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2009-2010
Honors Theses Abstracts

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***Denotes a combined thesis**

AFRICAN AMERICAN STUDIES

Anthony A. Phillips

Advisor: Hilmar Jensen

The Conflict Within: SNCC, Black Integrationists, and Black Nationalists

Integrationist and Black nationalist philosophies are, arguably, divergent and irreconcilable strategies adopted, at different times, in the long-range struggle for Black liberation in the United States. My thesis focuses on the relationship between these ideologies as methods of protest, and how these methods have shaped protest tactics and ideologies taken for granted by African Americans today. It attempts to answer three related questions: During the key period 1960-1968, how might we assess the array of political perspectives within the Black community? How did the balance between Blacks supporting integrationist or Black nationalist philosophies shift? What did this mean? Throughout this period, individual activists and organizations debated the efficacy of both integrationist and Black nationalist ideologies. Some radically altered their ideological and practical commitments to embody one or the other of these two strands of thought. My project specifically examines the Student Nonviolent Coordinating Committee (SNCC), the Black Freedom Movement's vanguard in these years, exploring how and why its members' philosophies shifted from integrationist toward nationalistic perspectives as a means for social change. It seeks to illuminate why Blacks chose certain philosophies and how the presence of multiple forms of social thought has affected possibilities for a unified Black liberation struggle today.

AMERICAN CULTURAL STUDIES

Molly C. Dilworth

Advisor: Myron Beasley

Pedagogy, Curriculum, and English Language Learning Programs: Investigating the Discourses of Cultural Politics in a Local High School

Cultural politics are concerned with issues that arise as a result of the intersection of culture and language. High schools throughout the country—in particular schools with bilingual education programs—face conflicts involving cultural differences which lead to exclusion and establishment of “the other.” Ultimately, my research seeks to unravel three themes: First, I examine the

representations of the United States and what it means to be an American in ELL (English Language Learning) textbooks and assignments. Second, I look into this notion of colorblind pedagogy or ignoring race and racial difference in the classroom and the implications that teaching style has on students and teachers. Finally, I ascertain the use of native language in the classrooms and whether eliminating native language provides the students with a more productive learning environment. A school where seventeen percent of the population is made up of recently-arrived ELL students who have spent little to no time in prior schooling, Lewiston High School (LHS) provides me with a fertile ground to explore these themes through interactions with students, teachers, and administrators.

ANTHROPOLOGY

Julia S. Caffrey

Advisors: Loring Danforth and Sarah Strong

Corporate Warrior or the Dog of Society? Hegemonic Masculinity in Popular Representations of the Japanese Salaryman (1991-2010)

In post-war Japan, the salaryman (salaried male corporate employee) enjoyed a status as a state-sponsored and mother-approved career and identity. During Japan's economic "bubble," salarymen received widespread credit for the booming success of "Japan, Inc." Since the collapse of the economic bubble in 1994, however, a period of sustained recession followed. Meanwhile, international pressure and a shockingly low birthrate pushed Japan toward a "Gender Equal Society" initiative. As a result, the institutions that supported the salaryman were dramatically altered. Using an interpretive approach to the anthropology of gender, I analyze popular cultural representations of salarymen in Japanese satirical songs, poetry, and graphic novels to understand how this hegemonic form of masculinity has shifted and persisted in response to social and economic change. Through these representations, the salaryman emerges as a historically situated male identity, privileged male lifestage, and masculine institution. I explore how changes in employment practices have influenced models for success for young salarymen. I also discuss the enduring qualities of this institution that are increasingly seen as constraints for Japanese men. Finally, I analyze contemporary contestations of men's domestic role and interpret what these representations of work and home suggest for Japan's pursuit of a "Gender Equal Society."

Caitlin E. McKittrick

Advisor: Heather Lindkvist

“Small Family, Happy Family”: The Relationship between Family Planning and Childbirth Practices in South India

The use of labor-hastening technology, such as labor-accelerating drugs and Cesarean sections, has become increasingly common during childbirth in South India. In some cases, doctors preempt a vaginal delivery with a scheduled Cesarean section. In other situations, doctors perform a Cesarean section if the labor is not progressing fast enough. Women also request Cesarean sections more frequently in order to take away the pain of childbirth. Practitioners agree that interventions, specifically Cesarean sections, should be limited to two during a woman’s life for her own safety. This medical practice supports the government initiatives to control population growth. Though a woman can have a vaginal delivery after a Cesarean section, many practitioners resist such practice, which potentially limits her family size to two children. In this thesis, I contend that the Indian government’s family planning policies affect obstetric practice, specifically childbirth interventions. Drawing upon ethnographic interviews, I explore how medical practitioners facilitate or resist these policies and practices in their day-to-day care of women in South India.

Nathalie C. Woolworth

Advisor: Charles V. Carnegie

The Local Significance of Global Climate Change: A Study of Environmental Impacts and Meaning in Pirané, Argentina

In Pirané, Argentina, a city of 18,000 located in the northeast province of Formosa, rainfall has decreased by two thirds, frost cycles have become unpredictable, and the intensity of heat in summer and cold in winter have increased over the last five years. The way in which these environmental changes are discussed by locals in relation to global climate change sheds light on the variability and elasticity of the larger concept. To Pirané’s inhabitants, whose livelihoods depend on agriculture and natural resources, climate change is not a global problem understood through the lens of Western science or international politics, but brings a plethora of real local impacts. I approach my investigation of impacts and meaning through a study of ethnoecology – local ecological knowledge and human-environment relations – in Pirané, made more widely relevant and action-oriented through the connection of local impacts and meaning with a study of national and global forces. I bring together these accounts of meaning and action on multiple scales in what anthropologist Anna Tsing terms an “ethnography of global connection” – an exploration of “zones of awkward engagement, where words

mean something different across a divide even as people agree to speak” (Tsing 2005:xi). Ultimately I argue that understanding the local impacts and meaning of climate change in both local and global context, and recognizing the variability in perspectives expressed through discourse and action are crucial to facilitating future local adaptation as well as equitable global response to climatic change.

ART & VISUAL CULTURE

Alexandra E. Israel

Advisor: Rebecca Corrie

Ingres: Personal Identity and the Generation of Style

That J. D. Ingres would become an artist had already been decided by his father, who had himself yearned for a profession that would yield financial stability and upward social mobility. His journey to becoming an artist at a young age led Ingres to seek both fame and respect. Ingres would achieve both, but his desire for recognition shaped his artistic identity and unconventional style. Scholars such as Andrew Carrington Shelton have argued that the level of fame he achieved prompted the writing of biographies during his lifetime, which broke the tradition of biographies only commemorating the work of the deceased. Depending on the intent of the author, these biographies can be seen as historical narratives or publicity releases. My thesis focuses on those biographies and their impact on Ingres' own identity as an artist and on his stylistic development. By using the “life-and-work model” established by Giorgio Vasari in his *The Lives of the Most Excellent Painters, Sculptors and Architects*, I examine different types of biographies for two primary reasons: to better understand the relation between his life and work, and to see the effects fame had on Ingres' struggle to form an identity and innovative style.

Emily K. Monty

Advisor: Rebecca Corrie

Lorenzo Ghiberti, Tradition, and Identity: The Use of Byzantine Prototypes in the North Doors

Lorenzo Ghiberti's north doors for the Florentine Baptistery are often overshadowed by his Gates of Paradise. The north doors, however, offer an interesting lens through which to understand Ghiberti's artistic practices and objectives. It is clear that Ghiberti appropriated elements of Byzantine composition and iconography in these doors. This appropriation challenges the notion that artists of the Italian Renaissance rejected Byzantine style in an attempt to distance

themselves from the Middle Ages. Ghiberti's willingness to draw on the recent past distinguished him from his peers in Florence's highly competitive artistic atmosphere. This thesis explores the Byzantine origins of the Annunciation, Transfiguration, and Crucifixion reliefs for the north doors and suggests Byzantine prototypes, often mediated through Italian mosaics, painting, and sculpture, that informed their iconography and composition. The importance of a number of local prototypes, including the Baptistry mosaics, in Ghiberti's understanding of this style and his decision to evoke it, are considered extensively. Recognizing Ghiberti's particular use of the Byzantine engenders a contemporary viewer's understanding of the north doors as symbols of rebirth and salvation, Florence's ancient heritage and relationship to Rome, and its identity as a Christian capital.

Elizabeth T. Weidner

Advisor: Erica Rand

Not Dead Yet: Rethinking the Visual Representations of Music in the Age of iPods and YouTube

This thesis focuses on the visual representations of music through new methods of consumption and production, specifically Apple's iTunes and iPods, and YouTube. I begin by outlining the history of relations between music consumption technology and visual representation. The second chapter addresses the reconfiguration of music within the digital revolution, focusing particularly on Apple's iTunes and iPods, and the third chapter examines how music is visually represented through them. The fourth chapter transitions from the physical programs and artifacts of music consumption to explore the complex representation of music on the Internet. I focus specifically on YouTube, with an analysis of the website's impact on the visual representation of music by artists and consumers in contemporary popular culture. Issues of ownership and authenticity are central to this analysis. The fifth chapter consists of a specific case study on the music artist, Beyoncé, and her visual representation on YouTube. I examine the "Single Ladies" music video, and its dynamic and diverse representations on the Internet. I argue that visual representations of music are far from extinct; indeed, they are transitioning into new media that involve complex representations of producer and consumer.

