



Bates College

2011-2012

Honors Theses Abstracts

BATES COLLEGE
2011-2012 HONORS RECIPIENTS

AFRICAN AMERICAN STUDIES

Tasheanna S. Dukuly*

AMERICAN CULTURAL STUDIES

Joanna L. Goldin
Katharine A. Maxwell

ANTHROPOLOGY

Sydney A. Hare*

BIOLOGICAL CHEMISTRY

Haley E. Manchester

BIOLOGY

Mariah M. Barstow

CHINESE

Ronima Istratii**

EAST ASIAN STUDIES

Kaitlin L. Harrison

ECONOMICS

Arjada Bardhi
Michael B. Sagan

ENGLISH

Tasheana S. Dukuly*
Erica R. Long
Meghan R. Napier
Maria J. Rouvalis
Charles J. Thaxton
Sarah J. Vigne
Katherine A. Wiryaman

ENVIRONMENTAL STUDIES

Corey J. Creedon

GEOLOGY

Colin H. Barry
Heather A. Doolittle
Ian T. Dulin
Jennifer A. Lindelof
Peter K. Miller
Haley R. Sive

HISTORY

Jeffrey E. Berry
Caylin E. Carbonell
James M. Cook
Claire E. Lampen
Rebecca L.D. Merten
Josephine B. Reinhardt
Anna K. Wallman

INTERDISCIPLINARY STUDIES

Sydney A. Hare*
Michael H. Pasek

JAPANESE

Brendan S. Culliton

MUSIC

Karen E. Nicoletti

NEUROSCIENCE

Caroline B. Neville

PHILOSOPHY

Daniel R. Lambricht

POLITICS

Catherine S. Elliott
Romina Istratii**
Kelsey E. LaFreniere
Justin G. Lipton
Gina C. Sima

PSYCHOLOGY

Kristen J. Gavin

RHETORIC

Ryan R. Katon
Kevin B. McCandlish

*TWO MAJORS WITH ONE HONORS THESIS

**TWO MAJORS WITH TWO HONORS THESIS

**BATES COLLEGE
2011-2012 HONORS RECIPIENTS**

SOCIOLOGY

Nicolle H. Bugajski
Jordan A. Conwell
Kerry M. Gross

SPANISH

Dhariana M. Gonzalez

THEATER

Elizabeth A. Castellano

*TWO MAJORS WITH ONE HONORS THESIS

**TWO MAJORS WITH TWO HONORS THESIS

AFRICAN AMERICAN STUDIES

Tasheana S. Dukuly

Advisor: Sue E. Houchins and Therí Pickens

Child of the Black Atlantic: Helene Cooper's Negotiation of her Identities as Influenced by Trans-Atlantic Migrations

This thesis examines Helene Cooper's memoir, *The House at Sugar Beach: In Search of a Lost African Childhood* (2008), and the transformation of her identities through migrations within the black Atlantic. This work investigates her text from three perspectives: the body of the text, the underlying implied subtext, and its framing by the paratext, which includes its promotion by the Starbucks Coffeehouse chain. Cooper's text chronicles her struggle to navigate a complex course of self-discovery. This thesis employs Paul Gilroy's model of the black Atlantic, because his work analyzes the movement and transformation of black bodies and their identifications through intricate and convoluted routes of capture, transportation, enslavement, migration, and return. Cooper's memoir begins with her complacent self-acceptance of her status as an Americo-Liberian elite. She flees to the United States and there she must learn to negotiate the multiple identities of an African immigrant, African American, and American citizen. She uses her memory and the history of her ancestral lineage, which encompasses three migrations: first, the capture of her forebears in the trans-Atlantic slave trade; second, the nineteenth-century relocation of her free-black ancestors as a part of the American Colonization Society's founding of the Republic of Liberia; and finally, her flight back to the United States after the Liberian military coup and subsequent civil war during the 1980s. By applying Gilroy's model of the black Atlantic to Cooper's complex routes of migration, this work will answer questions about the multiple, various, and shifting identities of people of African descent.

AMERICAN CULTURAL STUDIES

Joanna L. Goldin

Advisor: Mara Tieken

The College and the Community: Exploring the Impact of Service-Learning on the College Aspirations of Community Partners

This study surveys the form, function, and potential impact of Bates College service-learning endeavors on the college aspirations of community partners from Lewiston High School. Through interviews conducted with thirteen white juniors

and seniors, I discovered that service-learning in the Lewiston community does appear to impact the college aspirations of those community partners involved, but this impact is contingent upon service-learners utilizing a focus on personal engagement and college discussions. Furthermore, I found that in regard to the existing literature on college aspirations of youth growing up in low-income areas, service-learning in low-income communities, and town-gown relationships, Lewiston appears to be, in many ways, an anomaly. The fact that my participant pool demonstrated high aspirations, a firm belief in the American achievement ideology, a lack of manifestation of the binary in discussions of service-learning and a desire for strong personal relationships with their Bates service-learners suggests that Lewiston as a community is not producing students to adhere to the many expectations of them, based upon both social class and race.

