



Conference Schedule Friday, April 13

Please see abstract section of this program for abstracts of presentations. All project titles and abstracts are printed as received.

12:00-1:00 Concurrent Sessions

Session 1: Panel Presentations, Room 2094

Moderator: TBA

Libby Becker, "Reading (Between) the Lines: Authority and Agency in 17th Century English Midwifery."

Kira Brady, "'Making Waves in a No-Wake Zone': Redneck Feminism and Popular Country Music."

Luis Paredes, "They Shouted Me Black: In Search for the Revival and Canonization of Afro-Peruvian Folklore, Society and Culture."

Session 2: Panel Presentations, Room 2101

Moderator: TBA

Ian Anderson, "The Softest of Targets: A Study on Terrorist Target Selection."

Eric Christensen, "U.S. and Middle East Immigration Relations."

Sam Estabrooks, "Revisiting 'Reefer Madness': The Origins of America's Marijuana Policy."

1:15-2:15 Concurrent Sessions

Session 3: Work-in-Progress Presentations, Room 2094

Moderator: Sam Estabrooks

John D'Annibale, "Technology and the Construction of the Text."

Trisha Hahn, "Women and the Faceless Welfare: Information Technologies Taking the Place of Human Interaction."

Aida Hodzic, "Surviving Bosnia."

Amanda Kronen, "Silent Identity: Children in the Global Sex Economy."

Rachel Serkin, "Elizabethan Erotic Narrative: Amour, Sex, and Satire."

Session 4: Work-in-Progress Presentations, Room 2101

Moderator: Nalini Kalanadhabhatta

Laura Fredriksen, "In Vitro Synthesis, Formation, and Generational Seeding of Human Prion Protein."

Eric Koch, "The Role of GAP43 in Activity-Dependent Sharpening of the Retinotectal Map in Zebrafish."

Julianne Nichols, "The Role of Aggregation at Early Stages of Insulin Fibrillation."

Michael Rexhouse, "The Development of Novel, Alarm-Capable, Multianalyte Methodology for Wastewater Characterization."

Session 5: Panel Presentations, Auditorium

Moderator: Andrea Ojobi

Lori Critcher, "Malvolio's Revenge."

Jennifer Russell, "The Girl Who Would Not Grow Up: A Tale of Peter Pan and Anorexia Nervosa."

Laura Gallery, "Ejercito Zapatista de Liberacion Nacional: Where Are The Women? The Effects of the Zapatista Uprising on Indigenous Feminism in Southern Mexico."

2:15-2:45 Afternoon Refreshments Served in the area outside the Auditorium

2:45-3:45 Concurrent Sessions

Session 6: Panel Presentations, Room 2094

Moderator: William Schraffenberger

Nicholas Fahrenkopf, "Low Cost Alternative to Conventional Photolithography for Microfluidics Device Construction."

Leonid Yankulin, "Determining Line Positions in Scanning Electron Microscope Images of Extreme Ultra Violet Lithography Resist Test Patterns."

Elizabeth Gray, "Dinosaurs Were Not Gregarious, Simply Practical."

Session 7: Work-in-Progress Presentations, Room 2101

Moderator: Edward DuBois

Emily Gravelle, "Aesthetism and the Moral Implications of Oscar Wilde's Works."

Robert Jennings, "Leda, the Swan, and Aphrodite in Cyprus: Amorphous Concepts of Divinity in the Ancient World."

Christopher Philippo, "Horrorful Entertainment: Auteurs and Other Horror-Mongers; Women Directing in a Genre of Dread."

Kim Dryden and Kaitlin Peck, "An Oral History of the GE Research and Development Lab."

Erin Kammerer and Jamie Tedesco, "Connected Kids: Designing Web-based Community Information Systems for Teenagers."

Session 8: Poster Presentations, Area Outside Auditorium

Alicia Babson, "Decline in Estrogen and/or Progestins with Aging of Female Rats May Underlie Decreased Anti-Anxiety Anti-Depressive and Cognitive Behavior."

Candice Crain, "Infusions of 3 α ,5 α -THP to the Hippocampus Enhance Exploratory, Anti-Anxiety, Social, and Sexual Behaviors of Rats."

Taylor Goldberg, "Conditioned Place Preference May Involve Actions at Estrogen Receptor Beta."

David Idell, "Scanning Tunneling Microscopy (STM) Tip Fabrication and Image Quality Characterization."

Carolyn Koonce, "Estrogen receptor beta may be required for exogenous estradiol to produce anti-anxiety and anti-depressant-like behavior and enhance cognitive performance of female mice."

Soobin Maeng, "Conditioned Contextual and Cued Fear Learning is Improved by Estradiol Wildtype Mice, but not Estrogen Receptor Beta Knockout Mice."

Stephen Martir, "Experiential Case Study Research: Innovative Methods."

Allicia Ryan, "Wild Type and Estrogen Receptor Beta Knockout Mice Respond Differently to Physiological Concentrations of Estrogen for Effects on Conditioned Place Preference."

Christopher Wilming, "Estrogen infusions and implants to the Nucleus Accumbens of female rats produce conditioned place preference and aversions, respectively."

4:15-6:00 Plenary Speaker, Auditorium

Dr. Barbara Weinstein, Ph.D., Professor of History at New York University and President of the American Historical Association.

"The Color of Modernity: São Paulo and the Whitening of Brazilian Regional History."

Sponsored by the History Department. The lecture will be followed by a reception.



Conference Schedule Saturday, April 14

Please see abstract section of this program for abstracts of presentations. All project titles and abstracts are printed as received.

10:00-11:00 Concurrent Sessions

Session 9: Panel Presentations, Room 1144

Moderator: Libby Becker

Sarah Charles, "Race-Related Stressors, Coping Styles, and Depression Among African-American College Students."

Frederick Gyasi-Agyei, "Perceived Racism and Depression Among African Americans: The Moderating Role of Ethnic Identity."

Brian Jenkins, "An Examination of Coping as a Mediator between Perception of Parental Monitoring and Youth Competence: A Study with an Emphasis on African American Youths."

Session 10: Panel Presentations, Room 1143

Moderator: Amanda Crayton

Paige Pronovost, Gay Marriage: "Why, When and How: The Future of America's Marriage Laws."

Megan Turnbull, "A Critical Look at John Locke's Theory on Property."

David Warren, "The 2006 Midterm Election: Preelection Poll Accuracy and Voter Turnout as a Result of Preelection Polls."

Session 11: Poster Presentations, Area Outside Auditorium

Jonathan Blazek, "GAP43 Phosphorylation on Retinotectal Arborbs in Danio Rerio and its Effect on Activity-Driven Sharpening."

John Conway, "Building Strong Teams."

Nicholas Fahrenkopf, "High Resolution X-Ray Diffraction Analyses of Strained Silicon on Insulator Materials."

Christina Goon, "Predicting Proficiency in a Second Language for Adult Japanese Learners."

Samantha Halpin, "The Influence of One's First Language on Acquisition of English as a Second Language."

Erin Horan, "Revisiting Nations Not Obsessed with Crime."

Kimberly Roberts, "Mindfulness and Health Behaviors: Is Paying Attention Good for You?"

Andres Maldonado, "Analysis of Mycobacterium Proteasome (700kDa) Using NMR Spectroscopy."

Heather Stahura, "The Effect of AFP Derived Peptides on Growth of Human Glioblastoma Cancer Cells."

11:15-12:30 Plenary Speaker, Auditorium

Dr. Bryant Simon, Ph.D., Professor of History and director of the American Studies program at Temple University.

"Why Pay \$4 for a Grande Extra Hot No Whip Vanilla Latte, or Starbucks and the Predicament of Modern America."

12:30-2:00 Lunch

Served in the area outside the Auditorium

2:00-3:00 Concurrent Sessions

Session 12: Panel Presentations, Room 1144

Moderator: Natalie Tejada

Sunil Ganesh, "Testing Protein Kinase C Phosphorylation Targets for Controlling Retinotectal Arbor Dynamics."

Lynn Gribble, "Examination of Spatial, Seasonal, and Annual Variation in Atmospheric Carbon Monoxide Concentration."

Beth Weaver, "A New Family of Ruthenium(I) Carbonyl Carboxylates: Synthesis, Structure, and Catalytic Properties."

Session 13: Work-in-Progress Presentations, Room 1143

Moderator: Sam Estabrooks

Audrey Comstock, Cyndi Mellen, Ben Spear, and Bailey Van Deest, "From Free to Included: A Literature Review about the Factors that Account for Political Inclusion and Exclusion."

Kimberly Donoghue, Jonathan Ned, and Colleen Roy, "Gennatha Anothem."

James Fabrizio and Jarrett Kalish, "American Casualties in the Vietnam War."

Andrea Hart, "Morals and Ethics: In the Classroom and Beyond."

Daren Pon, "Social and Ethical Implications of Money Laundering."

Travis Summit, "Exploratory Study of Capitol Juror's Receptivity to Mitigation Evidence."

3:00-3:30 Afternoon Refreshments

Served in the area outside the Auditorium

3:30-4:30 Concurrent Sessions

Session 14: Panel Presentations, Room 1143

Moderator: Patrick Dugan

Bill Schraffenberger, "After Perry: America, Japan, and the Other Civil War."

Jennifer Shaffer, "Evidence-Based Practices in Foster Care Adoption: Maintaining a Forever Family for a Special Needs Child."

Sam Estabrooks, "Identity and Power in Early Modern Britain."

Session 15: Panel Presentations, Room 1144

Moderator: Xinxin Jiang

Alexandra Hoefinger, "Rimbaud Redux: The Photographic Poetics of David Wojnarowicz."

Maggie Johnson, "In Absentia: Living Bodies of Post-Mortem

Photography: The Subversion of Nation and the Liberal Agent."

Robert Scherer, "(In)communicable Trauma: A Cryptonymic Analysis of *The Da Vinci Code*."

Plenary Speakers

Barbara Weinstein

Dr. Weinstein is a Professor of History at New York University and is President of the American Historical Association.

Title of talk:

“The Color of Modernity: São Paulo and the Whitening of Brazilian Regional History.”

In the period between the 1870s and the 1950s, São Paulo emerged as Brazil's most rapidly modernizing state, with economic growth in both the agricultural and industrial sectors out-stripping all other regions. In this talk I will explore the way in which regional elites in São Paulo explained their region's greater “aptitude” for modernity, and especially the way in which they used racialized images and language to associate modernity with “whiteness,” even though plantation slavery had been an essential aspect of São Paulo's economic success. The result was a regional identity that not only erased the African contribution to the regional economy and culture, but also made whiteness an essential characteristic of the “true” paulista.



Bryant Simon

Dr. Simon is a Professor of History and director of the American Studies program at Temple University.

Title of talk:

“Why Pay \$4 for a Grande Extra Hot No Whip Vanilla Latte, or Starbucks and the Predicament of Modern America.”

Over the last year and a half, Bryant Simon has visited over 400 Starbucks in eight countries for a soon-to-be-published book on coffee and coffee houses in the contemporary world. This is not, however, just a study of Starbucks, but an exploration of American life both in the United States and abroad in the 21st Century. His research explores the very desires of daily life as they are revealed on the comfy couches and in the drive-thrus of Starbucks. As he looks at what it means to consume Starbucks, he also investigates what Starbucks consumes of us - our labor, our landscapes, and our politics.

Undergraduate Research at the University at Albany

Award and Funding Recipients, 2006-2007

More information about each project can be found in the abstracts section of this program.