BIOLOGICAL CHEMISTRY

Joshua A. Linscott

Advisor: Paula Schlax

Translational Regulation of an Alternative Sigma Factor in *Borrelia burgdorferi*: Interactions of the 30S Ribosomal Subunit with the mRNA Leader Region of RpoS

The alternative sigma factor RpoS is essential in the expression of key virulence factors in the spirochete *Borrelia burgdorferi*. Our studies investigate the role of the extended 5' UTR and corresponding secondary structure of different length rpoS mRNA transcripts. Equilibrium affinity assays using 30S ribosomal subunits purified from *Escherichia coli* indicate that the small ribosomal subunit binds with a higher affinity and to a greater extent to the short (-50 nt) rpoS transcript than the long (-171 nt) rpoS. Translational efficiency was measured using in vitro primer extension “toe-print” assays and the translational efficiency of the short rpoS transcript is up to 3-fold greater than translational efficiency of the longer transcript. Additionally, a second ribosome binding site is detected on the long transcript. A synthetic DNA regulator that mimics the natural sRNA translational regulator DsrABb increases translational efficiency of the longer transcript and modulates 30S subunit interactions at the alternative ribosome binding site. Examination of the effects of mutations that influence the sequence and structure of the ribosome binding state and comparisons between *E. coli* and *Borrelia* 30S subunits is described. This research offers insights into the life and development of *Borrelia burgdorferi*.

Ngoc H. Pham

Advisor: T. Glen Lawson

The Development of a Method for the Kinetic Analysis of EMCV 3C Protease Catalytic Activity

The concentration of viral proteins in infected cells depends upon the rate of synthesis, processing, and degradation of these proteins. As with other picornaviral 3C proteases, the encephalomyocarditis virus (EMCV) 3C protease catalyzes the majority of processing cleavages in the large polyprotein precursor produced by EMCV, thereby releasing functional viral proteins. In addition, it has been found that the 3C proteases target cellular substrates, thereby inactivating host proteins including transcription and translation factors and other proteins needed for host cell defense. Kinetic analysis has the potential to be a useful tool for examining the efficiency with which the 3C proteases catalyze peptide bond cleavage. Previous studies, using very short synthetic polypeptides, have provided information about the reactions catalyzed by the 3C proteases of a small number of picornaviruses. However, there have been no thorough kinetic measurements of EMCV 3C protease cleaving activity. For this study, I have prepared and evaluated, using a novel expression vector, EMCV 3C protease protein substrates for the purpose of determining the biologically relevant kinetic parameters that characterize 3C

protease processing reactions. The results of this study will provide new insights into the 3C protease-catalyzed cleavage of viral, and possibly cellular, substrates.

BIOLOGY

Annie L. Carlton

Advisor: Rebecca Sommer

Low-dose Developmental Arsenic Exposure Causes Sexually Dimorphic Alterations in Body Weight, Liver Histology, and Glucose Tolerance

Arsenic is abundant in the granite bedrock underlying eastern New Hampshire and western Maine. Wells drilled into arsenic containing rock, often contain arsenic concentrations above the Environmental Protection Agency and World Health Organization limit of 10 ppb in drinking water. Arsenic in drinking water, at high concentrations (above 300 ppb) is of significant concern: it has been classified as a group I carcinogen by the International Agency for Research on Cancer and has been associated with cardiovascular disease and type II diabetes. While much is known about the effects of arsenic at high concentrations, less is known about low-dose arsenic exposure. Additionally, the mechanisms underlying the effects of arsenic are unclear. We are investigating the physiological and molecular effects of developmental exposures to low-dose arsenic (50 or 500 ppb) in mice. Preliminary data indicate that developmental arsenic exposure causes liver inflammation in adulthood in female, but not male mice. Additionally, developmental arsenic exposure appears to increase blood glucose levels in adult males but not females. Alterations in gene expression, resulting from differences in DNA methylation, may explain these physiological observations. Currently we are investigating possible alterations in global DNA methylation in adulthood following arsenic exposure.

Baijing Qin

Advisor: Nancy Kleckner

Differential Expression of Glutamate Receptor Subtypes in *Helisoma trivolvis* Central Nervous System

Glutamate is a ubiquitous amino acid that serves as a neurotransmitter in both the vertebrate and invertebrate central nervous systems (CNS). In the pond snail, *Helisoma trivolvis*, glutamate is particularly vital to the neural network that controls feeding behavior, in which a modifiable central pattern generator (CPG) is responsible for the rhythmic activation and inhibition of different subunits of

neurons (S1-S3), resulting in distinct phases of feeding. Glutamate receptor (GluR) subtypes in vertebrates include AMPA (GluR1-4), kainate (GluR5-7), NMDA, and metabotropic receptors. Previous immunocytochemical studies using α -GluR5/6/7 and α -GluR6/7 antibodies indicate that the GluRs of the known feeding CPG and motor neurons are not kainate-like. Furthermore, both AMPA-like and kainate-like GluRs have been cloned from the *Helisoma trivolvis* CNS. This study uses immunocytochemistry, *in situ* hybridization based on the two GluR partial clones, and electrophysiology of immunoreactive CPG neurons through intracellular recording to identify and characterize the different GluRs expressed in the CNS. Preliminary findings suggest that a S2 motor neuron, B27, and a S3 motor neuron, B19, express AMPA-like glutamate receptor subtypes, whereas S1 motor neurons are not immunoreactive to vertebrate α -GluR2/3 antibodies. *In situ* hybridization studies may confirm these results.

CHEMISTRY

Marilla C. Pender-Cudlip

Advisor: Rachel Austin

A Mechanistic Inquiry into Partially Pure ω -Alkane Hydroxylase (AlkB)

The kinetically challenging conversion of alkanes to alcohols is important for several reasons. Key to this reaction is understanding the metal-based enzymes that facilitate the reaction. This research targets ω -Alkane Hydroxylase (AlkB), the dominant metalloenzyme in organisms that use alkanes as their sole energy source. Our goal is to purify AlkB, crystallize it, and characterize its reaction mechanism. A key step in crystallizing the protein is solubilizing it to remove it from the cellular membrane that it spans. We have found that adding Deoxycholate detergent (DDM) results in a solubilized and active protein. Strains of AlkB used in this study are *Pseudomonas Putida* GPo1 (AlkB-containing soil organism) and *Alcanivorax borkumensis* AP1 (AlkB-containing marine organism). We have also found that AlkB catalyzes the oxidation of alkanes by generating a substrate-based radical consistent with a high-valent iron intermediate on the enzyme. This mechanistic data is consistent with a sterically-restricted active site. We have seen that the thermodynamically favored position is oxidized in smaller molecules, while the sterically favored position is oxidized in larger molecules. Studies with more substrates will allow us to further relate mechanistic data to structural information.

EAST ASIAN STUDIES

Julia S. Caffrey – See Anthropology

ECONOMICS

Lixin Tang

Advisor: Margaret Maurer-Fazio

The *Hukou* System and Wage Differentials in China

The *hukou* (household registration) system is perhaps the single most important institution in China. The hukou system prevents the millions of rural migrants from becoming full citizens of their cities, even though those rural migrants may have lived there for more than 10 years. The lack of formal citizenship in the cities has important implications for the hourly earnings of rural migrants. I used the 2001 data from the China Urban Labor Survey to study the hourly wage differentials between urban residents and rural migrants in five Chinese cities, using a modified Brown et al. decomposition method. I find significant differences in rural migrants' and urban residents' occupational attainment and wages that are not explained by the workers' productivity-related characteristics. The white-collar rural migrant workers appear to be most affected by discrimination, while the rural migrant small-business owners appear to be least affected by discrimination. I further examine the relevance and policy implications of the economic models of discrimination in the existing literature with respect to discrimination against rural migrants in urban China.

ENGLISH

Vasey L. Coman

Advisor: Sanford Freedman

Investigating Literary Intimacy: Coherence and Formalism in Twentieth-Century Critical Theory

Closer attention to the formal elements of literature allowed twentieth-century formalist critics to explore—and attempt to explain—how the abstract, the elusive, is communicated under the constraints of language: How is emotion best expressed? How is nature best described? How do writers depict the ineffable? This

thesis considers the appreciation for a descriptive minimalist aesthetic that developed with, and from, formalist criticism in the twentieth century. Special attention is given to critical responses that condemn or redeem so-called “bad” or “failed” literary art—that is, literature that violates the preferred minimalist aesthetic, including Shakespeare’s *Hamlet* and John Keats’ Romantic poetry. Further, Jacques Derrida’s treatment of Plato’s *Phaedrus* is considered in response, and as a response, to the formalist preference for aesthetic minimalism.