Katharine A. Maxwell

Advisor: Joseph Hall

“An Exceedingly Dirty and Nasty People”: Exploring the Forces of 1775

In popular revolutionary iconography, New England colonists are praised for their dramatic rush to arms during the first few months of the American Revolution. While this enthusiasm led thousands of colonists to take up arms, it faded by 1776 resulting in a dramatically diminished force. What happened? Why did the forces of 1776 differ so much from those of 1775? My research focuses on how the changing military organization of New England forces in 1775, from a collection of local militias to an army, impacted colonists' enlistment and enthusiasm. To understand the development of New England forces, this thesis explores the connections between the local militia system, the creation of the Continental Army, the appointment of George Washington, and the changes in revolutionary rhetoric during 1775.

ANTHROPOLOGY

Sydney A. Hare

Advisor: Heather L. Lindkvist and Claudia Alberto Guzman

Las Trans: Negotiating Gender, Personhood, and Citizenship in Chile

Las Trans, a group of male-to-female transgender residents living in Arica, Chile, challenge the strict dual-sex, dual-gender system of Chile's family-oriented society. Chile presents an especially interesting case when analyzing the social position of sexual minorities due to the country's historically strong ties to the

Catholic Church, and, on a political level, the experience of seventeen years of dictatorship during a crucial period of time in world history. Drawing on ethnographic fieldwork conducted with las Trans, I consider how gender identity and gender expression affect to what extent an individual can achieve full personhood and full citizenship in this South American country. Because of las Trans members' gender identities, they are unable to take advantage of many opportunities that are, in theory, guaranteed as basic human rights. Specifically, they are unable to attain legitimate jobs and are instead forced to earn a living through sex work, putting them at a heightened risk of being assaulted and contracting STDs. Additionally, las Trans members' experience numerous barriers in effectively accessing government-sponsored institutions, like health care, which are allegedly free and accessible for all citizens. This thesis argues that such discriminatory and exclusionary practices, rooted in social discrimination and reinforced through government legislation and religious discourse, further marginalize those who fail to conform to culturally prescribed gender categories and norms.

BIOLOGICAL CHEMISTRY

Haley E. Manchester

Advisor: Rebecca Sommer

Low-dose Developmental Arsenic Exposure Alters Gene Expression Potentially through Epigenetic Modifications

Inorganic arsenic is a known carcinogen associated with type II diabetes mellitus. Developmental exposure to arsenic may induce low birth weight and fetal malnutrition, possibly causing diabetes and obesity later in life. More than 13 million Americans are exposed to low concentrations of arsenic (<300>ppb) through groundwater from wells drilled into arsenic-containing bedrock. Globally, over 40 million people consume arsenic-tainted groundwater at concentrations higher than the EPA and WHO standard of 10 ppb, with the worst cases appearing in Bangladesh and Taiwan. While high-dose exposure to arsenic is clearly linked to cancer and diabetes, the role of low-dose exposure as a carcinogen and diabetogen is still uncertain. In this thesis, I examined possible genetic and epigenetic mechanisms of toxicity resulting from transplacental arsenic exposure in male mice. I hypothesized that male mice exposed to arsenic early in development would exhibit aberrant expression in genes related to diabetes and liver cancer. I also hypothesized that these changes originated from abnormal epigenetic programming. The gene expression of 384 genes important to diabetes, inflammation, and cancer were examined through quantitative PCR array analysis. Seven genes related to cancer, steroids, or energy metabolism were identified as

abnormally expressed potentially due to aberrant epigenetic modifications. I investigated the source of gene repression further by examining global and site-specific methylation patterns in the genomic DNA of arsenic-exposed mice. Overall, this thesis provides further insight into the possible diabetogenic and hepatocarcinogenic mechanisms of low-dose developmental arsenic exposure in mammals.

BIOLOGY

Mariah M. Barstow

Advisor: Karen A. Palin

Working toward Pragmatic and Sustainable Exclusive Breastfeeding Practices among Somali Mothers in Lewiston, Maine

Breastfeeding is the most complete form of infant nutrition and has numerous health benefits for both the mother and infant. The U.S. Department of Health and Human Services' *Healthy People Goals* aims for approximately half of mothers to breastfeed exclusively through three months and a quarter of mothers to breastfeed exclusively through six months. Women in Somalia and in refugee camps abroad routinely breastfeed their babies, but upon immigration to the United States, these mothers often face barriers that make it harder to exclusively breastfeed for the recommended amount of time. In Lewiston, Maine, health care providers find that Somali mothers frequently supplement or replace breast milk with formula. In conversation groups with Somali women, this trend was confirmed and women expressed the belief that their breast milk was insufficient for their infants' nutritional needs. This thesis aims to understand breastfeeding knowledge and beliefs of local perinatal Somali women and how those beliefs translate to practice. Home visit interviews were conducted to collect data on breastfeeding practices and beliefs. This information was used along with public health recommendations concerning breastfeeding, to develop a culturally relevant educational workshop. By building upon Somali women's current knowledge of breastfeeding, the workshop aimed to encourage pragmatic and sustainable exclusive breastfeeding practices, which will in turn improve mother and infant health. Culturally sensitive programs such as this have the potential to effect real progress toward the lactation objectives set forth in the *Healthy People Goals* and to cultivate healthier practices in the community.

