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*\* Denotes Double Major*

## ANTHROPOLOGY

**Heather S. Thomson**

*Advisor:* Charles V. Carnegie

### **The Women's Agricultural Network: A Strategy for Empowerment and Entrepreneurial Success**

The Maine Women's Agricultural Network (WAgN) was established to support women in agriculture to own and operate agriculturally related enterprises. This thesis applies a feminist economic perspective to WAgN to examine how the group has evolved into an organization for economic development. Additionally, this thesis provides a brief overview of the history of women in American agriculture in order to gain a perspective from which to view the emergence of a network like WAgN. Interviews with WAgN members are used to document the support the network provides and to show how members are empowered and better prepared to take on the tasks necessary to successfully operate their own agricultural businesses.

## ASIAN STUDIES

**Van V. Brantner**

*Advisor:* James W. Hughes

### **Large-Scale Migration and the Gender Earning Gap in China's Urban Labor Market**

Involving the transfer of tens of millions of people from the rural villages and farms to the major metropolitan areas, China's large-scale migration is one of the most remarkable social and economic developments in Asia today. While labor mobility and substantial reductions of government control over the labor market have clearly created better economic opportunities for some rural migrants, it is suspected of also fostering the reemergence of the old Confucian customs and traditions subordinating women. This thesis investigates the relationship between large-scale migration and gender pay inequality in urban China by utilizing two large-size surveys covering Shanghai and eleven other provinces for the year 1995. Using descriptive statistics, earnings equations, and several earnings decomposition methods, this study compares migrant women to their urban counterparts in a number of areas such as labor market treatment, social status, and personal freedoms. It also covers the spatial and temporal dimensions of rural to urban migration, the determinants to migration, the characteristics of Chinese migrant workers, and the impact of migration on their earnings.

## BIOLOGICAL CHEMISTRY

**Geoffrey T. Hart**

Advisor: Pamela J. Baker

### **Genetic Susceptibility and Resistance to Periodontal Disease in Mice**

Periodontal disease is one of the most prevalent chronic inflammatory diseases affecting the human population. This study used a mouse model to investigate and compare the effects, over-time, of *Porphyromonas gingivalis* on one periodontal disease-resistant and one susceptible mouse strain, A/J and Balbc/ByJ, respectively. *P. gingivalis* is a gram-negative bacteria that is one of the predominant pathogens associated with adult periodontal disease in humans. Assays were done to detect alveolar bone loss and antibody levels specific to *P. gingivalis*. Furthermore, relative changes in gene expression between uninfected and *P. gingivalis*-infected mice were investigated with real-time PCR. These results provide insight into the time-dependent responses and factors on the genetic level relevant to the susceptibility and resistance of the host to periodontal disease.

## BIOLOGY

**John A. Bunce**

Advisor: Shyril O'Steen

### **Locomotor and Behavioral Predictors of Escape Performance in Prey Fish**

The kinematics of swimming performance are well studied in fish, but the fitness value of most kinematic variables remains unknown. This study examines the fitness value of c-starts, a standard measure of swimming kinematics, in two preyfish species, *Poecilia reticulata* and *Rivulus hartii*, which occur sympatrically in freshwater Trinidadian streams. Downstream of barrier waterfalls, both species are subject to predation from the pike cichlid, *Crenicichla alta*. Upstream of barrier waterfalls, these fish appear to live in the absence of a major predator. This laboratory study employs wild-caught *P. reticulata* and *R. hartii* from upstream and downstream populations to test the hypotheses that (a) locomotor performance differs between populations within species, and (b) c-start or other kinematic or behavioral traits predict fitness (survival). I used high-speed video to first document prey c-starts in response to a standard stimulus, and second, to measure locomotor performance, evasion tactics, and survival time during staged encounters with wild-caught *C. alta*. I present evidence for both inter- and intraspecific locomotor and behavioral performance differences. I find size to be a predictor of evasion success in *R. hartii*. These data are discussed in relation to ecological interactions and population distributions of *P. reticulata* and *R. hartii*.

**Tara N. Businski**

*Advisor:* William G. Ambrose, Jr.

### **The Effects of Bait-Worm Digging on Intertidal Benthic Carbon Remineralization in Maine**

The fate of organic matter reaching the sea floor is determined by biological and chemical processes occurring within the sediment that result in the material being advected, buried, mineralized, or incorporated into biomass. Commercial harvesting of bait-worms is a major sediment disturbance on mudflats in Maine and may affect the fate of organic matter by changing the rate of carbon mineralization and burial. I incubated sediment cores for 12-24 hours and measured oxygen concentration 4-6 times to measure aerobic mineralization in areas dug for bait-worms and undug control areas. To quantify anaerobic mineralization, I measured ammonium concentration in the overlying water and established an ammonium concentration gradient in sediment. I also measured macrofaunal biomass to estimate animal respiration in the cores and quantify community response to digging. Digging had no effect on aerobic mineralization after two days, but after one month control plots mineralized carbon at a rate of 78.4 mg C m<sup>-2</sup> d<sup>-1</sup> compared with 148.5 mg C m<sup>-2</sup> d<sup>-1</sup> in the dug area. This slow response in mineralization rate to digging could be caused by a community shift secondary to digging or increased organic matter deposition caused by the more pronounced topography of the dug site.

**Stephanie L. Eby**

*Advisor:* Shyril O'Steen

### **Does Mating Display Locomotion Provide Information About Fitness In Guppies (*Poecilia Reticulata*)?**

Studies of mate selection in animals frequently ask whether male mating displays provide information to females about the male's fitness. Experiments with Trinidadian guppies (*Poecilia reticulata*) often focus on the coloration of the males as a sign of fitness and the female's choice based on this. This study focused on the kinematics of male mating displays as a method for giving the females clues as to the male's ability to escape a natural predator, the pike cichlid (*Crenicichla alta*). To test if there is any correlation between the kinematics exhibited during male guppy displays and during escapes from the predator, high-speed video was used to measure the absolute angle held by the male and the change in this angle while displaying, and the linear speed and approach distance during predator escapes. I predict that the kinematics of mating displays are correlated with those in escapes and therefore displays provide information about the fitness of male guppies.

**Kate R. Meltzer**

*Advisor:* William G. Ambrose, Jr.