Presidential Award for Undergraduate Research:

Giyana Amaratunga. "AFPep Increases Cancer Chemo-preventive Efficacy when Combined with Tamoxifen." Nominated by Professor Thomas Anderson, Biology.

Alicia Babson. "The anti-anxiety, anti-depressant and mnemonic effects of estrogen administered to middle-aged rats is attenuated by delay in estrogen-replacement following ovariectomy." Nominated by Professor Cheryl Frye, Psychology.

Jonathan Blazek. "GAP 43 Phosphorylation on Retinotectal Arbors in Danio Rerio and its Effects on Activity-Driven Sharpening." Nominated by Professor John Schmidt, Biology.

Patrick Buonacore. "The Political Economy of TRAJE: Relativity of Use-Value in a Historical Commodity." Nominated by Professor Walter Little, Anthropology.

Sam Estabrooks. "Identity and Power in Early Modern England." Nominated by Professor Lana Cable, English.

Elizabeth Filardi. "Cut & Paste: Notes on Contemporary Zine Culture." Nominated by Professor Bret Benjamin, English.

Laura Gallery. "A 'Revolution Within a Revolution': The Women of the Zapatista Uprising and its Effects on Indigenous Feminism in Southeast Mexico." Nominated by Professor Bonnie Spanier, Women's Studies.

Andrew Gallup. "Handgrip Strength, Shoulder Breadth, Aggressive Behavior, and their Relationship to Promiscuity in Males." Nominated by Professor Daniel White, Anthropology.

Sunil Ganesh. "Testing Protein Kinase C Phosphorylation Targets for Controlling Retinotectal Arbor Dynamics." Nominated by Professor John Schmidt, Biology.

Alexandra Hoefinger. "Rimbaud Revisited: Legends of a Transgressive Genius." Nominated by Professor Judith Johnson, English.

Eric Koch. "The Role of GAP43 in Activity-Dependent Sharpening of the Retinotectal Map in Zebrafish." Nominated by Professor John Schmidt, Biology.

Carolyn Koonce. "Estrogen receptor beta may be required for estradiol to produce anti-anxiety and anti-depressant like behavior and enhance cognitive performance of female mice." Nominated by Professor Cheryl Frye, Psychology.

Robert Scherer. "(In)communicable Trauma via Primal Scene Crip-text: A Cryptonymic Analysis of *The Da Vinci Code*." Nominated by Professor Mary Valentis, English.

Heather Stahura. "The effect of AFP derived peptides on growth of human glioblastoma cancer cells." Nominated by Professor James Bennett, Biology.

Undergraduate Conference Travel Support:

Candice Crain. "Infusions of 3 α ,5 α -THP to the Hippocampus Enhance Exploratory, Anti-Anxiety, Social, and Sexual Behavior of Female Rats."

Carolyn Koonce. "Estrogen receptor beta may be required for estradiol to produce anti-anxiety and anti-depressant-like behavior and enhance cognitive performance of female mice."

Soobin Maeng. "Effects and Mechanisms of Estrogen to Enhance Reward."

Andrew Charles Philip. "The Effect of Implicit Theories on Self-Control Performance."

Undergraduate Research Support funds:

Alicia Babson. "Decline in Estrogen and/or Progestins with Aging of Female Rodents may underlie Decreased Anti-Anxiety, Anti-Depressive, and Cognitive Behavior." Faculty mentor: Professor Cheryl Frye, Psychology.

Libby Becker. "*The Compleat Midwife's Practice Enlarged: A Microhistory*." Faculty mentor: Professor Vivien Ng, Women's Studies.

Kristen Brileya. "An Examination of Antibiotic Resistance of Escherichia coli in Six Emergent Marsh Wetlands." Faculty mentor: Professor Denise McKeon, Biology.

Rossana Coto-Batres. False Memories in English-Spanish Bilinguals. Faculty mentor: Professor Jeanette Altarriba, Psychology.

Candice Crain. "Infusions of 3 α ,5 α -THP to the Hippocampus Enhance Exploratory, Anti-Anxiety, Social, and Sexual Behavior of Female Rats." Faculty mentor: Professor Cheryl Frye, Psychology.

Sanghamitra Vijay Dalimbkar. "Exploratory/Anti-Anxiety and Socio-Sexual Behavior may be Mediated by Cortex." Faculty mentor: Professor Cheryl Frye, Psychology.

Kimberley Donoghue. Photo-Documentary of a Rwandan Refugee Family. Faculty mentor: Professor William Rainbolt, Journalism.

Nicholas Fahrenkopf. Low cost alternative to conventional photolithography for microfluidics device construction. Faculty mentor: Professor Nathaniel Cady, Nanoscale Science and Engineering.

Wesley Harlow. "Population structure of the malaria vector Anopheles (Nysshorhynchus) triannulatus from Latin America." Faculty mentor: Professor Jan Conn, Biology.

Kyle Ketcham. Case Study on the Revolutionary Armed Forces of Colombia. Faculty mentor: Professor Victor Asal, Political Science.

Carolyn Koonce. "Estrogen receptor beta may be required for estradiol to produce anti-anxiety and anti-depressant-like behavior and enhance cognitive performance of female mice." Faculty mentor: Professor Cheryl Frye, Psychology.

Soobin Maeng. "Effects and Mechanisms of Estrogen to Enhance Reward." Faculty mentor: Professor Cheryl Frye, Psychology.

Jeanette O'Neil. Albert Eckhout's Ethnographic Portraits of the Non-European Peoples of Brazil. Faculty mentor: Professor Sarah Cohen, Art History.

Elizabeth Reinhart. Faculty mentor: Professor Susan Madison-Antenucci, David Axelrod Institute - Parasitology.

Vimla Singh. "Study of Synaptic Protein at Drosophila Neuromuscular Junctions."

Heather Stahura. "The effect of AFP derived peptides on growth of human glioblastoma cancer cells." Faculty mentor: Professor James Bennett, Biology.

Undergraduate Research Initiative

The object of the Undergraduate Research Initiative is to introduce first- and second-year University Scholars and students in The Honors College to the best practices of academic disciplines and to offer them the opportunity to apply some of these practices under the guidance of a faculty mentor. Professors who participate in the initiative work collaboratively with a student or a small group of students on a piece of their research or creative work. Professors also receive a stipend for their participation.

Students synthesize their findings and present their work at the annual Undergraduate Research Conference in the spring, and are granted a research award for their participation. These awards are funded by four private foundations: the Lita and Stephen Greenwald Research Fund, the Adelaide Schmid Research Fund, the C. and V. Slocum Fund, and the Adrienne Zimberg Endowment.

The Undergraduate Research Initiative is supported and coordinated by the Offices of the Vice President for Research,

Vice President for Development, and the Vice Provost for Undergraduate Education.

This year's student participants in the Undergraduate Research Initiative are:

Audrey Comstock, Cyndi Mellen, Benjamin Spear, and Bailey Van Deest. Faculty mentor: Professor Victor Asal, Political Science.

John Conway. Faculty mentor: Professor Wendy Becker, Management.

Kimberly Dryden. Faculty mentor: Professor Gerald Zahavi, Documentary Studies.

James Fabrizio and Jarrett Kalish. Faculty mentor: Professor Richard Lachmann, Sociology.

Trisha Hahn. Faculty mentor: Professor Virginia Eubanks, Women's Studies.

Samantha Halpin. Faculty mentor: Professor Laurie Feldman, Psychology.

Erin Horan. Faculty mentor: Professor Janet Stamatel, Criminal Justice.

Robert Jennings. Faculty mentor: Professor Sylvia Barnard, Classics.

Erin Kammerer and Jamie Tedesco. Faculty mentor: Professor Teresa Harrison, Communication.

Julianne Nichols. Faculty mentor: Professor Igor Lednev, Chemistry.

Daren Pon. Faculty mentor: Professor Sanjay Goel, Information Technology Management.

Travis Summit. Faculty mentor: Professor James Acker, Criminal Justice.

Funding for these undergraduate research projects is provided by the Office of the Vice President for Research.

Abstracts - Arranged by Session

Note: All project titles and abstracts are printed as received.

Session 1:

Libby Becker, "Reading (Between) the Lines: Authority and Agency in 17th Century English Midwifery."
Independent Study Project. Research Advisor: Professor Vivien Ng, Women's Studies.

The seventeenth century in England can be characterized by a number of important shifts in the dominant paradigms of that era that contributed in part to the professionalization of medicine, especially midwifery, in later centuries. These power shifts include the widespread introduction and use of the printed vernacular in the 1640s, the ecclesiastical breakdown of the Anglican Church between 1641 and 1661, the political turmoil surrounding the legitimacy of Henrietta Maria's son to Charles I, and the increased visibility of the middle class and their social and economic mobility. This project is about a journey to develop a methodology for understanding these forces, while centering the discussion in a primary text of the period. *The Compleat Midwives Practice*, first published in 1656 by a group of anonymous midwives and later co-opted and reprinted under the authorship of Sir John Pechey in 1698, represents the battleground for authority over the practice of midwifery. This study is designed to uncover and discuss the precursors to and pressures for the eventual distinction between the "art of midwifery" and the "management science of obstetrics".

Kira Brady, "'Making Waves in a No-Wake Zone': Redneck Feminism and Popular Country Music."
Senior Honors Thesis, Women's Studies. Thesis Advisor: Professor Bonnie Spanier.

Despite its history as an allegory of the struggles of rural working poor classes, and rural working poor women in particular, the genre of country music continues to be stereotyped as wholly conservative and misogynistic. Though women have historically played an important role within the genre, country is under-recognized in feminist discourse as a site for analysis of class, race, sex, and sexuality. By following a brief historical trajectory of the development of country music as a genre, and women's role within that developing genre, this work aims to dispel the myth that country music has always been a conservative and male-dominated genre. Further, this work proposes ways in which country music can become an important part of a social movement that uses class as a way to unite people in a movement to end all forms of oppression.

Luis Paredes, "They Shouted Me Black: In Search for the Revival and Canonization of Afro-Peruvian Folklore, Society and Culture."
Senior Thesis, World History and Spanish Literature. Thesis Advisor: Professor Patricia Pinho.

When it comes to discussing the cultural structure of Peruvian society, the main argument that eventually becomes the source of discussion is the "indigenous" make-up of Peru. In explaining the trajectory of Afro-Peruvians; their ancestral traditions, their exploration and willingness to connect Africa with their "lost" past, their "problematic" present, and "unknown" future has evoke various icons that must be fully explained to understand their purpose for a continuous renaissance and to ultimately appreciate their hope for acceptance and equality in Peruvian society. In the late 1950's, the rebirth of Afro-Peruvian culture was to reach its highest peak of social interest, at first only adapted for entertaining purposes and in today's society, Afro-Peruvians are still struggling for social recognition, not only for leisure assets, but also to identify their presence as an essential social, historical and cultural facet, in the making of a multi-ethnic and enriching Peruvian society.

Session 2:

Ian Anderson, "The Softest of Targets: A Study on Terrorist Target Selection."
Research with the START Center, a Department of Homeland Security Center of Excellence.

One important area in the analysis of terrorism where there is very little academic research, especially of a quantitative nature, is that of terrorist target selection. More specifically our study investigates what factors may lead a terrorist organization to target civilians. Our project uses the Memorial Institute for the Prevention of Terrorism's (MIPT) Terrorism Knowledge Base to analyze terrorist attacks against civilian targets, both international and domestic, for the years 1998-2005. We examine two distinct processes in targeting civilians: the one time decision to begin targeting civilians and the continued use of violence against civilian targets. Our analysis points to group ideology - specifically religion - as the decisive factor in turning to target civilians, while organizational factors such as group size and network centrality seem to impact the magnitude of civilian targets attacks. These conclusions not only highlight previously unexamined factors in target selection, but also have strong implications for counterterrorism policy.