Amanda M. Kesselman

Advisor: Carole Anne Taylor

“These Fragments I Have Shored against My Ruins”: An Analysis of Personae and Poetic Process in T. S. Eliot’s *The Waste Land*

Published in 1922, the fragmented form and elusive meaning of *The Waste Land* tested the experimental boundaries of modern poetry. At first, most critics considered the work impenetrable, but its subsequent critical history made it vital to any discussion of modern and postmodern poetics. Its “difficult” modern structure is built in part by the constant variation of its speaking voices, or personae. This thesis examines how the poem’s five sections juxtapose those voices from literary, mythic, and spiritual traditions with more ordinary and sometimes debased contemporary voices. Further, it explicates the shifting focus of these vocal fragments as the poem progresses, and it listens for Eliot’s own implied voice as he attempts to salvage or “shore” what remaining fragments of literary and spiritual traditions he can. Finally, this analysis informs a discussion of the poem’s legacy that examines Peter Ackroyd’s *Chatterton*, published in 1989, 67 years after *The Waste Land*’s first influence.

Alyssa D. Pagano

Advisor: Carole Anne Taylor

“Nature is not natural and that is natural enough”: Gertrude Stein’s Interrogations of Modern American Identity and Writing

The majority of recent critical readings of Gertrude Stein’s work focus on her coded and controversial portrayals of gender and race. This thesis focuses primarily on how Stein’s deconstruction of traditional literary forms undermines both her previous attempts to write a genealogy of “American types” and what she would call “patriarchal tradition.” The early anti-epic saga *The Making of Americans*, the late dramatic novel *Ida*, and relevant poems from various time periods all provide useful and less frequently examined cases of unconventional writing that examine the formation of both individual and group identity. This thesis explains the way these

texts overlap thematically in their criticism of dominant social practices and values, and how through time they develop more complex uses of irony and self-reflexivity that prefigure the literary works now considered postmodern.

ENVIRONMENTAL STUDIES

Emily S. Grady

Advisor: Sonja Pieck

Generating a Counter-Hegemonic Food Movement: Exploring the Role of Participatory Processes in a Lewiston, Maine, Community Food Project

Across the United States alternative food movements are creating and exercising ideologies and practices that directly contest the mainstream food system. This thesis uses Antonio Gramsci's theory of hegemony to analyze mainstream food-related ideologies and practices and the concept of counter-hegemony to discuss how alternatives to the mainstream food culture arise. Participatory democracy is discussed as a process-oriented strategy employed by food movements to promote counter-hegemony, due to its developmental benefits and capacity to undermine politically structured inequalities. Lewiston, Maine's, community food movement, represented by the ongoing community food assessment (CFA), is analyzed based on information gathered through participant observation, interviews with movement leaders and focus groups with residents. The significance, benefits, and drawbacks of the hybrid participatory model employed by the Lewiston CFA are analyzed. This paper argues that a food-related counter-hegemony may be generated through direct, democratic participatory processes that explicitly address and undermine politically structured inequalities in community food work, and debates whether counter-hegemony is a viable means of achieving food justice.

FRENCH

Jessica M. Carroll

Advisor: Mary Rice-DeFosse

Trouver l'Étrangeté et l'Identité à Travers les Frontières Culturelles

In my thesis, I study the split in one's identity as one adopts another culture. In *L'étudiant étranger* and *Un été dans l'Ouest*, Philippe Labro writes of living in the United States and how this new culture allows him to experiment with and redefine

his identity. Alice Kaplan's *French Lessons* recounts her experiences with the French culture, her complex relationship with languages, and the expression of her identity depending on the context. Transcending one's immediate culture is a complicated balancing act, as it allows the individual to better communicate, but can produce feelings of alienation because he or she is living in between cultures.

I use recent critical theory to consider multiculturalism, nomadism, and the idea of being a stranger to one's self. Essential to creating identity are limits and boundaries, which are often determined by the culture one inherits, not the one chosen. Transcending these boundaries through the experience of a different culture permits the individual to reconsider the culturally determined identity and redefine the self. Although liberating, the process of discovery and rebuilding can be alienating as it forces a person to re-examine him- or herself.

GEOLOGY

J. Patrick Gardner

Advisor: J. Dykstra Eusden, Jr.

Mesozoic Extension in the Presidential Range: Huntington Ravine, New Hampshire

Mesozoic extensional structures were examined in Huntington Ravine in the Presidential Range, New Hampshire to determine their relative ages, distribution, and paleostress fields. Dikes and over 1,000 fractures were measured and a map of major fractures and dikes was completed in ArcGIS. The oldest fractures in the Ravine have a NE strike (~036, 74 SE) and are sub-parallel to the Pinnacle dike (~045, 58 SE). These structures are believed to be coeval with regional early Jurassic extensional structures associated with the ENA province of McHone & Butler (1984). The next youngest and most prominent fracture set in the ravine has an E-W strike (~284, 71 N), and is parallel to the Upper Trail (UTD) (~270, 89.5 N) andesite and Escape Hatch (EHD) (~263, 59 N) basalt dikes. The youngest fracture set is characterized by NW-SE striking joints (~162, 85 SW), correlations with regional structures are uncertain suggesting a localized event. XRF geochemical analysis were completed and revealed similarities in the major and trace element compositions of the basaltic PD and EHD. UTD was unique and its composition is andesitic, while its texture is similar to that of basalt.

William V. Loopesko

Advisor: Beverly Johnson

Stable Isotopes in *Zostera marina* as a Proxy for Anthropogenic Nitrogen Loading in Casco Bay, Maine

Common eelgrass, *Zostera marina*, is the most abundant and productive seagrass in near-shore coastal environments of the Gulf of Maine (GoM). It provides crucial habitat for commercially important species and contributes to marine nutrient cycles and sedimentation processes. Nitrogen is the primary limiting nutrient in marine systems; thus any large increase in its concentrations can have a profound effect on marine environments, particularly through the process of eutrophication which can shade out eelgrass beds to their acute light sensitivity. Stable nitrogen isotope analysis of eelgrass provides a method for tracking nutrient flow in and around eelgrass beds. The purpose of this study is to determine the extent to which stable isotopes in eelgrass can be used as a proxy for anthropogenic nitrogen loading in Casco Bay. Samples of water, sediment, and eelgrass were collected in two different areas of Casco Bay in fall 2009. Preliminary results indicate that the $d_{15}N$ values of eelgrass from Portland are significantly enriched in ^{15}N relative to eelgrass from Maquoit Bay. These trends may reflect higher nitrogen loading and/or higher levels of ^{15}N enriched nitrogen available for uptake in one site relative to the other. Continued analyses are underway to corroborate these interpretations.

Laura N. Poppick

Advisor: Michael Retelle

Modern Depositional Processes Proximal to a Polythermal Tidewater Glacier Complex, Kronebreen-Kongsvegen, Kongsfjorden: Svalbard, Norway

The effects of global climate change are expected to be more extreme in the Arctic than at lower latitudes as a result of polar amplification, whereby ice and snow melt reduces Earth's reflectivity (albedo) and induces increased melting. Given the significant influence of Arctic change on global climate patterns associated with ocean thermohaline circulation and atmospheric circulation, it is important that the effects of climate change on Arctic systems are well understood. Accordingly, the status of such systems must be monitored today so as to generate baseline data upon which future comparison and predictions can be made. The purpose of this study was to provide such baseline data by characterizing the modern sedimentary processes in front of a tidewater glacier complex on Svalbard, Norway. A series of sediment gravity cores were collected proximal to the ice margin and were analyzed through x-ray, thin-section, and grain-size analysis. Depositional patterns were

characterized by considering results from these analyses in conjunction with the local fjord floor morphology.

HISTORY

William J. Brunnquell

Advisor: Karen Melvin

Dismantling Nationalization: The U.S. Government's Influence on the Bolivian Tin Mine Nationalization Policy of 1952

The victory of the National Revolutionary Movement (MNR) in the Bolivian national revolution of 1952 cultivated hope within Bolivia that the country, long entrapped in a mineral-based export economy, would escape the liberal economic policies which had hampered development. The MNR advocated expropriation and nationalization of the tin-mining industry, the nation's most important resource, but in working toward this goal the MNR confronted U.S. foreign policy in the height of McCarthyism. The United States, fearing a foothold of communism and socialism in the hemisphere, vehemently opposed expropriation of Bolivia's strategically valuable tin industry. This work examines the role of the United States in shaping Bolivian nationalization policy following the revolution of 1952, arguing that it was significantly altered by U.S. economic and political coercion. Exploiting the fractured political composition of the MNR party, the United States compelled the fledgling Bolivian régime to enact a weakened policy of nationalization which allowed for the defense of North American economic and political interests in region.

