

Bates | College

Theses Abstracts

submitted by

Honors Candidates

1996-1997

**BATES COLLEGE
1996-97**

**THESES ABSTRACTS
Submitted by
HONORS CANDIDATES**

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Tasha M. Hawthorne*
Rebecca C. Shankman

AMERICAN CULTURAL STUDIES

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WOMEN'S STUDIES

Britt L. Herstad*
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*Indicates Double Major
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AFRICAN AMERICAN STUDIES

Tasha M. Hawthorne*

(Advisor: Charles Nero)

"Conceptualizing the Particular vs. the Universal in Relation to Lorraine Hansberry's Play A Raisin in the Sun"

Heralded as one of the greatest playwrights of the twentieth century, Lorraine Hansberry was the first African American female to have a play on Broadway; she was the first Black and the youngest American to win the New York Drama Critics Circle award for the Best Play of the Year. Sensitively exploring issues of race and gender that pertain specifically to African Americans, Hansberry offered the first portrayal of African American family life in her play A Raisin in the Sun. This thesis aims to examine: the ways in which Black literature has been constructed and for whom, by doing a close reading of Hansberry's play A Raisin in the Sun. In analyzing issues of blackness that are unique to works by and about African Americans I will examine the particular vs. the universal debate. This debate questions conceptions of power that are implicated in literary criticism. This debate says that specific works apply to one particular group while others apply universally. Questions emerge such as: Is Black literature universal? Is there an underlying sense of erasure of Black culture when white critics proclaim that certain Black texts are universal?

Rebecca C. Shankman

(Advisor: Charles Nero)

"Repairing the Rift: Black-Jewish Relations"

My thesis is an exploration of the relationships between African Americans and American Jews. It is a study of the bonds that tie and the chasms that exist between the two groups. Utilizing four main texts, as well as interviews with professionals in the field, it will be determined whether or not there ever were bridges uniting the two groups. If there were, my thesis answers the questions: On what level did these bridges exist? Was there a true coalition between African Americans and Jews? I examine who it is

that has been creating and publicizing the debate between Jews and Blacks. While reflecting on current events, I attempt to verify where these possible bridges have gone and what steps the Jewish and African American communities can take to attain a reconciliation between themselves.

AMERICAN CULTURAL STUDIES

Annalee Gunlicks

(Advisor: Peter Blaze Corcoran)

"The Nature of Native North American Content in Secondary Social Studies Curricula"

The essence of this thesis is to address critically issues of prejudice, representation, and reform that are specific to Native North American content in secondary social studies curricula. The majority of my work involves identifying, defining, and discussing nine areas of prejudice against Native Americans in curricula, which are: content omission, invalid information, biased language, problematic visual depictions, disembodiment/dehumanization, historicalization, overgeneralized and unbalanced content, the imposition of stereotypical female roles, and white-centered presentation. Moreover, by addressing the potential effects of prejudiced curriculum on both Native American and white students, I hope to emphasize the long-term significance of curriculum in education. In addition, I discuss the process of curricular reform and development, and cite examples of past and current efforts. The final and unifying component of the thesis is a case study I am conducting in the Social Studies Department at Lewiston High School. I am researching the curriculum guidelines and textbooks, interviewing teachers in the department, and discussing these curriculum issues in conversation groups comprised of students in the senior class.

Britt L. Herstad*

(Advisor: Christina Brinkley)

"Reconstructions of Anita Hill and Her Legacy in America"

Ever since the 1991 Hill-Thomas hearings, Anita Hill has been a household name. Her allegations of sexual harassment against Judge Clarence Thomas had more of an impact on American culture and society than she ever would have imagined. For Hill's name is continually used to refer to discussions of sexual harassment, as well as issues relating to race, gender, and power. This thesis explores the phenomenon of Anita Hill that was and is still alive in American culture. Reconstructions of Anita Hill and the stereotypes used against her during the hearings are examined. Particular attention is paid to language and its role in the reconstruction of Anita Hill. The rhetoric used to discuss Anita Hill cuts to the root of perceptions of black women in American society today. To a certain degree, time has altered these perceptions. Four questions are then the primary focus: How was Anita Hill's character reconstructed, distorted and used? How did she become to be believed, or recognized as credible? What was the impact of the "Anita Hill Effect" on America, regarding the political realm? Where is Anita Hill now and can America ever forget her?

Jeremy A. Root

(Advisor: Charles Nero)

"Negotiating the Million Man March"

The Million Man March was unquestionably a significant event in the annals of American culture. On October 16, 1995, approximately one million African-American men convened on the mall in Washington, D.C., under the banner of atonement and reconciliation. The purpose of this thesis is to examine the potential reasons one million men attended the Million Man March. As my research indicates, this decision was far from easy. In the months preceding the March, persons who felt they had a stake in the events of that October day had to negotiate the significance of both the event and their own individual attendance. These negotiations

revolved around five central themes: the sociological status of African-American men in the United States, the leadership of Louis Farrakhan, the exclusive nature of the invitation, the representation of the event in the media, and the function of marches in American politics. In a nation where every social, political, and economic issue turns on a central axis of race, the Million Man March is an event that merits close critical attention.

Angela V. Summers

(Advisor: Christina Brinkley)

"De Mules un de World: Domestic Servitude among African American Women during the 1920s through the 1960s"

Domestic servitude among black women, during the 1920's through the 1960's, functioned to maintain the "place" of a racially subordinated group. In support of relegating African American women to domestic servitude and preventing their participation in other occupations, were the controlling images of black women. These controlling images consist of the Mammy, the Jezebel, the Welfare Queen, and the Matriarch. Understanding the intricate web of these images and occupational segregation provides a clearer picture of the objectification and exploitation of all black women and the interlocking systems of race, class, and gender that they have endured. Through the oral histories of seven former domestic servants in Washington, D.C., the picture of black women's resistance, perseverance, survival, family, and community were captured and in turn freed black woman from the controlling images. The significance in the contributions that these women gave to the black family is noteworthy. Their struggles answer questions of personal and family values that have been taught in the black community. Dispelling the myths of black women, opens the doors to the harsh conditions that domestics endured physically, mentally, and emotionally from their "masters". Extreme measures were taken to try to reduce the domestic to nothing more than the stereotypes that composed the noose that has hung so many black women. Black domestics epitomize the meaning of noble womanhood, they

wanted 'forty acres and a mule' and instead had to fight for a broom, which provided their children with the tools for their own success.

ANTHROPOLOGY

Karma J. Foley

(Advisor: Loring Danforth)

"The Construction of Tibetan National Identity in the Diaspora"

This thesis focuses on the construction, maintenance, and reconstruction of nationalism and national identity throughout the Tibetan diaspora. Since the Chinese occupation of Tibet beginning in 1950, over 100,000 Tibetans have gone into exile, creating a refugee community across the globe. Throughout the years the cultural, religious, and political center of the diaspora has been Dharamsala, India.

Communities of Tibetans can also be found elsewhere in South Asia, in Europe and in North America. In this thesis I look comparatively at different areas of the diaspora -- specifically Dharamsala and Boston, Massachusetts -- in an attempt to discern some of the issues and symbols underlying Tibetan nationalism. Some of the issues to be addressed include: the creation of a Tibetan national identity in response to the Chinese occupation, the use of education in maintaining that identity, the effect of non-Tibetan groups on the re-creation of national identity, and an analysis of material culture as a tangible expression of identity.

Rana D. Ozbal

(Advisor: Bruce Bourque)

"Early Complex Society in Fourth Millennium Anatolia"

During the second half of the fourth millennium BC, the alluvial plain of southern Mesopotamia witnessed the birth of civilization in the Uruk period. This period has been a longstanding field of research among archaeologists due to an interest in the origins and evolution of prehistoric states. In the recent decades, a multitude of distinctively Uruk artifacts and

architectural styles has been excavated over a vast geographical area reaching east into the Iranian Plateau and the Zagros Mountains and north into the Anatolian Highlands and Syria. In an attempt to explain the "Uruk Expansion", Guillermo Algaze has relied on a "World Systems" approach, whereby Uruk states ensured the influx of raw materials by exploiting less complex peripheral regions and by controlling trade routes. This thesis aims at reviewing the evidence for Anatolia in order to raise a few critical points concerning the dominant position of the southerners in the relationship between the Uruk and Anatolian societies. Not only will this thesis illustrate that the various indigenous local communities were technologically advanced, but it will also argue that Anatolians had an efficient and well organized administrative system prior to Uruk contact. The artifact categories used in order to make these claims are Anatolian seals and sealings representative of the administrative bureaucracy as well as Anatolian metal objects to elucidate their advanced technological achievements.

Sarah E. Standiford

(Advisor: Elizabeth Eames)

"Self Sufficient Living as Social Transformation"

Maine is a locus for a diverse array of families who are striving towards self-sufficiency in food production, energy use, entertainment, home construction, and schooling. Their lives are informed by homesteading and the ideas of voluntary simplicity and connection to place. I did fieldwork with families living self-sufficiently in many of these different capacities, in an attempt to understand to what extent self-sufficient living constitutes a social movement. At the same time I am asking the larger question: when does a personal life-choice become a political means for change?

BIOCHEMISTRY

Matthew J. Chapin

(Advisor: Nancy Kleckner)

"Mechanism and Impact of Insulin on Recovery of the Ischemic Isolated Rat Heart"

Heart disease, as manifested by low cardiac blood flow, is the number one contributor to mortality in the United States. The current theory on the physiology of the heart attack includes that there is an uncontrollable gain of calcium within cardiac cells during and following the attack. This overflow of calcium is thought to be one of the primary causes of the depressed cardiac function and irreversible damage observed following a heart attack. It has been demonstrated that insulin may play a role in calcium regulation in the normally functioning heart. I am focusing my project on answering the question: does insulin increase recovery of the isolated rat heart after a heart attack? And, if so, does insulin increase cardiac recovery by a mechanism which removes calcium from the heart? The isolated perfused rat heart model was used. Measurements of cardiac function were taken in order to quantify recovery. To gain insight into the mechanism of action, these results were compared to those obtained from hearts exposed to both the insulin therapy and an antagonist of the proposed intracellular action, which acts to block the removal of calcium from cells. The final results will be important to supplement current understanding of insulin therapy and serve as a basis for further investigation of possible therapeutic roles for insulin in cardiac disease.

BIOLOGY

Kara C. Buckstaff

(Advisor: William Ambrose)

"Effects of Nutrient Additions on Growth and Community Composition of Phytoplankton in Lake Winnebago, WI"

Phytoplankton use nutrients for construction of amino acids and other cellular constituents. Generally, in aquatic systems, nitrogen and

phosphorous are the limiting nutrients for phytoplankton growth. My work investigates the nutrient limitations of phytoplankton in Lake Winnebago, WI, a eutrophic freshwater system. The goal of this research is to determine the effects of nutrient additions on the growth and community composition of phytoplankton in the lake. Various combinations of nutrient enrichments were added to water samples (containing phytoplankton) collected from Lake Winnebago during August, 1996. The nutrient-enriched water samples were placed in test tubes and incubated for seven days. Preliminary analyses of these samples indicate that some genera of phytoplankton are affected by certain nutrient additions while others are not. *Microcystis* is the only genus that benefitted significantly from an increased concentration of phosphorous. The other two genera of phytoplankton that did not benefit from increased nutrient concentrations may have adapted or compensated for these limitations.