### **Interannual Growth Rate Variation in the Soft-shelled Clam, *Mya Arenaria*, and Its Relation to Interannual Temperature Differences and Habitat at Maquoit Bay, Maine**

Internal annual growth bands in the soft-shelled clam, *Mya arenaria*, were studied to determine age and growth rates of individuals collected in the Northeast and Northwest sides of Maquoit Bay, Maine. An annual index of growth was developed for years 1991 to 2001, accounting for age differences in growth rates using the von Bertalanffy equation. Interannual variations in growth were then related to interannual differences in temperature (air and water) and habitat (seagrass versus mudflat). Average lengths of two- and three-year old clams at Maquoit Bay were 38%-60% longer than two- and three-year old clams from six sites in a 1980 Maine study. *Mya* typically exhibits slow growth during winter, however the large size of young clams in recent years may be the result of milder winters that allowed for faster growth. Therefore, I expect to find a strong positive correlation between warmer winter water temperatures and faster clam growth. Seagrass in Maquoit Bay (45% cover, shoot biomass= 7.8g, SD= 2.9g; root biomass= 3.8g, SD= 2.3g; and canopy height= 31.4cm, SD= 4.9cm) decreases water flow by 50% which may reduce food delivery. Therefore, I expect that clams outside the seagrass bed will have a faster growth rate those inside the bed.

**Micah T. Webster**

*Advisor:* Joseph G. Pelliccia

### **The Effect of Mut-2 on Recombination in *Caenorhabditis elegans***

The recently isolated mut-2 gene in the nematode worm *Caenorhabditis elegans* has been shown to play a role in germ line integrity. Mut-2 mutators (worms with a genetic mutation at mut-2) exhibit several phenotypic variations including 1) transposition of transposable elements, 2) an increase in percentage of male progeny, 3) temperature sterility at 27°C, and 4) resistance to interference RNA. This study utilizes the abundance of Tc1 transposable elements in the Bergerac (BO) strain to study mut-2's role in recombination. In conjunction with Polymerase Chain Reaction (PCR) procedures, Tc1 elements function as Sequence Tagged Sites (STS), which make it possible to determine rates of recombination at three genetic loci. Preliminary results suggest an increase rate of germ line recombination for mut-2 mutators.

## CHEMISTRY

**Kristin J. Smith**

*Advisor:* Thomas J. Wenzel

### **Chiral Calixarenes and Their Lanthanide Couples as Chiral NMR Shift Reagents**

Calixarenes constitute a family of molecules that may act as hosts to a broad range of guest molecules. Chiral derivatives may be prepared through attachment of optically pure substituent groups to the rim of the calixarene cavity. The ester protected amino acids alanine, valine, leucine, and proline were coupled to p-tert-butylcalix[4]arene-O,O',O'',O'''-tetraacetic acid. The resulting ester and acid derivatives were evaluated as chiral solvating agents in proton nuclear magnetic resonance spectroscopy. Several of the derivatives were successful at causing enantiomeric discrimination in the NMR spectrum of the dinitrobenzoyl derivative of 1-(1-naphthyl) ethylamine. Results with other substrates are also reported. Efforts to couple lanthanide ions to these systems to enhance the enantiomeric discrimination in the NMR spectrum is described.

## ECONOMICS

**Van V. Brantner**

*Advisor:* James W. Hughes

### **Large-Scale Migration and the Gender Earning Gap in China's Urban Labor Market**

Involving the transfer of tens of millions of people from the rural villages and farms to the major metropolitan areas, China's large-scale migration is one of the most remarkable social and economic developments in Asia today. While labor mobility and substantial reductions of government control over the labor market have clearly created better economic opportunities for some rural migrants, it is suspected of also fostering the reemergence of the old Confucian customs and traditions subordinating women. This thesis investigates the relationship between large-scale migration and gender pay inequality in urban China by utilizing two large-size surveys covering Shanghai and eleven other provinces for the year 1995. Using descriptive statistics, earnings equations, and several earnings decomposition methods, this study compares migrant women to their urban counterparts in a number of areas such as labor market treatment, social status, and personal freedoms. It also covers the spatial and temporal dimensions of rural to urban migration, the determinants to migration, the characteristics of Chinese migrant workers, and the impact of migration on their earnings.



**Ngan V. Dinh**

*Advisor:* James W. Hughes

**Migrant Workers in Chinese Urban Enterprises – Twenty Years after Reforms**

This thesis provides an analysis of the wage gap between rural migrant and urban workers, and the employment of migrants in Chinese enterprises after the economic reform in 1978. A survey of 1,450 rural migrant and 1,859 urban workers in 118 enterprises from 6 cities in China is analyzed, using individual earning functions and enterprise-level production functions. I use the Oaxaca method to decompose the average wage gap between urban and migrant workers into differences in observable productivity characteristics, and differences due to unobservable variables that cannot be explained. It is found that rural migrants earn less than urban workers, and up to 51% of the wage gap between the two groups is unexplained, or generally attributable to discrimination. I also apply the Cobb-Douglas production function to test the hypothesis that urban enterprises in China are constrained in their employment decisions. Empirical findings of this paper support my hypothesis that the employment of labor in Chinese enterprises is economically sub-optimal, in that the marginal product of migrant workers exceeds their wage, whereas that of urban workers is below their wage.

**ENGLISH**

**Charis F. Campbell**

*Advisor:* Carole A. Taylor

**The Dystopian Worlds of Margaret Atwood: Narrative Strategies in *The Handmaid's Tale* and *The Robber Bride***

In this thesis I examine how Margaret Atwood's artistic genius constructs two very different but related dystopian worlds in *The Handmaid's Tale* (1985) and *The Robber Bride* (1993). I analyze the narrative strategies in both novels in order to understand how narrative voices, characterization, and structure function in the context of dystopian fictional worlds. Atwood's approach in both novels relies on complex and often self-referential allusions to both literary genres and historical reality. The politically informed satire of *The Handmaid's Tale* utilizes an imaginary world on the model of the satire in *Brave New World* and *1984*. *The Robber Bride* reads more like a romance thriller, yet it too provides a satiric critique of dominant and especially popular culture. Finally, I utilize my readings of these two fictional worlds to address issues raised by feminist critics of Atwood.

**Lawrence L. Copenhaver**

*Advisor:* Carole A. Taylor

**Listening to Sands That Shift, Watching Winds That Style: The Poetry and Poetics of Alice Fulton's *Sensual Math***

With the subtle and circular cohesiveness of *Sensual Math*, Alice Fulton explores the way an abstract poetic language might represent an embodied and conceptual sensuality. The structure of this book encourages a collective and comprehensive interpretation of the individual poems comprising it. Indeed, Fulton implicates the arrangement itself as significant by choosing language that recalls and possibly changes certain figures from different poetic sequences. Such lyric discursiveness substantiates for some of the collection's seemingly disparate frames of reference and their evolving contexts. To complicate the inter-textual dependency of its poems, *Sensual Math* contains moments of abstract and specific self-reflexivity. Though the poet assumes a common literary endeavor by describing writing and its related processes, her uniqueness lies in shaping a theory about the indeterminacy of language, both mathematical and poetic, into a form that simultaneously exemplifies and is about the expressive potential of poetry. This thesis places Fulton in the context of other women writers who have written sensuality by examining how interrelated poems further her central comparison between literary and mathematical ways of meaning, as she juxtaposes language from modes often regarded as categorically, mutually exclusive. Analytical consideration of the poetry and poetics of *Sensual Math* reveals the relationship between the processes of translating proofs, quantifying the physical world, conceptualizing infinity, and the creative act of poetry-making as well as the sensuous pleasure of reading it.