Rachel L. Laaff

Advisor: Joseph Hall

Penobscots, the Birch-Bark Canoe, and Industry in the Penobscot River Valley: An Exploration in the Commodification of Penobscot Culture

The Penobscot River and Penobscot culture exist in a cycle of mutual determination. The birch-bark canoe exemplifies a physical manifestation of this relationship, representing a product of and a means to navigate the surroundings. In the nineteenth century, non-native Americans fueled the industrialization of the Penobscot River Valley through the development of extractive industries such as timber and outdoor recreation, thus re-creating the Maine landscape and establishing new uses of environmental resources. To sustain the new use of the Penobscot River Valley, non-natives industrialized the birch-bark canoe. Although

initially dependent on Penobscots, industrialization of birch-bark canoe manufacturing quickly displaced and marginalized Penobscots in the reproduction of their own culture.

Elizabeth A. Leberman

Advisor: Karen Melvin

Cultural Revival and Reclamation: Forming Regional Identity in Post-Franco Andalusia

The death of Francisco Franco in 1975 marked the end of a 40-year dictatorship in Spain that had repressed regionalism in an attempt to centralize and homogenize the nation after the Spanish Civil War. During the transition to democracy, the 1978 Spanish Constitution allowed regions to apply for autonomy in a process of devolution that would create a “state of autonomies,” granting the right of self-government to regions. The Constitution provided the “historic communities” of Catalonia, Galicia, and the Basque Region an accelerated path to complete autonomy, an offer originally denied to Spain’s largest, most populous, and poorest region, Andalusia. Yet by 1981, the central government awarded Andalusia autonomy and “historic-community” status. This thesis explores how regional groups in Andalusia revived, reclaimed, constructed, and defined regional identity between 1975 and 1981 to obtain recognition as a culturally distinct region that deserved autonomy. More than a mere continuation of the regionalist movement of the pre-Franco era, I argue that the Andalusian autonomy movement and the formation of regional identity in the post-Franco epoch was a direct reaction to the subjugation of the dictatorship.

Evan Procknow

Advisor: Michael Jones

Gaiseric, Pirenne, and Mohammed: The Case for Vandal Exceptionalism

On New Year's Eve 406 C.E. a confederation of Vandals, Suevi, and Alans crossed the frozen Rhine and entered into the Western Roman Empire. This crossing was not in itself distinctive as various barbarian tribal agglomerations invaded and settled within the borders of the Later Roman Empire throughout 4th and 5th centuries C.E. However, an examination of the textual and archaeological evidence reveals the discrepant development of the Vandals. The invasion and settlement of North Africa by the Vandals differentiates them as unique among Germanic barbarians. Furthermore, the genius of Gaiseric, their inveterate adherence to the heretical Arian faith, and their relationship vis-à-vis the Eastern Roman Empire underscores this concept of Vandal exceptionalism. In addition, an

examination the heretofore neglected role of the Vandals in the dissolution of classical Mediterranean world proffers a revision of the Pirenne Thesis.

Ariela R. Silberstein

Advisor: Hilmar Jensen

**“You Don’t Need a Weatherman to Know Which Way the Wind Blows”:
The Weather Underground and the End of Youth-Based Mass Organization
in the United States**

In the 1960s, student protests grew larger and more influential than any other comparable youth movement in U.S. history, contrasting sharply with the more quiescent student activism of the 1940s and 1950s. By 1963, Students for a Democratic Society (SDS) emblematized the new movement beginning to take hold. However, internal and external pressure led to SDS’s gradual fragmentation and ultimate collapse by 1969. SDS’s radical Weatherman faction, later infamous as the Weather Underground, quickly inserted itself into the national consciousness. Despite initially promising efforts to transcend much of what divided SDS, Weather eventually exacerbated the splintering and demonization of organized, productive domestic dissent. It did so by polarizing antiwar coalitions and organizations of the political left, and actively distancing itself from those who were unwilling to put their lives on the line for revolution. The group isolated itself from the larger public, and catalyzed a diffusion of American dissent into smaller, single-issue groups. Weather’s violent actions and uncompromising politics in the late 1960s and 1970s, combined with other factors inside and outside the movement, were sufficient to weaken dissent in the United States through subsequent decades.

INTERDISCIPLINARY STUDIES

Mariam L. Alam

Advisor: Karen Palin

**Evaluation of Culturally Appropriate Symbolic Prescription Labels for the
Somali Community of Lewiston, Maine**

Research conducted in Biology s39 shows that members of the local Somali immigrant and refugee community demonstrate difficulty in comprehending and adhering to prescription medication instructions due to language differences and low functional and health literacy. Patient misunderstanding of prescription labels can have disastrous effects, including the potential for dangerous drug interactions and failure to complete treatments. Partnering with B Street Health Center and

Bedard Pharmacy, I seek to improve patient comprehension of and adherence to prescription medication instructions by developing culturally appropriate pictograms for use with prescription labels. The developed pictograms are intended to assist pharmacists in conveying information to patients and to serve as an explanatory tool for patients in their homes. Pictorial images denoting typical medication instructions were generated through workshops and interviews with local Somali women, with the aid of a cultural broker. Participants were asked to choose which of several pictograms relaying the same medical information most effectively aided their understanding. The images developed based on this data and input from participants were tested for their effectiveness at improving patient understanding and compliance through interviews in the health care provider's office during routine follow-up visits. Data will be analyzed for significance using SPSS.

Natalie R. Brown

Advisor: Patricia Buck

Developing a Framework to Achieve Educational Equity and Access: A Comparative Examination of the Impact of NCLB on ELL Policy

This thesis provides a comparative analysis of English Language Learner (ELL) policy and practice in Maine, Texas, and California. Noting the impact of the federal No Child Left Behind Act on ELL programming, the relevant influence of conservative, liberal, and radical political agendas within each state are identified. Drawing on a critical theory framework, this study examines whether and how the various manifestations of ELL policy and practice empower students to understand and question their political and economic stations in society. By highlighting ELL programs situated in both liberal and radical reforms that foster language acquisition as well as critical consciousness, this thesis argues that certain programs can provide a space for students to enact their agential voices as citizens. Finally, the proposed education reforms of President Obama are reviewed and discussed with regard to whether they direct the American public education system toward the realization of equal access to quality education for ELLs as defined by critical theory.

Barbara L. Byers

Advisors: Carol Dilley, Hiroya Miura, Michael Reidy

Rouse

My thesis is a performance piece incorporating elements of music, theater and dance. I have composed a repertory of musical compositions through multi-

track recording of found sounds and myself and others singing, and have choreographed a series of movement reflecting these sonic gestures. Using these visual and sonic gestures, I am exploring the performance space and discovering what opportunities or limitations present themselves in a given environment. I collaborated with artistic designers and theater technicians during the final process of bringing this creative work to the stage. I aim to cultivate an understanding of the artistic process from the initial ideas and inspiration through the technical development toward the final performance.

Scott M. Sinisgalli

Advisor: Georgia Nigro

The Effect of Cognitive Dissonance, Fear-Induction, and Point of View on Driving Attitudes and Behavior

Risky and aggressive driving is one of the most life-threatening public health concerns for the late-adolescent male cohort. Research has shown that novice male drivers are more likely to drive unsafely, are more aggressive on the road, and score highest on scales of sensation seeking (Deery, 1999; Jonah, Thiessen, & Au-Yeung, 2001). The present study uses two experiments to assess the effectiveness of interventions in reducing dangerous driving behavior among young males. The first experiment focuses on changing attitudes, while the second examines behavioral change. In the first experiment, male students at a private one-year post-high school academy are randomly assigned to one of six writing-based conditions formed by crossing the two variables of intervention type (a dissonance-based intervention, a fear-induced intervention, or an expressive writing control condition) with perspective type (1st-person field-perspective vs. 3rd-person observer-perspective). Driving attitudes are assessed using a comparison between pre-intervention and post-intervention scores on two scales. The second experiment evaluates the degree of behavior change by comparing students' performance on a driving simulator prior to and after exposure to an intervention. Results are discussed in context as findings may suggest new efficacious ways to decrease hazardous driving and the associated health risks in the young adult male cohort.

MATHEMATICS

Jean M. McIntyre

Advisors: Meredith Greer, Mark Semon

An Analysis of the Motion of Fastpitch Softball Pitches

Using Newton's Laws, we find the equations of motion for the fastpitch softball pitches: the fastball, the dropball, the riseball, and the curveball. These equations of motion contain the force of gravity, the force of air drag, and the force of lift. We numerically analyze these equations in C++ programs which implement the fourth-order Runge-Kutta method. From these programs, we find, for each of the different pitches, the initial conditions necessary for the pitch that will be most effective in striking out a batter. We also use this model to find values of the lift coefficient for the different pitches; these values are currently unknown for softballs.

MUSIC

George A. MacDonald

Advisor: Hiroya Miura

A Study in Incidental Music

My scores for theater have adapted to a variety of themes. *Alcestis* is a traditional Greek play with religious themes, *All The World's a Grave* is a new Shakespearean tragedy, and *A Lie of the Mind* analyzes domestic violence in the mid-west. The music must follow the arc of the play, match the seriousness of the action, and elicit an emotional response from the audience. My research in music theory, music for theater, and opera has led me to use Wagnerian leitmotifs in my scores. These recurring musical themes emphasize the development of a character throughout the play. Each motive creates a texture or evokes an emotional response that gives us a sense of place. These motives lead the audience to a better understanding of the characters, setting, and narrative development of the play. For my thesis expanded my scores from brief leitmotifs and musical textures into a full concert piece for string quartet.