Heather M. Chichester

(Advisor: William Ambrose)

"Habitat, Feeding, and Behavioral Characteristics of the Florida Manatee (Trichechus Manatus Latiostris)"

The Florida manatee (*Trichechus manatus latiostris*), an endangered marine mammal, lives in the coastal waters of the Southeastern United States. My study examined the habitat usage and feeding behavior of a local summering population of manatees in Sarasota Bay, Florida. Between May and August, 1996, I made daily observations of manatee feeding activities and habitat selection throughout the bay. Environmental factors (water and air temperature, salinity, weather condition, wind direction and speed, and seagrass coverage) were related to manatee abundance, distribution, and feeding behavior. Manatee abundance and time spent feeding varied significantly among sites. The environmental variables, however, do not explain the significant differences in manatee abundance. There is a significant negative correlation between salinity and time spent feeding. Other factors such as boat traffic, water depth, and access to fresh water runoffs may be

influencing the feeding selectivity and abundance of these manatees.

Jill C. Glazewski

(Advisor: Nancy Kleckner)

"Determining the Site of Action of the Anticonvulsant Drug, Felbamate, on N-Methyl-D-Aspartate Receptors"

Based on its unique anticonvulsant and neuroprotective profile, the anticonvulsant, felbamate, is believed to have a mechanism of action that is distinct from other anticonvulsants. Felbamate's exact mechanism of action is unknown, but it is believed to interact with N-methyl-D-aspartate (NMDA) receptors. The purpose of this study was to determine the site of action on the NMDA receptor with which felbamate interacts. NMDA receptor subtype A and B were expressed in *Xenopus laevis* oocytes. Electrophysiological methods were used to measure the oocytes' responses to experimental protocols designed to examine felbamate's interaction at the glycine binding site, in the voltage-gated membrane channel, and at the ifenprodil site. Findings show that felbamate does not interact at the glycine binding site. Results indicated that felbamate has a greater affinity for the B subtype of the NMDA receptor. The greater effect on the B subtype may suggest that felbamate interacts with a binding site that is either unique to or more prevalent on this subtype, possibly the ifenprodil site.

Thomas M. Tadros

(Advisor: Karen Rasmussen)

"Definition of Minimal Regions of Deletion on Chromosome 18q in Human Male Germ Cell Tumors"

Germ cell tumors are the most common type of cancer in males between the ages of 15 and 34 and are a major cause of death due to cancer in this age group. Tumors develop when there are mutations or deletions in certain genes within a body cell, causing the cell to multiply without control. The goal of my thesis experiment is to identify deletions within a small region of a gene

in germ cell tumors (cells for this experiment came from tumors surgically removed from patients at Memorial Sloan-Kettering Cancer Center). Identifying these deletions and the function of the altered gene leads to a better understanding of how germ cell tumors develop and how they can be treated.

CHEMISTRY

Bethany V. Pond

(Advisor: Tom Wenzel)

"Geometric Inclusion Studies of Cyclodextrin-Substrate Interactions Using Nuclear Magnetic Resonance Spectroscopy"

Lanthanide ions are attached to alpha, beta, and gamma-cyclodextrin (CD) by attachment of a diethylenetriaminepentaacetic acid (DTPA) unit to either the primary or secondary opening of the cavity. Analysis of lanthanide NMR shift data for substrates indicates that the DTPA unit in the secondary derivative may partially block access to the cavity, forcing the substrate to enter from the primary side. A detailed study of the substrate propranolol is being undertaken to elucidate the exact nature of the interaction with these CD systems. This study includes the analysis of the shifts of the cyclodextrin and substrate resonances. Preliminary data indicates that blockage of the secondary side is reduced with the larger gamma-CD. These findings have significance in utilizing lanthanide shift data to analyze the geometry of CD-substrate systems.

CLASSICAL AND MEDIEVAL STUDIES

Julie K. Mallon

(Advisor: Michael Jones)

"Memento Mori: The Role of English Monumental Brasses In the Late Medieval Death Culture"

Death was a central feature of medieval life. Late medieval Europe developed a ritualized institutional death culture to address the highly contentious issue of Christian eschatology. Within this culture every step in the process of dying, from daily preparations for death to

postmortem strategy for the afterlife, was prescribed. As a means of assessing the practical application of this cultural institution, I have chosen to look at how late medieval English monumental brasses work within the greater death culture. As the loci of postmortem strategy for the afterlife, brasses simultaneously represent and contradict the established rhetoric of the official church. Although this is a highly focused study, an examination of death is a means of examining life, and many of the broader trends in medieval history, from the emergence of the individual to the commercialization of the church, can be seen in a study of the role of English monumental brasses in the late medieval death culture.

ECONOMICS

Madhur Duggar*

(Advisor: Carl Schwinn)

"Option Valuation During Mergers: A Case Study"

This thesis builds a model for the evaluation of call options* prior to mergers, and then compares the call prices implied from this model with actual call prices. In order to carry out this comparison, the thesis looks at the Chemical Bank and Chase Manhattan Bank merger, and the call prices on the shares of Chemical Bank prior to the date of the merger. The reason why this study is interesting is that the assumptions made by standard models of call option pricing such as those made by the Black Scholes model, and the Binomial model are no longer valid prior to a merger between two companies. The model in this thesis derives the stock prices of the target company as a function of the probability of the merger taking place, the risk free rate of return, the risk averseness of the investors, and the two possible stock prices of the target company on the event date. Next, the model calculates the value of call options issued on the stock of the target company by using the derived stock prices. Time permitting, the thesis shall also look at the returns to shareholders of the merging companies, and compare these returns with those accruing to shareholders of firms involved in other mergers. The aim shall be to gain some further insight into the true reason behind the

merger between Chase Manhattan and Chemical Bank.

*The purchaser of a call option issued on a particular asset like a share, buys the right to acquire the share at a predetermined price known as the exercise price, and at a predetermined date known as the expiry date of the option.

Jason R. Hall

(Advisor: James Hughes)

"Medical Malpractice and No-Fault Liability"

The medical malpractice crises of the 1970's and 1980's motivated state legislatures across the country to reform their medical malpractice laws. In 1989, Florida enacted one of the most radical and controversial reforms to date -- a limited no-fault medical liability system. This law removed the possibility that certain birth-related neurological injuries to infants could be compensated through a traditional lawsuit filed in the tort system. In lieu of filing a lawsuit with the possibility of going to trial, these narrowly defined injuries are now compensated from a state administered fund according to a previously devised schedule (similar to worker's compensation systems). Moreover, the injuries are compensated regardless of whether the injury was caused by physician negligence. By merging an existing database of Florida's closed medical malpractice claims with data I have collected from the final orders of the no-fault cases, I empirically examine the performance of the no-fault system with respect to compensation and deterrence. This research contributes to the policy debate about the no-fault alternative to the tort system as a means of compensating medical injuries.

J. Teague McKnight

(Advisor: David Aschauer)

"Credit Channel Effects of Monetary Policy"

The object of my thesis is to gauge the role of monetary policy in influencing a credit premium associated with lower quality firms, or firms perceived as being a riskier investment. This

credit premium arises from frictions in financial markets attributed to information asymmetries between the borrower and the lender of investment funds. I am focusing on an array of differing asset sizes of small firms with the assumption that firm size accurately reflects the quality of a firm. Using statistical testing, I would like to show that a contraction in monetary policy restricts smaller firms access to loanable funds, and the subsequent affect upon real economic indicators.

Brian A. Rolph

(Advisor: Michael Murray)

"Determinants of AFDC Participation"

As the nation's taxpayers continue to demand reductions in public spending, safety net programs are coming under increasing fire; perhaps none more than the Aid to Families with Dependent Children (AFDC). In the face of growing program costs Congress is turning the design and management of AFDC over to individual states, many of which are exploring new ways to reduce the program's role. However, without a good understanding of the determinants of AFDC program participation, legislators are unable to devise effective policy levers to ease recipients off welfare. The purpose of this research is to increase our understanding of the determinants of AFDC participation. This study focuses on the possible effect of changing child care responsibilities in a families decision to exit welfare. Specifically, we address the research question: Does the youngest child in welfare family reaching school age change, if at all, the probability of leaving AFDC? Other factors that are related to the decision to leave AFDC include marriage, race, age, work experience, and education among other economic and demographic factors. The overriding methodological issue is to control for differences in these factors. We use the Panel Study of Income Dynamics (PSID) which is a panel survey that samples families and follows the individual family members over time. Using a "family spell year", we fit logistic regressions to estimate how the probability of leaving AFDC changes in that year due to the youngest child reaching school age. Methodological challenges include, in

addition to model specification, unobserved heterogeneity across families and intra-family correlation across years.

ENGLISH

Heather C. Alcock

(Advisor: Carole Taylor)

"Redefining Autobiography: The Liberation of Multiple Identities in American Proletarian Women's Literature of the 1930's"

Telling communal lifestories and simultaneously challenging individualistic narration, Meridel Le Sueur, Tillie Olsen, and Agnes Smedley help redefine the traditional autobiography by expressing collective, communal values in works incorporating aspects of oral tradition. Protagonists in The Girl, Yonnonidio, and Daughter of Earth adopt multiple identities in representing both the authors themselves and the proletarian community of the 1930's. Non-linear structure and non-traditional diction introduce hybrid genres and plural voices, features which distinguish women's proletarian literature of the period. In a kind of formal mimesis, the cyclical structure captures a desire to pass a legacy of women workers from one generation to another. Resisting dominant, realist modes of storytelling, Le Sueur, Olsen, and Smedley use figurative relations between mothers and daughters to "liberate memory."

Braden R. Buehler

(Advisor: Sanford Freedman)

"The Interplay of Metaphor and Possible Worlds in the Narratives of Borges"

The postmodern critical approach to literature has become distinctly intertextual. Literary theorists who concentrate upon the dynamics of fictionality contend with converging or conflicting lines of thought. The distinct motivations behind these inquiries form a complex discourse, forging productive connections energized by affinities and tensions. The concept of metaphor, and its unique relation to possible world semantics and worldversion epistemology,

emerges from this debate to provoke powerful questions about the nature and relevance of fictional worlds. The works of Jorge Luis Borges have been appropriated in this discourse as ideally situated (and often predicated) upon these points of debate. Borges *does* construct cerebral fictional worlds characterized by paradox and impossibility; however, he relies on antiquarian or obscure thinkers, ranging from Zeno to Chesteron, and marginalized theory incorporated for reasons of aesthetic rather than reasons of belief. I will focus on Borge's hermeneutic philosophy, linguistics, and research in relativity and chaos theory in order to explore the tangled interdisciplinary connections between metaphorology, ways of worldmaking, and fictionality.