Eric Christensen, "U.S. and Middle East Immigration Relations."
Senior Honors Thesis, Political Science. Thesis advisor: Professor Alethia Jones.

The U.S. is currently being hit with another wave of immigrants in general and the number of immigrants coming from the Middle East has grown more than seven-fold since 1970. The specific demographics of immigrants from the Middle East are examined (i.e. where are these immigrants settling in the U.S.?). The question of why Middle Easterners are coming to the U.S. is evaluated. The assimilation of immigrants is addressed with the importance of education emphasized. The impact of the influx of Middle Eastern immigrants is examined and the illegal alien problem is discussed. The paper concludes with a discussion of U.S. policy implications and options with respect to immigration. The core conclusions that were drawn from my case study include: 1) The U.S. is experiencing an unprecedented wave of immigration and Middle Easterners are part of that wave; 2) Middle Easterners encounter the same difficulties as other immigrants in terms of adapting economically, socially, and culturally to the U.S.; 3) U.S. efforts at immigration reform have been made since 9/11 but work still needs to be done; and 4) A consensus on U.S. immigration policy is yet to be achieved.

Sam Estabrooks, "Revisiting Reefer Madness: Understanding the Origins of America's Marijuana Policy."

In this project, I intend to examine the perceptions, rhetoric, and misinformation that led to the passage of the Marijuana Tax Act in 1937, which effectively outlawed the drug. I plan to look at primary source documents regarding marijuana from the 1930's and 1940's. These include the films Reefer Madness, Marihuana, and Assassin of Youth, and other documents from that era. Although the claims made by proponents of outlawing marijuana are often poorly documented and inaccurate, they were extremely effective in mobilizing the public in support of legislation to outlaw marijuana. Issues to be addressed include: the racial elements of the campaign to outlaw marijuana, especially regarding Mexican immigrants and African-American jazz musicians; the role of Harry J. Anslinger, the first head of the Federal Bureau of Narcotics; and the LaGuardia Commission report. The latter was the first scientific study on marijuana. It was conducted in 1944, seven years after marijuana was outlawed.

Session 3:

John D'Annibale, "Technology and the Construction of the Text."
Senior Honors Thesis, English. Thesis Advisor: Professor Helene Scheck.

This presentation discusses some of the issues and questions resulting from technology and literature's new reciprocal relationship. Past developments, current influence on the growth of literature and its possible implications for further progress are all discussed. Changes to the text have already been great, but questions will be posed for the text's future and the effects of its previous development. We see that the strict constraints imposed on the reader are removed and that the author is no longer the sole dominating force on the creation. Various examples of hypertexts and interactive texts are discussed, exploring their impact and the resulting issues that arise. Questions of authorship and structural permanence are analyzed, asking that at what point, after what amount of interaction, do the traditional positions of the author and reader begin to change and to what extent is this change possible?

Trisha Hahn, "Women and the Faceless Welfare: Information Technologies Taking the Place of Human Interaction."
Undergraduate Research Initiative Project. Faculty mentor: Professor Virginia Eubanks, Women's Studies.

The welfare systems in this country are always trying new ways to increase efficiency. Some of these methods are to use information technologies. The installment of these technologies not only has an effect on the efficiency of this bureaucratic organization, but one on the women who interact with it. These new technologies affect how valued women in the system may feel, or the degree to which she feels she has control over her life. This project is exploring the other side to these technologies, not merely looking at it as a way to boost efficiency, but as something that real women must interact with and work with on a regular basis. Some questions that will be asked are: What is the mode or method available that women/people can use in order to complain of effect change with regard to the information technologies used and they interact with? How are people educated about how these technologies work? And how they work for or affect them? Are these systems universally used through out the country, does it become an issue if you move or other information changes? As a result of using this technology when your information changes can there ever arise a time when you have to do with out the benefit because information has not been put into the computer? How does it affect people when they convert from the old system to this new one? Do the people have a choice in the matter; if they prefer to deal with a person can they opt for that?

Aida Hodzic, "Surviving Bosnia."
Senior Honors Thesis, English. Thesis Advisor: Professor Helen Elam.

According to the American Psychiatric Association's Diagnostic and Statistic Manual of Mental Disorders, a traumatic event involves the "direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experiences by a family member or other close associate" (APA, 1994, p. 424) But what happens to children who live through these experiences? Are their lives affected differently from the lives of adults? And more importantly, how is their narrative different from that of adults' narrative, if at all? I want to write a memoir on my growing up experiences during the war in Bosnia. I wish to layer it in a literary way rather than to produce it as a mere plot or worse yet, as a sociological study. To be more specific, my current conception of the thesis outline is something along the lines of frequent flashbacks to my childhood in a war-torn country that cast light on the way our perceptions of objects in an environment can shift rendering them completely foreign while they still remain the same. The notion of "foreignness" becomes synonymous with regard to both objects and people and it stems from one common denominator, war trauma. However, the relationship between these two mutually inclusive concepts will be portrayed by the events viewed from a child's perspective, by my memories. Lastly, when all is written and revised, I imagine a certain structure that is a combination of the tradition of literary memoirs, questions of genre and the form those take.

Amanda Kronen, "The Language of Imperialism: Silent Children in the Global Sex Economy."
Senior Honors Thesis, English. Thesis Advisor: Professor Helene Scheck.

Western imperialist thought continues to dominate the world even though there are few actual colonies remaining. Something about the culture of developed nations of the globe makes it possible to ignore the plight of millions in order to preserve a way of life that the majority has become accustomed to. The consequence of this kind of thought at the individual level is extreme, right down to the most innocent bodies; children in huge numbers are losing their childhood in the modern world because of the continuing impact of colonialist cultural thought. In order to end this kind of tragedy it is necessary to look into western society in order to expose whatever it is that makes it possible to keep children of the underdeveloped world from being declared human. It may not be a comfortable search, but it is increasingly important as huge numbers of people fall victim to the global world.

Rachel Serkin, "Elizabethan Erotic Narrative: Amour, Sex, and Satire."
Senior Thesis, English.

The objective of my senior thesis is to conduct in-depth research into the poetry genre of Elizabethan Erotic Narrative, also known as the epyllia. Some of the most acclaimed writers of the Elizabethan period such as Marlowe, Shakespeare, Lodge and Beaumont contributed to this genre. There are several reasons as to why this genre of poetry is set apart from the plays, sonnets, and other poems of the time. First, it was widely popular mainly during the last decade of the 16th century; it's known for its classical Ovidian themes, its comical satire and of course, its oftentimes highly graphic sexual content. For my presentation I would like to examine just one of these poems and illustrate that from just one example, the richness and depth that these poems have to offer us.

Session 4:

Laura Fredriksen, "In Vitro Synthesis, Formation, and Generational Seeding of Human Prion Protein."
Senior Honors Thesis, Chemistry. Thesis Advisors: Professor Igor Lednev and Professor Alexander Shekhtman.

It is apparent from previous studies that there exist many isoforms of the amyloid fibril formed from denatured PrP, the prion precursor protein. It is currently thought that the amyloid fibril formed *in vitro* is the form that is closest to the PrP^{Sc}, which is involved in Creutzfeldt-Jakob disease, a devastating neurodegenerative disorder. We will attempt to make purified or nearly purified samples of these different isoforms *in vitro* by a series of seeding experiments. Each successive generation of seeding should show more purified forms of the isoforms, which will then be analyzed using spectroscopic techniques such as fluorescence and deep UV resonance Raman spectroscopies.

Eric Koch, "The Role of GAP43 in Activity-Dependent Sharpening of the Retinotectal Map in Zebrafish."
Presidential Award for Undergraduate Research. Nominated by Professor John Schmidt, Biology.

Visual activity acts via N-methyl-D-aspartate receptors (NMDARs) to refine developing retinotectal maps. This mediated mechanism functions through a sharpening process to stabilize retinotopic synapses. Retinal axons have additions, deletions and many trial and error branches. These branches are stabilized in the correct area by the NMDA receptors and the mechanism requires a retrograde signal pathway to sharpen the presynaptic arbors. Arachidonic acid (AA) has been proposed to be that stabilizing signal, released by cPLA2 and it leads to the activation of presynaptic protein kinase C (PKC) (Schmidt, 2004). AA released by a second enzyme, diacylglycerol (DAG lipase), mediates L1/NCAM/FGF stimulation of axon growth via PKC phosphorylation of GAP43 to stabilize F-actin (Meiri et al. J Neurosci. 1998). PKC is necessary for phosphorylation of 43-kDa growth associated protein (GAP43), which in turn promotes growth within presynaptic arbors. Therefore, in our experiment, we developed a system for expression of GAP43-GFP fusion proteins in retinal ganglion cells to test the effects of GAP43 levels of expression and phosphorylation. After injecting a DNA expression vector coding for GFP into fertilized eggs, we screened for only embryos expressing excess GAP43 in ganglion cell arbors in tectum. In addition, the arbors were imaged in a time-lapse to trace the growth of the arbors. The two DNA vectors that we used were: a full GAP43 sequence and a point mutation of GAP43 (S41A). We find that overexpressing fGAP43 promotes growth of arbors by increasing length of arbors and the number of branches, causing more addition of branches on day 4. Arbors with S41A overexpression remained elongated and immature with no increase in the number of branches as phosphorylation is prevented. Using measurement and analysis techniques, the images of the arbors are time-lapsed and we assume that the GAP43 is a component that is essential for growth promotion and its phosphorylation-dependent stabilization of arbors.

Julianne Nichols, "The Role of Aggregation at Early Stages of Insulin Fibrillation."
Undergraduate Research Initiative Project. Faculty mentor: Professor Igor Lednev, Chemistry.

My presentation will start with an introduction of myself and my lab advisor. I will then continue with a few introductory slides explaining what my research is about and why I'm doing it – the problem to be solved. I will explain the techniques and machines that I use in the labs in depth. Next I will explain my first experiment and the results, along with what went wrong or what needed to be changed. Finally I will explain the new revised experiment that I have planned which will further clarify the previous experiment.

Michael Rexhouse, "The Development of Novel, Alarm-Capable, Multianalyte Methodology for Wastewater Characterization."
Research Advisor: Professor Igor Lednev, Chemistry.

Due to an ever-increasing demand for clean water, new methods must be developed to ensure the efficiency, timeliness, and thoroughness of wastewater treatment, including preliminary characterizations of harmful contaminant chemical and biological species present in untreated wastewater. The development of novel, alarm-capable, multianalyte methodology for wastewater characterization is our long-term goal. Absorption and fluorescent spectroscopic methods are economic and efficient tools for the qualitative and quantitative analyses, as well as the structural analysis in a wide range of fields, and thus provide a convenient, user-friendly way of characterizing certain chemical and biological species in wastewater. To prove the benefits of these methods, we collected real wastewater samples and, using absorption and fluorescent spectroscopic methods in conjunction with the more highly selective UV Raman spectroscopic method, we will characterize key components within the context of these samples. A great wealth of data, such as concentrations of known and unknown species present in the sample, will potentially be provided by this method and eventually compiled and analyzed using chemometric analysis. All of these features may be used in the future as points of reference in the speedy and thorough determination of unwanted or hazardous species present in influent wastewater.

