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John K. Garber *

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AMERICAN CULTURAL STUDIES

Kathleen Burke Advisor: Stacy L. Smith

From Stakeholders to Shareholders: How the For-Profit Charter Movement Has Affected Discourses of Access and Equity within Charter School Reform

Charter schools represent a dramatic transformation in education reform over the past decade. These public schools of choice funded with state education dollars exist in thirty-nine states and the District of Columbia, representing more than 2,700 of America's schools. When charters were first introduced by Raymond Budde and Al Shanker, they were hailed as mechanisms for teachers to take control of their schools and implement innovative curricula in their respective learning communities. Yet, since the initial rhetoric emerged, public discourse surrounding charter schools has shifted significantly, primarily with regard to for-profit charter schools, the fourteen percent of charters run by corporations seeking capital gain from educational ventures. I utilize multiple methods of analysis, from educational sociology to rhetorical analysis, to examine the fundamental gaps in the discourse between the original conception of charters to the present media rhetoric surrounding for-profit charters. In doing so, I look for chasms in understanding regarding access and equity in American education. Specifically, I argue that rhetorical transformations suggest that involvement of teachers has decreased in the charter process, and that discourse surrounding equality for students has been replaced with free market metaphors aligning success with the "products" of education.

ANTHROPOLOGY

Elizabeth E. Hoagland Advisor: Loring M. Danforth

The Construction of Male Homosexualities in Oaxaca, Mexico

Homosexuality is not a concept universal to all cultures. Homosexual behavior exists in all cultures, but a specific homosexual identity associated with people who engage in homosexual acts does not exist in all cultures. The concept of homosexuality does exist in Oaxaca as do homosexual identities. However, the ways in which homosexuality is understood and homosexual identities are constructed are unique to Mexico and more specifically to Oaxaca. This thesis examines the social construction of homosexualities in Oaxaca and the role of global cultural exchanges in this process. Local conceptions of homosexualities in Oaxaca can only be understood through the understanding

of the interaction between global cultural exchanges and traditional concepts of homosexualities. The ethnographic material covered includes a narrative chapter on a typical day for a gay man in Oaxaca, and three analytic chapters that examine coming out in Oaxaca, *la marcha*, a gay pride march, and *la vela*, a traditional party. The last two chapters on *la marcha* and *la vela* are the two main events of Orgullo Gay Mexico, Gay Pride Mexico, and demonstrate local agency interacting with global cultural exchanges.

Sara T. Montrone
Advisor: Loring M. Danforth

Moscow's Monumental Landscape: Contesting Russian National History

This thesis examines the relationship between the state, monuments of the state, and Russian national identity in the Russian Federation. Monuments are erected by the state to achieve certain goals, whether to propagate a certain ideology or influence the people to some end. However, the meaning of a monument after its construction is continually changing as it becomes a part of the symbolic landscape. The value of monuments to the construction of national identity lies in their ability to create various versions of the past. I elucidate the different meanings the monuments have for the nation and state. After giving a general overview of the role of monuments as symbols in Russia's history, I concentrate on specific monuments in Moscow. One chapter analyzes the monument to secret police founder Feliks Dzerzhinsky and the change in its meaning depending on time and location. Another chapter analyzes state use of pre-Soviet monuments to reconnect with a less painful national past. Finally, I analyze Lenin's mausoleum through the artwork of Soviet dissident artists, Komar and Melamid.

BIOLOGICAL CHEMISTRY

David J. Worhunsky
Advisor: Paula J. Schlax

The Bacterial Response to Stress: Regulation of rpoS Gene Expression

Survival of all organisms depends upon their ability to respond to the varying conditions of their surroundings, including limited nutrient supplies, changes in extracellular ion concentration, and other environmental stresses. The manner in which cells survive such pressures is through altering their pattern of gene expression. As the central paradigm of molecular biology, gene expression refers to the process by which DNA is transcribed into mRNA and the mRNA subsequently translated into

protein._S, the protein product of the *rpoS* gene, controls expression of over fifty genes in *Escherichia coli* responsible for cell survival during the bacterial stress response. Translation, and therefore expression of _S is increased during a stress response as a result of changes in the structure of the mRNA. Three non-coding RNA molecules regulate translation of the *rpoS* gene. My work is focused on the understanding of how one of these non-coding RNA molecules modulates RpoS mRNA structure and thus the efficiency of rpoS translation.

BIOLOGY

Amanda P. Devine
Advisor: Curtis C. Bohlen

Effects of Inorganic Nitrogen Addition and Elevation Change on Species Evenness and Productivity of Salt Marsh Forb Pannes

Previous studies show that amelioration of stressful conditions such as nitrogen deficiency and waterlogging leads to an increase in productivity and a decrease in species evenness as intensity of competitive interactions between neighbors increases. This study examines the response of productivity and species evenness of forb pannes in the Sprague River Salt Marsh, Phippsburg, ME, to a two-factorial manipulation of soil waterlogging and nitrogen availability. Experimental plots were either raised or lowered from ground level in order to decrease or increase waterlogging, respectively, in conjunction with one of two levels of nitrogen fertilization. Elevation controls remained at ground level and fertilization controls received no fertilizer. As nitrogen mineralization in waterlogged soils is hindered by the absence of aerobic microbial action, I expected that lowering plots would diminish the effects of fertilization; conversely, I expected raising plots would enhance fertilization effects. Fertilization resulted in a loss of species evenness and an increase in total biomass. Raising plots also led to a decrease in evenness while lowering plots had no significant effect. Elevation had no net effect on total biomass of plots, and there existed no interaction between fertilization and elevation for any measured parameter.