Heather P. Davies

(Advisor: Anne Thompson)

"Angela Carter's Wise Children and the Postmodern Feminist Self"

The Enlightenment ideal professed the existence of an intelligent, autonomous, rational subject, one inherently capable of perceiving his world and his place in it. With the advent of postmodernist theory however, grand narratives such as this are questioned on the levels of partiality, exclusivity, and humanistic, even romantic, naivete. Postmodernism argues that the "subject" is inherently fragmented, a loose association of a determinedly myriad number of experiences, identities, and cultural frames of reference. This subject contradicts the subject of the Enlightenment of professing itself unknowable because of its complexity. Feminist theory shares with postmodernism the awareness of complexity, highlighting the importance of recognizing difference. This trend towards fragmentation denies the idea of a "universal woman," leaving feminism with the need to balance its foundational embrace of female unity with its respect for difference. The critique of subjectivity, as developed in postmodernist feminism, has found a theoretical middle ground, affirming an idea of subjectivity afforded it by feminism, while struggling consciously to decenter a cohesion of totalization. The novel Wise Children by Angela Carter is organized

around a main character who, through the writing of her memoirs, explores the complexity of her ancestry, socialization, and her identity. The personal subjectivity she achieves is one of plurality and self-awareness, and Carter's exploration of this process of self-definition exemplifies the subjectivity defined by postmodernism feminism.

Jennifer A. Felton

(Advisor: Carole Taylor)

"Salvage and the Legacy of Class in Carolyn Chute's Egypt, Maine"

As a working-class writer who writes contemporary American fiction about the working class of rural Maine, Carolyn Chute sets all three of her novels in the fictional town of Egypt, Maine, with storylines that revolve around the many characters who reside there. Her first work, *The Beans of Egypt, Maine*, follows the life and development of Earlene Pomerleau as she struggles to reconcile herself between her repressive religious upbringing and the contrasting overtly sexual and friendly world of her eventual husband, Beal Bean. Chute revised her initial version of this novel, and comparative analysis of the changed passages examines how those changes affect interpretation of the text. *Miracle City*, constructed of salvage, frames the events of *Letourneau's Used Auto Parts* in which Big Lucien Letourneau, a man of immense compassion, salvages not only car parts but people. Chute uses his character as a symbolic device to connect the other characters and their lives to the theme of salvage. Lloyd Barrington leads the overwhelming cast of characters as he takes "social injustices" into his own hands in *Merry Men*, a considerably more sophisticated, complex, and non-linear epic. Over a period of thirty years and four generations, this work considers the legacies of both family and class. All three novels, in addition to addressing the issue of true belonging in Egypt, demonstrate Chute's own literary development in the genre of women's working class literature.

Tasha M. Hawthorne*

(Advisor: Charles Nero)

"Conceptualizing the Particular vs. the Universal in Relation to Lorraine Hansberry's Play A Raisin in the Sun"

Heralded as one of the greatest playwrights of the twentieth century, Lorraine Hansberry was the first African American female to have a play on Broadway; she was the first Black and the youngest American to win the New York Drama Critics Circle award for the Best Play of the year. Sensitively exploring issues of race and gender that pertain specifically to African Americans, Hansberry offered the first portrayal of African American family life in her play A Raisin in the Sun. This thesis aims to examine: the ways in which Black literature has been constructed and for whom, by doing a close reading of Hansberry's play A Raisin in the Sun. In analyzing issues of blackness that are unique to works by and about African Americans I will examine the particular vs. the universal debate. This debate questions conceptions of power that are implicated in literary criticism. This debate says that specific works apply to one particular group while others apply universally. Questions emerge such as: Is Black literature universal? Is there an underlying sense of erasure of Black culture when white critics proclaim that certain Black texts are universal?

Amanda L. Hinnant

(Advisor: Cristina Malcolmson)

"Wit in Castiglione and Oscar Wilde"

This thesis examines the way in which wit, as a social device, is used and understood in the works of Baldesar Castiglione and Oscar Wilde. The basis for comparison between the wit of these two authors lies in their concern for the construction of the social being as a work of art. A necessary characteristic in this aesthetic ideal is the ability to produce witticisms. Castiglione's *Il Libro del Cortegiano* offers a comprehensive survey of wit that is often pointed to as the definitive source for Renaissance wit. Likewise, Wilde is decidedly known as a great witticism, and his work exhibits exemplary models of modern wit. The wit of

Castiglione and Wilde, however, includes meanings that go beyond mirthful interpretations. In both cases, wit provides an avenue by which one can understand the social dynamics of a given situation and who has mastery of that situation. Questions are also raised about the objective of an aesthetic ideal and the moral implications of that objective. For example: should wit, as a social tool, serve to accomplish something other than the creation of an aesthetic ideal? This thesis discusses both the structure of wit in the writings of Castiglione and Wilde, and the message that comes through in their treatment of wit.

Carrie L. Jewell

(Advisor: Sanford Freedman)

"The Social Context of Perversion: Oscar Wilde's Dorian Gray and the 1890's"

Oscar Wilde's "notorious homosexuality" and celebrated trial leads recent critics to dub him the archetypal 'gay' icon of the nineteenth century. Arnold Davidson's study of nineteenth-century perversion theory reveals a shift in the medical conception of homosexuality; it named it a psychological 'disorder' rather than a medical one, opening up a discursive space for homosexuality as a *personality trait* in late-Victorian cultures. Concurrently in Europe, socio-artistic phenomena such as Decadence, Aestheticism, and Dandyism—represented for Wilde by Pater, Whistler, Mallarmé and others—became chief components of the public identity Wilde sought to cultivate for himself. This thesis asks: to what extent do recent critics reduce Wilde's personality and work to an explanation based on his sexuality? Despite considerations of his sexuality *per se*, Wilde was very much a social anarchist, chiefly concerned with self-stylization, artifice and egotism. My discussion mainly concerns the text that spurred the most controversy in his time and that still receives the most critical attention, *The Picture of Dorian Gray*. Other texts, such as *The Portrait of Mr. W.H.*, *The Importance of Being Earnest*, and the post-trial confessional piece, *De Profundis*, also contribute to an explication of Wilde's controversial public and literary personae.

Jennifer L. Johnson

(Advisor: Carole Taylor)

"Class and Sexuality in Carolyn Chute's Novels"

In this country, middle-class values and expectations permeate everyday life. The distance between the traditional American dream and social reality, however, generally results in the exclusion of "others," including the working class. Carolyn Chute challenges middle-class perspectives by creating worlds in which middle-class constructions are exposed as repressive, exclusive, and in many ways inhumane. This analysis focuses on a close reading and interpretation of three texts: The Beans of Egypt, Maine, Letourneau's Used Auto Parts, and Merry Men. The primary emphasis of this analysis is to interpret narrative techniques that illuminate and negate the middle-class constructions of Chute's fictional worlds. These middle-class constructions, which reduce social differences to simplified oppositions, are antithetical to working-class values. Chute demonstrates fundamental class conflicts concerning the relationship between sexuality, labor, family, and community. Through artful character inversions and juxtaposition, choice of diction, narrative tone and perspective, and structural development, Chute criticizes America's preoccupation with the "corporate system" and affirms the communal values of the working class. This thesis considers Chute's primary objective, to demonstrate how questioning dominant standards can stimulate serious introspection and reflection with the hope of an eventual social transformation, even with predominantly middle-class readers.

Ellen M. Keohane

(Advisor: Cristina Malcolmson)

"Autonomy in Villette and 19th Century Literature on Women's Education"

In the Victorian literature most female heroines either married or experienced "a kind of death-in-like renunciation of worldly pleasures and homage to an absent male" (Alison Booth). However, at the end of Charlotte Brontë's novel, *Villette*, Lucy Snowe does not marry her love, M.

Paul. Many readers as well as critics have viewed the novel's conclusion as dissatisfying and unresolved. Brontë replaces the typical romance plot of love and marriage with a shipwreck and a strong, independent single working woman. I argue that the novel allows the possibility that Lucy does not die of a broken heart, but that instead, she continues to support herself by successfully running her own school. For a woman with no family and no fortune in the mid-1800's, independence and autonomy were difficult, if not impossible goals. However, through education these goals could be achieved. During the Victorian period, vast changes in the role of men's education were taking place. Within Brontë's novel *Villette* as well as *The Professor*, education plays an immense important role. Within my thesis I explore Victorian accounts on education for women to discover cultural definitions of autonomy for women, and to compare them with *Villette*.

Katarina D. Orkand

(Advisor: Steven Dillon)

"Lawrence Ferlinghetti: Life, Politics, and Publishing"

My thesis focuses on the life and writing of Lawrence Ferlinghetti, a poet associated with the Beat poets and the San Francisco Renaissance. My first chapter deals with the early years of Ferlinghetti's life, from his childhood as an orphan to his enrollment in the American Navy during World War Two. Using Ferlinghetti's poetry from *A Coney Island of the Mind* and excerpts from his doctoral thesis, I focus on the development of the poet, the shaping effects of his early years, and his relation to Modernist poets such as T.S. Eliot and Ezra Pound. My second chapter focuses on Ferlinghetti's travels to Mexico in the 1960's and Nicaragua in 1984. In the two books he wrote about these travels, *The Mexican Night* and *Seven Days in Nicaragua Libre*, Ferlinghetti explores the necessity of revolution and the feasibility of real political change. At the same time, he is also questioning the role of the author in causing real change. In the third chapter, I focus on Ferlinghetti's founding of City Lights publishing company and bookstore. I explore his

purpose in founding this company and how this reflects on his beliefs about the role that author or publisher can play in promoting social change. My goal is to explore how the biographical, political, and commercial aspects of Lawrence Ferlinghetti's life reveal his beliefs about the power and purpose of writing in society; ultimately, I analyze whether or not Ferlinghetti has been successful in fulfilling these beliefs.

Cristina M. Shannon

(Advisor: Carole Taylor)

"Narrative Strategies in James Baldwin's Another Country and Go Tell It On the Mountain"

This thesis analyzes how narrative voice, structure and figurative language elaborate themes involving race, gender and sexuality in James Baldwin's Another Country and Go Tell It On the Mountain. In Go Tell It On the Mountain, the development of narrative, structural and figurative irony culminates in the ironic voice of the ultimate chapter. Ironic interpretations of extended internal discourse achieve structural unity and elicit specific readerly responses to characters. The internal discourse and artful structure employed within Another Country tailor the reader's sympathies toward particular characters through exposing characters' sentiments and motives as well as by foregrounding certain values. Finally, Baldwin's strategic placement of lyrical language ties the novel's environment and foil characters into the development of the main characters by causing these supposedly exterior factors to reflect the feelings of the protagonists.

Chris A. Guzofski

(Advisor: Dyke Eusden)

"Stratigraphy and Ductile Deformation of the Great Gulf, Presidential Range, New Hampshire"

The bedrock geology of the Great Gulf region of the Presidential Range, New Hampshire was recently mapped as part of an ongoing study aimed at re-defining the geology of the Range. Four metasedimentary formations have been mapped in the region. These include, from oldest

to youngest, the Silurian (?) Rangeley, Smalls Falls and, Madrid Formation, and the Devonian (?) Littleton Formation. The Rangeley Formation consists of a migmatitic gneiss with calc-silicate lenses; as well as several sub-members. The Small Falls Formation consists of a rusty, sulfitic schist. The Madrid Formation consists of biotite and calc-silicate granofels. The Littleton Formation consists of interbedded schists and quartzites which have been sub-divided into different members based upon the bedding style of the schists and quartzites. Within the Great Gulf three major phases of ductile folding as well as one phase of thrust faulting have been preserved. The first phase of folding is characterized by isoclinal nappe folds (F1) that occur as macroscopic fold hinges as well as abundant mesoscopic, minor folds. The second phase of folding has been characterized by large scale warps (F2) that deform the earlier structures. The contact of the Greenough Spring thrust fault has been redefined where it juxtaposes the Rangeley Formation upon the Littleton Formation. The final phase of folding is the most pervasive in the Great Gulf and has been characterized by asymmetrical, east-verging folds (F3), which become a distinct crenulation, intersected by a second crenulation with a different orientation at lower elevations. Transitions in the characteristics of F1 and F3 folds suggests the existence of a significant vertical variation in ductile deformation in the Presidential Range.