Session 5:

Lori Critcher, "Malvolio's Revenge."

Malvolio's Revenge is a lighthearted addendum to William Shakespeare's *Twelfth Night*. As its title suggests, this mini-drama is the story of Malvolio's revenge on two of the characters who had a hand in his humiliation in Shakespeare's famous comedy.

Jennifer Russell, "The Girl Who Would Not Grow Up: A Tale of Peter Pan and Anorexia Nervosa."
Senior Honors Thesis, English. Thesis Advisor: Professor Edward Schwarzschild.

Based on personal experience and extensive research, this portion of a larger creative thesis chronicles a girl's descent into anorexia nervosa. The eating disorder plays out as an attempt to evade womanhood, and mirrors Peter Pan's desire to stay eternally young.

Diana Preston is Peter Pan, a college senior who returns home unexpectedly in the of the fall semester. The Wendy character is her younger sister Moira, a high school senior in the midst of applying for colleges. Frustrated and confused about an unpredictable future, Moira seeks Diana's guidance to Neverland: a rigid eating regimen and compulsive exercise serving to bar its inhabitants from the social pressures of growing up, and blocking feelings that they can neither control nor comprehend.

The section here follows Moira on an early morning run with Diana, symbolizing Moira's first steps into Diana's Neverland.

Laura Gallery, "Ejercito Zapatista de Liberacion Nacional: Where Are The Women? The Effects of the Zapatista Uprising on Indigenous Feminism in Southern Mexico."

Presidential Award for Undergraduate Research. Nominated by Professor Bonnie Spanier, Women's Studies.

My research is an attempt to verify the activity of women within the Zapatista uprising in Chiapas, Mexico. This group is socialist in nature and claims to be seeking a just democracy. It also makes the claim that it involves and incorporates women into the movement with equal standing with the men. I am attempting to examine whether the movement truly does work towards the equality of women, or whether they are simply paying gender equity lip service to gain more outside support. Secondly, I am going to examine the impact this movement has had on indigenous feminism in southern Mexico, if any. There are many complexities and much history behind the Zapatista uprising which I cannot fully address in my presentation and thus, I have tried to place my analysis in a context which allows me to remain focused on my research questions.

Session 6:

Nicholas Fahrenkopf, "Low Cost Alternative to Conventional Photolithography for Microfluidics Device Construction."
Independent Study Project. Research Advisor: Professor Nathaniel Cady, Nanoscale Science and Engineering.

Photolithographic methods that are used to create microchips are similar to making photographic prints. Instead of enlarging photo negatives, however, photolithography uses high-resolution "masks", similar to photographic negatives, to print features onto microchips. The photolithographic process, including mask production, is typically expensive and requires clean-room facilities. For this research project we will attempt to develop rapid prototyping methods to produce microfluidic chips for nanobiological research efforts. To construct these devices we will explore the use of inexpensive transparency film-based masks for SU8 photoresist processing. These transparency masks are much cheaper than traditional photo masks, but have not been tested for their use in microfluidic device construction. In addition to developing this mask technology, we will also develop fabrication methods that will allow us to rapidly prototype microfluidic chips with minimal clean-room processing. This will allow us to construct microfluidic systems in traditional laboratory environments and greatly simplify the manufacturing process.

Leonid Yankulin, "Determining Line Positions in SEM Images of EUV Lithography Resist Test Patterns."

Lithography is critical in semiconductor manufacturing, and must be constantly improved to keep pace with Moore's law. One promising successor to the current technology is EUV lithography, however several performance parameters must be improved prior to commercial viability. Line Edge Roughness (LER) is one of the parameters used to qualify resists for production in optical lithography. Generally, LER above 5% of the Critical Dimension (CD) is not tolerated. In this presentation we show how we created the model, prepared the data for our simplified model, and how we used the Bayesian Method with the Markov Chain Monte Carlo sampling utilized by the Metropolis-Hastings algorithm to determine the defining parameters of Scanning Electron Microscope (SEM) images.

Elizabeth Gray, "Dinosaurs Were Not Gregarious, Simply Practical."

In 1971, Professor John H. Ostrom presented the view that dinosaurs were "gregarious", based on non-random trackways found in the United States and England that showed a preferred orientation. He used trackways from a site at Mount Tom in Massachusetts to support his hypothesis. Using data collected by students from SUNY Albany at Mount Tom, it was determined that there is some indication that the track-makers that Ostrom (1972) described may have been moving at different speeds. This finding challenges Ostrom's view that the track-makers were traveling together. An alternative hypothesis is presented that considers the possibility that the non-random trackways may be a result of the animals crossing a stream at the shortest distance, which is supported by the occurrence of ripple marks indicating a flow perpendicular to the trackways. This hypothesis avoids many of the problems encountered by Ostrom (1972).

Session 7:

Emily Gravelle, "Aestheticism and the Moral Implications of Oscar Wilde's Works."

A common theme in many of Oscar Wilde's works is morality. His short stories teach lessons of humility, sympathy, and affection which are often conveyed through religious imagery. Likewise, many of his plays are centered on a moral question: *Lady Windermere's Fan* and *A Woman of No Importance* are examples. His only novel, *The Picture of Dorian Gray* was used against him in the court of law because it was believed to be immoral. While the content of the majority of his works is clearly related to what is morally right or wrong, it seems that Wilde would like his readers to dismiss this fact. In the introduction to *The Picture of Dorian Gray*, Wilde writes: "There is no such thing as a moral or an immoral book. Books are well written, or badly written." As a strong advocate of aestheticism, Wilde likely meant for this to mean that his works should be appreciated for their aesthetic value, and not for their content. Is it really possible for one to ignore the moral implications of his work as he suggests? I believe that the two cannot be separated. *The Happy Prince and Other Tales* is arguably the most beautiful and the most moral of Wilde's works. If the reader were to ignore the moral implications in *The Happy Prince*, the beauty of the work might suffer. Even *The Picture of Dorian Gray*, which was considered by most of his readers to be immoral, might lose some of its aesthetic quality if this theme were not present. I would like to center my presentation on this question of morality and its relation to the aesthetic quality of Oscar Wilde's works.

Robert Jennings, "Leda, the Swan, and Aphrodite in Cyprus: Amorphous Concepts of Divinity in the Ancient World."
Undergraduate Research Initiative Project. Faculty mentor: Professor Sylvia Barnard, Classics.

The figure of Leda figures as the mother of Helen of Troy in Greek myth. According to the most well-known version of the myth of Helen's birth, Zeus transformed into a swan and, fleeing from an eagle, sought shelter with Leda, a mortal woman, and in doing so impregnated her. The children of this union were Helen, as well as her two brothers Castor and Pollux, the divine twin horsemen. However, the exact form of the myth varies across time and between sources. The earliest references to the myth of Leda and the swan per se are in the plays of Euripides, an Athenian playwright active in the late fifth century BC. However, the myth appears a century earlier, in a different form, in the Cypriote Trojan War epic. This version of the myth has Zeus in the guise of a goose chasing Nemesis, the goddess of retribution, who lays the egg that produces Helen. In late Roman Cyprus the myth of Leda and the Swan was very popular, judging by the iconographic evidence. The island has produced at least three mosaics depicting the story, dating from the third and fourth centuries AD. In the earliest of the three, the House of Leda mosaic, the scene is not labeled, which caused classicist Lily Kahil to identify the scene as depicting Aphrodite and a "goose". The aim of this presentation will be to show the work in progress on identifying the origins and evolution of the myth, paying particular attention to the iconographic parallels with Aphrodite on Cyprus, posing the question as to whether Leda is in fact a form of Aphrodite.

Christopher Philipppo, "Horrorsome Entertainment: Auteurs and Other Horror-Mongers; Women Directing in a Genre of Dread."

While "scream queens" and "final girls" garner attention, women's contributions behind the camera in the horror genre have largely been overlooked. However, there has been much more horror directed by women in the U.S. and abroad than is realized, in many different subgenres: e.g. body horror, transcendental horror, monster movies, gialli, comedies and spoofs. Some have won awards, some have even gained some notoriety: being banned, investigated by the F.B.I., or condemned on Pat Robertson's "700 Club." I have been researching the subject of women and the horror genre generally, and specifically trying to identify and locate those horror movies, including shorts, made by women. I am reviewing the works and if they were adaptations, comparing them to the original stories or novels. When possible, the directors of the movies are being interviewed. Other media such as posters, soundtracks and novelizations are also being collected.

Kim Dryden and Kaitlin Peck, "An Oral History of the GE Research and Development Lab."
Undergraduate Research Initiative Project. Faculty mentor: Professor Gerald Zahavi, Documentary Studies.

Our research this semester is focused on General Electric, which had a huge influence locally, specifically the Research and Development Lab located in Schenectady. We are compiling a CD using interviews we have conducted ourselves as well as archived interviews. On this CD, former scientists and other employees discuss technologies developed or improved upon, the effect of the Cold War, some of the big personalities involved in the R&D lab, and much more.

Erin Kammerer and Jamie Tedesco, "Connected Kids: Designing Web-based Community Information Systems for Teenagers."
Undergraduate Research Initiative Project. Faculty mentor: Professor Teresa Harrison, Communication.

This project asks the question of how to present community information on the web to users who are teenagers. We know anecdotally that teenagers like web sites that feature music, games, and the chance to interact with others. But what are the characteristics of web sites that will engage teenagers in the process of finding and using information related to community activities and resources? What features should such a web site include? How should such a web site look, and what kind of experience should it offer to teenage users? What other aspects of a web site's look and feel are appropriate? In this project, we have examined the literature on teenagers' information seeking behavior and we have explored a range of web sites oriented to teenage audiences in order to make a set of recommendations that might form the basis for future design and testing.

Session 8:

Alicia Babson, "Decline in Estrogen and/or Progestins with Aging of Female Rats May Underlie Decreased Anti-Anxiety Anti-Depressive and Cognitive Behavior."

Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.
Presidential Award for Undergraduate Research. Nominated by Professor Cheryl Frye, Psychology.

Reductions in steroids, such as estrogen (E₂), during menopause increase anxiety and decrease cognitive performance. Studies in women and animal models using E₂ administration suggest E₂ improves affect and/or cognitive performance, but this effect may be sensitive to the timing of E₂ administration following decline in endogenous E₂. We investigated the effects of long- vs. short-term E₂ replacement by examining

affective and cognitive behavior of aged female rats that were ovariectomized at 14 or 19 months old and implanted with placebo or E₂-filled silastic pellets. E₂ produced anti-anxiety in the open field, mirror chamber, and light-dark transition tasks, when administered to ovx rats at 14 or 19 months of age. E₂ decreased depressive behavior in the forced swim task but only when administered at the time of ovariectomy at 14 or 19 months of age. In the water maze or inhibitory avoidance tasks, E₂ administration only enhanced performance when administered at 19 months of age. This semester, we will examine affective and cognitive behavior of aged rats that are transitioning to reproductive senescence. Rats will be tested in anxiety (open field, defensive freezing, elevated plus maze, mirror maze, light-dark transition), depression (forced swim), analgesia (pawlick, tailflick) and cognitive (water maze, inhibitory avoidance, object recognition, and object placement.) tasks. We hypothesize that if endogenous E₂ decline underlies changes in affect and cognition that are observed with aging/reproductive senescence: then post-menopausal rats should have decreased anti-anxiety, anti-depressive, and cognitive performance and decreased endogenous E₂ levels, compared to peri-menopausal or pre-menopausal rats.

