoot the Ball, @\$#%&! : Perceptions of a Halftime Speech as a Function of Expletive Use and Team Gender

Jennifer L. Howell (Sr.) & Hailey M. Ormand (Jr.), Department of Psychology
Sponsor: Dr. Traci A. Giuliano, Department of Psychology, *Southwestern University*

Research on expletive use has revealed that using expletives increases a person's credibility in some circumstances (e.g., in witness testimony; Rassin & Muris, 2004). Research in this area has also shown that individuals tend to consider expletive use more inappropriate when it is directed at female audiences than when it is directed at male audiences (Coyne et al., 1978). It follows that expletive use may increase an individual's ability to persuade when the persuasion is directed at males, but may be less persuasive if the persuasion is directed at females. Thus, the present study was designed to evaluate the influence that audience gender and expletive use have on an individual's ability to persuade a given audience. Because it is not uncommon for coaches' speeches to contain expletives, the present study used basketball as a context to evaluate the efficacy of expletive use. As part of a 2 (Expletive Use: Yes or No) x 2 (Team Gender: Male or Female) between-subjects design, 58 undergraduates (30 men, 28 women) read a halftime speech given by a male basketball coach to his team, and then gave their reactions. Consistent with predictions, when a speech was directed at a female team, male participants considered it much less effective when it contained expletives than when it did not. When the same speech was directed at a male team, however, male participants rated the speeches equally effective, regardless of expletive

use. In contrast to male participants, female participants rated speeches equally effective regardless of expletive use.

27. Lookin' Great, Easy to Hate: Women's Reactions to Fat Talk as a Function of Target's Weight

Rachel Osborne (Sr.), Department of Psychology

Sponsor: Dr. Traci A. Giuliano, Department of Psychology, *Southwestern University*

One quick glimpse of American society would reveal that women are exceedingly vulnerable to poor body image and constantly strive to improve their figures. Of increasing interest to researchers is the translation of women's poor body esteem into overt self-criticism, or "fat talk." Although previous research has provided insight into the characteristics of (Nichter & Vuckovic, 1994) and perceptions surrounding fat talk (Britton et al., 2006), no research to date has addressed the role of a woman's weight status in moderating the effects of her fat talk. To address this gap in the literature, a 2 x 2 between-subjects design was conducted in which 142 female participants read one of four scenarios about a target woman who engaged in either fat talk or self-acceptance, and who was described as being thinner or heavier than the participants. Participants provided feedback about the scenario in terms of their verbal responses, emotional reactions, perceptions of the target, and perceptions about the target's motivations. As hypothesized, the results revealed that fat talk negatively affected participants' emotions and perceptions of the targets; importantly, however, for heavier targets, fat talk was viewed more positively than was self-acceptance, but for thinner targets, self-acceptance was viewed more positively. The present findings suggest that the relative weight between a woman and her audience has important implications in how her fat talk is perceived by others.

28. Intracranial Infusions of Amphetamine into the Medial Preoptic Area but Not the Nucleus Accumbens Affect Paced Mating Behavior in Female Rats

Erica Navaira (Sr.), Department of Psychology

Sponsor: Dr. Fay A. Guarraci, Department of Psychology, *Southwestern University*; Dr.

Russell J. Frohardt, Department of Psychology, *St. Edward's University*

Special thanks to Debra Hines, Julie Smith, and Lawrence Wampler of St. Edward's University for their work on the project.

The present study evaluated the effects of intracranial administration of amphetamine (AMPH) on paced mating behavior and open field activity in sexually receptive female rats. In Experiment 1, AMPH (0.5 μ l of 10 μ g/ μ l) or vehicle was infused bilaterally into the medial preoptic area (mPOA). In Experiments 2 and 3, AMPH (0.5 μ l of 40 μ g/ μ l) or vehicle was infused bilaterally into the shell region of the nucleus accumbens (NAc) or core region of the NAc, respectively. In Experiment 1, infusions of AMPH into the mPOA increased the latency to return to the male following sexual stimulation without affecting locomotor activity in the open field test. However, when

AMPH was infused 3.0 mm dorsal to the mPOA, no effects were observed. In Experiments 2 and 3, infusions of AMPH into the NAc shell or core significantly increased locomotor activity during the open field test but failed to affect most measures of paced mating behavior. Together these results suggest that amphetamine-stimulated dopamine release in the mPOA but not in the NAc alters paced mating behavior, confirming previous conclusions that the mPOA plays a critical role in female sexual behavior, whereas the NAc plays a relatively limited role.