CHEMISTRY

Hilary L. Domush

Advisor: Jennifer L. Koviach

Synthesis of 2-Deoxyglycosides by Conjugate Addition

The class of carbohydrates known as 2-deoxyglycosides is particularly important due to their presence in many antibiotics. The 2-deoxyglycoside linkage often provides the physiological significance of many large molecules. However, 2-deoxyglycosides are more difficult to synthesize than their fully oxygenated counterparts. The synthetic difficulty derives from the absence of oxygenation at the C-2 position. Conjugate addition to glycals offers a means by which this physiologically important moiety can be prepared. Conjugate addition is a simpler and more elegant technique than the current method, which involves the addition and subsequent removal of an activating group in the C-2 position. This project expands upon work found in the literature to include the initial conjugate addition studies of not only the primary benzyl alcohol, but also the secondary alcohols isopropanol, and cyclohexanol. Effects of protecting groups are also investigated.

James D. Wilcox Advisor: Thomas J. Wenzel

Calix(4) arenes as Chiral Solvating Agents in NMR Spectroscopy

Many molecules exhibit the property of chirality, or "handedness." Chirality arises when a molecule cannot be superimposed on its own mirror image. The left and right-handed forms of the molecule are known as optical isomers. Chirality can have significant effects as many biological systems have the ability to discriminate between optical isomers. This is of particular importance in the field of pharmaceutical development as drugs created in the lab are often mixtures of optical isomers. While one of the optical isomers may have the desired effect the other may have no effect at all or could possibly prove toxic. This research is focused on developing derivatized calix(4)arene molecules that can be used as chiral solvating agents with nuclear magnetic resonance (NMR) spectroscopy to discriminate between optical isomers. Calix(4)arenes are "basket-like" compounds capable of associating with chiral substrates in solution. Chirality can be achieved by attaching optically pure amino acids to the calix(4)arene. The complexes between the optical isomers and calix(4)arene are fundamentally different and can lead to discrimination in the NMR spectrum. The coupling of lanthanide ions to the calix(4)arenes has also been explored as a means of increasing the degree of discrimination in the NMR spectrum.

ECONOMICS

Mika C. Kanda Advisor: James W. Hughes

The Economics of Third Culture Kids

Third Culture Kids (TCKs) are individuals who have spent a significant amount of time during their developmental years in countries other than their parents' passport country. This thesis hypothesizes that the economic productivity of TCKs, measured by income, is higher than those without the TCK experience. Using Mincer's human capital earnings function I will look for statistical differences between the two groups when education, age, and sex are held constant. In other words, the culture and the environment in which children are rearred play an important role in determining the economic productivity of later labor markets. The Panel Study of Income Dynamics represents data for non-TCKs. As there are no known national surveys that identify TCKs from the rest of the population, TCK data come from an original online survey conducted over the summer of 2002. A search in the current economic literature yields no research as of date on the economic productivity of TCKs. This thesis is the first research on TCKs within economics.

Peter Kozak

Advisors: David A. Aschauer and Melinda H. Harder

Valuation of Risky Fixed Rate Debt and Credit Default Swaps

Perhaps the most insightful class of models of credit-risky corporate bonds utilizes the contingent claims approach with exogenous default barrier, whereby the default event is assumed to occur when the total market value of the firm's assets falls to a sufficiently low level relative to the firm's total liabilities. This threshold level is called a default barrier, and it acts as a safety covenant providing a contractual mechanism that enables the bondholders to enforce bankruptcy upon the firm. In this thesis, I develop a two-factor model for pricing credit-risky fixed-rate debt in a stochastic interest rate environment. This model is an extension of the exogenous Briys and de Varenne (1997) model, and since it incorporates interest rate uncertainty, allows for deviations from the absolute priority rule and provides bondholders with a safety covenant with the option to force early bankruptcy, it is capable of producing quite diverse shapes for the term structure of yield spreads. Within this framework, I develop a new model for valuation of some simple credit derivatives, such as credit default swaps, which enable market participants to isolate and hedge specific aspects of credit risk.

Sacha Savrimootoo Advisor: David A. Aschauer

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Range Volatility Breakouts and the Stochastic Behavior of Stock Prices: A Closer Look at the Random Walk Hypothesis

I investigate an area of financial economics that has been the subject of much controversy over the last fifty years. The notion that stock prices follow a random walk, i.e., a path that is indeterministic and hence unpredictable, is held by efficient market theorists. Experts argue that the study of past price patterns is a worthless exercise: it provides no "edge" to an investor seeking to maximize returns. However, this consensus has weakened over the last decade with an increase in conflicting evidence on the random walk. Yet, the latter and the "buy and hold" form of investment, also known as passive investing and popularized by Warren Buffett, still finds institutional support. In my thesis, I analyze not so much the merits of passive investing as the underlying factual evidence for the random walk hypothesis. My analysis extends the work of Professor Eugene Fama on the behavior of stock prices and seeks to produce further evidence on the true nature of stock price fluctuations.

Daniel J. Taylor
Advisor: Margaret Maurer-Fazio

Intra-household Allocation Bias in China: Does Son Preference Decrease with Increases in Economic Welfare?

This thesis examines patterns of intra-household resource distribution in China. Goods may be allocated in a biased fashion if household members with decision-making power exhibit son preference. Son preference results in greater intra-household resource expenditure on boys than on girls, ceteris paribus. There are few places where son preference is as prevalent and noticeable as in China. The implications of the combination of son preference and China's one-child policy are serious. The consequences include both higher infant mortality rates for girls (resulting in skewed post-birth sex ratios) and sex-selective abortions (leading to skewed at-birth sex ratios). There is evidence to suggest that Chinese son preference, rooted in Chinese Confucian culture, is sensitive to the economic environment. The outcomes of son preference are likely more severe for populations with few entitlements and low levels of economic welfare. I hypothesize that the outcomes of son preference are less apparent for higher levels of economic welfare. I test this hypothesis by applying both the "Engel framework" of equivalence scales and the "Rothbarth framework" of demand for adult goods to a large micro-level Chinese household data set. I thus examine differences in household resource allocation by household composition for communities of differing levels of economic welfare.