Candice Crain, "Infusions of 3 α ,5 α -THP to the Hippocampus Enhance Exploratory, Anti-Anxiety, Social, and Sexual Behaviors of Rats."
Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.

Actions of progesterone (P₄) in the ventral tegmental area (VTA) to modulate lordosis involve its metabolite, 5 α -pregnan-3 α -ol-20-one (3 α ,5 α -THP), which has anti-anxiety effects and can dampen stress responses due to its rapid biosynthesis in glial cells and/or paracrine effects in the brain. In the VTA, biosynthesis and metabolism of 3 α ,5 α -THP are important for modulating mating and anxiety behaviors (Frye and Rhodes, 2006; Frye et al., 2006b; Shen et al., 2005). Whether manipulations of 3 α ,5 α -THP in the hippocampus influences anxiety and/or reproductive behaviors has not been examined and is the subject of this investigation. In the fall semester of 2006, we addressed this question. Rats (n=40) that were in proestrus (and have high endogenous progestin levels; n=20) or diestrus (and have low endogenous progestin levels; n=20) were bilaterally infused with 3 α ,5 α -THP (100 ng/ml) or β -cyclodextran vehicle to the hippocampus and then tested in the open field, elevated plus maze, social choice, social interaction, and paced mating tasks. Proestrous or diestrous rats infused with 3 α ,5 α -THP aimed at the hippocampus had increased exploratory behavior in the open field, anti-anxiety behavior in the elevated plus maze tasks, social interactions with a conspecific, and sexually receptivity in the paced mating paradigm, compared to diestrous rats administered vehicle. Thus, 3 α ,5 α -THP in the hippocampus appears important for mediating these behaviors. Whether these manipulations of 3 α ,5 α -THP in the hippocampus may produce effects in part by altering 3 α ,5 α -THP in other regions needs to be assessed. In order to do so, this semester we will assess the levels of 3 α ,5 α -THP and its precursors in the hippocampus, midbrain, cortex and diencephalons, via radioimmunoassay.

Taylor Goldberg, "Conditioned Place Preference May Involve Actions at Estrogen Receptor Beta."
Research Assistant to: Professor Cheryl Frye, Psychology.

Estradiol (E₂) may have intrinsic rewarding effects, but the mechanisms of E₂ for reward have not been well-characterized. Recent research from Dr. Frye's laboratory demonstrates there are regimen dependent effects of E₂ for reward (Rhodes and Frye,2005). As well, pharmacological blockade of intracellular estrogen receptors (ERs), demonstrates that actions of E₂ at ERs are important for E₂'s effects on reward (Rhodes and Frye, 2006; Walf et al., 2006). Other findings from Dr. Frye's laboratory indicate anti-anxiety effects of E₂ may involve selective actions at the β , but not α , isoform of ER (as reviewed in Walf and Frye, 2006). Conditioned place preference (CPP), which is measured by the time spent on the non-preferred/drug-associated side of a chamber, is a model of reward that is used to ascertain the rewarding effects of E₂. A transgenic mouse model was used to test the hypotheses that there are concentration dependent effects of E₂ for CPP and that the E₂'s actions at ER may underline some of its effects. In Experiment 1, ovariectomized, wildtype (WT) mice were subcutaneously administered sesame oil vehicle, 0.1mg, or 1.0 mg E₂ immediately prior to placement in the originally non-preferred side of the CPP apparatus. In Experiment 2: ovariectomized, ER β knockout (β ERKO) mice were subcutaneously administered sesame oil vehicle, 0.1mg, or 1.0 mg E₂ immediately prior to placement in the originally non-preferred side of the CPP apparatus. In Experiment 1, 1.0 mg/kg E₂ produced conditioned aversion in WT mice. In Experiment 2, 0.1mg/kg E₂ produced conditioned aversion in β ERKO mice. Thus β ERKO mice are more sensitive to aversive effects of E₂.

David Idell, Scanning Tunneling Microscopy (STM) Tip Fabrication and Image Quality Characterization
Research Assistant to: Professor Vincent P. LaBella, Nanoscale Science and Engineering

Scanning tunneling microscopy (STM) is a high resolution microscopy technique that can resolve the atomic corrugations of a surface. The process involves taking a sharp metal tip typically made of tungsten and positioning it within a nanometer of a clean conducting surface. When a voltage bias is applied across the tip and the sample, the electrons on the higher potential side will quantum mechanically tunnel through the vacuum barrier created by the tip-to-sample junction. The tunneling mechanism allows for a highly sensitive tip to sample distance measurement that in turn allows for a precise rendering of an image of the surface on the atomic scale. The STM tip plays a crucial role in the overall resolution of the instrument and there are many ways to fabricate these tips. The aim of this study is to compare the quality of the images taken using tips made by various methods to determine the optimum fabrication procedure.

Carolyn Koonce, "Estrogen receptor beta may be required for exogenous estradiol to produce anti-anxiety and anti-depressant-like behavior and enhance cognitive performance of female mice."

Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.
Presidential Award for Undergraduate Research. Nominated by Professor Cheryl Frye, Psychology.

Research on gonadal hormones' modulation of hippocampal processes, such as affective and cognitive behavior, has focused primarily on estrogen (E₂); however, the mechanisms by which E₂ has anti-anxiety, anti-depressive, and cognitive-enhancing effects are not known. Recent research from Dr. Frye's laboratory and others (reviewed in Walf & Frye, 2006; *Neuropsychopharmacology*) has demonstrated that binding to the beta form of the intracellular estrogen receptor (ER β) is associated with effects to reduce anxiety and depression behavior and improve memory. Last semester, we investigated whether there were anti-anxiety, anti-depressive, and cognitive-enhancing effects of E₂ administration to ovariectomized wildtype (WT) and ER β knockout mice (β ERKO). Estrogen had some effects to decrease anxiety behavior in the open field, elevated plus maze, elevated zero maze, mirror chamber, emergence, dark light transition, social interaction, tail flick, and pawlick tasks and enhance cognitive performance in the object recognition/placement, T-maze, and water maze for WT mice but not β ERKO mice. This semester, we will use a similar approach to extend this project to examine whether E₂ has similar effects when administered to WT or androgen receptor deficient (trm) mice. Performance in a variety of hippocampally-mediated affective and cognitive tasks of female mice (WT and trm) administered vehicle (placebo) or a regimen of E₂ that produces physiological E₂ levels (10 μ g 48 hours before testing in affective measures and

immediately after training in learning tasks) were examined. Affective tasks include open field, elevated plus maze, elevated zero maze, mirror chamber, emergence, dark light transition, social interaction, and pawlick. Cognitive tasks include object recognition/ placement, T-maze, and water maze. We hypothesize that if E₂ has anti-anxiety and mnemonic effects due to its actions at ER β , then WT and tfm mice administered E₂ will show more anti-anxiety and learning behavior than will WT mice administered vehicle. If these actions of E₂ do not require androgen receptors, then the androgen receptor mutant (tfm) mice will respond to E₂ in a similar fashion as will WT mice.

Soobin Maeng, "Conditioned Contextual and Cued Fear Learning is Improved by Estradiol Wildtype Mice, but not Estrogen Receptor Beta Knockout Mice."

Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.

Estradiol (E₂) can alter affective and cognitive process, but the mechanisms and brain targets of E₂ for these effects have not been fully characterized. Recent studies suggest that anti-anxiety, anti-depressive, and cognitive-enhancing effects of E₂ may involve selective actions at the β , but not α , isoform of estrogen receptor (ER). Whether ER β is required for these effects, and the brain areas involved, is of interest. To investigate this, the present study utilized the conditioned fear task, in which hippocampus- (contextual fear) and amygdala- (cued fear) dependent cognitive processes can be parsed out, and effects of E₂ administration to wildtype and ER β knockout mice were compared. We hypothesized that E₂ may alter contextual and cued fear conditioning differently in wildtype and ER β knockout mice. Wildtype and ER β knockout mice were ovariectomized and administered oil vehicle or 17- β -E₂ (10 μ g) immediately after training and were tested 24 hours (Day 2 Testing) and 96 hours (Day 5 Testing) later. We found that 1) E₂ increased freezing (i.e. better performance) in both contextual and cued fear conditioning in wild type, but not ER β knockout, mice when tested 24 hours after training compared to vehicle administration, 2) ER β knockout mice had increased freezing in contextual and cued fear conditioning compared to wildtype mice, 3) These effects were attenuated on Day 5, compared to Day 2, testing. Notably, there were no differences for flinch jump scores among groups. Thus, conditioned fear may be improved by post-training E₂ administration in wildtype, but not ER β knockout, mice which suggests that actions at ER β may underlie E₂'s effects in this emotional learning task.

Stephen Martir, "Experiential Case Study Research: Innovative Methods."

Independent Study Project. Research Advisor: Professor Wendy Becker, Management.

The project tasks involve a compilation of a business database of full-text journal articles, references, and abstracts. The end product will be an annotated bibliography of the academic articles with linked references and PDF files. The bibliography will assist research collaboration and provide support for future publications in scholarly, peer-reviewed journals, conference proceedings, technical reports and the development of a book.

Alicia Ryan, "Wild Type and Estrogen Receptor Beta Knockout Mice Respond Differently to Physiological Concentrations of Estrogen for Effects on Conditioned Place Preference."

Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.

Estradiol (E₂) may have intrinsic rewarding effects, but the mechanisms of E₂ for reward have not been well-characterized. Recent research from Dr. Frye's laboratory demonstrates there are regimen dependent effects of E₂, for reward (Rhodes and Frye,2005). As well, pharmacological blockade of intracellular estrogen receptors (ERs), demonstrates that actions of E₂ at ERs are important for E₂'s effects on reward (Rhodes and Frye, 2006; Walf et al., 2006). Other findings from Dr. Frye's laboratory indicate anti-anxiety effects of E₂ may involve selective actions at the β , but not α , isoform of ER (as reviewed in Walf and Frye, 2006). Conditioned place preference (CPP), which is measured by the time spent on the non-preferred/ drug-associated side of a chamber, is a model of reward that is used to ascertain the rewarding effects of E₂. A transgenic mouse model was used to test the hypotheses that there are concentration dependent effects of E₂ for CPP and that the E₂'s actions at ER β may underline some of its effects. In Experiment 1, ovariectomized, wildtype (WT) mice were subcutaneously administered sesame oil vehicle, 0.1mg, or 1.0 mg E₂ immediately prior to placement in the originally non-preferred side of the CPP apparatus. In Experiment 2: ovariectomized, ER β knockout (β ERKO) mice were subcutaneously administered sesame oil vehicle, 0.1mg, or 1.0 mg E₂ immediately prior to placement in the originally non-preferred side of the CPP apparatus. In Experiment 1, 1.0 mg/kg E₂ produced conditioned aversion in WT mice. In Experiment 2, 0.1mg/kg E₂ produced conditioned aversion in β ERKO mice. Thus β ERKO mice are more sensitive to aversive effects of E₂.

Christopher Wilming, "Estrogen infusions and implants to the Nucleus Accumbens of female rats produce conditioned place preference and aversions, respectively."

Independent Study Project. Research Advisor: Professor Cheryl Frye, Psychology.