29. Creating a Southwestern University Internet Radio Station

Kaitlyn Dennis (Soph.), Brooke Lyssy (Fr.), Andrea Plybon (Soph.), & Katy Siciliano (Sr.)
Sponsor: Jason Chapman, Student Activities, *Southwestern University*

Many students have voiced the opinion that Southwestern would benefit as a community from the presence of a university radio station. We aim to create a student-run radio station that will be broadcast on the internet and will provide a basis for possibly expanding to a FM-broadcasting station in the future. We plan on featuring a variety of programs that will showcase a diverse range of student and faculty interests, as well as providing alumni, families, and prospective students with an immediate connection to the Southwestern campus. The project of starting a radio station is more complicated than it might seem at first, as we have found in the past months. In the process of organizing our station, we have dealt with the issues of finding an appropriate space on campus for the station, establishing interest among students, building a music library, researching the legal issues pertaining to internet radio, obtaining high-quality equipment, training people how to use the equipment, and just figuring out how day-to-day operations of a station will work.

30. Performance of Aztec Mythology: 'The Fifth and Final Sun'

Maggie Boos (Sr.), Department of Theatre
Sponsor: Desiderio Roybal, Department of Theatre, *Southwestern University*

Cultural differences are sources of conflict amongst people in the United States. The only way to combat these growing feelings of distrust is through education of different cultures to provide understanding and tolerance. In conjunction with Professor Desiderio Roybal and his Scenic Properties class, I researched the mythology of the ancient Aztecs and their culture. Using the skills of the Scenic Properties class, a performance was organized presenting the myth of the "Fifth and Final Sun." The performance was bilingual and ESL students from Annie Purl Elementary attended the performance in the courtyard of the Sarofim School of Fine Arts. Using funds provided by the Jones Grant the props class was able to build historically accurate headdresses, costumes, Aztec codices and design set pieces to aid their production of "The Fifth and Final Sun." Seventy percent of the children at Annie Purl Elementary come from economically disadvantaged homes and therefore it became important not only to provide a theatrical experience but an experience for children in their native language,

thus allowing them full access to the performance. Furthermore, by providing a glimpse into the culture of the Aztecs, a group which greatly shaped modern culture in large areas of Mexico, the school children glimpsed a piece of their own cultural past.

31. Illustrations by Ricardo Levario for 'From a Sperm's Eye View: Revisiting Our Perspective of This Intriguing Cell.'

Ricardo Levario (Jr.), Department of Art and Art History

Sponsor: Victoria Star Varner, Department of Art and Art History, *Southwestern University*

This project was a collaboration among Ricardo Levario, Dr. Dickson Varner, Professor of Veterinary Medicine, Texas A & M University, and Ms. Victoria Star Varner, Professor of Art, Southwestern University. Several meetings were held to discuss known and newly discovered scientific concepts to be described in three medical illustrations for publication in the Proceedings of the Annual Meeting of the American Association of Equine Practitioners. The challenge of this project was to use two types of information: 1) representation that is purely descriptive; and 2) abstracted visual information designed to emphasize anatomical concepts. The first illustration is an oil painting that revises existing anatomical representations of a stallion testis to clarify anatomical structures for easier identification. In addition, color relationships indicate the continuity of the various pathways through which sperm travel and mature. The second illustration is a colored drawing that incorporates new scientific information into existing representations about how sperm attaches and penetrates the membrane of the egg. For this illustration, color relationships differentiate between specific biological structures and the spaces between them, while representing the energy involved in the fertilization process. The third illustration, pen and ink, describes two cross-sections of a stallion sperm's tail that clarify the anatomy of this portion of the sperm cell. The illustrations were presented in Dr. Dickson Varner's Milne Lecture at the 2007 AAEP meeting in Orlando, Florida, and will be presented in the Netherlands.