**Meredith A. Gethin-Jones**

*Advisor:* Carole A. Taylor

**Narration, Gender, and the Artful Paradoxes of Jamesian Morality**

Through an analysis of two Henry James novels, I argue that the implied author behind multiple narrative voices gradually reveals the ambiguously gendered nature of morality. Narration that is sometimes authoritative and sometimes limited, together with focalized direct and indirect discourse, produces textual values that comprise the moral character for an imperfect Jamesian universe. These voices deliberately and meticulously convey the realities of nineteenth-century gender roles, and in doing so, challenge power relations among women and men. James's many narrative voices involve the artful, paradoxical social locations of male and female, European and American. In the European setting of *The Portrait of a Lady* and the American setting of *The Bostonians*, James's narrative art examines the social processes that (en)gender the interrelated constructions of a European immorality and an American morality.

## **GEOLOGY**

**Laura N. Allen**

*Advisor:* John W. Creasy

### **Trichloroethylene Remediation by Cyclodextrin from Soil**

Cyclodextrin is a complexing agent that enhances the solubility of chlorinated solvents such as trichloroethylene (TCE). This property of cyclodextrin gives it great potential for use in groundwater remediation. A field test of TCE removal using a cyclodextrin solution under unconstrained aquifer conditions is being planned at a contaminated site in Virginia Beach, Virginia. This thesis describes laboratory-scale experiments of cyclodextrin flushing of TCE using soils from the Virginia Beach site. TCE was injected into the soil sample, at 15% saturation of the total pore volume, and then flushed with a 10% solution of cyclodextrin. Results indicate that cyclodextrin enhances the solubility of TCE by a factor of 7 when compared to flushing with water alone. Mobilization of pure TCE was observed in the first few pore volumes of flushing in the several experiments. The fine sediment fraction in the soil samples was also mobilized. Anomalous tailing of the concentration of TCE in column effluent was also observed due to the presence of fine-grained sediments in the soils. These results indicate that cyclodextrin is an effective complexing agent for TCE and has the potential to mobilize TCE and fine-grained sediments.

**Polly M. Carter**

*Advisor:* Michael J. Retelle

### **Late Holocene Paleoenvironmental Reconstruction from Laminated Sediments, Danielle Point Lake, Bathurst Island, Nunavut, Canada**

Marine and lacustrine sediments retrieved from high arctic lakes and marine inlets provide detailed paleoclimate records in a region predicted to undergo dramatic environmental change in the near future. In addition, the sediment records can be used to determine the postglacial evolution of the basins. Six sediment cores were recovered from Danielle Point Lake, Bathurst Island, Nunavut, Canada (75° 26'N; 98°W), a sea-level basin with an area of approximately 2.4km<sup>2</sup>. Optimal depositional conditions in this 33m deep basin, moderate sediment flux, and anoxic bottom waters favor preservation of finely laminated sediments. The sediment cores contain finely laminated sediments to approximately 41cm down core, recording deposition and variation in climate with an annual resolution for the past 2000 years. Laboratory analyses of the sediments include measurements of magnetic susceptibility, loss-on-ignition, grain size, carbon to nitrogen ratios and Carbon 14 age determination. Petrographic thin sections are prepared for analysis of lamination thickness and composition to determine seasonal to annual variability in sediment flux within the basin.

**Matthew E. Dupee**

*Advisor: J. Dykstra Eusden, Jr.*

### **A Stratigraphic, Structural, and Kinematic Analysis of the Ordovician Ammonoosuc Volcanics, Northern Presidential Range, New Hampshire**

The bedrock geology of the northern Presidential Range, New Hampshire, was mapped during the summer of 2001 with funding provided by the U.S. Geological Survey's EDMAP Program. This study is a continuation of an ongoing project to map the bedrock geology of the entire Presidential Range. A detailed bedrock geological map of the Ordovician Ammonoosuc Volcanics present on the northern flank of Mount Adams was created. The volcanics were subdivided into seventeen different members all with distinct compositional relationships. Contained in two different layers were mylonitic shear zones exhibiting ductile deformation. A kinematic and vorticity analysis of the shear zones suggests that motion was hanging wall up along a north-west directed reverse faults. The timing of this faulting event is constrained between the Early Devonian and Late Devonian time periods, during the Acadian Orogeny, approximately 355 to 390 million years ago. This result and surrounding stratigraphy suggests that the study area may be the root zone for the thrust fault that emplaced the Piermont Allochthon.

**Christopher L. Mabbett**

*Advisor: Gene A. Clough*

### **Trichloroethylene Contamination in a Shallow Unconfined Aquifer System: Is Natural Attenuation Working?**

Trichloroethylene (TCE) is one of this nation's most ubiquitous groundwater contaminants. This thesis examines the fate and transport of TCE in a shallow, heterogeneous unconfined aquifer system located in northeastern Massachusetts. The migration of TCE is of great concern in this area because there are two water bodies located within one-half mile of the site and residences within thirty feet of the site. The migration and biodegradation of TCE and its daughter products, cis-1,2-dichloroethylene (cis-1,2-DCE), vinyl chloride (VC), and ethylene (ETH), were observed through examining contaminant concentration contour maps created from eleven years of site data. These maps indicate that the contaminant plume is migrating in a northwestern direction towards one of the water bodies. It can also be seen that TCE is degrading into its daughter products throughout the site. However, it is hard to determine whether vinyl chloride continues to degrade into ethylene, which is a harmless end product. Further studies must be done at the site to determine what factors are contributing to TCE degradation and what other actions, if any, are needed to aid in the natural attenuation process and to fully remediate the site to the Massachusetts Department of Environmental Protection (MADEP) groundwater standards.

**John J. Minor**

*Advisor:* J. Dykstra Eusden, Jr.