ENGLISH

Margaret C.S. Herrick *Advisor:* Lewis A. Turlish

"Wombed in sin darkness I was too. Made not begotten:" The Making of the Artist in James Joyce's *Ulysses*

The focus of my study is to gain a comprehensive view of James Joyce as an artist through the lens of his most famous work, *Ulysses*. I begin with a broad biographical sketch, since much of my textual analysis is highly dependent on a knowledge of the basic facts of Joyce's life. From there I examine a number of Joyce's literary forefathers, namely Flaubert, Ibsen, Dante, and Giordano Bruno, and the way their stylistic influences can be tracked in *Ulysses*. I look for traces of Joyce's moral guides, people who imparted some knowledge about the social, spiritual role art plays, or should play, in society. In *Ulysses* these guides are frequently heretics who embody the power of the imagination to break away from conventional authorities. I consider Joyce as a specifically Irish writer and the influences of the Irish literary revival and the Troubles on *Ulysses*. Finally, I examine the way in which Joyce's relationships with his father and his son provide the inspiration for this whole novel, which draws so heavily on the mystical, even divine, bond between fathers and sons.

Howard W. Martin
Advisor: Robert L. Farnsworth

Disturbing the Quotidian: Parable Poems of Louis MacNeice

Most critical responses to Northern Irish poet Louis MacNeice have focused either upon his early fascinations with the textures and trials of contemporary life, what his most famous poem "Snow" calls "the drunkenness of things being various," or upon the longer, politically charged journalistic meditations he undertook in the 1930s in company with such English writers as Auden and Spender. Most contend that the more prosaic work of his late middle years lost vitality, but that his last poems featured a remarkably expressive compression, parabolic and surreal. My thesis illuminates parabolic strains already present in MacNeice's early lyrics and criticism and reveals, through close readings of poems from *Solstices* and *The Burning Perch*, how his distinctive later poems give disturbing insight into everyday experience and its emotional isolations. The thesis concludes by establishing a lineage of "parable poetics," linking MacNeice to contemporary Northern Irish poets Derek Mahon and Paul Muldoon.

Matteo A. Pangallo

Advisor: Cristina Malcolmson

"O blessed object!": An Argument for the Value of The Second Maiden's Tragedy

In October 1611, the Master of the Revels licensed for performance the anonymous play *The Second Maiden's Tragedy*. Since then *SMT* has languished in the dark corridors of dramatic history, with most scholars only considering its authorship question worthy of any study. *SMT* has become merely an enigma to be unraveled, a casualty of our habit of focusing more on playwrights than on plays. This thesis aims to reverse that trend by exploring the play's rich literary and dramatic potential. Included is a discussion of the only extant manuscript's history, an overview of the authorship debate, and an investigation into its use as a source by later playwrights. Literary analysis focuses on the three formal characteristics of theme, structure, and genre and how all three are united through its language, characters, and plot. Also included is an explication of the text's production values, a review of its stage history, and an envisioning of the premier performance. Within the specific practical applications of this thesis, a broader theoretical framework is evident: shifting critical attention from the closed, canonical paradigm of literature to a more open investigation of works *regardless* of their author-based positioning within the traditional hierarchy of texts.

Kate H. Strum

Advisor: Carole Anne Taylor

"Out there somewhere in America": The Poetry and Poetics of Simon J. Ortiz

This thesis examines the poetry and stories of contemporary Acoma writer Simon J. Ortiz, whose art relies on creating a highly formal lyricism out of ordinary rituals and ordinary language. First, it analyzes the way in which Ortiz transforms the rituals and ceremonies important to his native oral traditions into written English. Second, it focuses on the interactive character of poetry representing the struggle to maintain a non-hierarchical relationship with the land, a struggle that places the writer in opposition to many of the conventions of Anglo-European poetics. Finally, it focuses on Ortiz's self-referential use of the Coyote figure, a trickster appearing in diverse guises in many Native American traditions. This section draws together Ortiz's themes and forms to reveal the complexity of his conception of the writer as Coyote, one who must speak to a white world directly enough to be understood but whose political meanings utilize all the levels of irony characteristic of "Indi'n Humor." Ortiz's writing (re)presents the strategies for survival that have grown from the nature of the losses undergone by his pueblo community between the beginning of an internal colonization and the twentieth-century resistance movements in which he himself has participated.

ENVIRONMENTAL STUDIES

Alexis M. Curry Advisor: James G. Richter

Selling Compassion: PETA from the Radical to the Mainstream

Throughout the past century social movements and the organizations that represent them have altered the way Americans interact with different races, genders, and classes, as well as our interaction with the environment and nonhuman animals. Currently, social movement organizations are turning to principles of social marketing to "sell" ideas and persuade social change. This thesis examines the strategies People for the Ethical Treatment of Animals (PETA) uses to market animal rights values in mainstream society. As a non-governmental organization with a limited budget, PETA uses controversial campaigns to get media attention, and markets animal rights through the news it creates. Is this method an effective path to social change? Is it desirable for social movement organizations to use consumer based neo-capitalist commercial marketing principles to "sell" ideas? I explore these questions through literature reviews, informal and formal interviews, and focus groups.

Hannah R. Gaines
Advisor: Curtis C. Bohlen

The Impact of Patch Retention on Ground Beetle (Coleoptera carabidae) Communities in Western Maine

Increasing living standards and world population place greater demand on natural resources such as forest products. Current forest harvest practices can cause habitat degradation and loss of diversity. Researchers at the Manomet Center for Conservation Sciences are studying the potential of a method called "patch retention" for preserving biodiversity on commercial forestry land in western Maine. This thesis examines the effectiveness of patch retention by comparing the diversity of ground beetle (carabid) communities in mature forests, patches, and harvested areas. Carabids are a good indicator of environmental variation due to their species-specific habitat requirements. This study shows that 60-meter diameter forest patches support the same species of carabids found in mature forests, as well as a number of additional transient species. Thus, mature forest communities contain overall fewer species, but with a more even distribution of species abundance; whereas patches and harvested areas support more species, but with a less even abundance distribution. Although the patches support all species found in a mature forest, a 60-meter diameter patch may be the smallest effective forest remnant patch able to do so, as only the community in the very center of the patch resembles that of an undisturbed, mature forest.