Jeremiah B. Hubeny

(Advisor: Mike Retelle)

"Late Quaternary Stratigraphy in The Basin, Phippsburg, ME"

A study of sedimentary cores and acoustic profiles from The Basin, Phippsburg, Maine (43°48'N x 69°52'W) was conducted as an investigation of the Late Quaternary geologic history of this coastal Maine area. The Basin is a well protected marine inlet on the eastern side of the Phippsburg peninsula approximately eight miles southwest of Bath. The late Quaternary geologic history of coastal Maine has been dominated by the advance and retreat of the Wisconsin ice sheet. Relative sea level changes have occurred

as a result of glacial isostasy and glacial eustasy during the period. The field site was drowned by marine waters during the highstand caused by the isostatic depression of the coastal lowland. As the sea retreated due to isostatic rebound, the inlet emerged from the sea and became a terrestrial environment. As eustasy increased and the recent transgression resulted, sea level once again submerged The Basin. The different environmental conditions are mirrored in the stratigraphy of the sediment. The sediments from the field area have been investigated through acoustic profiling and ground-truthing with sediment cores in order to determine different units. Examining the units found in the cores show the type of environment present at the time of deposition and a geologic history of the sight can be determined. Biogenic material found at the contacts between the different sedimentary environments have been dated at a commercial laboratory in order to obtain radiocarbon dates of the environmental changes of The Basin. These dates will help in the understanding of the post-glacial sea-level rise in Maine.

Andrew N. Lasca

(Advisor: Mike Retelle)

"A Comparison of Varve Records from Three Lakes in Taconite Inlet, Arctic Canada"

Laminated sediments found in glacial lakes in the Canadian high Arctic offer a chance to study the paleoclimate of the region. These laminations form in seasonal couplets, or varves, consisting of a coarse grained summer layer and a fine grained winter layer. By counting the number of varves within sediment cores taken from such lakes, an unbroken history from lake formation to present can be established. In the field seasons of 1991, 1992, and 1996, sediment cores were retrieved from the bottoms of Lake C1, lake C2, and Lake C3 located in Taconite Inlet on the northwest coast of Ellesmere Island. Each of the lakes contain a laminated sediment record from the time of glacial uplift to present. Discharge into the lakes occurs only during the short summer season, allowing for varves to form. Each Core was stratigraphically logged and thin sectioned. Grain size analysis was performed at a 1 cm

interval to determine fluctuations in deposition. Loss on ignition sampling was done on each of the cores, also at a 1 cm interval, to determine fluctuations in the amount of organic matter within the sediment. Using this information, a chronology for each core was established and compared to existing varve records and sediment analysis from Lake C1 and Lake C2. ²¹⁰Pb dates from Lake C2 provided further information for comparison. The comparison of the lakes may have paleoclimatic implications.

Chenda Lor

(Advisor: John Creasy)

Environmental Geochemistry: Characterization of Igneous Dikes and their Contribution to Arsenic Contamination in the Groundwater in Zimapan, Hidalgo, Mexico"

The purpose of this study is to characterize igneous dikes and their impact on the arsenic contamination in the groundwater of the Zimapan Valley. Zimapan Valley is a major mining district (Pb, Zn, and Cu) located about 150 km NNW of Mexico City in western Hidalgo State. Arsenic-bearing minerals such as arsenopyrite, realgar, opiment, arsenolite, mimetite, and cobaltite (Marzo, 1995) are associated with these deposits. About half of the fifty wells tested in and around the town of Zimapan have arsenic concentrations greater than 0.028 mg/L (Armienda et al., 1993), 18 of which have concentrations greater than the 0.05 mg/L drinking water limit (US EPA, 1980). Although recent studies have addressed different possible sources of arsenic, e.g. natural (from limestone) and anthropogenic (mine tailings), none have examined the igneous dikes that are prevalent in the region. The Malacate Fault, the major structural feature of the Zimapan Valley, is used as an indicator of the direction of groundwater flow. Thirty-three dikes orienting subparallel to the fault were sampled from both sedimentary and volcanic terrains. Dikes found in the area show moderate to strong hydrothermal alteration and range in composition from rhyolite to basalt (Simon and Mapes, 1956). Arsenic contribution of the dike rocks to groundwater chemistry, rock-water leaching experiments of 27 representative dikes (1:4

sample to deionized water, 120 days duration) were Zn, Al, Ba, Cr, Cu, Ca, Fe, Pb, Mg, Mn, Ni, P, K, Si, Na, Sr, S, and U. EDS techniques are used to identify and characterize the mineral assemblages in each dike. These data will permit evaluation of the dikes as a potential source of arsenic.

Alexander C. Robinson

(Advisor: Dyke Eusden)

"U-Pb Radiogenic Age Dating of Rocks from the Presidential Range, NH"

U-Pb dates from monazite, zircon, and xenotime crystals are used to date the timing of various metamorphic and deformational events which have effected the rocks in the Presidential Range, NH. The Presidential Range is made up primarily of Silurian and Devonian sedimentary rocks which have been deformed and metamorphosed by the Acadian Orogeny. Several igneous and metamorphic rocks were sampled and mineral separates from each were analyzed using ion dissolution-mass spectrometry. Monazite, zircon, and xenotime crystals were separated from the igneous rocks to obtain dates of intrusion of the plutons. These plutons are bracketed by deformational events and provide constraints on the timing of pre- and post-intrusion phases of folding in the Presidential Range. Five igneous rocks were dated with the following results: zircon crystals from the Wamsutta Diorite yield an age of 408.4 \pm 1.0 Ma, monazite crystals from the Bickford Granite yield age of 404 Ma, and monazite crystals from the Bigelow Lawn Granite yield an age of 402 Ma, and monazite crystals from the Peabody Granite yield an age of 355 Ma. Results from xenotime and monazite analysis of the Auto Road Aplite are still pending. Monazite crystals were separated from the metamorphic rocks to obtain dates of the timing of multiple high grade metamorphic events which have effected the area. Two metamorphic rocks were dated with the following results: monazite crystals from the Littleton Formation schist yield ages of 402 Ma and 394 Ma, and monazite crystals from the Rangeley Formation migmatite yield an age of 403 Ma. The dates from the metamorphic and plutonic events are used to construct the following series of events for the Presidential

Range: 1) The initial phase of folding and metamorphism (D1, M1) occurred somewhere between 418 Ma (beginning of the Devonian and deposition of the Littleton Formation) to ~408 Ma (diorite intrusion which cuts M1 foliation), 2) Peak of metamorphism (M2) occurred from roughly 404-402 Ma (dates from granite intrusions, the Little schist and Rangeley migmatite), 3) M3 occurred ~394 Ma (dates from the Littleton schist), and finally, 4) M4 occurred ~355 Ma and coincided with the intrusion of the Peabody Granite.

Bryan H. Turner

(Advisor: John Creasy)

"Intrinsic Permeability of the Soyatal Formation, Zimapan, Mexico"

Arsenic is present in over half of the 50 wells tested in the Zimapan Valley, Mexico. The intrinsic permeability of the bedrock aquifers is critically important for any hydrogeologic models of As movement in the ground water. The Zimapan Valley, located about 150 km north-northwest of Mexico City, is an important mining district for Copper, Zinc, and Lead. Rocks associated with these ores contain arsenic mineralization. The Cretaceous Soyatal Formation is a thinly bedded calcareous shale and limestone with significant surface exposure in a broad open syncline in the northwestern Zimapan Valley. This formation is strongly fractured and cleaved with orientations parallel to axial planes of the syncline. The intrinsic permeability for the Soyatal Formation were calculated using the mathematical models of Snow (1969) and Romm (1965). Field data collected for this study include fracture spacing along trace lines. 6,262 fractures were measured along 177 trace lines of varying length (0.1 -1.5 meters). Romm's model assumes all fractures are parallel, equally spaced, infinite, connected, and of the same aperture. Snow's model calculates intrinsic permeability using fractures of any orientation and aperture; it does not require spacing along each trace line, and assumes that all fractures are infinite and connected. Using these mathematical models a hydrogeologic model can be constructed of the ground water flow.

Understanding the ground water flow will help locate uncontaminated aquifers.

HISTORY

Sharleen J. Davis

(Advisor: Elizabeth Tobin)

"Communism, Resistance and Women's Political Participation in France After the Second World War"

The absence of women from state political institutions raises interesting questions about gender equality. If women have the right to hold political office, then why do we only find a small percentage of them elected to state political institutions? France provides a particularly interesting study of women in politics. Female political representation in the French national parliament steadily declined after 1946 when they were first allowed to run for legislative positions. A majority of these elected women were members of the French Communist Party. They encountered much success in winning seats in the National Assembly during the Fourth Republic (1946-1958), but their numbers dramatically decreased during the Fifth Republic. Why didn't women Communists' political success of the Fourth republic reproduce itself during the Fifth Republic? My study attributes women's political success and defeat to changes in the political climate which allowed for various concepts of women's political roles to emerge. Political parties often used different representations of women's roles in the Resistance movement of the Second World War to promote their own ideas about women's roles in French politics. This study demonstrated how representations of women's roles in historical events can be used to both facilitate and hinder the participation of women in political institutions.

Lucy Fowler

(Advisor: Jim Leamon)

"Domesticity and the Revolution in the Writings of Mercy Otis Warren and Madam Wood"

This thesis examines the role of women during the Revolutionary era of American history. Specifically, it explores how the concept of Republican motherhood affected the lives of American women in the early nineteenth century. The writing of both Mercy Otis Warren and Sarah Sayward Wood is used to illustrate this theme. Mercy Otis Warren's History of the American Revolution offers the only contemporary account of the American Revolution that was written by a woman, and it is revealing for what it does (and does not say) about women and their participation in the war. Additionally, two of Warren's plays, both political satires, are discussed with respect to how she represents her female characters. The sentimental novels of Sarah Sayward Wood, Maine's first woman novelist, are also revealing for their portrayal of American womanhood. Ultimately, Mercy Otis Warren and Sarah Sayward Wood uphold the ideal of Republican motherhood by reflecting traditional conceptions of women's domestic role in their writing.