### **P-T Paths for Acadian Migmatites of the Presidential Range, New Hampshire**

The purpose of this study is to come to a greater understanding of the migmatites of the Rangeley and Littleton Formations. Field research conducted during the summer of 2001 indicates that a premetamorphic fault or slumping event removed the rock units that typically separate the Silurian Rangeley Formation from the Devonian Littleton Formation. Lithological relationships between units were found to closely correspond to what previous researchers have described. The migmatites probably represent both a fertile source region for adjacent plutons, as well as conduits through which magma flowed as a result of compressive stress during orogeny. Electron microprobe data, when calculated using the program Geothermobarometry 2.0, suggest that the migmatites underwent metamorphism at pressures and temperatures of approximately 425 °C and between 1 and 3 kbar, far below values at which rocks are generally understood to melt. Back-reactions probably account for this phenomenon, because many of the minerals in thin section demonstrate alteration and resorption, and because chlorite, apatite, and andalusite are observed to overprint the older minerals. Retrograde metamorphism may also account for the fact that the peak P-T calculated is far below expected values.

**Casey P. Saenger**

*Advisor:* Michael J. Retelle

### **Holocene Basin Evolution and Paleoclimate Reconstruction from Laminated Sediments, Cape Hurd Lake, Devon Island, Nunavut, Canada**

The possibility of significant anthropogenic climate change in the last century has raised a need to fully understand how humans affect climate. Using annually laminated lake sediments, or varves, high-resolution records of climate change through the Holocene epoch are available. Three sediment cores were recovered from the meromictic Cape Hurd Lake, southwestern Devon Island, Canada (74°33'35.5"N, 89°36'50"W) in June 2001. Cape Hurd Lake is a restricted marine inlet with anoxic, hypersaline bottom waters reaching a maximum depth of 55m, and is fed primarily by snowmelt and runoff from the Devon Ice Cap. Lab analyses of sediment cores include investigations of loss-on-ignition, magnetic susceptibility, paleomagnetism, grain size, lipid biomarkers, C/N ratios, and <sup>14</sup>C dating. Initial results from these analyses show significant variation through the Holocene epoch, indicating probable changes in basin structure and climate. The primary cause of these changes is likely isostatic uplift following glacial retreat that transformed Cape Hurd Lake from an open, circulating basin, to a restricted, meromictic lake. Further correlation and analysis of sedimentary structures, climatic indicators, and known climatic events will better constrain basin evolution and create a higher resolution image of paleoclimate fluctuation.

**Bethany R. Thienel**

Advisor: Beverly J. Johnson

### **Potential Remediation of Copper and Zinc by Sorption on Aspen Wood Wool**

The interest in innovative methods for removing heavy metals from contaminated groundwater has been increasing as industrial pollution continues to be a global problem. Potential sources of heavy metal pollution include industries in developing countries that operate under less stringent environmental standards, as well as power plants and chemical companies throughout the world. Plant materials such as cornhusks, peat, and hazelnut shells have been found to remove heavy metals from polluted wastewater. In this study, aspen wood fibers are being proposed as a sustainable and low-cost remediation alternative for removing metals from polluted waters. The environmentally relevant metals copper and zinc have been selected as test cases for evaluating the effectiveness of the wood fibers. Aqueous solutions of these metals have been used to investigate the rate and amount of metal sorption onto aspen wood wool under dynamic (column experiments) and no-flow (batch experiments) conditions. Preliminary results indicate an equilibrium time of around 24 hours for the aspen wood wool to reach maximum copper and zinc sorption under column experimental conditions. Adsorption of the metals in solution to functional groups on the wood is most likely the reaction mechanism.

## **GERMAN**

**Holli M. Cavender**

Advisor: Gerda Neu-Sokol

### **The Evolution of the Female Voice in the Novels of Christa Wolf**

From the Trojan War to the Berlin Wall, this thesis explores the primary female figures in three of Christa Wolf's novels, *Divided Heaven*, *Quest for Christa T.*, and *Cassandra*, who display similar characteristics in formulating strategies for survival within societies to which they must conform or suffer the consequences. An alternative perspective to the dominant societal order, as expressed through the female voice, emerges in these novels. This perspective challenges the relationship between patriarchal language, values, and governmental systems which have, in the past, tended to silence female subjectivity. Incorporating tenets of Marxism and the Blochian philosophical ideals of a concrete utopia and humanism (*der aufrechte Gang*), Wolf's novels also transcend the focus on gender to encompass a more optimistic, universal view of the individual working toward the betterment of his/her society. This thesis delves into the archeology of the female perspective that not only represents a contrast to the prevailing patriarchal structure of western societies, but which, when articulated, also allows the main character to achieve her goal of human self-realization ("*Zu-sich-selber-Kommen des Menschen*").

## HISTORY

**William C. Brucher**

*Advisor:* Hilmar L. Jensen, III

### **Manufacturing History: The Rise and Fall of the Textile Industry in Lewiston, Maine**

For much of the nineteenth and twentieth centuries, Lewiston was known as Maine's "Spindle City" because of its active textile manufacturing industry. The city boasted several cotton, synthetic, and woolen textile mills that together employed over 8,000 workers. Since the 1950s, however, the textile industry has all but disappeared completely, gutting Lewiston of the socioeconomic infrastructure around which the city was built. The goal of this thesis is to not only present a historical narrative of the growth and subsequent decline of the textile industry, but to show how this growth and decline shaped the city, its residents, and most notably, the industry's workforce. Particular attention is given to the questions of how and why deindustrialization occurred and how the city and its industrial workers have coped with the problem. The source materials for this thesis are archival records related to the Lewiston mills and the industry elsewhere in New England, the variety of secondary sources written about different aspects of the city's history and people, histories of industrial growth and decline in other American communities, and oral history interviews with area residents who have been connected to the textile manufacturing industry.

**Eric G. Kaviar**

*Advisors:* Elizabeth H. Tobin and Francesco G. Duina

### **Propaganda, Women, and Vichy**

This thesis examines the way in which the propaganda of Vichy attempted to change feminine identity. The propaganda of Vichy utilized an inherited system of knowledge that rendered women different and "naturally" subordinate to men. Vichy propaganda introduced an urgent sense of national duty for women to get married and produce children. The first chapter reviews literature on propaganda and then introduces my model of propaganda. My model uses a postmodern semiotic analysis of difference and meaning. The second chapter establishes the nineteenth-century sources for the "proofs" and meanings of sexual difference that would later be used during Vichy to justify its social hierarchy. The third chapter analyzes the context of interwar France and Vichy through the way in which the issues of abortion, depopulation, female agency, and the sexual division of labor(s) move from the Third Republic into the French State. The final chapter submerges my model of propaganda into the context of Vichy and analyzes poster propaganda which sought to redefine the female image with an identity of "honorable," obligatory motherhood.