Elizabeth A. Kreischer

Advisor: Peter J. Rogers

"We're not just growing plants we're growing people": An Assessment of Who Receives What Benefits from the Community Gardens in Lewiston, Maine

Community gardens in Lewiston have existed for the past four years due to the efforts of a former Bates student, outside organizers, and residents. An assessment of the program has never been done. I worked with organizers and participants to develop three questions that would help assess the programs: Who is benefiting from the community gardens? What benefits are participants receiving? Why do some potential beneficiaries not participate? Answers to these questions were collected through surveys, questionnaires, participant photographs, and participant observation. It was found that the most frequent users of the gardens were white women and children, while men and Somalis were the least frequent. The benefits valued by users were knowledge gained, children's involvement, food produced, and community enhancement. Barriers reported for Somali residents were misunderstandings about the gardens, safety concerns, and a lack of time and interest. Other general barriers included low motivation, a dislike for the responsibility involved, and misconceptions about the purpose of the gardens. Through this study, community garden managers can become more efficient by catering to people's values in the gardens and maximize participation by breaking down barriers to ensure the long-term success of the community gardens in Lewiston.

Maya R. Levine

Advisor: Robert J. Andolina

Ecological Alternatives for Local Development: Confronting Mining in Intag, Ecuador

Intag, a subtropical zone located in northwestern Ecuador, is one of the world's most biodiverse regions, rich in flora, fauna, and minerals. The people of the zone have engaged transnational advocacy networks from local to global levels so as to more effectively resist mining development in their communities and forge alternative development agendas. Unlike other studies of transnationalism, which assume that government hostility toward local groups compels transnational activity, this thesis demonstrates that different levels of government may facilitate or obstruct the demands of local groups. While the national Ecuadorian government largely ignores or harms the interests of Intag residents, the municipal government supports Intag's efforts to create development alternatives, and it attracts support from international NGOs. This networking enables and informs Intag's alternative approach to development, which grants priority to ecological and social concerns. With the passing of an ordinance declaring the region an Ecological County, and international support of this agenda, Intag and the surrounding area in northern Ecuador may prove a model for local communities throughout Latin America facing similar challenges.

Elisabeth B. Markus

Advisor: Curtis C. Bohlen

Vegetation Patterns along Ditched and Natural Channels on Two Maine Salt Marshes

Salt marshes have long been subject to human alteration. This study examines vegetation patterns along ditched and natural channels at two Maine salt marshes, ditched fifty years ago (Sprague River Marsh) and one hundred years ago (Morse River Marsh). Elevation and distance from channel were compared for their ability to predict vegetation zones. The vegetation and morphology of ditches was also quantified, to better understand how ditches change over time. Natural channels were found to have vegetation patterns very similar to the characteristic zonation of New England salt marshes. Spartina alterniflora dominated adjacent to the channel bank, and was replaced by Spartina patens at three meters. The high marsh, above five meters, was dominated by Juncus gerardi. Ditched channels had very different zonation patterns along their banks, supporting the conclusion that ditches create unique microenvironments. Elevation data showed that salt marsh species are restricted to certain elevations resulting in vegetation zonation. The changing morphology of ditches shows that ditches are a dynamic part of the marsh ecosystem. Over time, ditches begin to either aggrade or expand, depending on water velocity and sediment retention. These results suggest that the evolving nature of ditches should be considered in future restoration efforts.

Abigail S. Poe

Advisor: Curtis C. Bohlen

An Energy Analysis of Organic and Conventional Apple Production

Controversy exists over the benefits of conventional versus organic agriculture. One topic of study in this field that has become popular is the difference in the energy use of the two systems. This study compares the energy use in the organic and conventional apple production systems at Ricker Hill Farm in Turner, Maine. In order to calculate the total energy use of both production systems, process analysis, a popular method of energy analysis, was utilized. The boundaries of the analysis included the embodied energy of materials used on the farm and the energy attributed to the fuel used in the production process. As practiced at Ricker Hill Farm, the organic production system utilized more energy per acre per year than the conventional production system, due to the large quantity of sprays that were used on the organic apples.

Christopher L. Westcott *Advisor:* Peter J. Rogers

"Truths" of Development: "Truth," Power, and Resistance in South Africa and Thailand

Underlying the project of international development are many types of assumptions of what a society should be or not be, what is progress, what types of knowledge are legitimate and what are not. This thesis is an effort to reassess and unpack some of these underlying assumptions that deal with how knowledge and truth function within the field of development. More specifically, it explores how scientific knowledge and the goal of economic growth function as what Foucault calls "regimes of truth" within development. As regimes of truth, science and economics are privileged forms of knowledge that come to guide cognition and action, and shape discourses within international development. This thesis explores how science and economics have shaped discourses of conservation and development in South Africa, and agricultural development in Thailand. Using information gathered during recent field work, this thesis also looks at how local actors in South Africa and Thailand have responded and/or resisted these development projects, discourses, and regimes of truth.

GEOLOGY

Amelia R. Haas Advisor: Michael J. Retelle

Paleoenvironmental Reconstruction Using Laminated Sediments from a High Arctic Isolation Basin: Depot Point Lake, Cornwallis Island, Nunavut, Canada

Annually laminated sediments from High Arctic coastal lakes may provide valuable high-resolution records of paleoenvironmental change. The coastal lakes, or isolation basins, have evolved from marine inlets and fiords due to postglacial isostatic uplift and subsequent trapping of seawater in the basins. Anoxia in the bottom waters favors preservation of finely laminated sediments by precluding bottom fauna. Sediment inputs are distinctly seasonal due to the High Arctic climate thus allowing for the deposition of annually laminated couplets. In this study, two sediment cores up to 4.96m were recovered from Depot Point Lake, southeastern Cornwallis Island (75°45'N, 93°39'W). This freshwater lake is presently situated at 12 meters above sea level. The sediment cores contain up to 2.83m of finely laminated sediments overlying massive marine mud. Radiocarbon ages on mollusk valves in the marine mud range from ca. 5760+/- 40 B.P. near the top to 9120 +/-40 B.P. near the base of the cores. Variations in lamination structure and thickness, organic matter content and sediment particle size are proxies examined in this study to determine past environmental changes that may be controlled by changes in temperature and precipitation from ice recession circa 9,000 years B.P. to present.