CHINESE

Romina Istratii
Advisor: Xing Fan

Kaleidoscopic and Non-Monolithic Ethnic Tourism in China: A Case-specific Approach to the Examination of Its Impacts on Minority Identities

Cultural tourism has been an integral part of China's economic modernization strategy for several years. The issue of cultural commoditization, which can be defined as ethnic cultural manifestations in return for economic gains, has emerged more recently. The growing tourist industry in China has raised concerns that cultural exposure for the sake of money has a damaging effect on the unique character of ethnic cultures and weakens minority people's sense of ethnic identity. Although such concerns are justified in certain ethnic communities, they do not apply to all minority populations in China. Tourism is not monolithic: its impacts are contingent on the cultural characteristics, political history, religious affiliation, and geographic distribution of a specific ethnic minority. Cultures are fluid and multifaceted and interact with tourism in unpredictable and diverse ways. In this thesis I argue that to understand the real impact of cultural tourism on ethnic cultures it is necessary to study the phenomenon taking a case-specific approach. I examine the development of cultural tourism in two specified ethnic minority communities in China's Yunnan Province, the Dai in Xishuagbanna and the Hui in Weishan. Through an empirical as well as theoretical analysis I conclude that the impacts of ethnic tourism are unpredictable and differ among communities due to cultural, political, and other idiosyncratic characteristics of minority peoples.

EAST ASIAN STUDIES

Kaitlin L. Harrison
Advisor: Sarah Strong

Defining the Japanese OL Body through Modern Advice Literature: Text and Images

The OL (office lady) is the cultural prototype of the Japanese clerical worker who accounts for the vast majority of women working in white-collar companies after graduating from college until their mid thirties. The OL identity, as a behavior, image, and body is actively shaped and disciplined by Japanese popular culture and corporate culture, yet it is an identity surrounded by cultural tension. This thesis investigates the ways in which the Japanese OL body and identity are

shaped and disciplined by Japanese advice literature, namely Mariko Bandō's book, *The Dignity of a Woman* and *AnAn* magazine. Mariko Bandō's highly popular book, informs Japanese women how to live with grace and dignity befitting ambitious, modern women in the workforce. *AnAn* is a popular young women's magazine, and I use the text and images to show how these describe the female body and promulgate feminine beauty. Despite their clear differences as advice literature, I show how the OL is both the common reader and the targeted audience of Bandō's book and *AnAn*. I explore how OL manners and beauty are presented in these two types of advice literature and how they construct OL femininity by urging the cultivation of a desired OL body and identity. This interdisciplinary project involves theorists and studies from visual culture, women's studies, and sociology to explain how *AnAn* and Bandō's book discipline the OL as a physical body and gendered identity, products of Japanese society's "biopower." I analyze topics such as linguistic silence in Japanese corporate lives, the dichotomy of the OL body as a social and individual concern, and how the OL identity is a "body" capable of empowerment and dissent. I work to ultimately compare which advice literature is the more successful and why it appeals to the sensibilities of the "real" Japanese OL woman.

ECONOMICS

Arjada R. Bardhi

Advisor: Michael Murray

Two Essays on the Optimal Control of Infectious Diseases: Examining Discrepancies between Discrete-Time and Continuous-Time Models

A growing body of literature on the optimal allocation of resources in controlling the spread of communicable diseases has garnered considerable attention during the last four decades. Although such literature is relatively unanimous formally speaking (i.e., marrying tools of optimal control theory with epidemiological nonlinear models), it has been quite polarized over both the theoretical question of the choice of time scale (i.e., discrete versus continuous) and, relatedly, the question of the most adequate optimization tool (Pontryagin's Maximum Principle versus Bellman's Dynamic Programming) to be employed in determining the lowest-cost policy for containing and eradicating the infection. This thesis theoretically investigates the roots of the discrepancies that exist between these two divided bodies of literature, seeking for ways to reconcile the results that are obtained by these two different approaches. The central analysis focuses on two pairs of articles on the control of SIS infections: 1) two classical articles written in the 1970s that disagree on the pulsing behavior of the optimal policy over discrete and continuous time, and 2) two recent articles that examine the optimal allocation of funds between multiple connected populations when the social planner faces tight

budgets, pointing out the difficulties that arise in analytically solving the problem in continuous time. The implications of this theoretical investigation extend to similar models in topics as diverse as fishery management, corruption control, and crime prevention, while its practical contribution lies in carefully prescribing optimal intervention strategies for public health policymakers.