M. Sean Ryan

Advisor: Jennifer Woodruff

Sonic Progressions: Radiohead and the Evolution of the Album

The digital revolution has figured drastically in popular music's recent history. In particular, music's transition from a physical to a virtual medium has forced reconsiderations of both the value and relevance of record albums as a format. Both before and throughout this period of change, the popular musicians Radiohead have been integral in reinforcing the album as a valid platform; the extent to which this has cultivated Radiohead's status as credible pioneers in both

popular and critical opinion is evident in the much-discussed release of their latest album, wherein fans were asked to name their own price upon purchase. This thesis examines the intersection of musical elements and branding behind three Radiohead albums: *OK Computer* (1997), *Kid A* (2000), and *In Rainbows* (2007), as they present different installments of the album before, during, and after the digitalization of music, respectively. This will be accomplished through transcription and analysis of musical passages as well as by drawing upon social theories concerning identity, production, and consumption in modern media—music, specifically—and scholarly writing surrounding issues within the canonization of musical genres. Applying the insight gathered from these endeavors will allow a deeper understanding of how Radiohead's contributions underline the variable identity of “the album.”

NEUROSCIENCE

Leah H. Carr

Advisor: Nancy Koven

The Neurogenetic Basis of Alexithymia and Executive Dysfunction: The DAT1 Gene

Alexithymia, a multifaceted trait, is marked by the reduced capacity to identify, distinguish, and describe emotions. Although not a unique clinical syndrome per se, alexithymia has been implicated as a risk factor for numerous medical and psychiatric conditions. Previous studies indicate frontal lobe impairment in alexithymia, suggesting weaknesses in executive functions such as abstract thinking, creativity, and cognitive flexibility. Little is known about the genetic contributions to the cognitive components and emotion dysregulation in the alexithymic population. With dopaminergic innervation in the frontal lobe, the present study seeks to examine the possible relationships between the genetic basis of dopamine, alexithymia, and cognition. This study looks at an unselected sample of community participants who completed self-report measures of alexithymia, a broadband measure of executive functioning (BRIEF-A), a variety of neuropsychological measures of executive functioning, and who were assessed for the 40 base-pair variable number of tandem repeat (VNTR) polymorphism of the dopamine transporter gene (DAT1). In examining participants with the 9/10 genotype (n=53) and 10/10 genotype (n=61), results suggest a significant role of DA in aspects of cognitive and emotional functioning within the mesocortical pathway.

Mayur M. Contractor
Advisor: Nancy Kleckner

Electrical and Dye Coupling in Dorso-medial Buccal A Cluster Neurons of the Pond Snail *Helisoma trivolvis*

The feeding behavior of *Helisoma trivolvis* is controlled via a tri-phasic central pattern generator (CPG), a system of neurons that produces recurring motor output through activation of corresponding motor neurons in a network. This pattern can be modified via input from other neurons in the form of electrical signals, chemical signals, or directly via drug application. A group of neurons in the buccal ganglia of the *H. trivolvis* central nervous system called the buccal A cluster (BAC) is known to play a role in modulating the feeding CPG via activation and inhibition of CPG subunits, resulting in disruption of feeding or regurgitation. This study aims to investigate modulatory characteristics of a dorso-medial group of BAC neurons that have previously shown dye coupling as the result of filling neurons with Neurobiotin tracer. Morphology of dye-injected cells confirms identity of BAC neurons in the target group and intracellular recordings show uni- and bi-directional electrical coupling between BAC neurons as well as unidirectional dye coupling within the target group. Coupling coefficients were used to determine the magnitude of electrical coupling and pharmacological activation was used to investigate the role the dorso-medial coupled neurons in feeding CPG modulation.

Baijing Qin – See Biology

PHILOSOPHY

Madison K. Kilbride
Advisor: Mark Okrent

The Objects of Phoneme Perception

Despite the ease with which we produce and perceive speech, speech perception is plagued by a lack of correspondence between features of the acoustic stimulus and the features of our experience of phonemes. Given that the structure of the acoustic stream does not reflect perceived phonemic structure, we can ask what the relevant phenomena are in virtue of which we categorize sounds into phonemic classes. In light of this problem, one of the central questions speech perception theorists ask is, “What are the objects of speech perception?” In other words, what are our speech experiences about, directed toward, or represent? I reject the view that in order for our perceptions to count as veridical, there must be

perceiver-independent entities whose structure is isomorphic with perceived phonemic structure. I argue that actual articulatory gestures are among the intentional objects of speech perception and that we need to think of phoneme perception in terms of the larger articulatory event that contains all of the information that the perceptual system uses in phoneme categorization. I argue that the intentional objects of phoneme perception are multi-modal and that speech perception involves the integration of multi-modal information about speech events.

PHYSICS

Jean M. McIntyre – See Mathematics

POLITICS

Alison J. Blanksteen

Advisor: Eric Hooglund

Overcoming Asymmetry: Uncovering Effective Resolution Strategies for Intractable, Protracted Conflict

In regions cleaved by years of unrelenting conflict, marked disparities in land distribution, access to natural resources, military strength, political power, and ethnic and religious ideology each play an integral role in perpetuating unrest and hindering the efficacy of traditional conflict resolution strategies. This thesis investigates the ways in which such asymmetries, as they exist both within and among regional actors, alter the conflict environment over time and influence relative outcomes of war or peace. Through an examination of the Israel/Palestine case study, this thesis draws on the theoretical frameworks of a variety of conflict resolution theorists, including Peter Coleman, Louis Kriesberg, Sara Roy, and Benjamin Miller. By analyzing historical trends of conflict perpetuation and mitigation in the region, as activated by fluctuations in the relative intrastate, interstate, and international imbalances of power, resources, and ideology, this thesis aims to construct an optimal theoretical model for intractable protracted conflicts that isolates the specific conditions under which peace can be attained. In contrast to more realist or liberal frameworks, this model primarily considers how extreme infrastructural and ideological incongruencies, which pervade regions plagued by perpetuating conflict, can be mitigated in such a way that brings regional actors to the negotiating table, with a willingness and readiness for peace.

Eleanor C. Gourley
Advisor: Leslie Hill

A Gendered Perspective of Transitional Justice: Coping with Wartime Rape and Sexual Violence in Bosnia and Rwanda

My thesis studies transitional justice institutions' responses to gender-based violence during periods of armed conflict. This research compares two countries, Rwanda and Bosnia, which both underwent conflict in the early 1990s. Both conflicts involved copious amounts of civilian violence, specifically targeted against female civilians, such as rape, sexual violence, and sexual assault. The international community reacted similarly in both situations, establishing two ad hoc criminal tribunals to prosecute the most egregious acts of war. In both tribunals, important precedents for transitional justice were set, criminalizing wartime rape and sexual violence as a crime against humanity, as an element of genocide, and as a violation of the laws of war. Concurrently, each country, differently, initiated its own internal transitional processes, especially concerning female victims of gender-based violence. Transitional justice is conceptualized as reconciliation and reconstruction after intense, civilian-oriented violence instigated by the state, political opponents, or aggressive nations. Transitional justice institutions, initiated at the international, national, or community level, therefore, are legal, social, economic, or psychosocial organizations, designed to promote justice, reconciliation, reconstruction, and peace after periods of armed conflict or war. I explore differences among these institutions at the international, regional, and state levels in order to shed light on which transitional justice institutions more effectively incorporate gender perspectives and female victims.

Spencer B. Holland
Advisor: Leila Kawar

Approaching the Law: Legal Interpretation, Social Change, and the Warren Court

The Warren Court has been characterized by some legal scholars as the paragon of our judicial system and by others as the epitome of subversive judicial activism. For the first time in our nation's history, the Supreme Court actively fought for progressive reform in areas that had previously been left to legislative bodies including criminal procedure, reapportionment of voting districts, and the use of birth-control devices. The only way that the Court could take on these issues was through employing a new concept of law that repositioned the judicial branch in our system of government. My thesis closely examines three scholars who have commented extensively on the Warren Court: John Hart Ely, Alexander Bickel, and Robert Bork. Each represents a dramatically different perspective on the Warren

Court's legacy and its implications for contemporary legal interpretation, and each scholar uses the Warren Court's example to help structure, position, and explain his own legal philosophy. By drawing on the works of additional legal scholars such as Ronald Dworkin and Keith E. Whittington, I critique the commentaries of these three central scholars and use their ideas to construct a solvent theory of legal interpretation that is consonant with our government's balance of power.