Estradiol (E₂) may have intrinsic rewarding effects, but the mechanisms of E₂ for reward have not been well-characterized. Recent research from Dr. Frye's laboratory demonstrates there are regimen-dependent effects of E₂, for reward (Rhodes and Frye,2005). As well, pharmacological blockade of intracellular estrogen receptors (ERs), demonstrates that actions of E₂ at ERs are important for E₂'s effects on reward (Rhodes and Frye, 2006; Walf et al., 2006). Other findings from Dr. Frye's laboratory indicate anti-anxiety effects of E₂ may involve selective actions at the β , but not α , isoform of ER (as reviewed in Walf and Frye, 2006). Conditioned place preference (CPP), which is measured by the time spent on the non-preferred/ drug-associated side of a chamber, is a model of reward that is used to ascertain the rewarding effects of E₂. A transgenic mouse model was used to test the hypotheses that there are concentration-dependent effects of E₂ for CPP and that the E₂'s actions at ER β may underline some of its effects. In Experiment 1, ovariectomized, wildtype (WT) mice were subcutaneously administered sesame oil vehicle, 0.1mg/kg, or 1.0 mg/kg E₂ immediately prior to placement on the originally non-preferred side of the CPP apparatus. 1.0 mg/kg E₂ produced conditioned aversion in WT mice. In Experiment 2, ovariectomized, ER β knockout (β ERKO) mice were subcutaneously administered sesame oil vehicle, 0.1mg/kg, or 1.0 mg/kg E₂ immediately prior to placement on the originally non-preferred side of the CPP apparatus. 0.1mg/kg E₂ produced conditioned aversion in β ERKO mice. Thus, β ERKO mice are more sensitive to aversive effects of E₂.

Session 9:

Sarah Charles, "Race-Related Stressors, Coping Styles, and Depression Among African-American College Students."
Research Assistant to: Professor Hazel Prelow, Psychology.

A substantial body of literature has linked race-related stress with poor psychological outcomes in African Americans. There is a small body of evidence that suggests coping styles can mediate the relationship between race-related stress and depression. The purpose of this study was to determine whether active or avoidant coping styles would mediate the relationship between race-related stress and depression. There have been very few studies that have addressed the coping strategies that African Americans use to deal with race-related stress. It was expected that avoidant coping styles (e.g., distancing, internalizing, externalizing) would mediate the relationship between race-related stress and depression, while active coping styles (e.g., seeking social support) would not. Participants were 100 African American college students. The findings suggested that active coping styles do not mediate the relationship between race-related stress and depression which was consistent with the hypothesis. The findings also indicated that avoidant coping styles does not mediate the relationship between race-related stress and depression, however in this model there was a main effect. The implications for future research are discussed.

Frederick Gyasi-Agyei, "Race-Related Stressor and Depression among African Americans: The Moderating Role of Ethnic Identity."
Research Assistant to: Professor Hazel Prelow, Psychology.

Depression is a debilitating psychological condition experienced by many. Research has shown that African Americans experience depressive disorders at higher rates than those reported by the general population. Despite this disparity, research on this population is greatly limited. This study examines the moderating impact of ethnic identity (affirmation/belonging, achievement and behavior) on the relationship between race-related stress and depression. 100 college students of African descent (ages of 17 and 32) completed a self-report survey which included questionnaires about their ethnic identity, racial experiences, and depression. Results indicated that, individuals who were high in ethnic affiliation/belonging, as well as ethnic achievements reported fewer depressive symptoms than individuals at low levels of ethnic affiliation/belonging and achievement. In contrast, individuals who scored high on ethnic behavior were not protected from depressive symptoms.

Brian Jenkins, "An Examination of a Mediation Relationship between Maternal Monitoring, Maternal Involvement through Active and Avoidant Coping on Total Perceived Competence: A Study with an Emphasis on African American Youths."
Research Assistant to: Professor Hazel Prelow, Psychology.

Social competence has been shown to be important for adolescent psychosocial development. Youth with low perceived competence tend to do more poorly in school than their more competent peers. The current study examines the relationship between maternal monitoring, maternal involvement and total competence among 143 African American high school students, positing that this relationship is mediated by active and avoidant coping. Drawing from Bandura's Social learning theory (Bandura, 1977), the current study predicts that a mothers monitoring and involvement will both have a direct and indirect affect on the child and affect their overall social competence through the use of both active and avoidant coping. The hypothesized model was found to be statistically significant, with active and avoidant coping partially mediating the relationship between maternal monitoring, maternal involvement and total perceived competence.

Session 10:

Paige Pronovost, "Gay Marriage: Why, When and How: The Future of America's Marriage Laws."
Senior Honors Thesis, Political Science. Thesis Advisor: Professor Scott Barclay.

The cultural makeup of various states and how this information influences opinions about same sex marriage was investigated in this work. As the topic of same sex marriage becomes more prominent in the United States, the political connotations are being widely debated. By analyzing tables, timelines, charts, and public opinion data, as well as researching the sociological perspective and demographic information it was discovered that these and other factors intermittently determine the direction gay marriage will take in the future. With this data we can see that America is heading in a more liberal direction because the availability of higher education and the influx of professionals to the cities are creating a more tolerant society, but the shift from conservative to liberal is a slow process. Although the LGBT movement appears to be making strides, a law nationally legalizing same sex marriage could still be ten to thirty years away.

Megan Turnbull, "A Critical Look at John Locke's Theory on Property."
Senior Honors Thesis, Political Science. Thesis Advisor: Professor Morton Schoolman.

John Locke's notion on property still holds as one of the leading theories for the justification of private property in capitalist societies today. Locke brought the attainment of private property into the realm of natural, inalienable rights and in doing so, set off a variety of consequences concerning the purpose of the state, imperialism, and the capitalist economy. This paper will take a closer look at Locke's theory on property and attempt to point out the inconsistencies and flaws in Locke's argument, concerning his justification for and his distinction of private property. In doing so, the author will also discuss two contrasting interpretations of Locke's argument for property by Kristin Shrader-Frechette and C.B. MacPherson. The author hopes to bring to light some of the glaring inconsistencies and assumptions inherent in Locke's theory on property, which have greatly impacted the history of the western world.

David Warren, "The 2006 Midterm Election: Preelection Poll Accuracy and Voter Turnout as a Result of Preelection Polls."
Independent Study Project. Research Advisor: Professor Anne Hildreth, Political Science.

Preelection polls effect the results of important elections in the United States. Since preelection polls have the ability to influence the outcome of an election, the problem is the accuracy of these polls. If a poll is inaccurate, how does this affect the outcome of the election, and voter turnout

for the election? My research addresses the accuracy of preelection polls in the 2006 midterm election in a quantitative matter. My research also addresses the effects of preelection polls on the outcome of an election, and asks if voter turnout is effected by preelection polls. For example, is there a difference in voter turnout if a candidate is up 16.6% before election day, as was Minnesota Democrat Amy Klobuchar in her Senate race, as compared to Virginia Democrat Jim Webb, who was up a mere 1.5% in his Senate race? My research finds that the preelection polls of the 2006 midterm election are marginally accurate. My research also finds that there is a marginal effect on voter turnout when it comes to preelection polls, no matter their accuracy.

Session 11:

Jonathan Blazek, "GAP43 Phosphorylation on Retinotectal Arbors in *Danio rerio* and its Effect on Activity-Driven Sharpening,"
Independent Study Project. Research Advisor: Professor John Schmidt, Biology.
Presidential Award for Undergraduate Research. Nominated by Professor John Schmidt, Biology.

Topographic maps and the mechanism of their formation are of great interest, and the most studied is the retinotectal projection of fish. N-methyl-D-aspartate (NMDA) receptors help refine retinotectal maps by detecting correlated activity of imports. The neuron sends out trial branches that extend and retract filopodia while identifying different pathways, during this process, addition and deletion of branches occurs. The branching is stabilized by these signals from the postsynaptic targets, however, its unclear which pathway acts on it. Arachidonic Acid (AA) is one of the postsynaptic retrograde signals needed to stabilize the synapses and promote growth. AA is a pathway which in effect stimulates PKC phosphorylation of Growth Associated Protein, GAP 43, to stimulate F-actin polymerization, stabilizing the branch and promoting growth at retinotopic synapses. Postsynaptic cPLA2 plays a role in NMDAR dependent AA release by contributing to larger arbors and faster dynamics, also seen in blocking of NMDA receptors (Leu, 2005). To test for the effects of GAP 43 and its phosphorylation, Zebrafish eggs were injected with Full GAP 43 and S41A, which are DNA vectors designed to express wildtype GAP 43 and mutant vectors. Specifically, serine-41 in the GAP sequence is replaced with alanine residue. The embryos were screened to find expression in the tectum at 30 minute intervals on day 3 and day 4 post-fertilization (~74 and ~104 h.p.f.) with time lapse videomicroscopy. The purpose of this experiment is to test the effects of Full GAP 43 and the role of the point mutation in serine-41 in the GAP sequence in relation to a group of control arbors. Full GAP 43 expressing arbors exhibited significant increases in size and branching. Arbors expressing S41A retained an immature morphology. Both growth and branching stimulation was found to be independent on the phosphorylation by PKC. The total growth and significant increase in number of branches for Full GAP 43 expressing arbors suggests that residue differences at the phosphorylation site of GAP-43 affect arbor morphology and have a significant role in the activity-driven mechanism in the tectum.

John Conway, "Building Strong Teams,"
Undergraduate Research Initiative Project. Faculty mentor: Professor Wendy Becker, Management.

The research project Building Strong Teams, examines team regulatory processes - team transactive memory, team mental models and team efficacy - and how these processes are developed and are maintained in the workplace. I took an active part on Dr. Becker's team as co-researcher. Library tasks included searching online Business databases, obtaining full-text, peer-reviewed journal articles, organizing references and abstracts and creating annotated bibliographies. I learned how to use EndNote, an academic reference database, for this research.

Nicholas Fahrenkopf, "High Resolution X-Ray Diffraction Analyses of Strained Silicon on Insulator Materials,"
Internship Project.

Strained Si and SiGe materials are becoming increasingly important in semiconductor manufacturing, but reliable measurement of the degree of strain in thin layers is difficult when the strained layer is separated from the underlying substrate by an electrically-insulating oxide. This project examined the use of high resolution X-ray diffraction methods to quantitatively determine the thin film strain in complex silicon-on-insulator (SOI) and SiGe-on-insulator materials and will assess the reliability of XRD for SOI strain metrology. We found that XRD/XRR is a very reliable and useful tool. However, the software needed to perform calculations and curve fits had serious limitations when it came to the more complex samples. This can be improved upon by improving the code of the software.

Christina Goon, "Predicting Proficiency in a Second Language for Adult Japanese Learners,"
Senior Honors Thesis, Psychology. Thesis Advisor: Professor Laurie Feldman.

This project investigates the factors that predict proficiency among Japanese adult learners who are acquiring English as a second language and the influence of non-native accent on the perception of English. Participants were 123 native Japanese speakers living in Japan who began their education of the English language in their native country. Participants had varying degrees of exposure to through school and through immersion in the United States. Subjects were given the sentence grammaticality test of Johnson and Newport's (1989) and the picture naming test of Snodgrass and Vanderwart's (1980) to test their knowledge of grammar and vocabulary respectively. In addition, all participants were given a timed reading task (lexical decision test) in which written and spoken words appeared in pairs. Spoken words were accented in either Japanese or English. Results show that high scores in picture naming correlated with higher performance in the grammaticality test. The relationship to their initial language learning history will be examined. Also, those who read word pairs with a Japanese accent had faster reaction times in the lexical decision task than those who heard words with an American English accent. Further analysis will be done to determine the correlation between picture naming and lexical decision. In addition, the results of the grammaticality test will be looked at to determine if there are tendencies for adult learners to answer a question incorrectly because the violation includes components in English grammar that is not found in Japanese grammar. The pattern of errors will be informative in recognizing areas of concentration when teaching a second language.