Rebecca R. Larkin

Advisor: J. Dykstra Eusden

Electron Microprobe Age Dating of Monazite from the Bretton Woods Granite, Presidential Range, New Hampshire

This thesis aims to augment the tectonic models of the Presidential Range, New Hampshire, through electron microprobe age dating of the Bretton Woods Granite. Determination of an absolute age for this pluton on the northwest flank of the range contributes to an understanding of the geologic activity during the Acadian Orogeny in the region. Monazite, (Ce, La, Nd, Th)PO₄, proves to be a useful mineral in geochronology as it contains the radioactive elements uranium, thorium, and lead. Monazites are found with varying degrees of zonation depending upon, and representative of, the conditions of their formation. The monazites of the Bretton Woods Granite are chemically zoned and require a complex model of multiple metamorphic events subsequent to emplacement of the granite in the Presidential Range. In this study, quantitative compositional data from monazite grains located in the Bretton Woods Granite are generated on an electron microprobe and used to obtain dates for chemical zones within the crystal structure.

Nicole A. Ouellette
Advisor: Beverly J. Johnson

Lipid Biomarkers and Paleovegetation Determinations for the Last 30,000 Years at Elikchan Lake, Northeast Siberia

Sedimentary cores from Elikchan Lake, northeast Siberia, provide a continuous sequence of deposition for at least the last 60,000 years (Lozhkin and Anderson, 1996). Pollen analysis indicates several shifts between forest and tundra dominated vegetation between 30,000 and 60,000 years ago (Lozhkin and Anderson, 1996). Lipid biomarker concentrations of modern plants, a plankton tow, and core sediments from Elikchan Lake have been investigated to better understand organic matter sources, deposition, and diagenetic effects within the catchment. A tertiary plot of unsaturated C-26, C-28, and C-30 n-fatty acids indicate that modern plant groups have distinctive n-fatty acid compositions. The concentrations of these n-fatty acids shift downcore in response to changes in source material deposition and diagenetic effects. The lipid biomarker concentration data parallel the pollen data and indicate that terrestrial vegetation has been a major source of input to the basin over the last 40,000 years. This is important in evaluating carbon cycling and improves our understanding of terrestrial responses to climate change.

GERMAN

Martins Masulis
Advisor: Craig J. Decker

Imagining the German Nation in the Political Lyric of Freiligrath, Geibel, and Herwegh

This thesis applies the modernist theories of nationalism by Benedict Anderson and Ernest Gellner to analyze the political and cultural context of the 1848 revolutions in the German lands. The study first looks at the general evolution of national imagination among German intellectuals leading up to the revolution and proceeds to a closer examination of national symbolism and mythology as represented in the political lyric of three poets in the 1840s. Particular attention is devoted to how previous intellectual tradition has shaped the nationalist rhetoric of Ferdinand Freiligrath, Emmanuel Geibel, and Georg Herwegh and to the reconciliation of liberal and nationalist ideologies in their work on the eve of the 1848 revolutions. The study seeks to test the modernist contention that the (German) nation is largely a modern concept, initially constructed and imagined by a small elite of intellectuals and then passed onto the masses to achieve political realization.

HISTORY

Caitlin A. Cook

Advisor: Steve Hochstadt

Motherhood Against the Monstrous: Mothers' Reactions to Concentration Camps During the Holocaust

In this thesis, I explore individual acts of resistance by mothers to the various threats of concentration camp existence during the Holocaust. Among the most prominent functions of concentration camps were the consistent assaults on both the lives and the moral and social frameworks of prisoners. These violations included separation of family members and the creation of a destructively competitive atmosphere that threatened traditional models of social dependency (e.g., the mother-child relationship). As such, I contend that any effort to counteract methods employed by the Nazis to enforce these purposes constitutes significant resistance. My analysis of oral histories and memoirs of concentration camp survivors shows that mothers frequently made decisions about their lives and those of their children in the camps. These decisions reflected values and expectations that vastly exceeded the limited interest of self-survival often categorically assigned to concentration camp inmates. In order to emphasize the importance of the actual drive to resist, I examine cases

with varying outcomes. In addition, I discuss the relevance of the "sheep to the slaughter" stereotype in several of its forms, and how many mothers demonstrated priorities that were influenced but not defined by the Nazis.

Katharine J. Shaw

Advisor: Elizabeth H. Tobin

Blackleg or Patriot?: Redefining the Strikebreaker during the General Strike of 1926

For nine days in May of 1926 British industry and transport were paralyzed by a general strike of over 3 million workers. In the face of such unprecedented worker solidarity, the strikebreaker, who acted in opposition to that solidarity, became central to the discursive battle between labor and the government for possession of public support. What were the implications of these various discourses surrounding strikebreaking? How were they employed to either condemn or encourage strikebreaking? Governmental rhetoric attempted to redefine the strikebreaker, previously derided as a desperate "blackleg," as an enthusiastic patriot saving the nation from the menace that the strike posed to Britain. By contrast, labor discourses portrayed the strikebreaker as a cowardly traitor who was both ineffectual and effeminate. This contest over the definition of the strikebreaker engaged discourses that reevaluated the meaning of working-class solidarity, patriotism, gender roles, and upper-class frivolity. The outcome of the General Strike was largely influenced by the extent to which these various discourses resonated within British society.

Elizabeth J. Wallace

Advisor: Margaret S. Creighton

Signs of Enslavement in Urban Spaces: The Public History of Slavery in Four United States Cities

This thesis studies the public representations of slavery in Savannah, Georgia; Charleston, South Carolina; Boston, Massachusetts; and Portland, Maine. With its roots in scholarly research about historical memory, this project aims to study how and why slavery is remembered and forgotten in dominant historical narratives presented in sites of public culture. It shows how developers of repositories of collective memory have constructed prevalent histories about slavery, while they have also marginalized, omitted, or forgotten other facets about the institution. The basis for the project is travel to each of the four cities to conduct original research into how each municipality publicly constructs its history of slavery. Examinations and critiques of museums, monuments, historic homes, graveyards, and various other historical markers form the majority of the discussion. The analysis considers how the historical narratives of each site, as well as each city as a whole, represent slavery to the audience of the modern public. Inter-city and inter-regional comparisons and contrasts form the foundation of the conclusions.