Alberto S. Means

Advisor: Clarisa Pérez-Armendáriz

Civil-Military Relations in Hugo Chávez's Venezuela: A New Model in Latin America

This thesis argues that existing scholarship does not adequately account for civil-military relations in Hugo Chavez's regime. Venezuela's political and military history is unique to Latin America. Venezuela was exempt from a successful military coup for over 30 years, and along with Colombia, was the longest lasting democracy in Latin America. Venezuela's current government has a mixed civilian-military cabinet. Though Chavez led a failed coup d'état in 1992, he was a democratically elected as civilian president in the 1998 elections. Venezuela's military is highly involved in domestic affairs, corruption is rampant, and human rights are limited, yet Chavez's regime boasts high approval ratings. What strategies has Chavez used to control the military, especially when averting the 2002 coup intended to oust him? To address this question, I explore civilian control of the military, military input in day-to-day governing, the constitutional-legal basis of the military's functions, and participation in civil-military relations discourse among civil society, the military, and political leaders.

Sarina S. Rosenthal

Advisor: Leslie Hill

What Does Free Movement Mean for Refugees?: Policy, Action, and Education in Uganda

This study compares the intentions of progressive policy to expand refugee rights in Uganda with the reality of how these rights are accessed. It assesses the successes and barriers the government, NGOs, and refugees face in order to understand the impact of freedom of movement and education upon refugee development and empowerment. Hundreds of thousands of people find themselves displaced, lacking basic human rights and securities, and reliant upon the charity of the nations in which they seek refuge. Scholarly refugee literature focuses on the right to freedom of movement—the ability to live freely within a country of asylum.

In many host countries, refugees are confined within designated settlements. As a result, they are limited in realizing the full rights of citizens as well as prevented from contributing to their asylum countries. As states begin to expand refugee freedoms, it is important to question how the relationship between state and non-state actors contribute to policymaking and policy implementation for the provision of refugee freedom of movement and how this policy affects access to rights. Specifically, I look at how the relationship between Ugandan government actors and NGO actors has affected the provision of refugee freedom of movement. In order to assess the impact of this policy on refugee rights, I examine how freedom of movement affects access to education for urban Congolese refugees in Uganda.

Zoe E. Rosenthal

Advisor: John Baughman

Image is Everything: Gender and Party Influences on Female Candidates' Campaign Construction

In our increasingly mediated age, it is commonly agreed that political candidates put forth a significant effort when crafting their public image, as they aim to gain the respect and allegiance of the greatest number of citizens. Modern technological advances have made elections place significantly more emphasis on a candidate's representation in the public eye; however, it becomes difficult to determine what factors candidates consider when constructing their campaign strategies. While scholars have proven that voters place a certain amount of weight on basic heuristics such as candidate gender and party allegiance, little attention has been paid to the way that these two factors may interact to inform the decisions candidates make when considering their presentation to the general public. This study looks at female candidates in particular, seeking to determine how and to what degree they may be uniquely influenced by gender and party stereotypes in ways that distinctly differ from their male counterparts. Specifically, attention is paid to partisan differences with regard to the ways that these factors differently control female candidates in the Democratic and Republican parties. To reveal answers to these questions, I look at candidates' image and issue presentations in both their campaign websites and television advertisements.

David Shalleck-Klein

Advisor: Leila Kawar

My Dorm Is My Castle: The Fourth Amendment, Democracy, and Colleges

This thesis examines the relationship between rights under the Fourth Amendment and searches of students' dorm rooms in private colleges. Following an

initial examination of the different jurisprudential understandings of the issues underlying the constitutional framework for governmental intrusion into protected areas, the thesis then stresses the amendment's bedrock role in protecting people from the dangers of tyrannical governmental power as a crucial aspect of liberty and freedom. A doctrinal examination of dormitory room searches follows to demonstrate how judges, the everyday interpreters of law, apply the Fourth Amendment to dormitory searches. Bates College is then used as a case study to assess how one college addresses issues that arise in educating students about and fostering democratic values in the context of searches. Through interviews with administration officials and security personnel, this thesis identifies the policies/protocols guiding dormitory searches and the everyday interactions that occur. It evaluates whether policy and practice comport with legal and democratic theory and what messages about privacy, security, and the use of power, both public and private, the college communicates. The thesis concludes by arguing that colleges should take an active role in educating students about and guarding against unwarranted intrusions on liberty.

PSYCHOLOGY

Brianna R. Bakow

Advisor: Kathryn Low

Ukuthwasa: A Culture-Specific Syndrome?

This study investigates *ukuthwasa*, a South African culture-bound syndrome, and its relationships to symptoms of schizophrenia and depression. Culturally, *ukuthwasa* is believed to be the calling to become a *sangoma*, a type of traditional healer similar to a diagnostician, while in Western medicine *ukuthwasa* is considered a mental disorder. Participants were comprised of South African Western mental health professionals, *izangoma*, and educated native South Africans living in the Durban metropolitan area (N=13). Based on the interview data, there is a strong association between the symptoms of schizophrenia and *ukuthwasa*, as well as a comorbidity with depression. However, the course of *ukuthwasa* differs from that of Western illnesses.

Charlotte D. Brill

Advisor: Kathryn Low

Exploring Alcohol Myopia in Alcohol-Related Rape between Cross-Sex Friends

The relationship between alcohol consumption and sexual assault has not yet been examined in the context of college students' casual sexual relationships with their cross-sex friends. Previous research on alcohol intoxication and sexual assault between brief or romantic acquaintances has frequently drawn on alcohol myopia theory (AMT). AMT suggests that alcohol impairs the processing of environmental behavioral cues, such that an intoxicated individual only attends to disinhibitory environmental cues that encourage a behavior and lacks the cognitive resources to process subsequent inhibitory behavioral cues. Interestingly, AMT research has also demonstrated that alcohol may act as a behavioral inhibitor as well: when intoxicated individuals receive the fear-provoking cue of a risky behavior's negative consequences, they are less likely to endorse that behavior. Thus, this experiment expanded previous AMT research by exploring the effects of expected and actual alcohol consumption on perceptions of when a man should stop his sexual advances and of a woman's sexual arousal in a rape scenario featuring cross-sex platonic friends. It also examined the impact of both social intimacy and sexual history on responses to such a scenario. Implications for these findings include a broader view of the interpersonal and situational factors that contribute to alcohol-related rape.

Gina F. Petracca

Advisor: Krista Scottham

Cooking Made Easy: A Healthy Eating Behavior Change Intervention for Adolescents

Adolescent obesity has become a national epidemic in the United States prompting an urgent need for adolescents to make healthier eating choices. Research shows that adolescents who help cook food in their households have healthier diets and better eating behaviors than those who do not assist with preparing food (Larson, Story, Eisenberg, & Neumark-Sztainer, 2006), and that cooking programs successfully teach adolescents the necessary skills for food preparation. Interestingly, very little research exists on the effectiveness of cooking classes as an intervention for creating changes in eating behavior. The current study developed a behavior change intervention in the form of a cooking class, using the transtheoretical model of change – which has been used in a variety of health behavior change interventions – as its framework, in an attempt to demonstrate the effectiveness of cooking classes to initiate healthy eating behavior changes in adolescents. The program was assessed using a stages-of-change questionnaire, individual interviews and focus groups. Qualitative results indicated that adolescents' eating behaviors were positively affected by the cooking classes. Based on the findings the use of cooking classes as healthy eating interventions for adolescents is highly encouraged.

Molly E. Radis

Advisor: Susan Langdon

The Relationship between Physical Activity and Academic Achievement in Children

Previous research illuminates a relationship between exercise and cognitive functioning in young children. The current study examined this relationship in the context of the Lewiston School System. Goals of the study included a) determining if exercise and academic achievement are positively correlated b) promoting physical activity in local elementary schools. The study was comprised of three parts. A week-long Pedometer Pilot Program was conducted with 98 students in five fourth-grade classrooms. Daily step counts were compared to academic grades and to Northwest Evaluation Association (NWEA) standardized test scores. FITNESSGRAM and NWEA scores of 142 students from 2008 were analyzed to determine if physical fitness can predict academic achievement. Lastly, students at Farwell Elementary School engaged in a movement-based learning intervention for nine weeks. The Pedometer Pilot and FITNESSGRAM study both indicated that exercise and academic achievement are positively correlated. Students who were more physically active earned better grades and performed better on standardized tests than their peers. Taken as a whole, these results indicate that educators should be made aware of exercise's cognitive benefits, and may want to allocate more in-school hours to physical education and movement-based learning.

Katherine D. Reilly

Advisor: Georgia Nigro

The Effect of Playful versus Academic Learning Experiences on Preschoolers' Cortisol Levels

The decline of play in the lives of children has sparked great concern among developmental psychologists and early childhood educators. Although research suggests that children learn best when they are playing, many parents, educators and policymakers have turned to more direct-instructional programs in the hopes of fostering greater intellectual gains. Some research has shown a link between direct-instructional programs and higher stress levels. I conducted an experimental study to find more compelling evidence about this association. Preschoolers from the Lewiston/Auburn area participated in pairs in an 80-minute study in the developmental lab at Bates College. Half of the participants participated in a learning experience designed to simulate a play-based preschool curriculum. The other half participated in a learning experience designed to simulate a direct-instructional preschool curriculum. Saliva samples were obtained before and after the learning experiences and were later analyzed for concentrations of the stress

hormone cortisol. Results may provide stronger evidence about the suggested link between different types of preschool programs and stress levels, giving parents, educators, and policymakers important information to consider as they choose what types of learning experiences are most beneficial for preschoolers.