Samantha Halpin, "The Influence of One's First Language on Acquisition of English as a Second Language."
Undergraduate Research Initiative Project. Faculty mentor: Professor Laurie Feldman, Psychology.

How are written versions of Chinese, Japanese, and Serbian different and does this influence one's potential to master English? These three languages have writing systems that differ in which units they represent. Chinese is a logographic system where each sign represents a word. Serbian is a phonographic system where each sign represents a phoneme, or smallest unit of sound. Japanese is a phonographic system where each sign stands for a syllabic unit of sound. The purpose of this study is to observe how the written form of a person's first language influences their abilities to learn English as a second language. Subjects perform two experimental tasks to assess their English abilities and complete a survey detailing the conditions under which they learned English. The subjects were students learning English in their native country recruited through posters and were paid for their participation. There were about fifty participants per country (China, Japan, and Serbia.). The first experimental task entailed naming pictures as a test of vocabulary. The second task was a grammaticality task in which each subject was given a set of 144 sentences and was to decide whether each sentence contained a grammatical mistake or not. Outcome variables include vocabulary and grammar knowledge as predicted from age of acquisition, number of years of studying English, and participant's first language, which were measured in survey form. The statistical method that will be used is correlation method. All data have been gathered, but has yet to be analyzed. This study, when completed, will show whether a person's first language has an influence on their mastery of English as a second language.

Erin Horan, "Revisiting *Nations Not Obsessed with Crime*."
Undergraduate Research Initiative Project. Faculty mentor: Professor Janet Stamatel, Criminal Justice.

In 1983 criminologist Dr. Freda Adler published a unique monograph called *Nations NOT Obsessed with Crime*. While most criminologists at that time were concerned with explaining high crime rates in the United States by looking almost exclusively within the United States, Adler instead looked to countries with low crime rates to see what lessons could be learned. She examined crime rates and criminal justice systems in ten countries representing each region of the world. Although it was difficult at that time to collect comparative data to study this issue, Adler was able use qualitative data to examine the formal and informal mechanisms of social control in these ten countries. She concluded that crime rates were low in these countries because they had effective criminal justice systems that were popularly accepted, along with strong informal social control institutions that successfully transmitted shared values to the population. Since Adler's publication, cross-national criminology has grown as a subfield of criminology, but few researchers have followed her example and studied nations with low crime rates. This research project revisits the countries that Adler studied almost 25 years ago to investigate whether they have continued to maintain low crime rates, what contributes to the trend of low crime for some countries, and why other countries have not been able to maintain low crime rates.

Andres Maldonado, "Analysis of Mycobacterium Proteasome (700kDa) Using NMR Spectroscopy."
Research Advisor: Professor Alexander Shekhtman, Chemistry.

Mycobacterium tuberculosis (MTB) is considered to be one of the deadliest pathogens on the earth. In the United States alone NIH reported that close to 18 million people were infected. MTB lives within the cell macrophage, which is a cell designed to kill microbial pathogens. In the macrophages, MTB is under continuous stress from Reactive nitrogen intermediates (RNIs). In response MTB produces proteasomes, which in turn counters the destructive effect of the RNI. The main thrust of this research project is to express the proteasome and study its structure and dynamics using Electron Spin Resonance Spectroscopy and novel Nuclear Magnetic Resonance Spectroscopy techniques.

Kimberly Roberts, "Mindfulness and Health Behaviors: Is Paying Attention Good for You?"
Senior Honors Thesis, Psychology. Thesis Advisors: Professor Sharon Danoff-Burg and Professor Christoffer Grant.

Mindfulness is a concept that emerged thousands of years ago within the Buddhist tradition, yet has only recently become familiar to the Western world. Simply defined, mindfulness is a way of paying attention -- a "moment-to-moment, non-judgmental awareness" (Kabat-Zinn, 2005, p.24) that involves focusing on the experiences of the present moment. The psychological and physical health benefits of mindfulness have been investigated in several studies. For example, Zvolensky et al. (2006) found that greater levels of mindfulness-based attention among young adults were associated with perceptions of better physical and psychological functioning. My study will attempt to replicate these findings, while examining specific behaviors that influence health. College students will complete questionnaires assessing health status, positive and negative health behaviors (e.g., smoking and exercise), and mindfulness. I hypothesize that participants who score higher on measures of mindfulness will report better health, engage in fewer harmful behaviors, and practice more beneficial ones.

Heather Stahura, "The Effect of AFP Derived Peptides on Growth of Human Glioblastoma Cancer Cells."
Independent Study Project. Research Advisor: Professor James Bennett, Biology.
Presidential Award for Undergraduate Research. Nominated by Professor James Bennett, Biology.

Background: Glioblastomas are the most common and aggressive type of brain tumors. Standard cytotoxic chemotherapy, radiation, and surgery have not had any significant impact on prolonging life of glioblastoma patients and therefore prognosis remains poor. The survival rate is less than 3%, and most patients only live 1-3 years after diagnosis. Consequently, new therapeutic agents are in demand for management of glioblastomas. The lab that I am working in and others have shown that glioblastoma multiforme is sensitive to estrogen (E2). Anti-estrogens are being evaluated for the treatment of these tumors. An anti-estrogen peptide derived from alpha-fetoprotein (AFPep) has been developed in the lab that I will be working in, and this peptide has been shown to inhibit the E2-stimulated growth of breast cancers growing in culture and in mice. It is thought that AFPep may be able to inhibit growth of glioblastoma cancer cells. Hypothesis: AFPep inhibits growth of glioblastoma cancer cells through its interference with estrogen receptor function in those cells. Approach: Glioblastoma cell line U87 will be used and a growth curve will be established. An estrogen concentration curve will be obtained. Sensitivity of U87 to a standard antiestrogen (hydroxytamoxifen) and to AFPep will be compared. The overall significance is to determine if AFPep will be a new treatment for glioblastoma multiforme cancers, based on information described above.

Session 12:

Sunil Ganesh, "Testing Protein Kinase C Phosphorylation Targets for Controlling Retinotectal Arbor Dynamics."
Independent Study Project. Research advisor: Professor John Schmidt, Biology.
Presidential Award for Undergraduate Research. Nominated by Professor John Schmidt, Biology.

Retinotectal maps are adjusted and refined using visual activity via NMDA receptors. The NMDARs are activated thus allowing calcium ion flow setting off a signaling pathway in the postsynaptic terminal starting with activation of phospholipase A2 (PLA2) that results in the release of arachidonic acid (AA) as a retrograde messenger. AA then sets off another pathway in the presynaptic terminal by activating protein kinase C (PKC), which phosphorylates growth associated protein 43 (GAP-43). AA also creates a positive feedback loop by activating phospholipase C γ (PLC γ), which allows diacylglycerol (DAG) and DAG lipase to release more AA. All of these pathways eventually lead to GAP-43, which when activated can stabilize F-actin thereby causing growth of branches to specific locations. GAP-43 thus controls the patterning of the retinotectal arbors. Our experiment tests the role of the AA-PKC-GAP43 pathway by using Green Fluorescent Protein (GFP)-GAP43 fusion proteins that allow for visual observation of GAP43 expression. We combined an altered GAP43 DNA construct with a GFP tag and injected it into the zebrafish embryo. We then observed GFP expression in the eye and tectum and imaged the resulting arbors. We used several vectors: full GAP (which resulted in overexpression of wildtype GAP43), S41A (serine replaced with alanine producing a mutant GAP43 with an inactive PKC phosphorylation site), S41R (serine replaced with arginine), and S41D (serine replaced with aspartic acid creating a pseudo-phosphorylated GAP43). Arbors expressing full GAP were larger with more branches showing that extra GAP43 increases both growth and branching. Arbors expressing S41A were longer and narrower with normal branching showing how inactivated GAP43 leads to less growth and branching (relative to fGAP). Arbors expressing S41R were larger with more branches, mimicking fGAP arbors; this shows that activation at the GAP43 phosphorylation site has more to do with bulkiness and hydrophilicity rather than the negative charge of a phosphate anion. We concluded that phosphorylation of GAP43 played an essential role in arbor growth and maturation. Complete blocking of PKC severely restricts arbor growth and maturity. This suggests the idea that PKC affects additional substrates and pathways and serves as the premise for future experimentation.

Lynn Gribble, "Examination of Spatial, Seasonal, and Annual Variation in Atmospheric Carbon Monoxide Concentration."
Senior Honors Thesis, Atmospheric Science. Thesis advisor: Professor Ken Demerjian.

In two upstate New York locations, Demerjian et al. have been continuously collecting data on Carbon Monoxide (CO) since the early 90's. CO concentration exhibits several variations including spatial, seasonal, and inter-annual. The first two variations have widely agreed upon explanations, while inter-annual variation is slightly more complex. This variation is greatly impacted by global fire activity, and there is evidence that the intensity of global fire activity is strongly correlated the El Niño Southern Oscillation (ENSO) cycle. The upstate New York data is mirrored by several global background sites, which suggest that the cause of variation is a large scale phenomenon rather than a local event. It is important to note that 1998 had one of the most intense and destructive fire seasons in recent history. It is also important to note that the period from 1997 to early 1998 was one of the most intense La Niña events on record.

Beth E. Weaver, "A New Family of Ruthenium(I) Carbonyl Carboxylates: Synthesis, Structure, and Catalytic Applications."
Research advisor: Professor Marina Petrukhina, Chemistry.

This is a study of ruthenium(I) carbonyl carboxylates. A family of mixed-ligand complexes, $[\text{Ru}_2(\text{O}_2\text{CR})_2(\text{CO})_5]_2$ ($\text{R} = (\text{C}_6\text{F}_5)$, $(2,3,4\text{-F})_3\text{C}_6\text{H}_2$, $(2,4,6\text{-F})_3\text{C}_6\text{H}_2$), has been prepared. The characterization of these complexes and their applications in catalysis is shown. The compounds are synthesized through melt reactions and gas sublimation, and purification procedures. They are then resublimed to grow single, stable crystals, which have been characterized by X-ray crystallography, infrared spectroscopy, nuclear magnetic resonance, elemental analysis, and cyclic voltammetry. These dinuclear complexes show electrophilic properties at open ruthenium(I) ends enhanced by the presence of bridging fluorinated carboxylates. This behavior of the crystals was studied. In solution the 'dimer of dimers' splits opening up two reactive sites for coordination of an additional ligand. Also the compounds were sent for catalytic testing, and have been shown to be catalytically active.

Session 13:

Audrey Comstock, Cyndi Mellen, Ben Spear, and Bailey Van Deest, "From Free to Included: A Literature Review about the Factors that Account for Political Inclusion and Exclusion."
Undergraduate Research Initiative Project. Faculty mentor: Professor Victor Asal, Political Science.

Throughout history selected groups have been systematically excluded. This study was conducted to determine what primary factors according to the literature motivated the exclusion of groups and explain those processes enacted to perform that exclusion. A comprehensive literature review was executed to analyze: 1) why and when slavery ends (particularly in the new world); 2) why and when groups get civil rights; and 3) why and when are groups politically included and excluded. A study of these results will lead to hypotheses which will be able to be tested against historic examples of political exclusion within the context of the African Diaspora. We plan to present a comprehensive overview of what we have found in the literature.