Michael B. Sagan

Advisor: Michael Murray

Access to Information in the Developing World: The Role of Mobile Telephony in Economic Development

Classical theory suggests that economies operate efficiently when agents have open and symmetric access to market information such as the price, quality, and availability of goods and services. Emerging economies often lack the infrastructure and institutional framework necessary to facilitate this fluid transmission of information, and are subsequently defined by informational divides that sustain systemic structural impediments to development. The recent proliferation of mobile telephone services in the developing world, however, has created new possibilities for information-sharing among the globe's poorest populations, and has introduced the potential for development that is both economically sustainable and inherently "bottom up." This thesis considers the role of mobile telephony for development through an empirical examination of agricultural markets in one of the world's poorest countries, Mozambique. Using established methods of analysis in conjunction with a novel geospatial approach, we find that while the introduction of cellular technology has a discernible impact on agricultural price behavior in our sample, the overall the estimated effect of mobiles falls short of our expectations. This study therefore draws upon an alternative theory on price dispersion and connects it with the current empirical research on mobiles phones for development. We conclude that while mobiles are an influential force in Mozambique's staple food markets, additional constraints such as trade discontinuities between markets are the primary source of persistent price dispersion and inefficiency.

ENGLISH

Tasheana S. Dukuly – See African American Studies

Erica R. Long

Advisor: Sue E. Houchins

Fred Khumalo: Love, Crime, and Jazz in Post-Apartheid Township Literature

Fred Khumalo's novels *Bitches' Brew* (2007) and *Seven Steps to Heaven* (2008) offer a vibrant and unapologetic depiction of the South African township and those who call it home. With *Bitches' Brew* now included as required reading for English students at the University of Cape Town and his acceptance into the prestigious Nieman Foundation for Journalism at Harvard University, Khumalo's work is just beginning to reach international audiences. For these international readers, Khumalo's writing provides a moving narrative of the South African characters explored in post-apartheid films like *Tsotsi* (2006). His novels jerk the voices of the shebeen queen, the gangster, the rapist, and the jazz musician to the fore, beyond the context of the anti-apartheid struggle. Although apartheid influences their lives, the characters' stories focus on their relationships with lovers, family, co-workers, and friends. Khumalo's memoir *Touch My Blood: The Early Years* (2006) and his articles from the *Sunday Times* suggest that although these are works of fiction, they respond to real stories about the individuals who shaped his youth in the Mpumlanga township. By allowing these voices to be heard, Khumalo addresses issues of identity, sexuality, and creativity in South Africa in a way that forces readers to reevaluate their preconceptions of township life during and after apartheid.

Meghan R. Napier

Advisor: Sanford Freedman

The Problem of the Ordinary: Liberating the Fantastic and the Uncanny

Tzvetan Todorov's theory of the the Fantastic systematizes fantastic literature, binding it within a moment of hesitation. Todorov argues that when a seemingly supernatural event, object, or being enters a narrative, readers must decide whether this is to be explained by natural laws or not. Only before this decision is reached does the text sustain the fantastic; otherwise it falls into the categories of the marvelous or the uncanny. Yet the fantastic and the uncanny inherently contain tensions that play out best on a spectrum of ordinariness rather than separated by the strict boundaries in which Todorov places them. These tensions between uncertainty and closure break and reform boundaries between internal self and external self, between the fantastic mind of the reader and authorial words. The thesis, by examining the narratives of Kleist, Hoffmann,

Gotthelf, Hauptmann, Hawthorne, Tieck, Chamisso, Márquez, and Banville, challenges Todorov's restrictive terms to explain the fantastic and the uncanny and require it to conform to a genre. The critical writings of Freud, Adorno, Cavell, Jackson, Royle, Todorov, Frye, Chaouli, Kermode, and Foucault are queried and analyzed. Narratological explanations concerning uncertainty, boundaries, textual and readerly perceptions, and distortions function to clarify how or why the fantastic or the uncanny should be assigned or to judge when either of the two terms transcends the ordinary without breaking from it or remains a mere projection of it.

Maria J. Rouvalis

Advisor: Lillian Nayder

Charles Dickens and Elizabeth Gaskell: Authorship, Collaboration, and Divergence

A working relationship between a male and a female novelist in the Victorian era begs exploration, especially when the man's name is Charles Dickens. When Dickens rallied up-and-coming talent Elizabeth Gaskell in 1850 to write for *Household Words*, they forged a literary connection that illuminates their different perspectives on and approaches to fiction and contemporary social issues – from authorship and publication, to labor unrest and class struggle, to gender roles. This thesis investigates the ebb and flow of the Dickens-Gaskell relationship by examining their correspondence, their novels, and their historical context. Theirs is not the expected tale of a master and pupil, but a complex story of a shifting power dynamic between the famous “conductor” of Victorian literature and a woman author who quietly dared to disagree with him.