Erik S. Gellman

(Advisor: Hilmar Jensen, III)

"Black-Jewish Relations During the Civil Rights Movement, 1954-1968"

My research focuses on relations between blacks and Jews during the civil rights era. Ever since blacks and Jews encountered each other in the urban North and West in the 1920s, these two minorities have shared a variety of feelings for each other, including admiration and respect as well as resentment, envy, and betrayal. My study concentrates on the relatively small number of Jews who joined blacks in what has become known as the modern Civil Rights Movement from 1954-1968. The analysis begins with a consideration of the interaction between Jews and blacks in liberal civil rights organizations in conjunction with the larger relationship between the Northern black and

Jewish communities in this era. An exploration of the interaction between blue-collar blacks and Jews within the labor movement follows. The study then travels South for anti-depth analysis of the lack of interchange between the small number of Jews and large segregated black population in that region. Finally, after the Southern climate for these minorities has been established, the activism of the young blacks and Jews involved in the Student Non-Violent Coordinating Committee is explored as the prime interaction of Jews and blacks within the more radical channels of protest. My collection of oral interviews with activists, archival research, and other primary and secondary source material, leads to the conclusion that a small number of Jews and blacks cooperated in an effort to force America to realize its true democratic ideals. While the Civil Rights Movement was dominated by local black people who risked their lives in an effort to gain respect for their humanity, Jews, more often than any other "white" American group, responded to the African American call for assistance. This cooperation helped to achieve the final result of national civil rights legislation and a retraction government enforced segregation in the South.

Aileen Novick

(Advisor: Margaret Creighton)

"Questioning 'Separate Spheres' in 18th and 19th Century New England Maritime Communities"

Many scholars of women's history have maintained that women living in New England during the eighteenth and nineteenth centuries were in a "separate sphere" from the male members of their communities and families. Men and women were divided by the work they performed and the feelings and emotions they shared with one another. Women performed the domestic chores and cared for the children while men worked outside of the home in the public sphere. "Separate sphere" historians maintain that women only formed close bonds with each other and rarely even interacted with males outside of their families. The women of the New England maritime communities I have studied reveal the flaws with the "separate spheres" ideology of American history. These women held

their communities together while the men were off at sea. Maritime women had to work outside of the "female sphere" of domestic duties as they were often responsible for the family's financial and business transactions. These women were also very involved with the men of their communities through both business affairs and social ties. This thesis proves that men and women were constantly interacting with one another in many ways. Therefore, the theory of "separate sphere" does not accurately describe the multifaceted lives these women led.

Beka K. Smith

(Advisor: Hilmar Jensen, III)

"Coal Miners' Daughters: Growing Up Female in a Coal Mining Community"

Coal miners' daughters have shared a distinctive self-perception and social status as people shaped by an intense, explicit working-class identity rare in the twentieth century United States. Paradoxically, their gender has historically caused them to be excluded from the jobs which most decisively defined who they were and how they were perceived by others in their formative years. For much of this century, male miners and operators refused to allow women to set foot in mines, and many male miners refused to work in mines women had entered, citing bad luck and a variety of myths. This thesis will examine how women grappled with the contradictions inherent in growing up female in working-class communities defined by an explicitly male occupation. It will address how they carved out roles as union activists, women miners, and miners' wives; how they navigated childhood and life choices; and how they conceived of community beyond a class identity imposed by others. Sources will include oral interviews with coal miners' daughters, as well as documentary and secondary material.

INTERDISCIPLINARY

Biopsychology (Neuroscience)

**Sean M. Donohue &
Alexandra S. Weld**

(Advisor: Cheryl McCormick)

"Peripheral and Central Administration of Androstaediol on the Hypothalamic-Pituitary Adrenal Stress Response"

Sex hormones have been shown to influence the hypothalamic-pituitary-adrenal (HPA) axis: testosterone (T) decreases, whereas estrogen (E) increases, the release of corticosterone (CORT) in response to stress in rats (Viau and Meaney, 1991, 1996). Dihydrotestosterone (DHT), a metabolite of testosterone also has an inhibitory effect on the stress response of the HPA axis (Handa et al., 1994). T and DHT operate at the level of the genome via the intracellular androgen receptor (AR). DHT can be further metabolized into 5α -androstane- 3α , 17β -diol (3α -diol), which does not bind well at AR, and is thought to operate at the level of the membrane (reviewed in Frye, Van Keuren, Rao, & Erskine, 1996). 3α -diol levels increase in response to stress (Erskine, Hippensteil, and Kornberg, 1992); however its effects on the stress response are unknown. The present study examined the effects of peripheral administration of 3α -diol on the stress response of Long-Evans rats. Rats were gonadectomized and given jugular catheters for blood sampling. Five days later, rats were injected s.c. with either 0 mg/kg, 1.5 mg/kg, 3 mg/kg, or 6 mg/kg 3α -diol in polypropylene glycol. Two hours later rats underwent the stress test: 30 min of restraint in plexiglass restrainers. Blood samples (.2 cc each, via jugular catheter) were taken at intervals before and following the stress test. The interaction of dose and time point was significant: 3α -diol resulted in lower levels of CORT immediately after removal from the retainers (and not before restraint), but only the 6 mg/kg dose was significantly different from the control dose (0 mg/kg). The CORT levels of the control group returned to prestress levels more quickly than did the 6 mg/kg 3α -diol group. Nevertheless, the integrated system response

over the duration of the experiment was lower in the 6 mg/kg 3α -diol group. These data suggest that 3α -diol, like other androgens, can inhibit CORT release in response to stress, although it likely acts at the level of the membrane rather than at AR. We are currently investigating whether central administration of 3α -diol into the medial preoptic area can dampen the stress response (as does testosterone, Viau & Meaney, 1996) to determine if 3α -diol acts as a neurosteroid to alter HPA function.

Anne-Marie P. Miller

(Advisor: Nancy Kleckner)

"An Investigation of Potential Mechanisms for the Activity of the Antipsychotic Drugs Clozapine and Chlorpromazine at Cloned N-Methyl-D-Aspartate (NMDA) Receptors Expressed in Xenopus Oocytes"

The N-methyl-D-aspartate (NMDA) receptor, a glutamatergic receptor located in the hippocampal and cortical regions of the mammalian brain, is unique in that it requires the binding of glycine as well as glutamate in order for activation to occur. This additional binding site provides a potential target for pharmacological mediation. Recent theories of the mental illness schizophrenia have stressed the potential role of NMDA receptor hypoactivity, most likely in the modulation of negative symptoms. The present study examined the effects of a typical antipsychotic agent, chlorpromazine, and an atypical antipsychotic agent, clozapine on NMDA receptor, the atypical agent augmenting transmission to a greater degree. Subtypes of the NMDA receptor (A, B and C) were expressed in *Xenopus* oocytes and were tested for their sensitivity to chlorpromazine and clozapine with pharmacological and electrophysiological techniques. While both drugs did sometimes cause a potentiation effect at low concentrations (1-10 μ M) on the NR2A subtype, this effect was not consistent. Although both drugs antagonized the receptor at high concentrations (30-100 μ M), chlorpromazine did this to a greater extent than did clozapine at all subtypes. This evidence supports a potential role for the receptor in the treatment of schizophrenia, although it does not clearly differentiate the

actions of the atypical versus the typical antipsychotics. Future research should focus on the effects of very low concentrations of drug on these and other receptor subtypes.

Alexandra S. Weld

(See Sean M. Donohue)

Women's Literature and Theater

Alice A. Reagan

(Advisor: William Pope.L)

"Abingdon Square: A Project in Directing"

My senior thesis will consist of directing the play Abingdon Square by Maria Irene Fornes, a Cuban playwright. The play concerns a young woman who finds herself married to a man forty years her senior in pre-World War I New York. The central conflict of the work is Marion's need for safety and love from her fatherly husband, and her blossoming desire for independence in a world that leaves women few options. My pre-production research has focused on Victorian women's relationship to home, family and madness. I am also keeping a daily director's log of my work, the problems I encounter in production, and the solutions I find. Excerpts from this journal will comprise a written portion of the thesis, and will be worth 15% of my grade. The play will be performed in Gannett Theater on March 27, 28, and 29.

French

Kristin J. Kilbourne

(Advisor: Mary Rice-Defosse)

"Madness in Zola"

In the nineteenth century, the idea and popularity of madness became very large. The number of people declared mad and admitted to asylums rose. However, it wasn't only clinically mad people who were patients at the asylums. Many times women or members of the lower class were declared mad because of their differences

from society, their variation from what was considered normal, and sometimes the only reason for their incarceration was that no one understood them. In Emile Zola's Rougon-Macquart family, one finds many members who are mad. Each has their own experiences and reasons behind the rise of their madness, but behind it all is the family link - the madness that is in their veins. Zola himself speaks of the madness in the preface of La Fortune des Rougon, the first book in the collection. "Je veux expliquer comment une famille, un petit groupe d'êtres, se comporte dans une société, en s'épanouissant pour donner naissance à dix, à vingt individus qui paraissent, au premier coup d'œil, profondément dissemblables, mais que l'analyse montre intimement liés les uns aux autres." (p. 15) (I want to explain how a family, a small group of beings, behaves in society, growing by giving birth to ten, to twenty individuals who appear, at first glance, profoundly different, but that analysis shows intimately connected to each other). I would like to show the chain of madness in the blood of the central characters in La Fortune des Rougon, L'Assommoir, Germinal, L'œuvre, and Nana, and I would like to comment on the different types of madness between the females and the males, and the reasons behind them.

Justin J. Sullivan

(Advisor: Kirk Read)

"Une Délicieuse Ketracte: Une Comparaison de l'Esprit Associatif dans les Communautés en Marge"

In French literary tradition there exist communities which have found themselves alienated by various institutions ranging from the political structure to economic orientation. During the seventeenth century, women found themselves entering for the first time literary sphere to which they had previously been excluded. Affected by the humanist spirit, the salon women came together to produce literary works which challenged political and social institutions even as their popularity grew. Today, this tradition of sociability and literary expression as opposition continues particularly among young people who feel alienated by similar

socio-political institutions. These associations express the concerns through the literary milieu of comic strips and punk music. This thesis project will attempt to draw rich comparisons between these two movements based on social, political, and literary ideologies in order to discover how and why the participants of modern associations choose the path initiated over three hundred years ago by salon women.

Spanish

Andrew J. Aspen

(Advisor: Francisca López)

"Tiempo de Dilencio"

Tiempo de silencio, by Luis Martín-Santos, is regarded by many critics of Twentieth Century Spanish literature as a novel whose narrative innovations distinguish it from other post-Civil War works. Published in 1961, it relates the struggle of a young cancer researcher in Madrid to realize in 1949 his personal and professional ambitions within a society unsympathetic to his goals. His frustrated ambitions and the forces which limit his achievements result in the problem of his identity within the international scientific community. From a postcolonialist perspective, the protagonist's plight symbolized Spain's post-Civil War struggle with identity under the Franco regime within a rapidly enveloping international political economy. Spain's role within this economy is as uncertain as the young Spanish scientist's place within the scientific community. Martín-Santos effectively develops this parallel not only through his narrative innovations, but also by using irony to "demythify" the Francoist vision of Spanish national identity. The fate of the young researcher serves as a warning of Spain's national direction during the postwar era, but the factors which distinguish his struggle from Spain's also provide a message of hope for the recovery of the nation.