**Maria E. Sparks**

*Advisor:* James S. Leamon

**Jonathan Mayhew, Puritan Radical: The Evolution of Religious Opposition to British Authority, 1750-1766**

In 1763, just as Britain had defeated its traditional enemies in the Seven Years' War and stood at the height of its glory for unparalleled successes, a quarrel of long-term significance erupted in Massachusetts Bay. American pride in Britain's empire was beginning to change to fear of its power, as two religious leaders argued the legitimacy of the Church of England in Puritan New England, culminating with the threatening rumors of an Anglican bishopric in Cambridge. Jonathan Mayhew, a liberal Puritan minister, criticized the imperial nature and Catholic structure of the Anglican Church, stressing the importance of an autonomous congregation. East Apthorp, minister for the Society for the Propagation of the Gospel, the Anglican missionary group in America, defended his institution's mission and dismissed Mayhew's accusations. The debate exposed deeply-rooted antagonism between New England Puritanism and Anglicanism. This early opposition to a British institution preceded and eventually merged with the secular arguments over taxes that arose the next year. What began as a conspiracy against America's religious traditions turned into a conspiracy against American liberties in general, and the coveted City on a Hill mantra that defined their superior religious community evolved into the concept of a Nation on a Hill.

**Volkan Y. Stodolsky**

*Advisor:* Dennis Grafflin

**The Other Children of the Son of Heaven: A Short History of the Muslim Chinese until the End of the Great Rebellions of the Nineteenth Century**

Although Islam originated in the Near East, the numerical heartland of Muslims is Asia. In continental Asia, Chinese Islam represents the farthest extent of Muslim civilization. Contact between China and Muslims occurred only two decades after the Prophet's death if not earlier; Muslims started settling in China during the T'ang dynasty (618-907). However, the first extant work on Islam written in Chinese by a Chinese Muslim—Wang Tai-yu (c.1590-c.1657)—dates from the seventeenth century. The aim of this thesis is to explicate Wang's treatise, *Great Learning of the Pure and Real*, in the context of the history of Muslims in China, and to place Islam in China in the frame of Muslim civilization in world history. The first chapter analyzes the emergence of Islam and the factors that engendered the astonishing expansion of the Muslim empire. The second chapter gives a general overview of the history of Muslims in China until the end of the nineteenth century and compares the progress and retardation of Islam and Christianity in the Middle Kingdom. The last chapter is devoted to the interpretation of Wang's treatise.



## INTERDISCIPLINARY STUDIES

**Jaime M. Berrian**

*Advisor:* Kevin K. Kumashiro

### **Complicating Theory: The Re-evaluation of Critical Pedagogy Through the Lens of a High School Classroom**

In general, critical pedagogy, within the context of education, works to critically engage both teacher and student in the re-evaluation of knowledge being circulated throughout the classroom in an attempt to disrupt traditional student/teacher power structures. This thesis works to complicate the theoretical grounds of critical pedagogy by practically applying three aspects of this practice in a self-constructed curriculum unit. The unit is taught in two Multicultural Literature courses composed of high school seniors, and focuses on the positive and negative ways stereotypes influence individuals in both a social and educational context. I attempt to complicate critical pedagogy by asking, "How does the practical application of this 'liberating' process create and perpetuate certain forms of student resistance?" and "What, if anything, can educators do to minimize the amount of resistance apparent in the classroom?" Throughout this thesis my curriculum unit is detailed and student response to my critical teaching methodology is both recorded and analyzed.

**Erin E. Wells**

*Advisor:* Michael E. Jones

### **The Conversion of Ireland to Christianity**

St Patrick, the Druids, and banishing the snakes are the symbols most identified with the conversion of Ireland to Christianity. However, these popular symbols say very little about the actual historical experience and process of the Irish conversion. The mission to the Irish was the first effort of the Catholic Church to attempt to bring Christianity beyond the boundaries of the Roman Empire. Christianity was required to adjust and adapt to a new environment, taking on structures unknown elsewhere in the Christian world and incorporating traditions from the pagan culture that came before. This thesis attempts first to understand how Christianity changed under the influence of Irish culture and what of Irish paganism survived the conversion. Then it considers how the Irish case compares to the other conversions of the period. During the fifth through the seventh centuries, the Catholic Church commenced the conversion of several cultures including the Irish, the Franks, and the Anglo-Saxons. An examination of the particular Irish conversion and its processes may offer the opportunity to understand how native religious traditions persisted after the introduction of Christianity elsewhere and how Christianity was forced to grow and change with each new people it encountered.

**Sarah B. Williamson**

*Advisor:* Loring M. Danforth

**Spirit Possession and Music: Clinical Realities in a Senegalese Religious Healing Ceremony**

This thesis adopts an interpretative anthropological approach to the Ndeup healing ceremony of the Lebou people in Senegal. I analyze the main aspects of the Ndeup ceremony: concepts of religious healing, illness, health care systems, spirit possession, trance, and musical performance. In Chapter One, I describe a semiotic concept of culture and examine why the meanings of cultural symbols are significant. I assert that health care systems are culturally constructed systems in which a culture creates its own clinical realities. Finally, I explore the complexities of doing interpretive analysis. In Chapter Two, I present the ethnographic data I collected while doing fieldwork in Senegal. The final three chapters synthesize theory and ethnography in order to demonstrate the importance of trance, spirit possession, and music as healing powers that constitute clinical reality for the Lebou people.

**MATHEMATICS**

**Sameer R. Maskey**

*Advisors:* John A. Rhodes and Mark D. Semon

**Building Text-To-Speech Synthesizer and Automatic Speech Recognizer For Nepali Language**

This thesis presents the algorithms, programs, and theories used to develop the first text-to-speech synthesizer and an Automatic Speech Recognizer for the Nepali language. It also presents a speech-to-speech translator from Nepali to English and English to Nepali. Finally, the thesis describes a new method for creating a phonetic lexicon that allows new lexicons to be created in a few weeks rather than the usual time period of a few years. The programming languages used in these projects were C++, C, Scheme, and Perl.

## MUSIC

**Ananth M. Anthes**

*Advisor:* William R. Matthews

### **Synergy: A Compilation of Acoustic Percussion and Computer Music Pieces**

This thesis involves the composition and performance of several pieces of music. The program includes both acoustic and computer/electronic music. Several compositions are played over loudspeakers, while others feature loudspeakers in addition to my live performance. Another piece was written for a xylophone and controller with piano accompaniment on a Yamaha Disklavier. The final piece employs multiple percussionists in the performance of a percussion ensemble piece. This mainly includes acoustic percussion instruments with one electronic controller. Both the xylophone and the percussion ensemble piece include formal notations written out with parts and a score. The others are recorded to compact disc (CD) and also saved as files to computer disks.