INTERDISCIPLINARY STUDIES

Jenna C. Feldman Advisor: Charles I. Nero

Imagining Kinship: White Directors/Black Films

This thesis examines three films directed by white males and starring black casts: Michael Roemer's Nothing But A Man (1964), John Sayles' The Brother From Another Planet (1984), and Marc Forster's Monster's Ball (2000). The interracial makeup of each film prompts us to ask, what is a black film? I examine this question by exploring how white males imagine and construct black kinship. This analysis looks at how kinship is grounded within racialized paradigms and how kinship caters to dominant expectations. This thesis pays particular attention to uses of white and black female characters and their roles in family building and in regulating male heterosexual desire.

MATHEMATICS

Peter Kozak

Advisors: Melinda H. Harder and David A. Aschauer

Valuation of Risky Fixed Rate Debt and Credit Default Swaps

Perhaps the most insightful class of models of credit-risky corporate bonds utilizes the contingent claims approach with exogenous default barrier, whereby the default event is assumed to occur when the total market value of the firm's assets falls to a sufficiently low level relative to the firm's total liabilities. This threshold level is called a default barrier, and it acts as a safety covenant providing a contractual mechanism that enables the bondholders to enforce bankruptcy upon the firm. In this thesis, I develop a two-factor model for pricing credit-risky fixed-rate debt in a stochastic interest rate environment. This model is an extension of the exogenous Briys and de Varenne (1997) model, and since it incorporates interest rate uncertainty, allows for deviations from the absolute priority rule and provides bondholders with a safety covenant with the option to force early bankruptcy, it is capable of producing quite diverse shapes for the term structure of yield spreads. Within this framework, I develop a new model for valuation of some simple credit derivatives, such as credit default swaps, which enable market participants to isolate and hedge specific aspects of credit risk.

MUSIC

Yuko Eguchi Advisor: Philip C. Carlsen

Anata no Moto e: I Will Follow You to the End

This is a Japanese opera, which contains an overture and nine scenes, lasting about one hour. The lyrics are sung in Japanese, accompanied by a classical chamber ensemble with the Japanese string instrument, the Shamisen. I composed all music and lyrics, wrote a translation of the libretto, choreographed the dancing, made costumes and stage settings, and directed acting for performers. In the first scene, the main character, Mariko, is threatened by her classmates to give them an enormous amount of money by the end of the week. Her family is in the middle class, so her parents will not give her the amount of money she requested. She wanders around in town and decides to prostitute herself in order to get money in time. She falls in love with a businessman whom she has slept, but she discovers that she has been infected with AIDS by him. She blames her parents and her friends, but in the end she blames herself. She still loves the businessman, but she decides to commit suicide in order not to dishonor her family name.

Laurel R. Killough

Advisor: Philip C. Carlsen

My Beloved: An Honors Thesis in Music Composition

This thesis in music composition is a work in five movements for two-part choir and a chamber ensemble of flute, strings, harpsichord, and percussion. The choral lyrics are selections focusing on love and nature imagery taken from the *The Song of Songs: A New Translation with an Introduction and Commentary* by Ariel and Chana Bloch, published in 1994. The two choral voices are female and male and their exchange is that of a young couple rejoicing in their love. The instrumental texture provides the backdrop for the lovers' conversation. This thesis was performed by student musicians March 29, 2003.

PHILOSOPHY

Andrea J. Brewer
Advisor: Mark B. Okrent

Explaining Modality Ontologically

This thesis is a study of how best to understand modality and the related semantics for modal logic. I give particular attention to the argument that the provision of an adequate semantics for modal statements requires a commitment to the existence of non-actual objects. In my reply to this argument, I address the question of how a reductive definition of modality—that is, a definition of modality in non-modal terms—might be given, as well as the question of whether equivalences between modal statements and possible-world analogues can be useful, even if they are not entirely reductive. I review two ontological accounts of modality that have dominated recent literature and, after finding these accounts to be unsatisfactory for both technical and philosophical reasons, I defend an alternative approach based on a reconsideration of existence and necessity as logical properties.

POLITICAL SCIENCE

Kelsey A. Evans Advisor: Mark B. Okrent

The Gender Identities of Women Attorneys

This thesis considers how the legal profession affects women in the law by examining female attorneys in different practice settings. Specifically, it investigates the perspectives of female attorneys working as associates in large law firms in which men are the primary decision-makers, and of female attorneys working as associates in smaller law firms in which there is greater opportunity for participation in the firm's decision-making structure. Through qualitative data gathered by interviewing twenty-four women attorneys in large and small law firms, I examine how upper level male management in large firms affects female attorneys' social constructions of gender difference and gender identity in the workplace. This thesis challenges prevailing notions of gender as an objective characteristic, synonymous with biological sex and universal across organizational settings; it explores a more complex view of gender as an ongoing social construction, the meaning, significance, and consequences of which may vary as a result of power differences reflected in the sex composition at the upper levels of an organization's hierarchy.

Robert M. Fallon Advisor: John R. Baughman

Ideological Sophistication and the Need for Cognition: Epistemic Personality Factors and the Liberal-Conservative Continuum

Over fifty years of political research have determined that individual differences exist in political ideology belief structures in the United States. Citizens differ in "ideological sophistication," based on the ideology's *size* (number of cognitions) and *integration* (intercorrelation of cognitions). While behavioral studies have sought to determine how differences in ideological sophistication are distributed within a mass electorate, the questions of how and why these differences exist have seldom been the focus of research. The need for cognition (NFC), which assesses the extent to which a person engages in and enjoys effortful cognitive endeavors, was predicted to have a strong effect on individual fluctuations in a political ideology's size and integration. A positive correlation was predicted between size and NFC; a negative, nonlinear relationship was predicted between integration and NFC. Using data from the 2000 National Election Study, as well as a survey on the Bates College campus, the relationships between ideological sophistication and NFC were explored. Participants were administered a need for cognition scaling item, a political knowledge test to ascertain ideological size, and a number of forced-choice policy questions to reveal ideological integration, which was measured using the Barton-Parsons method.