Michelle C. Silverman

Advisor: Krista Scottham

Implementing a Dialectical Behavior Therapy Program for Local At-Risk Youth

Dialectical Behavior Therapy (DBT) is an evidence-based treatment, which blends standard cognitive behavioral therapy with Eastern meditation practices. Although previous research has demonstrated its effectiveness with adolescents suffering from a wide range of psychological disorders, DBT is not currently offered as an outpatient service in the Lewiston-Auburn community. In order to provide therapeutic treatment to the increasing number of at-risk youth in the community, a local group home for teens is preparing a grant proposal for state funding, so that DBT can be offered as one of its outpatient services. The present study assessed how to best implement this program by investigating how DBT has been adapted for adolescents, barriers associated with DBT for adolescents, local adolescent commitment to undergoing therapy for their target problems, and parent and adolescent interest in DBT techniques. Results support interest in DBT among community members and indicate that many local youth are not only exhibiting negative behaviors that DBT has been shown to improve, but that they are motivated and ready to commit to therapeutic treatment. Implications and limitations of these results are discussed.

RELIGION

Julia M. Bedell

Advisor: Susan Schomberg

From Mirra Alfassa to the Mother: Tracing the Path of a Modern Spiritual Icon

In 1926 the Indian yogi Sri Aurobindo removed himself from the public eye, entrusting the affairs of both his popular Pondicherry ashram as well as his communication with the outside world to a Parisian woman named Mirra Alfassa. Aurobindo declared to his devotees that this woman was an avatar of the divine and was to be revered as the “Universal Mother” representing the entire life-force

(shakti) of the universe. From this point onward Mirra was referred to as “the Mother” and she continues to be worshiped today post-mortem throughout South India. How did Mirra, a twice-married painter who was born and raised in Paris, become accepted within a long-standing tradition of Indian goddess-worship? My thesis explores this question by tracing Mirra’s personal spiritual journey as documented within her own autobiographical writings, devotee literature, and scholarly commentary. Mirra’s personal union with the divine became further solidified in her meeting with Aurobindo, culminating in her ability to become a modern-day guru within a foreign context. The Mother’s divine presence persists today in the hearts of her devotees, within the Pondicherry ashram, and in the international community founded by Mirra, called Auroville.

Jared Bok

Advisor: Susan Schomberg

Contextualization of the Gospel to Muslims and Its Implications for Christian-Muslim Relations

For many Christians, “proclaiming the Good News” about Jesus is intrinsic to their faith. Some of them have sought to explain the Gospel in terms and concepts relevant to each unique geographical and cultural context. In modern evangelism efforts, this strategy is called “contextualization.” Over time, the concept has undergone several significant developments, one of the most controversial of which is the inclusion of the notion that people can believe in Jesus without changing their religious identities. This thesis explores this brand of “proclamation” and its implications for Christian-Muslim relations. To this end, the project covers several important themes: 1) Why do Christians feel that proclamation is vital to their faith? 2) What exactly is this form of contextualization that argues that Muslims can believe in Jesus while remaining Muslims, and what are the controversies surrounding it? 3) How have Muslims responded to Christian proclamation efforts, and, particularly, how are they likely to respond to current contextualization strategies? To answer these questions, this project draws from Christian (especially missionary) literature, as well as primary and secondary Muslim sources, concerning proclamation, missionary activity, conversion, apostasy, and contextualization itself.

Peter B. Linsley

Advisor: John Strong

Encountering the Demonic: Buddhist Exorcism in Song China

A current preoccupation in the study of premodern Chinese religion centers on Buddhism's influence over popular ritual in the Song dynasty (960—1279 C.E.). A general feeling persists that, far from dying out with the late Tang persecutions and subsequent rise of Neo-Confucianism, Buddhism flourished in the sphere of Song local ritual. Buddhist tantric method played a significant role in transforming Daoist and local ritual classically used to treat cases of disease, hungry spirits or troubled ancestors, misfortune, and demonic possession. This thesis considers how Tang forms of Buddhist exorcism left the court and entered the vernacular setting in the Song. In order to better engage local religious anxiety and successfully garner socioeconomic support, Buddhist exorcistic method transformed in a way which resonated with rural shamanic practice but still worked within Buddhist laws of purity. Tantric method facilitated this precarious balance in a ritually effective manner, and in the process played a large role in defining the lived religion of modern China. It answered a question most pertinent to the survival of Buddhism in the Song: How does one deal with the supernatural?

RHETORIC

Kate B. Eisenpress

Advisors: Stephanie Kelley-Romano, Julie Rabinowitz

Death Panels: How Conservatives Derailed Health Care

President Barack Obama, promised to issue in a new era of politics, one that values bipartisan pragmatism above partisan pettiness. However, in the first year of his presidency, partisan politics continued to rule the legislative process in Washington, D.C. The debate surrounding the passage of the cornerstone policy of his administration, healthcare reform, has been mired in partisan debate. During these deliberations, both conservative and liberal figures have attempted to persuade voters of the wrongfulness or the rightfulness of such a bill. Overall, conservative media personalities have been more successful than liberals in arguing against reform, by changing the terms of the debate. Through the use of metaphorical analysis, this thesis examines the use of the metaphor of “death panels” within the healthcare debate as an example of conservatives’ ability to sway voters through deep-value frames, and develops an understanding about the liberals’ failure to popularize their own agenda (Lakoff and Johnson, 1980). By naming, framing, and changing the debate through metaphor, conservatives have

boasted of their comparative success, which exemplifies the power of metaphor to alter and affect public opinion (Steen, 2008).

Alexandra E. Howard

Advisors: Stephanie Kelley-Romano, Julie Rabinowitz

Screening the First Lady: Michelle Obama's Negotiation of Race, Class, and Gender on Entertainment Television

In 2008, Michelle Obama became the first African-American first lady of the United States. An icon of both American womanhood and racial progress, Michelle Obama embodies the intersection of race and gender more prominently than any other American figure. Despite her groundbreaking role, the American public restricts Obama. Tied to traditional expectations of the first ladyship, Obama must negotiate between her private role as a wife and mother and her public role as a champion of social causes. Race further binds Obama. She must work to identify with African-Americans of varying classes while simultaneously presenting an acceptable image of Black womanhood in keeping with the traditionally White image of the first ladyship. In this thesis, I apply theories of intersectionality, language, performance of race and gender, and first-lady rhetoric to examine Michelle Obama's enactment of race, gender, class, and first ladyship in her presence on PBS' *Sesame Street* and The Food Network's *Iron Chef America*. I suggest that the way Obama performs the multiplicity of roles with which she is saddled on entertainment television reflects societal views on race and gender.

Mark H. Johnston

Advisors: Stephanie Kelley-Romano, Charles Nero

Repetition as the Father of Learning: George W. Bush's Systematic Redefinition of Terrorism between September 11th and the Passage of the USA Patriot Act

The military action of the “War on Terror” began shortly after terrorists reduced the World Trade Center’s twin towers to rubble and scarred the face of the Pentagon on September 11, 2001. The wake of the terrorist attacks of September 11th not only saw the United States engage in military action in order to avenge a tremendous loss of American life, but also saw Congress pass the USA Patriot Act in an effort to prevent future attacks. The Patriot Act rearranged the American defenses against terrorist action, and literally redefined terrorism in the U.S. code. This thesis analyzes the rhetorical strategies of George W. Bush in his systematic redefinition of terrorism, but instead of looking at his major speeches, it looks at his weekly radio addresses between September 11th and the passage of the USA Patriot Act

seven weeks later. The analysis focuses on specific rhetorical strategies employed by Bush in order to facilitate a legal redefinition of terrorism.

Lindsay S. Thomson

Advisor: Jan Hovden

Blogging@Barack: The Intersection of the Public Sphere and the Blogosphere During the 2008 Presidential Election

The philosopher Jürgen Habermas is most well known for his work on the creation and subsequent demise of a “bourgeois public sphere” in eighteenth-century Europe. The public sphere was defined as body of private citizens engaged in rational-critical debate on political issues. However, the rise of capitalist economies and the mass media led to the collapse of the public sphere, replacing democratic debate with homogenized, prefabricated political reportage. Habermas’ theories have not been lost though, as the rise of the Internet has created a digital realm in which public discourse on political issues flourishes. The political blogosphere is seen as this new media, a leader in online journalism and democratic citizen participation that closely mirrors Habermas’ theories. Employing rhetor Kenneth Burke’s ideas on identification, this thesis examines the relationship between the public audience, blog authos, and the mainstream media for evidence of bi-directional influence. A close content analysis of elite political blogs focuses on Obama’s first 100 days in office as a small snapshot of the current political climate. This data is examined for trends similar to those presented by Habermas, and ultimately conclude if the blogosphere represents a re-imagination of the public sphere.