**Simon J. Hutchinson**

*Advisor:* William R. Matthews

### **Neo-Traditionalist Jazz Composition**

This project is a collection of original modern jazz compositions written over the course of this academic year. These compositions entail a variety of jazz styles, ranging from 1930s swing to more modern fusion. The pieces in this project display the use of the musical techniques of counterpoint, jazz harmony, and jazz arrangement. This project hopes to demonstrate an integration of musical ideas from the past in a twenty-first-century setting. The Bates Jazz Ensemble and other Bates musicians perform the compositions on the 23rd of March at 3:00 PM in the Olin Concert Hall.

## NEUROSCIENCE

**Cristina A. Cellurale**

*Advisor:* Nancy W. Kleckner

### **The Role of Calcium in Kainate-Induced Toxicity of Cultured Rat Fetal Forebrain Neurons**

Excitotoxicity, the overexcitation of neurons by high levels of extracellular glutamate, is thought to be responsible for the cell death that occurs in neurodegenerative diseases and stroke. The initial insult to neurons at the focus causes these cells to rupture, releasing their entire cellular contents. Overstimulation of the nearby neurons via excessive activation of glutamate receptors results in increased calcium within the neuron and the initiation of degradative enzymatic processes that ultimately lead to cell death. This study explores the role of calcium in kainate-induced neuronal cell death. Kainate is a compound that mimics glutamate at specific glutamate receptors, termed AMPA/kainate receptors. Exposure of rat cortical neurons in primary culture to kainate resulted in cell death. Exposure to kainate in conjunction with either a blocker of calcium entry or blockers of internal calcium release resulted in protection or the promotion of death, respectively. Therefore calcium, when it is released from internal stores, appears to exert a protective effect on neurons exposed to kainate. This study supports the hypothesis that increases in intracellular calcium might exert different roles depending on the mode of entry or release.

## PHILOSOPHY

**Charles M. Comey**

*Advisor:* David Kolb

### **The Secret Language of *Walden***

This thesis is constructed as a series of meditations that attempt to interpret Thoreau's *Walden*. First it establishes, to some degree, the layeredness of the language of *Walden*, and finds within those layers a vein of coherency that is also implied by the fact of the layers themselves: a response to what the author of *Walden* sees as the inability of his neighbors to accept the individual as a source of meaning. This problem is distinguished from the strictly philosophical problem of establishing first principles, and furthermore distinguished from our modern fascination with an avoidance of meaninglessness. The problem is specifically one of licensing the individual to be a creator of meaning, one in which the neighbors of *Walden* are admitting of altogether too little meaning in their lives. As Thoreau puts it, "Men esteem truth remote, in the outskirts of the system, behind the farthest star,"

but *Walden* would present to us the truth and meaning that lies all around us in the simplest and nearest of things, in our lives and in ourselves.

**Whitman L. Holt**

*Advisors:* David R. Cummiskey and Mark A. Kessler

**Ronald Dworkin's Theory of Law as Integrity and Critical Legal Theory: An Analysis of the Resilience of a Liberal Philosophy of Law Against the Claims of a More Radical Jurisprudence**

Recent times have been characterized by an intense intellectual attack on the promises of liberalism and "Western thinking." Critics have attacked traditional liberal theory from a variety of perspectives: race-based, feminist, Marxist/class-based, and communitarian. A significant component of this general attack on liberalism is an indictment of the American legal system and of the desirability of liberalism's "rule-of-law." Legal scholars who are members of the Critical Legal Studies (CLS) and Critical Race Theory (CRT) movements can be collectively viewed as positing a critical legal theory—a jurisprudence that portrays the law as a site of power where elites maintain their illegitimate social and economic power through the manipulation of an indeterminate mass of contradictory principles. Despite the force of the critics' charges, several political theorists have begun the difficult task of rebuilding liberalism in the face of significant opposition. This thesis strives to play a key role in that reconstructive movement by demonstrating that at least one "liberal" philosophy of law, Ronald Dworkin's theory of law as integrity, contains intellectual tools that can provide sufficient responses to the main concerns of those legal thinkers who support critical legal theory.

**Christian W. McTighe**

*Advisor:* David Kolb

**From Finite Substance to Infinite Existence: Aristotle's First Mover and Aquinas' Concept of God**

In the fourth century B.C., Aristotle arrived at the conclusion that there necessarily exists an immaterial, eternal being who is the source of motion in the world, which he called the First Unmoved Mover. In the Middle Ages, when his writings entered Europe, various philosophers interpreted the First Mover as the God of revealed religion and some even incorporated Aristotle's philosophical ideas into theology. Despite widespread suspicion of and even opposition towards pagan Greek philosophy in the Christian Church, Thomas Aquinas produced a synthesis between Aristotle's thought and Christian theology. Using Aristotelian concepts and methods of reasoning, Aquinas developed a conception of God based on Aristotle's First Mover in addition to a new metaphysical understanding of the world. I argue that Aquinas created a highly original and wholly new concept of God that is closely tied into his systematic metaphysical view of the universe which, although based on Aristotle's philosophy, expresses deeply creative thinking that surpasses that of his Greek predecessor and of earlier Christian theologians.

## PHYSICS

**Sameer R. Maskey**

*Advisors:* Mark D. Semon and John A. Rhodes

### **Building Text-To-Speech Synthesizer and Automatic Speech Recognizer For Nepali Language**

This thesis presents the algorithms, programs, and theories used to develop the first text-to-speech synthesizer and an Automatic Speech Recognizer for the Nepali language. It also presents a speech-to-speech translator from Nepali to English and English to Nepali. Finally, the thesis describes a new method for creating a phonetic lexicon that allows new lexicons to be created in a few weeks rather than the usual time period of a few years. The programming languages used in these projects were C++, C, Scheme, and Perl.

**Endri Trajani**

*Advisor:* Hong Lin

### **Effect of Spatially Filtered Optical Feedback on a Unidirectional Photorefractive Ring Resonator**

The oscillating beam in a unidirectional photorefractive ring resonator (UPR) can exhibit complicated spatiotemporal behavior in the transverse profile. The interaction between light (resonating beam) and the photorefractive intracavity medium is the source of the inherent pattern formation and alternation. The UPR oscillating at specific parameters (aperture size and pump power) is capable of sustaining stable output beam patterns over long time spans. For example, coexistence of Gauss-Hermite modes is observed to be such a state the resonator can support. Periodical alternations between modes having different beam patterns are also observed. By using phase sensitive spatially filtered optical feedback, I attempted to control the dynamics of the UPR. I observed that optical feedback can affect the frequency of the periodical alternations by slowing or speeding the competition between the oscillating modes. For coexisting Gauss-Hermit modes, spatially filtered optical feedback added to the resonator can enhance one oscillating mode and suppress the other. This depends on the relative phase between the oscillating beam and the filtered feedback signal. At large aperture size and/or high pump power, we have not been able to affect the predominantly excited pattern via spatially filtered feedback.