Brendan C. Ferriter *Advisor:* William Corlett

Rethinking Racial Conflict: Political Race and the Wilmington Massacre of 1898

How can people form coalitions across racial lines that overcome patterns of racial conflict? Approaching this question from the perspective of race formation theory, my thesis develops such concepts as the "racial state" and "political race" to rethink the main components of racial conflict. The racial state is a set of institutions and practices geared toward governing bodies through racial discourse and often racist ideology. Political race is a set of coalitions established on notions of racial consciousness that aim to build alliances across racial lines by implementing ideas of social justice and democratic experimentation. Using these concepts to retell the story of the Wilmington massacre of 1898 allows me to distinguish between attempts toward healing and reconciliation, which all too often revert to racial conflict, and strategies for political mobilization that result in democratic practices.

Cynthia S. Gorman Advisor: Mark A. Kessler

Progressive Entanglements: Asylum Legal Practices and Gender-Based Persecution

Considering the larger question of whether lawyers can create social change, this project examines how lawyers perpetuate, challenge, and/or negotiate power through their legal practices. Drawing upon scholarly work that describes the law as a system of knowledge, or "discourse" this thesis explores how legal knowledge is gendered and thus affects women. Research focuses on the lawyer and client interaction because it is one site where legal power is negotiated and contested. Asylum law (the immigration mechanism for protecting those fleeing persecution) provides a useful case study because it does not include gender as an enumerated ground for persecution. Lawyers play an instrumental role in maneuvering within the law in seeking asylum for their clients. Among the sources of data are interviews with asylum attorneys who represent female applicants.

Dominick S. Pangallo Advisor: John R. Baughman

"Congressional Chameleons": Progressive Ambition and Political Adaptation in the United States Congress

It is a central tenet of democratic government that elected representatives will be reflective and responsive to their constituencies and that when these constituencies change, so too will policy. In order to achieve their goals, strategic politicians will demonstrate political adaptation in the face of changes in their constituency; however, politicians are also constrained by the value of consistency. This thesis examines as case studies the twelve U.S. Representatives from the state of Maine in the twentieth century who demonstrated progressive ambition by running for the U.S. Senate. By examining campaign materials, roll-call voting records, bill sponsorships, and committee and subcommittee memberships, it is possible to determine whether or not, and to what extent, these subjects exhibited adaptation to the change in constituency brought about by the change in office. This thesis also offers a theoretical reflection on the nature and value of political adaptation in general.

PSYCHOLOGY

Michelle J. Geiss Advisor: Kathryn G. Low

Morningness-Eveningness, Sleep, and Negative Affect

Past research has suggested a link between depressive symptoms and a trait-like dimension referred to as "morningness-eveningness"—an individual's preference for morning or evening. Using a prospective design, this study investigates whether certain chronotypes are more likely to develop symptoms of mood or anxiety disorders, or whether these symptoms coincide with a change in an individual's time of day preference. 166 students completed the Horne and Ostberg Morningness-Eveningness Questionnaire (MEQ) as well as the Inventory of Depressive Symptomatology (IDS), the Beck Depression Index (BDI), and the State and Trait Anxiety Inventory (STAI) to assess depressive and anxious symptomatology. It was hypothesized that more evening-types than morning-types would develop depressive symptoms over time, but that individuals reporting symptoms of severe depression would be more likely to be morning-types. Analysis of variance of baseline data revealed that chronotype significantly impacted depression and trait anxiety scores—with morning and evening types reporting elevated depression and anxiety levels over individuals expressing neither preference. Further analysis of this data is expected to yield a working model which incorporates an individual's chronotype to predict risk of depression.

Stephen L. Gresham Advisor: Kathryn G. Low

Invisible Black Gay Men

The black gay man has been marginalized by both the black community and the gay community. The black community proscribes the existence of homosexuality as a result of the White man challenging the black man's masculinity throughout slavery and various periods of American history. Furthermore, religion is a powerful institution in the black community, and various religious sects propagate anti-homosexual views. Consequently, the black gay man's existence is constantly questioned within the black community. The black gay man does not find solace in the gay community either, due to marginalization, exoticization, and the stigma in what is considered a white community. This thesis seeks to understand the experience of being a black gay man. Eight black gay men were interviewed. The interviews covered topics of masculinity and homosexuality within the black community, race and attractiveness within the gay community, the effects of having competing identities, and coming out. Each interview was approximately sixty minutes. Each interview was transcribed, followed by a content analysis to extract emerging themes. Themes

were of homophobia within the black community, geographic location affecting attractiveness and coming out, and the exoticism of blackness within the gay community. Each theme is examined and implications are discussed.

Julia E. Price

Advisor: Georgia N. Nigro

Effects of Training on the Accuracy of Head Start Children's Narrative Elaboration of a Staged Event

Because the number of child maltreatment cases remains high, it is important to find an interview method that will improve the amount and quality of information child witnesses provide. Researchers have found that middle class children recall more information while maintaining accuracy rates when questioned with the narrative elaboration interview method. This technique involves three different levels of recall: free recall, cued recall with cue cards, and probed recall with specific questions. Recent research is unclear about the effects of cue card training and instruction to focus on the target event in each stage of the interview. This study uses this interview method to question Head Start children about a staged chemistry demonstration. Half of the children are briefly trained in using the cue cards and half of each training group receive clear instruction in the cued and probed recall stages of the interview about focus on the event. In a departure from past research, a familiar interviewer questions all the children. Results clarify issues regarding instructions to child witnesses and extend child interviewing findings to a population that is overrepresented in child maltreatment cases.