Charles J. Thaxton

Advisor: Sanford Freedman

Counting “Whole Persons” in David Foster Wallace’s Fiction

In David Foster Wallace's fiction, the salient topic is the cultivation of moral personhood. Personhood and human individuality are represented through descriptive categories like “citizenship,” “wholeness,” “authenticity,” or “spirituality,” all nominations that bristle against the “postmodern” genre in which his fiction is critically located—and all partially inadequate in capturing Wallace's spirit comprehensively. In Wallace's fiction personhood is constantly frustrated by philosophical and psychological obstacles: addiction, trauma, self-consciousness, or simple failures of imagination. Wallace's political and social concerns, in turn, reiterate these “private” topics; they are complicated by his desire to discuss

“traditional human verities” through the dizzying techniques of literary postmodernism. Wallace acknowledges the category of the individual person as tenuous, always implicated in language, contingent and historical, but no less necessary for these reasons. For him personhood is not found or discovered, instead it is posited and risked continuously. He admired Stanley Cavell’s description that individuality consists not in the fulfillment of our desires, but in their continuous transformation. Though Wallace’s scene is late American life, wherein he locates a crisis of “seeming” and “being,” I argue that the typical critical rubric of “sincerity” and “irony” generally descriptive of his fiction is inadequate. Instead, in a genealogical approach, I investigate Wallace with philosophical, critical, and literary progenitors like Cavell, Richard Rorty, and most importantly, Ludwig Wittgenstein. Like Wittgenstein, Wallace leads readers away from unhelpful chimeras, toward pursuits more difficult, gratifying, and strange. He enacts something like Wittgenstein’s “therapies,” the *dissolution* of apparent problems in place of their solution.

Sarah J. Vigne

Advisor: Cristina Malcolmson

The Evolution of Chivalric Values in the Order of the Garter: Edward III to Elizabeth I

This thesis examines the evolution of chivalric values embodied in the Order of the Garter through historically conscious readings of the fourteenth-century romance *Sir Gawain and the Green Knight* and Book I of Edmund Spenser’s *Faerie Queene*. These texts each reference the Order of the Garter to prescribe an ideal of chivalric knighthood: *Sir Gawain* through the story of the green girdle (reminiscent of the garter symbol) and its acceptance by the court as a symbol of honor, and the *Faerie Queene* through the narrative of the Redcrosse Knight, who is in fact St. George, patron saint of the Order. Examining these texts through the lens of the Order illuminates the chivalric values of their times and illustrates the evolution of chivalry from the Edwardian to Elizabethan periods. Providing historical background on the Order of the Garter—England’s first chivalric knightly Order founded in 1348 by Edward III—and close reading of the texts in light of this context, I argue that chivalry in the medieval period was in a period of transition, characterized by conflicts between the military, courtly, and religious ideals of the time. By the time of Elizabeth I, these diverse elements had been united to create a hegemonic chivalric ideology emphasizing the elevated status of the courtly lady. This ideology was used as a political tool to support Elizabeth’s rule. The Order embodied the combination of chivalric elements, and provides one example of Elizabeth’s manipulation of chivalry as a means of justification of female rule.

Katherine A. Wiryaman

Advisor: Steven Dillon

The Vindication of Spinsters: Winifred Holtby's Case for Female Satisfaction

Winifred Holtby, the British interwar feminist, was one of the most talented and insightful writers of her time, yet sadly never achieved the status of household name. In a society where marriage was assumed to correlate directly with female happiness and satisfaction, the single woman was an object of pity. Never married herself, Holtby was passionate about promoting singleness as a viable alternative to marriage and even one that might bring about more satisfaction to a woman. Chapter 1 will deal with the portrayal of women and singleness in an earlier novel, The Crowded Street (1924), and chapter 3 with her last and perhaps most famous novel, South Riding (1936). In the middle chapter I will look at her nonfiction work, Women and a Changing Civilization (1935), in order to examine her account of female history, the feminist movement, and her thoughts on the direction in which women are going. Holtby in her own words claims women can find satisfaction outside of marriage or living in relation to men, but these themes do not always manifest themselves so cleanly in her novels. I observe her handling of female characters, the choices they make in regards to men, and whether or not those choices result in satisfaction.