32. Southwestern University Arts Festival Sponsored by Delta Omicron

Natalie Moore (Jr.) & Mary Kierst (Sr.), Department of Music

Sponsor: Dr. Bruce Cain, Department of Music, *Southwestern University*

Southwestern University is an institution that prides itself on providing its students with a well-rounded education for students in all disciplines. We are planning the Arts Festival for Southwestern University and the Georgetown community. The Arts Festival is a new and creative project that will offer an educational opportunity for S.U. students and the Georgetown community and will celebrate our fine arts programs. The Arts Festival is a chance for our wonderful departments of art, theatre, and music to combine forces and learn about each other's passions through workshops, hands on learning, performances, and informal displays. As individual aspiring artists, we each dedicate ourselves and our time to our personal areas of study. Consequently, we rarely

take the time to understand and appreciate the amazing things that other students on campus are doing in the Arts. The Arts Festival will be held from 11-5 on April 5, 2008 in the Bishop's Lounge and veranda, and on the academic mall. All events are free and all are welcome! For more information please contact us at mooren@southwestern.edu.

33. Fiddler on the Roof: Costume Designs

Allison Dillard (Sr.), Department of Theatre

Sponsor: Kerry Bechtel, Department of Theatre, *Southwestern University*

Costume designing for Fiddler on the Roof was an exploration into texture and color as well as a huge learning experience in working with 35 actors on one of the biggest shows that has been produced at Southwestern. As the costume designer I collected research and did numerous sketches before deciding on my designs. Then I found swatches of the fabrics I wanted to use and watercolored renderings for the characters. The textures and silhouettes of the characters were important in bringing the villagers of Anatevka to life, as well as focusing on the Jewish customs that run their lives. The inspiration for the show was Chagall's paintings of the Fiddler and so the designs for the show have a sense of realism mixed with the folkloric quality of the story.

34. Oh , The Things You Can Think!: Designing the Costumes for Seussical: The Musical

Jessica Colley-Mitchell (Sr.), Department of Theatre

Sponsor: Kerry Bechtel, Department of Theatre, *Southwestern University*

The clothes that a character wears can communicate a huge variety of information ranging from social class, gender, and age to personality traits or emotional states. In order to make the appropriate decisions for a show and for specific characters a costume designer must do a lot of work that the audience never sees. The research process for designing a show involves a combination of practical and inspirational research. The costumes for the Theatre Department's Theatre for Young Audiences production of Seussical: The Musical posed a set of challenges that Professor Kerry Bechtel and I faced in the Fall 2008 semester. After compiling images that showed interesting colors and textures, we looked for materials that would be appropriate in creating both human and fantastical characters. Research also included how to produce certain garments, hats and masks of various cultures, animals, and the work of Dr. Seuss in addition to design basics, costume history and construction. Special problems to be considered involved quick costume changes, mobility for the dance sequences, and a bird tail that had to grow in size on stage. Good research actually allows for more creativity and more options, which is helpful in solving these types of problems. Using Mylar, pailletes, faux fur, and feathers in many colors, we created fantastical creatures that would hold the attention of the young audience and bring the magical world of Dr. Seuss to life.