Clair P. Rummel

Advisor: Richard V. Wagner

Enhanced Self-Identity: An Exploratory Study of Adolescents' Relationships with the Natural Environment

The role that the ecological context plays in human development has long been overlooked in the psychology world (Barrows, 1995; Merkl 1995). The little research that has been done reveals a connection between experiences in the natural environment and a raised sense of self and well being. Kellert (2002) believes that direct contact with nature plays an irreplaceable role in childhood development but calls for more research in order to substantiate this conclusion. Prior research by Kellert has revealed nine values of nature that appear throughout human development: e.g., aesthetic, moralistic, and humanistic. The purpose of this study is to answer Kellert's call to explore the relationship between adolescents, who developmentally speaking are in the midst of personal identity formation, and the natural environment (Erikson 1982). Twenty-seven interviews were collected at three different high schools in Maine, as well as eight interviews from Bates College students. Results

supported the presence of a tenth value of nature, called the self-realization value, which reflects the use of nature as a place to think and reflect. Benefits associated with this value are increased sense of self through better understanding of attributes, characteristics, capacities, preferences, and self-esteem.

John K. Garber

Advisors: Kathryn G. Low and Heidi T. Chirayath

Persuasive Messaging and Attitude Change: An Examination of Antismoking Advertisements in Magazines

Currently, magazines created for audiences over the age of seventeen are the only medium in which individuals are exposed to pro-tobacco advertisements. Despite these advertising restrictions, adolescents continue to smoke at greater rates than desired. This thesis examines the impact of pro- and anti-tobacco advertisements on smoking. First, a content analysis demonstrates that there are proportionately more pro-tobacco ads than antismoking ads in magazines created for people over the age of seventeen than in publications intended for those under the age of eighteen. Second, adolescents aged eleven to thirteen who spend more time per month reading "eighteen plus" magazines have more positive attitudes toward smoking than their peers who spend more per month time reading "seventeen and under" publications. Finally, after viewing a series of advertisements, it is predicted that college freshmen will report more positive attitudes toward smoking if they are low in need for cognition than peers who were high; also, the presence of an antismoking advertisement should lead to more overall negative attitudes toward smoking. Results are discussed and changes in tobacco-related policy are recommended.

RELIGION

Diana Y. Birney

Advisor: Marcus C. Bruce

Where are We? The Place of Anglo-American Women in Mainline Protestant Churches

What is the real life experience and the complex place of modern Christian women beyond the walls of the academy and the church? The lives of women in the church are more complex combinations of women's concerns and more traditional aspirations than feminist theologians and church statements would lead us to believe. This thesis explores and examines the stories and experiences of Anglo-American Protestant women in two different regions (southern Maine and west Texas) of the United States. It focuses on a group of specific women who confront the practical challenges of reconciling

their faith with modern day feminism and church theology. This thesis privileges their voices and allows them to identify their place in the world and issues they face as Christian women. The research examines particularly the experiences of women in three national, mainline denominations, United Methodist, Presbyterian, and American Baptist, through interview-based research.

RHETORIC

Ryan J. Weaver

Advisor: Stephanie Kelley-Romano

A Study in Yellow: Construction of the American Dream Meta-myth on The Simpsons

The Simpsons is considered by Time to be "The Best Show of the Twentieth Century." This thesis explores the American dream meta-myth with an eye to who can, and who cannot, be successful. With The Simpsons as the textual model for this examination, two dominant themes of the metamyth, family and suburbia, are further explored as potential indicators of success. Family is shown to be a determining factor for material and emotional success. A person's placement in a suburban setting is recognized as a critical factor in determining self-efficacy and social mobility. The suburban household and familial structures on The Simpsons closely model the myth of the American dream. The nuclear family is far more mobile and successful than divorcees, the elderly, alcoholics, or homosexuals. This relationship between mobility, family, suburbia, and success is described in terms of observations and textual examples pulled from the show. Overall, this thesis argues for the centrality of family and suburbia in achieving the American dream as articulated by The Simpsons.

SOCIOLOGY

John K. Garber Advisors: Heidi T. Chirayath and Kathryn G. Low

Persuasive Messaging and Attitude Change: An Examination of Antismoking Advertisements in Magazines

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THEATER

Julie E. Hammond Advisor: Paul T. Kuritz

An Ideal Woman: Oscar Wilde, Mrs. Erlynne, and the Realities of Idealism

In *The Quintessence of Ibsenism*, George Bernard Shaw situates the conflict of idealist and realist at the center of Ibsen's work. Oscar Wilde, a contemporary of each, explores these same struggles through Margaret Erlynne, protagonist of his first successful play, *Lady Windermere's Fan.* Mrs. Erlynne is both a character and a tool created by the artist to explore and explode notions of the idealist and realist. The connection between Wilde's and Ibsen's work lies in the roles idealist and realist occupy, although their techniques to broach the subject differ. Plays, unlike poems or novels, are written with the intent of performance outside the confines of the book. In this way, the characters and ideas of the play live double lives on and off the page. Wilde is notorious for his claims about the relationship of art and life, yet the intention of his own art is by no means straightforward. His works evade categorization, and strive to blur sharp lines of distinction. This thesis employs an actor's analysis of Mrs. Erlynne, alongside textual and historical research on Wilde, to examine the roles of idealist and realist, their relation to each other, and the world in which they reside.

Dominick S. Pangallo *Advisor:* Paul T. Kuritz

The Spanish Tragedy in Production

The Spanish Tragedy (c.1587), by playwright Thomas Kyd, tells the moving and powerful story of a wronged father's quest for justice for his murdered son and the machinations of those who

oppose him, all set against the background of political treachery in the Spanish court. The play was the progenitor of the Elizabethan revenge tragedy genre and, as such, introduced many of the enduring themes, questions, archetypes, characters, and conventions of the genre. This thesis project consists of two components. The first is a written document containing a thorough directorial analysis of the play, an examination of the dramaturgical values and elements it contains, and a vision for a production of the play based on the analysis and identified key values and elements. The second component is the final production (Gannett Theater, March 21st and 22nd at 8pm, and March 23rd at 2pm) of the cut play, which transfers from the page to the stage the themes and central ideas of Kyd's story through the use of staged composition, picturization, movement, rhythm, and pantomimic dramatization.