ENVIRONMENTAL STUDIES

Corey J. Creedon

Advisor: Sonja Pieck

**World Bank-NGO Entanglements in Ecuador's Intag Region:
Entanglements that Favor a World Bank Hegemony or NGO Agency?**

Through exploring two modes of entanglement between Ecuadorian non-governmental organizations (NGOs) and the World Bank – the Inspection Panel and the Extractive Industries Review – this thesis examines how effective these engagements have been through the eyes of the NGOs themselves and what these forms of overlap mean for both the World Bank and the involved NGOs. Understanding the roles played by NGOs and the consequences of their engagements with the Bank is an integral component of environmental and social justice in the Andean region and, more broadly, the global South. This analysis is informed by secondary source research, World Bank documents, and field research

which was carried out with involved Ecuadorian actors. Relevant literature on World Bank-NGO interactions is organized into two broad theoretical perspectives before being applied to the specific case study of Ecuador's Intag region: 1) a point of view which favors a World Bank hegemony, an idea rooted in Gramscian thought arguing that the Bank is able to control the conversation and relationship it has with NGOs, absorbing and manipulating the critique it receives in order to reproduce its power and 2) a perspective that favors NGO agency in the sense that these groups are able to sway the Bank's social and environmental policies and operations, bringing about permanent change. This analysis suggests that although the Bank is a powerful force that may threaten the integrity of some NGOs, the engagements explored here reflect room for significant NGO agency. This thesis seeks to inform future NGO-Bank interactions, and more broadly contributes to scholarship on power and resistance by offering evidence that resistance and social change can occur within existing networks of power.

GEOLOGY

Colin H. Barry

Advisor: Beverly Johnson

A Study of the Impact of Ditchplug Restoration on the Hydrogeology of the Sprague River Marsh, Phippsburg, Maine

The "grid ditching" of salt marshes is a 200-year-old practice of marsh management that results in an effective drainage of the marsh and overall loss of pool habitat on the marsh surface. Recent restoration projects designed to remediate the effects of grid ditching on Sprague Marsh, located in Phippsburg, Maine, were initiated by the United States Fish and Wildlife Service in 2002, where eleven ditchplugs were installed in the southern end of the marsh. The focus of this study is to monitor and compare the hydrogeology in natural systems versus ditchplugged systems to determine if the restoration is adversely affecting natural processes in the marsh. Fifteen monitoring wells were installed in the southeastern section of the marsh, six in the northern alcove (control) and nine in the southern alcove (ditchplugged), to enable monitoring of water level, conductivity, and temperature over several days. Land-cover information, soil salinities, monitoring well stratigraphy, and slug test information was also gathered to aid in evaluating the existing hydrologic conditions. Results from the southern alcove indicate higher water table levels behind the ditchplug. Land-cover information supports this finding by indicating increased low marsh environments, likely caused by the higher water table. The well-monitoring experiment and analysis in ArcGIS indicate altered hydrologic flow due to the installation of the ditchplug toward observed portions of floating peat. The NA shows larger amounts of high marsh

vegetation coverage due to lower inundation times and soil salinities. The well-monitoring experiment and analysis in ArcGIS potentially show higher influxes of freshwater from the margins of the marsh.

Heather A. Doolittle

Advisor: J. Dykstra Eusden

Determining P-T Paths of Metamorphism Based on Mineral Textures and Pseudosection Analysis in Small Point, Maine

The bedrock geology of Small Point, Maine, was mapped at 1:5,000 using digital methods in the summer of 2011 as part of an USGS EDMAP grant. Previous work on the metamorphism at Small Point has focused on regional studies throughout Casco Bay (Hussey and Marvinney, 2002; Lang and Dunn, 1990). This study reconstructs the detailed metamorphic history of Small Point and directly links it to related stratigraphic and structural studies in the same region using standard petrographic analyses to identify varying mineral assemblages and the sequence of syn-kinematic metamorphic textures. X-ray fluorescence analyses was used to construct pseudosections for the study area. The bedrock consists of the Ordovician Cape Elizabeth, Spring Point, Diamond Island, and Scarborough Formations, a diverse collection of metapelitic schists interbedded with quartz-rich layers, rusty weathered schists, thin layers of calc-silicate granofels, amphibolites, marble, and graphitic phyllites. Meso and macro-scale granite/pegmatite intrusions are common throughout the study area, with increased size/density to the north. Small Point has experienced four tectonometamorphic events related to the Salinic (D_1), Acadian (D_2), Neoacadian (D_3), and Alleghenian orogenies (Phippsburg Shear Zone, D_4), as defined by Sive (2012). Results from the metapelites (bt + msc + qtz + plg + grt ± sil ± and ± str) show at least two metamorphic events of Buchan-style metamorphism. The first of these metamorphic events at Small Point (M_2) occurred during D_2 isoclinal folding and developed the dominant S_2 foliation defined by an early biotite + muscovite foliation, staurolite-andalusite grade assemblages, and inclusion-rich, poikiloblastic garnet cores. The next event (M_3) was syn- D_4 shearing (Norumbega Fault System), and shows a second generation of less to non-foliated biotite and muscovite, clear garnet rims, fresh staurolite showing a later staurolite out reaction, hinge parallel fibrolitic sillimanite filling between boudined andalusite, and fibrolite pseudomorphic lenses of staurolite or andalusite. M_3 shows three metamorphic zones including a staurolite zone, an andalusite zone, and a sillimanite zone, that increase in grade from the SW to the NE, towards map-scale granite intrusions in northern Small Point. Metamorphic modeling using pseudosections was done in Theriak-Domino revealing a complex chemical history, and disequilibrium assemblages.