Lindsay M. Hanson*

(Advisor: Francisca López)

"Política de la Música Popular en Cuba"

Over the course of the past thirty years, Cuban socialism has been anything but uniform. Political and economic projects in revolutionary Cuba have constantly adapted and transformed in order to confront the political and economic realities facing the island. While external global forces have affected the revolutionary agenda, international conditions alone do not fully explain the dynamic nature of Cuban politics. Thus, world systems theories have been inadequate in addressing political and economic trends in Cuba because they tend to overlook the importance of domestic factors like popular culture which continues to express, comment on, and resist dominant political platforms. The purpose of my thesis, therefore, is to demonstrate the role of popular music in reflecting, supporting, and critiquing the course of post-1959 Cuban politics. To accomplish this, my project entails a detailed analysis of the texts of selected works written by singer/songwriter, Silvio Rodríguez, from 1966 to the present. In addition, to support by argument, I will draw from the writings of Antonio Gramsci, John Fiske and James C. Scott, exploring how these readings can both reveal and obscure the complexities of the Cuban situation.

Elizabeth E. Rogers

(Advisor: Silvia Rosman)

"Manuel Puig: Hacia una redefinición del arte"

What is literature? The objective of my thesis is to show how Manuel Puig problematizes our traditional notions of literature in The Betrayal of Rita Hayworth, The Buenos Aires Affair, and The Kiss of the Spider Woman. As a contemporary author, he faces the difficult task of producing literature in an age in which the mass media regulates our communication. Puig demands that we deconstruct the cultural hierarchy that distinguishes high culture from mass culture by exposing the presence of mass culture in our society and ourselves. Within these three texts, Puig shows us how both mass

culture and high culture provide us with tools with which we can interpret our experiences. In both, we find models and terms which enable us to be understood by society. It is through examining the way in which we "know" the world and ourselves that Puig complicates the traditional roles of the author, critic, and reader. By incorporating mass culture in his texts, he questions the fundamental elements that separate literature from mass culture; beauty, originality and creativity. I will refer to Puig's social and historical context as well as the various literary and critical movements among his contemporaries. My aim is to show how Puig demands that we *rethink* our way of naming a creative production called literature.

East Asian Language & Culture

Melissa Michalak

(Advisor: Shuhui Yang)

"Free Press in Hong Kong and its implications for China"

There are many assertions currently popularized in the mass media that after Hong Kong's reversion to Mainland China, the Communist government will, in its ignorance of the Western culture that has shaped Hong Kong, crush everything that makes it unique. These assertions are not necessarily true. In my thesis, I wish to demonstrate that while there will be temporary setbacks in press freedom in Hong Kong, there is a logic to the Chinese Government's treatment of this issue, as opposed to blind ignorance of Hong Kong's way of life. I will be focussing on freedom of the press, often considered an important indicator of political freedom, to show how the current conception of Hong Kong as a paragon of Western-style freedom is incorrect. I will also analyze the riots and boycotts in Hong Kong in the early 1920's, comparing them with the protests in Tiananmen Square, to show how freedom of the press is always threatened when the political status quo feels itself insecure. The first chapter will be a theoretical discussion of free press, in which I will define the term "free press" according to Chinese standards, as well as Western. In the second chapter, I will analyze the early

twentieth century civil disturbances in Hong Kong, such as the Anti-American boycott in 1905, to present a clear picture of government suppression of the press in cases where it felt the security of the colony was threatened. In the third chapter, I will analyze the Chinese government's reaction to the Tiananmen Square protests in regard to both the Chinese press and the Hong Kong press. I will conclude that the situation of Hong Kong's press will not remain unchanged after July 1, but if China remains sociopolitically stable, there is a chance that restrictions will loosen.

Heather A. Thompson

(Advisor: Sarah Strong)

"The Human Proximity to Nature: A Study of Human Activity Seasonal Words in Haiku"

Haiku is the Japanese form of seventeen-syllable poetry that focuses on a moment in the natural world. Almost any observations of nature made by a poet in a temperate region reveal the season in which the poem was written. *Kigo* are seasonal words that succinctly accomplish temporal placement of a poem in one or two words, and are necessary to all *haiku*. In Western thought, human activities have traditionally been sharply divided from the natural world, but there is strong evidence in Japanese thought and philosophy that the two lie on a continuum. I maintain that this continuum of the natural and the human is illustrated by the use of human life as *kigo* in *haiku* poetry. In *saijiki*, or dictionaries of *kigo*, categories of *kigo* are divided into *jiko*, seasons and climate, *tenmon*, astronomy, *chiri*, geography, *dobutsu*, animals, *shokubutsu*, plants, and *seikatsu*, human life. It is significant that among all of these categories in nature the Japanese include human activities, a fact that might strike many Western readers as anomalous. The renowned artist and *haiku* poet Taniguchi Buson painted vivid verbal images in his *haiku*, and thus my study of human activity (*seikatsu*) *kigo* as an example of the inclusion of nature in *haiku* will focus on his works. In order to study these connections, I will work with scholarly texts on the Japanese relationship with nature, as well as works by and about Buson in the original

Japanese. In my study I will use *kigo* to demonstrate the close tie Japanese have between the human world and the natural world.

German

Kathleen McCann

(Advisor: Denis Sweet)

"Proletarische Märchen der Weimarer Republik"
(*"Proletarian Fairy Tales of the Weimar Republic"*)

1918 to 1933: in Germany, the years between the end of the First World War and the Nazi takeover were characterized by the infancy of the Weimar democracy, new socialist movements and organizations, Expressionism, as well as revolutionary concepts in politics, education, art, literature and music. Challenges to both the "system" and deeply rooted tradition took many forms; a notable one being the new fairy tales written for the working class, (*die proletarische Märchen*). Countering the more traditional tales of the legendary Brothers Grimm, these stories describe in vivid detail the situation of the worker in Weimar Germany, aiming to raise his/her consciousness and give impetus to the imagination and revolutionary action. In my thesis, I provide a historical and theoretical background of the socialist and communist youth movements, concepts in education and the raising of children and a socialist conscience in a capitalist society. This information will provide a backdrop and *raison d'etre* for the fairy tales themselves. Through the interpretation of a number of tales I will delve into several of the political historical and literary themes of the time. These explorations will also serve to answer such questions as; "How do the proletarian fairy tales reflect and relate to the strong tradition of *Märchenerzählen* (the telling of tales) in Germany? and, "Do the tales transcend their place in Weimar society to incorporate a generally applicable meaning (as those from the Grimms are purported to do)?"

Russian

Patricia M. Daniels

(Advisor: Dennis Browne)

"Russian Women Revisit the Great Patriotic War and Perestroika: Problems in Oral History"

Oral histories provide important perspectives on historical events; their incorporation into the official Soviet Russian record is vital for a thorough understanding of the Great Patriotic War and *perestroika* in Russia. In the Spring of 1996, I interviewed 9 elderly Russian women and asked them to recall their experiences in World War II and discuss their feelings about the current era of political and social transformation. I contend that the narratives offered in these interviews are distinctly shaped by cultural dynamics between myself and the respondents, and influences within Russian culture. Many proponents of transformation have denounced not only the political and economic systems of the Soviet Union, but the system of cultural symbols as well. I identify and explicate two influences which weigh heavily on the narratives: 1) the significance of martyrdom in Russian cultural history, and 2) the importance of the women's identification of their experiences in the war with the betrayal of the Soviet Union in the era of *perestroika*. In addition, I examine my process of conducting the interviews, paying special attention to the interview setting, biographical information about the respondents, and my role in the process as a young, non-native speaker of Russian, which are all factors that influenced the narratives. The work of this thesis compliments the political and military history of the Soviet Union with the personal narratives of human experience.

MATHEMATICS

Madhur Duggar*

(Advisor: Melinda Harder)

"Option Valuation During Mergers: A Case Study"

This thesis builds a model for the evaluation of call options* prior to mergers, and then compares the call prices implied from this model with actual call prices. In order to carry out this comparison, the thesis looks at the Chemical Bank and Chase Manhattan Bank merger, and the call prices on the shares of Chemical Bank prior to the date of the merger. The reason why this study is interesting is that the assumptions made by standard models of call option pricing such as those made by the Black Scholes model, and the Binomial model are no longer valid prior to a merger between two companies. The model in this thesis derives the stock prices of the target company as a function of the probability of the merger taking place, the risk free rate of return, the risk awareness of the investors, and the two possible stock prices of the target company on the event date. Next, the model calculates the value of call options issued on the stock of the target company by using the derived stock prices. Time permitting, the thesis shall also look at the returns to shareholders of the merging companies, and compare these returns with those accruing to shareholders of firms involved in other mergers. The aim shall be to gain some further insight into the true reason behind the merger between Chase Manhattan and Chemical Bank.

*The purchaser of a call option issued on a particular asset like a share, buys the right to acquire the share at a predetermined price known as the exercise price, and at a predetermined date known as the expiry date of the option.

Kara J. Jackson

(Advisor: Bonnie Shulman)

"The Visualization of Mathematical Concepts through Art"

Throughout history, art and mathematics have been intricately connected. I examine the role of curvature and the use of intersecting planes and surfaces in Russian constructivist art. Specifically, I look at the art of Naum Gabo, whose thoughts were influenced by many mathematicians and scientists, including Einstein. Like other constructivists, Gabo explored the curvature of quadrics, second-order surfaces. His "Head of a Woman" is inspired by the construction of an ellipsoid from intersection circles. I demonstrate this construction mathematically, via an analytic proof, and present two constructions (one cardboard and one made of plywood) which I made myself. I also explore Gabo's "Crystal," whose mathematical analog is the cubic ellipse. I show analytically that the cubic ellipse is the intersection of two quadrics and use Mathematica to explore this intersection visually.

Jamie L. McDowell

(Advisor: John Rhodes)

"The Synchronization of Pulse-Coupled Oscillators in the Sinoatrial Node; and Integrate-and-Fire-Model"

The heart contains many pacemaker cells, which govern its beating. In each cell the voltage gradually builds up to some threshold value before the cell "fires". For a coordinated heart beat to be produced, all of the pacemaker cells must fire at the same time. Representing each pacemaker cell in the heart as a biological oscillator, simple models for the coupling of these oscillators have been developed in order to investigate synchronous firing. This thesis looks at various types of pulse-coupling between the oscillators. The specific type of pulse-coupling determines if synchronization occurs within the system and also the length of time it takes for it to occur. Numerical computations and computer graphics are used to deal with the different types of pulse-coupling.

Joseph M. Ferrara, Jr.

(Advisor: David Cummiskey)

"Moral Epistemology"

Everyday we are confronted with decisions that have a moral dimension. However, as is evident from the abundance of moral disagreements in our society, the specific values and constraints that should govern our actions are far from clear. The diverse and irreconcilable criteria that humans have used to gauge an action's oral worth have forced us to search for a legitimate way through which our moral principles can be conclusively justified to our doubters and to ourselves. Unfortunately, the historical diversity of opinion also raises the serious concern that perhaps there exists no relevant justification at all for any moral principles. In response to this skeptical worry, philosophers have pursued various avenues hoping to ground their ethical principles. For example, they have searched for self-evident moral truths, striven to derive moral principles from hypothetical social contracts, and conceived of ways that moral principles could be supported by scientific premises. My thesis will examine the successes and shortcomings of several popular approaches to moral epistemology. I will then offer a defense of the strategy which I find to be most promising. The style of moral defense I support has its historical origins in the philosophy of Immanuel Kant, though many current philosophers are expanding on and reworking Kant's system. These philosophers hold that certain unconditionally obligatory moral requirements can be justified through an analysis of the concept of free rational action. Accordingly, all persons, insofar as they are rational agents, just recognize certain moral requirements as binding, and thus actions contrary to these requirements involve a fundamental self-contradiction.