SOCIOLOGY

Rachel P. Eades

Advisor: Emily Kane

Structure and Agency in the Health Care Strategies of Uninsured Working Adults

According to 2008 U.S. Census data, 46.3 million Americans are living without health insurance. Most uninsured Americans come from working families, despite the supposed link between employment and health benefits in the United States. This gap in the U.S. health care system acts as a structural constraint, shaping health care options for the uninsured. While many are unable to access the care they need, the uninsured are not passive victims of a broken health care

system. Instead, people without health insurance constantly find ways to adapt within and even act back on institutional structures to maintain health for themselves and their families. Using data from 21 qualitative interviews conducted in Maine and New Hampshire, this thesis explores the strategies for health care used by working adults without health insurance. For uninsured adults, health care decision making reflects both the weight of institutional structures and opportunities for individual agency. Every day, individuals without health insurance suffer the adverse consequences of their insurance status, but also creatively manage their health needs. This thesis contributes to the conversation on health care reform, giving voice to the lived experiences of Americans without health insurance.

Abby R. Mays

Advisor: Sawyer Sylvester

Covering All the Bases—Or Is It? Sex Education in Maine Public Schools

In 2002, Maine set forth a mandate for comprehensive sexuality education in all public schools. Alongside this mandate, Maine rejected federal funding for abstinence-only programs offered under the Bush administration. These decisions should make Maine's sexuality education programs among the more comprehensive in the nation. My thesis explores these questions: Are Maine's programs universally comprehensive? If there is variation in the quality of programs, what is to blame for this? My methods of investigation included talking to high school sex education teachers and administrators responsible for implementing the mandate, as well as those who designed the mandate. Through this process I discovered that not all sex education programs in Maine are created equal, that a lack of assessment of health programs makes for legislation that is almost impossible to enforce, and that teachers and administrators alike struggle with the disconnect between what is hoped for Maine and what is actually accomplished. What gets taught in the classroom depends on the individual teachers' personal views, skills, and preparation to take on the challenge of teaching sexual education; the political environment; parental influences; and the philosophies of administrators. What gets taught in the classroom ranges from comprehensive to nothing at all.

Alix E. Melamed

Advisor: Emily Kane

“To Have and to Hold”: Views about Marriage among College Students

My thesis examined how college students at an elite, liberal arts college conceptualize marriage both in their own lives and in the context of greater society.

Scholars from varying disciplines believe that understanding how college students conceptualize marriage today will help to understand marriage and divorce trends in the future. Based on the evidence found in my review of the scholarly literature, I hypothesize that most college students will express a strong preference for getting married and having children. Furthermore, I believe that college students will place great value on the institution of marriage in general. In order to test my hypothesis, I conducted eight focus groups. Each focus group was comprised of five male or female college students that I sampled from the Bates College student population. To date, I have found that these college students do desire a more “traditional marriage” model as is described in the literature and highly value the institution of marriage. However, I also found that this inclination toward the “traditional model” is heavily tempered by the desire for personal establishment and definition prior to marriage.

William R. Morimer

Advisor: Matthew Archibald

“Overwhelmed and Underfunded”: EMT Views toward Medical Indigence, Impact on Medical Service, and Systematically Learned Attitudes

Emergency medical technicians (EMTs) of all license levels have regular and frequent interaction with medically indigent patients. Still, there is no wide body of literature directly studying the intersection of the different ways these patients use the pre-hospital emergency system and its impact on the views of EMTs toward these patients. This study uses qualitative methods to examine how EMTs view their medically indigent patients, how these views ultimately impact the care that the medically indigent receive, and the process through which EMTs learn to view patients in certain ways. I rely on a combination of intensive semi-structured interviews and open-ended focus groups to explore the views of EMTs. Study results show that EMTs have extraordinarily complex, nuanced, and often contradictory views of their patients. While EMTs take care to follow protocol on all patients, the medically indigent are perceived as more likely to “abuse” the ambulance and therefore are seen as less deserving of care. This leads to subtle inequity in the way that indigent patients are treated medically. Additional results indicate that EMTs learn to view their patients in particular ways through a systematic process.

SPANISH

Elizabeth H. Russell

Advisor: Francisca López

La Semana Santa de Sevilla: Un Análisis Cultural de la Identidad Sevillana a Través de la Fiesta

Every spring religious confraternities of Seville, Spain, celebrate the Holy Week (Semana Santa) by processing floats representing the Passion of the Christ and the grieving Virgin Mary through the streets. Although the celebration has a basis in the Catholic faith and is a prime example of popular religiosity, it is the secular and sometimes profane behaviors present during the Semana Santa of Seville that make it unique. Using cultural studies as a theoretical approach, I analyze media representations and various newspaper articles and videos posted on the Internet, focusing on the comments of the articles and videos. Most comments emphasize secular aspects of the processions rather than religious, demonstrating more loyalty to the city of Seville than to Roman Catholicism. The reactions of the people of Seville show that their Semana Santa not only reflects a sense of identity and pride, but simultaneously forms these ideas as well. The significance of the Semana Santa of Seville extends beyond religion and becomes a manifestation of allegiance for the people of Seville.

THEATER

Margaret H Koerber

Advisor: B. Christine McDowell

Visualizing Comedy: Costume Design for *You Can't Take It with You*

This thesis provides a close reading of *You Can't Take It with You* by Moss Hart and George Kaufman, the winter 2010 Bates College Theater Department mainstage production. The comedic tone of the play is analyzed with reference to the context of its era, and concentrates on psychoanalysis of its characters. The thesis focuses on a study of each character, their complex relationships, and the demands presented by the text and the director's interpretation. In-depth research of men's and women's fashions of the 1930s is coupled with the character analysis and is manifested in the choices of costume design, descriptions and sketches of which are included.

Caroline A. Servat
Advisor: Paul Kuritz

From Blood to Wine to Hell: A Queen Reckons in Red

This thesis constitutes the written component of my performance thesis fulfilled by the mainstage theater department production, *All the World's a Grave*. It explores the composite nature of my character work, integrating several of Shakespeare's most complex female characters: Lady Macbeth, Gertrude, and Lady Anne. I argue that these characters influence but did not determine the psychology and disposition of my character, the Queen. Specifically, I use the Queen's preoccupation with her hands and the dynamic symbol of her hair within our production as a metaphorical tool for tracing her ever-disintegrating mental state.

Lana Y. Smithner
Advisor: Martin Andrucki

"I'm the Happiest Girl in the World," or am I?: Performing the Role of Alice Sycamore in Kaufman and Hart's *You Can't Take It with You*

In a time when no one can escape the pitfalls of an economic crisis, the theater can act as a comforting distraction from a world obsessed with and controlled by money. George Kaufman and Moss Hart, two renowned playwrights from the 1930's, understood the positive effects theater can have on a community, especially when humor is involved. They wrote *You Can't Take It with You* in 1935, a comedy about an eccentric family who lets nothing, especially money or status, control them. When this family's token "sane" daughter becomes engaged to a Wall Street executive's son, the value of money is brought to the forefront. I analyze the text, the time period and economic depression and how they relate to the present day, the playwrights, the positive (or counterproductive) effects of theater as a distraction, and complete intensive character work for the written aspect of my thesis. Additionally, I performed in the play in the role of Alice, the young ingénue whose engagement brings up the punchline of the play, that you can't take money with you and "there ought to be something more" to show for one's life besides a bank account.

Marielle P. Vigneau-Britt
Advisor: Paul Kuritz

Juliet in John Reed's *All the World's a Grave*

For partial fulfillment of my thesis in performance I performed the role of Juliet in the Bates College fall 2009 production of *All the World's a Grave*, by John Reed and directed by Paul Kuritz. The play presented linguistic and emotional challenges for my character. I overcame these challenges by close examination of the text of the play and other Shakespeare plays, and weekly meetings with the director in which we discussed interpretations of the text, plot, and characters. Additionally, I rehearsed with the cast daily for two to three hours and kept a journal of my progress and discoveries during the rehearsal process. In my written reflection of my role in the play, I discuss how my character changed and took shape within the whole of the production.

WOMEN & GENDER STUDIES

Alicia A. Gilman

Advisor: Erica Rand

A Place for All Girls *and* Those At Risk: An Analysis of Girl Scouting in Public Housing in Lewiston, Maine

My thesis is a case study of A Place for Girls in Lewiston, Maine, which is a nontraditional Girl Scout troop created for “at risk” female youth. I use A Place for Girls as a model to locate and trace the history of applying a discourse of at risk populations in Girl Scout policies, literature, and the larger history of girl scouting itself. My analysis explores the elements involved in the construction of this discourse, focusing particularly on gender, race, class, and sexuality, in order to analyze the implications of this discourse upon the female youth to whom the label is applied. I argue that the events, people, and ideologies involved in the creation of the initial Girl Scout program anticipate the current divide between traditional and nontraditional troops such as A Place for Girls. My analysis reveals a much larger history and central discourse of difference and separation which calls for a critique of GSUSA’s marketing of an international sisterhood and universal Girl Scout identity. From this critical study, I ultimately aim to offer suggestions for improving Girl Scout programming.