Ian T. Dulin

Advisor: Timothy Cook

New Evidence of a Post-Laurentide Local Cirque Glacier on Mount Washington, New Hampshire

As global temperatures warmed and the last North American continental ice sheet receded there were several climate reversals during which mean temperatures in New England significantly decreased. Lower temperatures, in combination with increased precipitation, may have supported the formation or reactivation of local mountain glaciers in pre-existing cirques on Mt. Washington, New Hampshire. Evidence supporting the existence of a local cirque glacier would provide important constraints on climatic conditions during the late-glacial Holocene transition. Preliminary mapping done in the area has identified a potential terminal moraine associated with a local valley glacier in the Great Gulf, the largest cirque-like feature on Mount Washington. The presence of this landform is significant because any pre-Wisconsin evidence of valley glaciers in the Great Gulf would likely have been expunged by the presence of continental ice. In order to determine the origins of the terminal moraine, representative samples of the till composing the moraine were collected by digging five test pits across the feature, sampling ~50 hand-sized stones from each pit, and determining the provenience of individual stones. Results indicate that the landform is composed of unsorted clasts with provenances of both local and regional origin. Clasts sourced within the Great Gulf support the interpretation that they were deposited by processes dependent on the presence of a local mountain glacier during a post-Wisconsin climate reversal. Stones of more distant origins may be attributed to residual till, associated with a continental ice mass that occupied the cirque at the time of local glacier reactivation. This data shows that the landform was deposited from processes taking place within the Great Gulf, and the pronounced topography and volume of the landform would support its interpretation as a terminal moraine. By reconstructing the glacier using the feature as terminus, a paleo-ELA was calculated and climate conditions necessary to promote the growth of an icemass were ascertained. Comparing this climate to the contemporary allows us to evaluate the magnitude of late-Pleistocene climate reversals in the White Mountains.

Jennifer A. Lindelof

Advisor: Beverly Johnson and Michael Retelle

Using Sedimentary and Geochemical Proxies for Little Ice Age Climate Change Reconstructions, South Mainland Shetland

The Old House of Broo, located in South Mainland Shetland, is an archaeological site dated to the late seventeenth century that is believed to have been inhabited for a short period of time before massive sand blows completely buried the stone buildings. Previous investigations indicate deposition of thick sand layers in nearby lochs, potentially tied to Little Ice Age storminess; however the timing and mechanisms of deposition have yet to be determined. Analyses performed on eight cores from the nearby Lochs of Brow and Spiggie include bulk organic matter stable isotope analysis, biogenic silica, grain size analysis, percent loss on ignition, magnetic susceptibility, and plutonium dating. The objectives of the study were to use sedimentary and geochemical proxies to examine changes in environmental conditions through the last few hundred years. Contiguous coarse-grained sediments were seen in the middle of most cores in the Loch of Brow. Confirmation of a minerogenic layer in the loch was identified through increases in magnetic susceptibility and sediment particle size within the unit, and visual identification. Bulk organic stable isotope analysis indicates a relatively stable carbon isotope signal with $\delta^{13}\text{C}$ values ranging between -27‰ and -30‰. Stable nitrogen isotope values increased from 1-2‰ at the bottom of the core to 5‰ at the top of the core. Elevated C/N ratios indicate a terrestrial origin of organic matter in organic layers. The proposed models of sand genesis include marine inundation, aeolian deposition, and anthropogenic activity on the landscape, in particular increased agricultural activity, in conjunction with increased storminess of the Little Ice Age.

Peter K. Miller

Advisor: J. Dykstra Eusden

Kinematics of the Phippsburg Shear Zone at Hermit Island and the Wood Islands, Small Point, Maine

The Phippsburg Shear Zone is located within the Casco Bay restraining bend associated with the Norumbega fault zone in south central Maine. Mapping of the shear zone was conducted at Hermit Island during the summer of 2011 as part of an EDMAP grant. The shear zone deforms schists of the Ordovician Cape Elizabeth Formation and granites and pegmatites of Devonian age. The shear zone is part of a D4 deformational event that proceeded regional folding associated with D3 Acadian deformation. The shear zone has a foliation that strikes northeast-southwest and dips steeply SE along the western shore of the Phippsburg peninsula. There is a strong lineation defined by fold hinge lines and quartz rods that plunges gently south. The shear zone width extends at least two kilometers to the west of Small Point. Swanson (1999, 2010) has documented dextral shear both regionally and locally by evaluating macroscale kinematic indicators within Casco Bay and Hermit Island. In this study, γ -shear strain within the Hermit Island section of the Phippsburg Shear Zone was calculated from the synthetic rotation of granites that