"The Lakota Sun Dance"

The Lakota sun dance is an extremely powerful, profoundly sacred religious ritual, which maintains a unique balance that serves both the tribal community, and the individual dances. The ritual restores the tribes place in the cosmos and reestablishes the people's covenant to Wakan-Tanka. Due to its primacy in Lakota religion and cultural identity, the sun dance has endured the challenges of time. It continues to thrive in the second half of the twentieth century because of a static ritual foundation that has largely resisted the invasion of foreign beliefs, while still managing to adapt and accommodate the changing needs of each successive generation of Lakota people. This dynamic nature of the sun dance allows it to remain a living religion, which is still frequently practiced today. As the sun dance serves the binary ritual function of fulfilling both tribal and individual aspiration, it is extremely multifaceted, covering a broad spectrum of ritual purposed.

Geoff D. Pynn

(Advisor: David Kolb)

"Heidegger and Lévinas on Death"

Martin Heidegger, one of the most important philosophers of the twentieth century, offers an extremely influential interpretation of human existence (Dasein) in his *Being & Time*: to exist is to have possibilities and pursue them. Paradoxically, the key to Dasein's completeness lies in the proper understanding of one's own death, the *possibility* of the impossibility of all possibilities. By having the right sort of relationship with our own finitude and mortality, we can be free to live as authentic individuals. Emmanuel Lévinas, a more recent French philosopher, criticizes Heidegger's explication of death, instead pointing to the absolute impossibility of ever grasping death in any form. Death for Lévinas is a looming threat that we can never relate to as a possibility, but rather only as the impending *impossibility* of all possibilities. Death shatters the solitude of the

subject, introducing a force which is absolutely other than the world given to comprehension, and leaves the self passive and paralyzed. Lévinas' entire philosophical project is devoted to critiquing the Western tradition's privileging of the Same over the Other. He finds traces and hints of alterity in many different places, but most importantly in language, which relates the self to the human other. This relationship is unequal and essentially ethical, giving rise to both philosophy and religion, which, in their course, forget the prior experience of that which cannot be grasped by the Same. But is Lévinas right? Can we locate a unique orientation in the relationship to the Other that transcends the march of philosophy, science and culture, giving unequivocal meaning to ethical responsibility?

PHYSICS AND ASTRONOMY

Laura S. Auger

(Advisor: Hong Lin)

"Instabilities of Barium Titanate Phase Conjugators for tc -Face Incidence"

The self-pumped phase conjugators one setup that produces a phase conjugate wave, or a "time reverse" replica, of an input light wave. Through a process called four wave mixing, a "time reverse" replica of the input wave is produced. The "time reverse" replica is basically a wave that maintains the shape of the original wavefront, but reverses its direction of propagation. The advantage of the self-pumped phase conjugator is that it requires only a single input beam, not several external beams. A cubic barium titanate crystal can be used for this purpose. In March of 1996, Chi Ching Chang et al. reported a novel configuration for the self-pumped phase conjugator. In Chang's setup, instead of having the input beam incident on the face of the crystal parallel to the optical axis, the A face, it was incident on the face of the crystal to which the optical axis points, or the +C face of the crystal. Chang observed phase conjugation over a wide range of incident angles and positions with a high rate of efficiency in two barium titanate crystals. However, the self-pumped phase conjugator has been known to demonstrate both spatial and temporal instabilities under certain

conditions. In order to develop high performance of self-pumped phase conjugators, it is important to understand these instabilities and the relevant conditions. The topic of study for the proposed thesis is the spatio-temporal instabilities of two self-pumped barium titanate conjugators using the +C face incidence as suggested by Chang.

Kip D. Coonley

(Advisor: John Pribram)

"Light Sensitivity of Photovoltaics"

Amorphous silicon (a-Si) solar cells are semiconductors used to directly convert incident sunlight into electrical energy. Amorphous silicon acts as a photo diode that produces currents when exposed to exterior light. In recent years, breakthroughs in solar cell efficiency and affordability have been experienced. In particular, semi-transparent a-Si solar cells have been developed. This unique type of cell allows natural light to pass while simultaneously generating electricity. One cell placed directly behind another blocks incoming light and increases power output. Incident light of varying wavelengths is used to determine optical and electronic responses of a-Si solar cells under normal conditions. The light sensitivity properties of a-Si and semi-transparent a-Si are reported and applications of the technology are investigated.

Gavin M. King

(Advisor: Eric Wollman)

"Parametric Amplification of Waves and Oscillations"

I am studying parametric wave amplification. This process involves feeding energy into an oscillation by varying a physical condition at twice the natural frequency of the oscillation. A recent article reporting remarkable self-organizing phenomena occurring within a vibrating sandbox sparked my interest in this subject. These phenomena, specifically the formation of stable, two-dimensional excitations in the vibrating sand layer, are very surprising. Dubbed oscillons, the excitations act in ways

strikingly similar to the interactions leading to both the formation of atoms from sub-atomic particles and the formation of molecules from atoms. As part of my thesis I have built an apparatus to create oscillons to explore these findings about self-organization and inter-particle communication. It happens that the apparatus can also be used to parametrically amplify surface waves in water by vertically oscillating a container of water at twice the natural frequency of a surface wave therein. This vertical oscillation varies the gravitational field acting on the water and amplifies the original wave. With the realization that a complete understanding of water waves is prerequisite to any (more complex) analysis of granular waves, I have focused most of my theoretical analyses on the propagation of surface waves in water and on the general treatment of parametrically-excited oscillators.

Lawrence L. Ackerman

(Advisor: Douglas Hodgkin)

"And They're Off. . . A Systematic Analysis of the 1996 Republican Invisible Primary"

This thesis is a critical examination of the part of the 1996 Republican Presidential nomination that Arthur Hadley labeled the *Invisible Primary*—the lengthy interval between the last election of one President and the New Hampshire Primary. It employs David Easton's System's Analysis, as well as rational actor, strategic politician and ambition theories, to examine candidates and actors involved. Major focus is upon the effects of money, media and polling during the *Invisible Primary* and how through the intersection of each, the presumptive nominee is known before the actual primaries, resulting in the primaries usually becoming no more than a confirmation process.

Jeffrey S. Cohan

(Advisor: Patrick Rivers)

"The Evolution of Rawls: Towards a Postmodern Structure of Political Discourses"

In reaction to the current paradigmatic transition in the social sciences, I have chosen to construct a model of what I believe the postmodern paradigm of political inquiry will consist. Relying heavily on the work of John Rawls and Iris Marion Young I will illustrate the need for a divided discourse where theories are distinguished as applicable in public and private spheres according to their practical promise and compatibility in the existing formal institutional structure. I will argue that the continued (though often unacknowledged) reliance on the paradigm of modernity in theories that label themselves as "postmodern" indicates a need to retain some practical benchmark as a means of avoiding a slide to absolute relativism in a discourse concerned with the political facets of the contemporary democratic state.

Lindsay M. Hanson*

(Advisor: Patrick Rivers)

"Music as Political Commentary in Cuba"

Over the course of the past thirty years, Cuban socialism has been anything but uniform. Political and economic projects in revolutionary Cuba have constantly adapted and transformed in order to confront the political and economic realities facing the island. While external global forces have affected the revolutionary agenda, international conditions alone do not fully explain the dynamic nature of Cuban politics. Thus, world systems theories have been inadequate in addressing political and economic trends in Cuba because they tend to overlook the importance of domestic factors like popular culture which continues to express, comment on, and resist dominant political platforms. The purpose of my thesis, therefore, is to demonstrate the role of popular music in reflecting, supporting, and critiqueing the course of post-1959 Cuban politics. To accomplish this, my project entails a detailed analysis of the texts of

selected works written by singer/songwriter, Silvio Rodríguez, from 1966 to the present. In addition, to support by argument, I will draw from the writings of Antonio Gramsci, John Fiske and James C. Scott, exploring how these readings can both reveal and obscure the complexities of the Cuban situation.

Sarah C. Langenfeld

(Advisor: Arlene MacLeod)

"Women's Clothing & Street Harassment: Rethinking Romanticized & Politicized Discourses"

This thesis will explore the phenomenon of public harassment using the philosophy of Michel Foucault. Specifically, focus was placed on the relationship between public harassment and the ways in which women dress. This topic was chosen in light of the fact that even women who think of public harassment as a symptom of patriarchal society nevertheless tend to wonder if their clothing could have caused a harassing event. It seems interesting that these women, who otherwise have abandoned the notion that public harassment occurs because of men's inability to resist their attraction to overly provocative women, continue to experience feelings of guilt. Because this notion of the responsibility of dress to avoid harassment seems to operate so strongly in our society, it might be useful to attempt to understand what discourse are circulating in society which frame the ways in which individuals understand the significance of women's clothing. In order to monitor the discourses currently active in society, talk shows and women's magazines were viewed and in-depth interviews were conducted. This information, in combination with Foucault's theories about the discursive formation of reality and the nature of power, was used in an attempt to shed light upon the ways in which public harassment and discourses about women's clothing interact to affect women's understandings of their responsibility to appear certain ways.

PSYCHOLOGY

Christine B. Ballantyne

(Advisor: Georgia Nigro)

"An Evaluation of the Arts Integration Program at Sherwood Heights Elementary School"

Arts integration, or incorporating art into the curriculum to teach all subject areas, is an exciting educational idea which utilizes a variety of teaching methods within the classroom. Studies have found that integrating arts into the classroom and throughout the school can lead to increased student academic performance as well as higher self-esteem. Three years ago, Sherwood Heights Elementary School in Auburn, Maine implemented an arts-based curriculum throughout the school. The purpose of my research is to evaluate their arts integration program in order to determine what type of effects, if any, it is having on the students. Specifically, I am focusing on student language performance and self-esteem. A comparison school, Washburn Elementary School in Auburn, Maine, was chosen. Because arts integration is currently in its third year at Sherwood Heights, the study focuses on one third grade class, with a comparison class at Washburn. Students at both schools completed the language portion of the Stanford Achievement Test, as well as a self-esteem scale that measures perceived competency in several domains. They also completed writing samples based on a "How to . . ." writing prompt. In addition to these standard measures, I spent time in the school making observations and conducting interviews with school teachers and staff. The results of the standard measures will be subjected to statistical analysis. The observations and interviews will be analyzed and compiled to paint a clearer picture of the situation. Higher test scores at Sherwood Heights, as well as observable positive effects, would indicate that arts integration has been successful in benefiting the students. This evaluation has implications for the staff at Sherwood Heights, as well as curriculum developers interested in arts integration. In fact, in February, I will be part of a team that has been invited by the Kennedy Center to present our work on arts integration at an annual conference.