## POLITICAL SCIENCE

**Radu Costinescu**

*Advisor:* Mark A. Kessler

### **Can Right-of-Center Public Interest Law Effect Positive Social Change?**

This study examines the potential contribution of right-of-center public interest law to socio-economic change in the United States. Since the 1950s, legal action has often been used to bring about controversial policy changes. Public interest groups, which provide free legal representation, have played a major role in this process. However, the degree to which changes in the law can be translated into tangible, positive social change is a topic of intense debate. This debate has focused primarily on left-wing public interest law firms, despite the rising popularity of their right-of-center counterparts. Furthermore, the search for an objective standard by which to measure social change continues. This project seeks to advance the debate on law and social change by concentrating on the activity of the Institute for Justice (IJ), a libertarian public interest law firm based in Washington, DC. Three cases in which IJ successfully fought economic regulation are analyzed insofar as they affected economic welfare, including prices, output, and employment, in the relevant markets. Economic welfare effects are used to ascertain and measure social change and thus assess the viability of right-of-center public interest law as an instrument for such change.

**Whitman L. Holt**

*Advisors:* Mark A. Kessler and David R. Cummiskey

### **Ronald Dworkin's Theory of Law as Integrity and Critical Legal Theory: An Analysis of the Resilience of a Liberal Philosophy of Law Against the Claims of a More Radical Jurisprudence**

Recent times have been characterized by an intense intellectual attack on the promises of liberalism and "Western thinking." Critics have attacked traditional liberal theory from a variety of perspectives: race-based, feminist, Marxist/class-based, and communitarian. A significant component of this general attack on liberalism is an indictment of the American legal system and of the desirability of liberalism's "rule-of-law." Legal scholars who are members of the Critical Legal Studies (CLS) and Critical Race Theory (CRT) movements can be collectively viewed as positing a critical legal theory—a jurisprudence that portrays the law as a site of power where elites maintain their illegitimate social and economic power through the manipulation of an indeterminate mass of contradictory principles. Despite the force of the critics' charges, several political theorists have begun the difficult task of rebuilding liberalism in the face of significant opposition. This thesis strives to play a key role in that reconstructive movement by demonstrating that at least one "liberal" philosophy of law, Ronald Dworkin's theory of law as integrity, contains intellectual tools that can provide sufficient responses to the main concerns of those legal thinkers who support critical legal theory.

**Jason M. Surdukowski**

*Advisor:* Mark A. Kessler

### **The Nuremberg Trial, Postwar American Silence on the Holocaust, and Some Policy Implications of the Power of Law on the Reality of Genocide**

The legal construction of the Holocaust through the Nuremberg Trial and the impact this had on American life in the crucial immediate post-war years is examined. Law, in combination with other interconnected and overlapping discourses, acted as a silencer of an extreme, loss-filled event of profound importance. Legal elements of the Nuremberg experience eclipsed the narratives of Holocaust loss that were present in the Bavarian courtroom in media coverage and elite reflection. The American public was subsequently enraptured by legalism and not loss. This trend combined with the intersection of other ideological strands contributed to the famous American silence towards the Holocaust in the immediate post-war period. The power of the dominant discourse of law to affect social reality is found to have another outlet in the sphere of law and genocide. If law is a disembodied force that can effectively cause a cognitive divorce between the realities of horrifying and overwhelming loss and the consciousness of American elites, there are dire consequences. Troubling political and policy-issues are raised when considerations of law trump concerns for loss, as demonstrated by legal (in)actions of American elites with regard to ex-Yugoslavia and Rwanda.

## **PSYCHOLOGY**

**Rachel S. Beckhardt**

*Advisors:* Kathryn G. Low and Rebecca M. Herzig

### **Diagnosing a Culture: Women's Words on the Meanings of Food**

Food not only sustains and nourishes physical bodies, but also involves interacting social, cultural, and symbolic meanings. While psychology research devotes extensive attention to eating disorders and obesity, researchers too often focus on psychopathology arising from consumption's physical effects. This emphasis on consumption ignores many other sources of possible conflict between women and food. Women have an intimate relationship with food, not only through consumption, but also through other social roles as food producer, provisioner, procurer, and preparer. Utilizing gender as a lens of analysis, this thesis uses women's words regarding their relationships with food to illuminate the meanings and roles of food for a diverse group of women in an urban Maine setting. Results confirmed that social norms, ideals, and expectations inform and shape women's daily relationships with food. These social messages are often contradictory, creating conflict related to food that is not pathological or abnormal, but standard and normative in American women. Further discussion explores why, if ambivalence related to food is normal for women, diagnosis and treatment addresses individuals, rather than a pathological culture.



**Carissa A. Gottlieb**

*Advisor:* Cheryl M. McCormick

### **Mechanisms of Androgen Action in Spatial Navigation Task Performance in Male Rats**

The effect of sex hormones on cognitive performance may depend on the nature of the memory test. For example, estrogen tends to improve general memory but impair spatial mapping. Also, factors such as motivation, sensory sensitivity, and stress may be influenced by sex hormones, in turn altering performance on memory tasks. This study examined the components of performance of male rats in the Morris Water Maze (MWM), a standard test for spatial memory in rats. Gonadectomized rats were given either estradiol (E), dihydrotestosterone (DHT, a testosterone derivative that cannot be metabolized into estrogen), or vehicle (VEH) and tested under the following conditions: (1) a MWM task that involved neither memory nor spatial mapping to determine if sex hormones affect other performance-related factors; (2) a spatial mapping version of the test that did not have a memory component; (3) a test of their memory for spatial mapping after they learned the task. Preliminary results indicate no effect of sex hormones on memory or on performance-related factors. However, DHT animals performed markedly better than both E and VEH groups on the spatial mapping task. Subsequent experiments examined the aspects of the spatial mapping task that were sensitive to DHT as well as the physiological mechanisms of DHT's actions.

**Lisa C. Lucia**

*Advisor:* Cheryl M. McCormick

### **Routes to Recognition: Hemisphere Bias and Holistic/Featural Processing of Faces, Words, and Objects**

Evidence from patients with various agnosias (disorders of the visual system) leads us to believe that the brain has two distinct recognition systems. It is suspected that faces are processed by using a more holistic method (seen as whole images or as joint configurations of facial components) and that objects may involve a more feature-based (detail oriented) method. The right hemisphere of the brain is more involved in holistic processing and the left hemisphere in feature analysis. This thesis tests whether the right hemisphere advantage in face recognition is lost when a person is forced to focus on features and cannot utilize a holistic mechanism. By presenting stimuli briefly in either the left or right visual field, one can send visual information selectively to the right or left hemisphere. Under these conditions, I hypothesize that participants will show better facial recognition of whole faces when information is sent to the right hemisphere and impaired facial recognition of rearranged faces when information is sent to the left hemisphere.