NOTES

AUTHOR INDEX

Ackley, Braden D. 47
Acree, Bradley 12
Alexander, LaToya 32
Allen, Jennifer 41
Arrowood, Lauren 43
Baccam, Tristine 24
Barnes, Rachel 12
Battle, Jeremy 46
Beal, Anna 42
Bertrand, Dominique 18
Biermacher, Michelle 42
Blair, Aaron 20
Bollich, Kathryn 47, 48
Boos, Maggie 52
Brandt, Emily 44
Brock, Claire 33
Cade, Delaney 12
Caple, Alex 31
Cardenas, Lauren 14
Colley-Mitchell, Jessica 54
Collie, Leslie 12
Dammann, Erin 20
Davenport, Kristen 49
Davidson, Shauna 14
Deane, Dana 33
Dennis, Kaitlyn 52
Dettloff, Kristen 26
Dillarde, Allison 54
Dominguez, Delilah 35
Doris, Matthew 12
Duran, Marcos 48
Durance, Matthew 12
Edge, Chelsea 30
Egan, Patrick 47, 49
Elsey, Miles 24
Evans, Connor 12
Everill, Laura 20, 49
Foster, Ashley 12
Foster, Stephen 12, 30
Freeman, Rachel 12
Fritz, Carissa 40
Fudge, Suzy 31
Gingrich, Brian 29
Graf, Elizabeth 35
Gutzmer, Emily 30
Harper, Matthew 12
Hensley, Sarah 17
Hoch, Jessica 40
Hoffman, Ben 43
Holland, Ashley 12
Holzum, Erin
Howell, Jennifer 12, 47, 50
Jansen, Mary 28
Johnson, Whitney 30
Kainthla, Radhika 40
Kamin, Erin 25
Kaminsky, Deborah 12
Keahey, Pelham 45
Kerbacher, Mariel 46
Kierst, Mary 12, 34, 53
Kyle, Colin 16, 17
Laas, Whitney 47, 48
Lannon, Alexandra 12
Le, Kim 40
Lee, Kuan Hsien 19
Lesieur, Heather 30
Levario, Ricardo 53
Littleton, Shane 20
Lockwood, Robert 23
Loer, Andrea 12
Loop, Melanie 45
Lyssy, Brooke 12, 52
Mahlberg, Natalie Kay 39
Manly, Ráchale 17
Mar, Sara 31
Marshall, Kyle 22
Mayo, Andrew 32
McAdams, Claire 30
McBride, Jonathan 30
McDonald, Joe 19
McDonough, James 16, 17
McHugh, Erin 12
McVey, Aine 21
Miller, Brian 12
Mingle, Morgan 12, 19
Mohammed, Amanda 38
Moore, Natalie 12, 53
Morris, Amanda 28
Navaaira, Erica 51
Nguyen, Tammy 40
Noel, Dolores 12
Orf, Meredith 12
Ormand, Hailey 50
Osborne, Rachel 51
Perrin, Michelle 22
Piana, Brytanie 39
Plybon, Andrea 52
Poritz, Julia 48
Potter, Bobby 30
Powell, Nicole 24
Prather, Anna 30
Prince, Charles 25
Reeves, Vicky 49
Rogers, Tommy 30
Rola, Kelyn 43
Ryan, Tracey 42
Schmidt, Emily 38
Schreiber, Kenneth 30
Schwind, Leslie 31
Scoggins, Meredith 26
Scott, Matthew 30
Shelton, Delia 19
Siciliano, Katherine 19, 52
Simpson, Kyle 36
Smith, Phillip 12
Smith, Sean 45
Stanberry, David Martin 32
Sternner, Eric 43
Strine, Kyle 30
Stevenson, Allie 31
Tanguay, Amy 29
Taylor, Stephanie 30
Teakell, Jaymie 14,
Thurman, Justin 34
Trinite, Brittany 12,
Vonderheide, Kristen 19
West, Carl 30
West, Jessica 26
Wilson, Kacie 28
Wilson, Ted 27
Zeman, Zach 12

DISCIPLINE INDEX

Animal Behavior 18, 19

Art and Art History 14, 35, 53

Biology 16, 17, 38, 39

Business and Economics 26, 39

Chemistry and Biochemistry 22, 23, 40

Classics 20, 21

Communication Studies 31, 41

Education 26, 27, 28, 42

English 29, 30, 34

History 42

International Studies 26, 44

Kinesiology 43

Mathematics and Computer Science 30, 31

Modern Languages 29

Music 12, 22, 53

Physics 45, 46

Political Science 32, 33, 34, 46

Psychology 20, 47, 48, 49, 50, 51

Religion and Philosophy 36

Sociology and Anthropology 24, 25

Student Activities 52

Theatre 12, 35, 52, 54

2008 Student Works Symposium

From Every Voice

April 9, 2008