Kathleen Leonard

(Advisor: Hugh McDonald)

"Role of Affect in Communication Effectiveness"

In the interest of gaining a better understanding of the factors which influence communication between therapists and their clients, this research examines the effects of the negative mood-states sadness and embarrassment on the nature and effectiveness of verbal communication. Recent research investigating the effects of emotion on various behaviors indicates that several of the behaviors consistently influenced by mood-state represent significant components of the more complex behavior of communication. Research on verbal expression (Natale, 1977), disclosure (Miller & Lefcourt, 1983), recall and retrieval (Cegala, 1984; Parrott & Sabini, 1990), creativity (Isen, Daubman, & Nowicki), and systematic processing (Isen, Means, Patrick & Nowicki, 1982) indicate performance differences associated with the balance of a subject's mood. While subjects in positive moods are generally more expressive, creative, and demonstrate higher levels of word recall and disclosure than do those in negative moods, they are less systematic and analytical. To investigate how these and other behaviors come together during verbal communication by subjects in sad, embarrassed, and neutral moods, one hundred and ninety-six women underwent a 10-minute mood induction, followed by a times communication task. Given the expressive and creative nature of the communication task, it was hypothesized that subjects induced into the negative mood-states of sadness or embarrassment would take longer to perform the task than would those in neutral moods. Data trends revealed that sad and neutral subjects demonstrated comparable communication effectiveness, while embarrassed subjects were considerably less effective. Video recordings of the interactions suggest that these differences may be attributable to mood-associated variation in communication strategies such as eye-contact, facial expression, and partner encouragement. These initial indications suggest that the effectiveness of communication within the therapist-client relationship is partially

dependent on the mood-state of the individual imparting information. The implications of this research suggest that facilitation of communication within many types of relationships may be achieved through various techniques of mood-modification or manipulation.

Meghan J. Sawyer

(Advisor: Cheryl McCormick)

"The Influence of Testosterone on the Corticosterone Circadian Rhythm and Stress Response in Rats"

My thesis research is broadly defined as the effect of the sex hormone testosterone on the release of the stress hormone corticosterone. The thesis contains two related studies, both utilizing three groups of rats; 1) sham-operated, 2) gonadectomized males with testosterone, and 3) gonadectomized males with control cholesterol replacement. The first study is the effect of testosterone on corticosterone in terms of an animal's biological patterns. I found that across groups, the lowest basal corticosterone levels were observed at 12:00 pm, while the highest basal levels were observed at 8:00 pm, correlating with the nocturnal nature of a rat. Post hoc analysis indicated that shams had lower levels of corticosterone than gonadectomized males with testosterone replacement, demonstrating that testosterone acts as an inhibitor of corticosterone release. Gonadectomized males with control cholesterol replacement were not significantly different from either gonadectomized males with testosterone replacement or shams. The differences among the groups were most marked at 12:00 pm and 4:00 pm. Basal levels of corticosterone are known to affect stress responsiveness: more corticosterone is released in response to stress when basal levels are at their peak than when they are at their trough (Dallman et al. , 1987). The second study looks at the results of the first study, but in terms of the differences of the corticosterone stress response at 12:00 pm and 4:00 pm.

SOCIOLOGY

Alison S. Angell

(Advisor: Emily Kane)

"Outsider - Within"?: Gender, Race and Class in Nanny Employment"

A vast hierarchy exists in nanny employment such that the industry includes both the illegal woman forced to work for a very low sum and the "professional nanny" who demands higher wages for her work (Enloe, 1989). This thesis presents an overall analysis of the literature on nanny employment in order to create a picture of the hierarchy which exists. My personal investigations, however, include only those nannies who sit at the top of the nanny hierarchy "the professional nannies". I have interviewed six nannies and six nanny employers who were referred to me through a nanny agency in Portland, Maine. Thus, through a qualitative, exploratory study I examined nanny employment under the best of conditions, in which a nanny agency has determined the minimum which nannies can be paid and the maximum amount of household work which they can be asked to do. Based on my literature review, I assert that: "all nannies experience some forms of denigration based on the fact that they are nannies.....employed within the home, doing work with such a long history of domination/subordination: My interviews with nannies and employers test the validity of that statement.

Gretchen A. DeHart

(Advisor: Emily Kane)

"Role Importance and Influence on Students"

Research has investigated a wide range of factors associated with students. Examples of these are identity, self-esteem, achievement, and influence. However, most investigations of these factors have addressed them individually. The intent of this project is to look for the relationships that may exist between these factors in order to attain a more holistic picture of the student. This study explores, in great detail, the different roles a student engages in and the potential

sources of influence within each role. Each role is studied separately so as to reach a clearer idea of how different realms of students' lives overlap and affect each other. This cross-sectional study surveyed 621 students in grades 7-12 from both public and parochial schools, in 6 different towns and cities. I expect to find positive correlations between role importance and the students' levels of self-esteem, mastery, accomplishment, and communication within each role, and the level of influence from each role. A dynamic across grade, sex, and type of school has also been hypothesized.

Sarah H. Hallowell

(Advisor: Emily Kane)

"The Formation of Social Relationships in Single-Sex and Co-Educational Schools"

Studies have been conducted on the patterns of peer socializing environments in schools, according to size, tracking, and race to name a few. This thesis is designed to look at how gender-controlled environments affect the social networking of students. Through in-depth interviews with men and women who attended a single-sex high school and are now in a coeducational college, this research addresses how the social networks in a single-sex environment are attained and whether the same processes of attainment are continued once a student enters a coeducational environment. Interview results indicated the particular importance of eating disorders among females and athletics among males, and therefore these issues are explored in depth. The research addresses peer relationships among females, among males, and the reciprocal relationships between females and males. Once defined in the high school setting, these aspects of social relationships are compared to empirical and interview evidence of relationships in a coeducational environment.

A. Breck Smith

(Advisor: Emily Kane)

"The Social Construction of Space as Defined through Mortgage Discrimination"

Racism is culturally rooted in American institutions. Therefore, America's social, political, and economic structures continue to reflect negative images of Black Americans. One striking example is the racial disparity in home ownership rates, and the racial segregation of urban neighborhoods. My research considers these issues, and suggests that mortgage discrimination plays a significant role in socially constructing urban neighborhoods. Qualitative historical, social, and political research I have reviewed is combined with a quantified Federal Reserve Data set. By introducing the data set, I am attempting to statistically conform that race plays a major role in the lending process. The juxtaposition of the spectrum of social science accounts and the statistical data works towards delineating a significant pattern of racial discrimination in the mortgage market. Such a conclusion would suggest mortgage discrimination as a primary factor in the symbolic construction and subsequent segregation of urban neighborhoods.

Tanya M. Stepasiuk

(Advisor: Emily Kane)

"Views of Conflict and Identity among Northern Irish Americans"

In the past thirty years Northern Ireland has come into the spotlight of world news as a troubled area. The events and social conditions of the past several decades obviously have an effect on how those living in Northern Ireland conceptualize themselves. Religion and politics are central issues in everyday life to the people of this region. This thesis uses qualitative interviews with Northern Irish immigrants in Boston to explore how those who left Northern Ireland and came to America identify themselves. Specifically I examine how Catholics, the minority in Northern Ireland, think about themselves and the country they have left now that they live in the Boston area, a

predominantly Catholic Irish American community. Through interviews and field work I have gathered data and an understanding of the types of communities and identities shared by the group of Catholic Northern Irish Immigrants that I have encountered.

THEATER AND RHETORIC

Corey L. Norton

(Advisor: Linda Horwitz)

"The Rhetorical Transformation of East Germany's Communist Party into Unified Germany's Modern Socialist Party"

This project explores the development of Germany's modern socialist party, the Partei des Demokratischen Sozialismus (Party of Democratic Socialism, PDS) as a successor to the East German communist party. At issue is the speech delivered by party chairman Gregor Gysi at the special party conference in December 1989 to declare and solicit support for the birth of the PDS. The fall revolution of 1989 has become famous as it provided the first major resistance to the ruling party and succeeded in toppling the corrupt communist government. However, little attention has been paid to the consequent political situation before Germany's unification. Speaking at a time of such distrust and corruption Gysi faced many obstacles in his speech. Popular opinion within the country and even within the party was to disable the corrupt party structures and begin anew. How would Gysi, and his few supporters, mobilize a population, that had been lied to by their government for forty years, to support the new party and reforming of the old structure? This project discusses East Germany's unique political situation in the fall of 1989 and the rhetorical constraints it provided a pro-government speaker such as Gysi. Furthermore it will examine the party's success and ultimate survival as a result of Gysi's ability to harness public sentiment for a renewed socialism. By examining these issues it seeks to expose an institutional body's ability to act as a movement and collect grass roots support to rebuild a party from the bottom up.

Jeremy A. Villano

(Advisor: Linda Horwitz)

"A Rhetorical Analysis of the Representation of Ethnic Diversity in the Bates College Viewbook, 1996-1997"

Each year millions of high school seniors open their mailbox to find college viewbooks patiently waiting to be discovered. Bates College, like most other schools, uses the viewbook as a persuasive tool to attract students by depicting a cropped and polished representation of the institution. My thesis will examine the Bates College Viewbook's pictorial portrayal of visually identifiable minority students, recognizing the strategies, both deliberate and unintended, used by its producers to attract a diverse student body. Through this research I hope to develop a better understanding of how images are used in our society, as well as consider the ethics surrounding our society's sometimes questionable use of images and rhetoric.

WOMEN'S STUDIES

Britt L. Herstad*

(Advisor: Christina Brinkley)

"Reconstructions of Anita Hill and her Legacy in America:

Ever since the 1991 Hill-Thomas hearings, Anita Hill has been a household name. Her allegations of sexual harassment against Judge Clarence Thomas had more of an impact on American culture and society than she ever would have imagined. For Hill's name is continually used to refer to discussions of sexual harassment, as well as issues relating to race, gender, and power. This thesis explores the phenomenon of Anita Hill that was and is still alive in American culture. Reconstructions of Anita Hill and the stereotypes used against her during the hearings are examined. Particular attention is paid to language and its role in the reconstruction of Anita Hill. The rhetoric used to discuss Anita Hill cuts to the root of perceptions of black women in American society today. To a certain degree, time has altered these perceptions. Four questions are then the primary focus: How was

Anita Hill's character reconstructed, distorted and used? How did she become to be believed, or recognized as credible? What was the impact of the "Anita Hill Effect" on America, regarding the political realm? Where is Anita Hill now and can America ever forget her?

Arcelia Moreno

(Advisor: Christina Brinkley & Elizabeth Eames)

"Latina Teen Pregnancy: Problem or a Rhetorical Tool"

Throughout the United States teenage pregnancy has been a popular political symbol for numerous politicians. The constant political attack on teenage pregnancy has now become a media focus. Through the evaluation of media sources, such as print media and television, this thesis attempts to analyze how the rhetoric of teenage pregnancy has led to the media blame of teen mothers for many of the United States' economic problems. I will work with Latina teen mothers of Ukiah, California to help in explaining the ways in which the media portrays teenage pregnancy is affecting the United States middle class and not the mothers. The core of this thesis is concentrated on giving Latina teen mothers their space to speak and be listened to. Through personal interviews and conversation with many of these young mothers, their words are spoken and recorded and the rhetoric of teen pregnancy is deconstructed.