**Lori B. Massa**

*Advisor: Kathryn G. Low*

### **Psychological Impact of the Insulin Pump: Interviews with Adolescents**

The use of subcutaneous insulin infusion therapy with adolescents is increasing dramatically. Presently, there is little research regarding the psychological effects of pump use on adolescents. This study identifies and explores psychological issues encountered by adolescent pump users and their families. Ten adolescent boys and girls, ages 12 to 18, and their parents were interviewed separately. The semi-structured interview consisted of questions regarding glycemic control, management, the effect of the pump on body image, concerns about the functioning of the pump, compliance, family involvement in management, and the pump's impact on interpersonal relationships. All participants expressed positive feelings about the pump because it enabled them to achieve better glycemic control and increased flexibility. No reported changes in body image with the pump were reported. The adolescents did not hide pump use; however, they would not talk extensively about its purpose or function with others. Parents felt their children were more responsible for their own care since beginning pump therapy, although their compliance declined over the first several months. Reasons for changes in compliance are difficult to determine. Compliance will have to be explored in a study involving both adolescents on insulin injection therapy and CSII therapy.

## **RHETORIC**

**Katharine A. Reinhalter**

*Advisor: Stephanie Kelley-Romano*

### **The Meanings of Maine's Learning Results: Using Rhetorical Analysis to Facilitate Educational Reform**

Although educational reform may seem like a simple case of getting rid of what doesn't work and replacing it with programs/ideas/methods that do, arguably educational reform has not been very successful in getting new programs to work in practice. The educational reform literature has identified superficial reforms — lack of shared meaning and inattention to implicit features of reform — as major contributors to the lack of success in educational reform. In this study, I argue that rhetorical analysis provides methods that address these concerns and increase the likelihood of success in educational reform. A case study on Maine's state-wide standards, the Maine Learning Results, was conducted by interviewing individuals involved with one Maine elementary school. The subsequent rhetorical analysis examined how individuals in different places of power interact with the Learning Results reform and create meaning.

## SOCIOLOGY

**Eric G. Kaviar**

*Advisors:* Francesco G. Duina and Elizabeth H. Tobin

### **Propaganda, Women, and Vichy**

This thesis examines the way in which the propaganda of Vichy attempted to change feminine identity. The propaganda of Vichy utilized an inherited system of knowledge that rendered women different and “naturally” subordinate to men. Vichy propaganda introduced an urgent sense of national duty for women to get married and produce children. The first chapter reviews literature on propaganda and then introduces my model of propaganda. My model uses a postmodern semiotic analysis of difference and meaning. The second chapter establishes the nineteenth-century sources for the “proofs” and meanings of sexual difference that would later be used during Vichy to justify its social hierarchy. The third chapter analyzes the context of interwar France and Vichy through the way in which the issues of abortion, depopulation, female agency, and the sexual division of labor(s) move from the Third Republic into the French State. The final chapter submerges my model of propaganda into the context of Vichy and analyzes poster propaganda which sought to redefine the female image with an identity of “honorable,” obligatory motherhood.

**Lucas O. Kirkpatrick**

*Advisor:* Emily W. Kane

### **Marxism and The Political Economy of Space-Making: An Analysis of Lewiston, Maine**

It is the overall objective of this project to formulate a case-specific Marxian political economy of urban space-making activities. Specifically, I consider the economic, political, and social dimensions of the Bates Mill Referendum (November 1999) and the ways in which this dynamic was, at its core, socio-spatial in nature. This extremely complex phenomenon can be most effectively evaluated by utilizing a sophisticated theoretical paradigm that resists both blind faith in market efficiency, as well as simple reductionism. In my research, however, it soon became apparent that the two dominant strains of urban academic discourse harbored serious deficiencies in this regard. Whether it is the ideologically regressive organicism of the urban ecologists, or the mechanistic functionalism of political economists, urban studies, as a discipline, has remained fragmentary and, ultimately, incomplete. While this project is squarely located within the Marxian political economy tradition, it takes pains to recognize and resolve the intellectual problematics which arise out of the “vulgar” economic determinism endemic to most political economy models by fusing a dialectical sensibility (as personified by Henri Lefebvre) with a nuanced examination of Marx’s original categories of analysis.

## SPANISH

**Neal T. Sheran**

*Advisor:* Baltasar Fra-Moliner

### **De la Esclavitud a la Revolución: la Construcción de Género y Sexualidad en la Cultura Cubana**

In Cuba the cultural system of colonization did not end with the conclusion of its war of independence from Spain in 1898. Its effects continued through economic dependence from Europe and the United States and the persisting traditions characteristic of colonialism. Chattel slavery had been the dominant economic system of Cuba in colonial times. It controlled all aspects of the culture including institutionalized male superiority, homophobia, and white supremacy. After the Cuban revolution in 1959, politically based reforms encouraged a dramatic rupture of these same hegemonic powers. However, Cuban culture continues to allow the manifestations of the slave system in the persecution of homosexuals, the sexual objectification of women of color, and the failed attempts of equal representation of women in politics. In the twentieth century, movies and literature have documented Cuban society's confrontation of colonial ideology both as an expression and evolution from the slave based culture.

## WOMEN AND GENDER STUDIES

**Rachel S. Beckhardt**

*Advisors:* Rebecca M. Herzig and Kathryn G. Low

### **Diagnosing a Culture: Women's Words on the Meanings of Food**

Food not only sustains and nourishes physical bodies, but also involves interacting social, cultural, and symbolic meanings. While psychology research devotes extensive attention to eating disorders and obesity, researchers too often focus on psychopathology arising from consumption's physical effects. This emphasis on consumption ignores many other sources of possible conflict between women and food. Women have an intimate relationship with food, not only through consumption, but also through other social roles as food producer, provisioner, procurer, and preparer. Utilizing gender as a lens of analysis, this thesis uses women's words regarding their relationships with food to illuminate the meanings and roles of food for a diverse group of women in an urban Maine setting. Results confirmed that social norms, ideals, and expectations inform and shape women's daily relationships with food. These social messages are often contradictory, creating conflict related to food that is not pathological or abnormal, but standard and normative in American women. Further discussion explores why, if ambivalence related to food is normal for women, diagnosis and treatment addresses individuals, rather than a pathological culture.