Kimberly Donoghue, Jonathan Ned, and Colleen Roy, "Gennatha Another"

The Capital Region has exploded with churches popping up in former supermarkets, shopping plazas and even rebuilt barns. These "non-traditional" churches use a variety of ministries to attract people in ways that traditional ministries do not. Outreach ministries witness to passer-bys on the street and give out canned good to those in need. They reach out to children through puppets and hold "youth- group" meetings on Friday nights to promote adolescent attendance. "Non traditional" churches have molded to their constituents time constraints and hold services "after hours" throughout the week. Many confront their constituents' issues by providing counseling for substance abuse and women's groups for those who have experienced domestic violence or rape. Attendance in these churches is soaring; they attract those who feel alienated by the doctrines of traditional churches by offering a golden nugget: the opportunity for a second chance.

James Fabrizio and Jarrett Kalish. "American Casualties in the Vietnam War."
Undergraduate Research Initiative Project. Faculty mentor: Professor Richard Lachmann, Sociology.

For our presentation, we will discuss the reason for our project, which is to determine the attitude in the United States regarding the casualties we suffered during the Vietnam War. We will briefly go over the methods being used, which are locating articles in the New York Times from the time period of the war, and taking recording the reactions to the casualties in those articles. After this, we will use examples from what we have found thus far to show the basic attitude in American at that time, and if possible, show the shifting of that attitude. We will show specific articles mentioning casualties, and how they refer to them and describe them. We will also compare it to modern articles dealing with the War in Iraq, to show how over time, attitudes and concerns have either changed, or remained basically the same. Since our project will still be in progress, we will not be able to provide a clear synopsis of the material and data collected.

Andrea Hart, "Morals and Ethics: In the Classroom and Beyond."
Senior Honors Thesis, English.

Ethics. Morals. Two topics frequently discussed at the college level. However, this is not the case in American high schools. Rather than openly discussing ethics and morals, high school educators use ideas presented in books to teach these subjects. I'd like to address the current "Reading Wars" in schools. By "Reading Wars", I mean which books are and are not included in the curriculum, and why. I'd like to relate this to the morals and ethics children are being taught in schools, and compare them to the morals and ethics suggested to children by the media. Books I have in mind include *The Bible*, *The O'Reilly for Kids* by Bill O'Reilly, and *The Long Hard Road out of Hell* by Marilyn Manson. I'd like to argue that schools shield children from the realities of the world, in that they teach ideal morals, however not everyone will abide by them. In my presentation, I will define the terms "morals" and "ethics", explain how they are used in schools, and also explore what morals are being left out of the curriculum, and investigate why this is. With this presentation, I'd like to argue that schools shield children from the realities of the world, in that they teach ideal morals, however not everyone will abide by them.

Daren Pon, "Social and Ethical Implications of Money Laundering."
Undergraduate Research Initiative Project. Faculty mentor: Professor Sanjay Goel, Information Technology Management.

Dirty money is money that is created, transferred, or used in violation of local and international laws. There is a virtual black economy in parallel to the legitimate or "white" economy that is driven by dirty money. Dirty money not only has implications for the economy by undermining the financial infrastructure of the country, it also has serious social and ethical impact on the society. The current project entails developing data analytic techniques for detection of money laundering. This specific talk discusses the social implications of money laundering in activities such as terrorism, child trafficking, drug distribution, and prostitution. Money laundering is often done by criminal organizations which are organized as a complex network comprising of multiple criminal activities with money flowing seamlessly through them. In addition, it is typically an international phenomenon where innocent people are roped in along the entire supply chain. Since the transactions transcend national boundaries, international cooperation is essential. This talk explores the paths of money laundering operations and examines the impact of these operations on the people that get touched by it along the way including the perpetrators of the crime, the banks, the governments, the victims of the crime, legitimate institutions that are unknowingly facilitating the activities, and the society as a whole. The talk examines both the positive and negative impact of money laundering over the short and the long run.

Travis Summit, "Exploratory Study of Capital Juror's Receptivity to Mitigation Evidence."
Undergraduate Research Initiative Project. Faculty mentor: Professor James Acker, Criminal Justice.

For this exploratory study, I will be working closely with the Capital Jury Research Initiative here at the University at Albany. I will use the testimony of 18 jurors in 8 cases from three states to formulate a thesis. These testimonies were collected using a strict questioning system so it is easy to pick out patterns and similarities in several jurors' statements. I will be focusing on the different ways jurors from different backgrounds (racial, socio-economic, etc.) view and consider mitigation evidence during the sentencing phase of a capital murder trial. I will be looking at whether or not jurors of different backgrounds consider different types of evidence differently. For example, I will search for data which shows if women consider testimony of victim's family more important than men do. I will also search for similarities in their considerations. The thesis that I formulate will then be turned into an exploratory qualitative study about receptivity to mitigation evidence. This study will focus on statements the jurors made regarding their decision of whether or not to impose the death penalty rather than a qualitative study because of the small number of cases available. From this exploratory study, I hope to gain insight into the way that a juror thinks about mitigation evidence and whether or not their background affects their decision.

Session 14:

Bill Schraffenberger, "After Perry: America, Japan, and the Other Civil War."
Internship Project for Albany Institute of History and Art.

My presentation, tentatively titled "After Perry: America, Japan, and the Other Civil War", will present an insider's view of Japanese-American Relations during the early 1860s. Commodore Perry's famous visit to Japan in 1853 forced open a society that had practiced self-isolation for centuries. This research provides a valuable insight into the years following that event. This was a time of intense political wrangling in Japan, and an upheaval in society that would eventually lead to the Meiji restoration - the beginning of Modern Japan. The bulk of this research was accumulated at the Albany Institute of History and Art, where I had an internship in summer 2006. We've been going through the collections of a Richard H. Pruyne, a local Albany resident who was the Minister-General to Japan in the early 1860s. The collection contains his (and others') personal documents, including correspondence (business and personal), photographs, and official reports. The presentation will showcase several features on formative relations between Japan and America, as well as the rest of the world. Topics to be briefly covered include American views on Japanese culture, the formation of trade deals and treaties, and the Satsuma rebellion (an armed uprising against the presence and influence of foreigners).

Jennifer Shaffer, "Evidence-Based Practices in Foster Care Adoption: Maintaining a Forever Family for a Special Needs Child." Independent Study Project. Research advisor: Professor Toni Naccarato, Social Welfare.
Presidential Award for Undergraduate Research. Nominated by Professor Toni Naccarato, Social Welfare.

After completing a literature review on adoption through the foster care system, I have identified concrete, evidenced-based practices for supporting families as they adopt children with special needs. Key issues surrounding foster care adoptions such as adoptive identity, coping with abandonment and the impact of childhood family disruptions on children's relationships, & their ability to bond with adoptive parents; along with post-adoption adjustment among adopted children will be addressed. I believe that all of these topics are relevant and important working with families so that effective interventions can be learned and initiated as difficulties arise. I will discuss each of the adoption phases, from the home study process to post-finalization, and discuss how we as social workers can facilitate smoother transitions for both the adoptive child and family. I have limited the size of the study to include data gathered from the United States only, as adoption and foster care laws vary from country to country, and therefore only information gathered from within the United States would be most relevant. In addition, information gathered from within the US would be most relevant in terms of similarity of lifestyle, environment, and culture and the results could therefore be generalized across a greater segment of the population. I have utilized a total combination of fifty-five peer-reviewed journal articles and books as reference material for this study.

Sam Estabrooks, "Identity and Power in Early Modern Britain." Presidential Award for Undergraduate Research. Nominated by Professor Lana Cable, English.

In the Early Modern period, there arose a new awareness of an individual's autonomy in fashioning his or her own identity. At the same time, however, structures of authority continued to make demands of the individual. To be a public figure required that one suppress, at least partially, one's own identity in order to preserve one's career and one's life. Many English writers during this time were aware of the tension between these extremes. The primary texts used are Sir Thomas More's *Utopia* and several poems by Sir Thomas Wyatt. I also look at an anti-clerical tract written by the pseudonymous Martin Marprelate, and explore how his use of a pseudonym both fits into and departs from this pattern. What this study ultimately yields is not a clear-cut answer, but rather an awareness of a tension between two extremes, where Wyatt and More struggled to place themselves throughout their lives.

Session 15:

Alexandra Hoefinger, "Rimbaud Revisited: The Photographic Poetics of David Wojnarowicz." Senior Honors Thesis, English. Thesis advisor: Professor Judith Johnson.
Presidential Award for Undergraduate Research. Nominated by Professor Judith Johnson, English.

This third chapter of my English Honors thesis positions the artwork and lived narratives of the contemporary queer American artist David Wojnarowicz next to those of the 19th-century French poet rebel Arthur Rimbaud. It considers the coincidental and deliberate intersections of the lives, oeuvres, and legacies of the two once marginalized but now respected cultural icons. These biographic and artistic similarities culminate in Wojnarowicz's 1979 photography project *Arthur Rimbaud in New York*, a series in which a model poses in New York City's seediest areas while wearing a mask of Rimbaud's face to suggest a current reincarnation and presence of the French poet's aesthetic of rebelliousness. As Rimbaud constructed sonnets with slang from the streets of Paris, Wojnarowicz created formal art from his own deteriorating urbanity. My chapter argues that these acts of subversion are precisely what make Rimbaud and Wojnarowicz living poems.

Maggie Johnson, "In Absentia: Living Bodies of Post-Mortem Photography: The Subversion of Nation and the Liberal Agent." Senior Honors Thesis, English. Thesis advisor: Professor Branka Arsic.

This project links the political agency of post-mortem photography to a genealogy of the "particular" and a moment of modernity in which the advent of mass reproduction naturalizes the politics of governmentality through the aestheticism of culture. By linking the deliberate disposal of the particular to the genesis of humanism and the liberal agent, the piece endeavors to disrupt the narratives of the American Nation, from an early expansionist period dominated by frontier mentalities to contemporary neo-racism in which the borders of the United States Nation are ever-anxiously territorialized. Creatively situated within the dialogues of Post-Colonial and Queer Studies and inspired by a steadfast Barthesian intuition, the text manifests itself through an understanding of the ways in which the process of photographic becoming animates both corpse and specter in radically new ways, creating a trifurcate being of a single protoplasm which challenges the basic institutions of the capitalist Nation. The research looks at the post-mortem work of United States photographer Joel-Peter Witkin, whose photography of deviant bodies assumes with more intricately conceived grotesquerie, the projects of artists with a favor for the culturally peculiar and disruptive, like Diane Arbus and Arthur Fellig. Ultimately the exigency of the piece is articulated in a suggestion that the corpse is an ethical agent, capable of expressing disharmoniously subversive articulations of political agency after the physiological death of a qualified social being.

Robert Scherer, "(In)communicable Trauma via the Primal Scene Cryp-text: A Cryptonymic Analysis of *The Da Vinci Code*." Senior Honors Thesis, English. Thesis advisor: Professor Mary Valentis.
Presidential Award for Undergraduate Research. Nominated by Professor Mary Valentis, English.

The Da Vinci Code stages a desire to decode, and encrypt, a scene of sexualized origin. In Dan Brown's text, this scene gets introduced as a "secret," one that has been sought after and withheld for millennia: "a secret so powerful that, if revealed, it threatened to devastate the very foundation of Christianity" (239). *The Da Vinci Code*'s "secret" is thus withheld, or encrypted, as a potential threat. Sexualized origin remains veiled, and devastation is foiled. Still, Brown's benign act of encryption rouses a globalized effort to (un)veil the text's "secret," to (de)code what is in effect the primal scene.