are assumed to have intruded orthogonally. Minimum γ -shear strain values were calculated from 15 rotated and variably boudined granites on Hermit Island and 27 of the same on the Wood Islands. These data suggest a decrease in shear strain from south ($\gamma = 5.14$) to north ($\gamma = 1.47$) and west ($\gamma = 9.51$) to east ($\gamma = 1.43$). A NE-SW striking line separates areas of high from low shear strains and is demarked by a regional dip change from east dips in the shear zone to west dips outside of it. 2D Strain ellipses determined from elongation of boudin strings and shortening of fold trains around Hermit Island were used to complement the shear strain calculations and further define the eastern boundary of the shear zone. The east dipping foliation, south plunging lineation, and dextral kinematic indicators suggest the Hermit Island shear zone is a dilational, type I shear zone (Fossen, 2010). The eastern shear zone boundary strikes more northerly than the shear zone as defined by Swanson (2010.). The kinematics of Phippsburg Shear Zone at Hermit Island support the strike-slip fault bounded crustal extrusion model for the Casco Bay restraining bend as proposed by Swanson and Bampton (2009).

Haley R. Sive

Advisor: J. Dykstra Eusden

The Structure and Stratigraphy of Small Point, Maine: D3 Inverted Transtensional Map-Scale Folds of Neocadian Provenance

The Cape Small Synform lies in an area of the Northern Appalachians that has undergone successive deformation from at least two major orogenic events, the Salinic Orogeny (440-423 Ma) and the Acadian Orogeny (421 – 400 Ma) (van Staal et al. 2009) and contains evidence for Norumbega shearing deformation (Early Devonian-Carboniferous) (Swanson 1999). With a grant from the USGS EDMAP program, a 1:5,000 scale map has been created which sheds light on the complex history of folding and shearing. The study identifies 5 new lithologic units within the Scarborough Formation (youngest to oldest- amphibolite, garnet rich member, muscovite rich member, quartz-rich member, and rusty-weathering member), 2 new units in the Spring Point Formation (a calc silicate and a marble), and articulates 6 seven other members which are similar to those mapped by Hussey and Berry (2006) in the Cape Elizabeth and Diamond Island Formations. A previously unseen graded bed, located in the Cape Elizabeth silver schist implies a downward facing stratigraphy, and designates the previously named Cape Small Synform as a synformal anticline. This folding generation, which dominates the area, is related to D3, which took place during the Neocadian Orogeny creating a complex regional fold that changes from open in the south to tight in the north. The upright folds deform two previous events: D1, an isoclinal recumbent folding event during the Salinic orogeny observable in foliation of quartz-rich beds of Bald Head; and D2, an isoclinal recumbent refolding deformation event evidenced by folded quartz veins and foliation at Bald Head related to a local Early Acadian event. Strike and dip

measurements taken for both meso- and macro-scale D3 folds suggest the existence of two synformal anticlines (Head Beach fold (190/21), and Hermit Island fold (191/39)), and two anticlinal synforms (Cape Small fold (193/22), the Seal Island fold (165/8)). The well-exposed trough of the Cape Small synformal anticline shows hinge parallel extension, which is linked to deformation outside of a purely compressive regime. Thus a wrench dominated, transtensional environment (Venkat-Ramani and Tikoff 2002) is proposed to explain both hinge parallel extension and the connection of this Acadian orogenic folding to the subsequent Norumbega shearing.

HISTORY

Jeffrey E. Berry

Advisor: Jason Thompson

Sigmund Freud, Arthur Schnitzler, and the Birth of Psychological Man

The *Wiener Moderne*, the modernist movement that took place in Vienna between roughly 1890 and 1910, is unique in its contributions to modern thought. The imperial capital produced Sigmund Freud and psychoanalysis; the artist Gustav Klimt; the writers Arthur Schnitzler, Hugo von Hofmannsthal, and Karl Kraus; the philosophers Ludwig Wittgenstein and Karl Popper; the composers Gustav Mahler and Arnold Schoenberg; and the politics of Zionism, anti-Semitism, and Austro-Marxism. Many of these intellectuals and artists demonstrated a close correspondence in thought across disciplines. Scholars explain these similarities with the expression, “the ideas were in the air.” Unsatisfied with such a terse write-off, this thesis looks to Sigmund Freud and Arthur Schnitzler for answers. The two men never met in person; in a letter to Schnitzler, Freud confided that he avoided a meeting out of fear of facing his own *doppelgänger* (*Doppelgängerscheu*)—an expression of their extraordinary intellectual alignment. Both were Jewish, at least by heritage, and both were neurologists, at least by training. Though Freud wrote as psychoanalyst and Schnitzler as playwright, in their respective works they each explored questions about hysteria, dreams, free association, repressed (or perhaps in Schnitzler’s case, unrepressed) sexuality, and Jewish identity. By examining Freud and Schnitzler’s stances on these questions, as well as their biographies, this thesis aims to ground the air-borne ideas and identify some of the characteristics of Viennese modernism at the turn of the century.

Caylin E. Carbonell

Advisor: Joseph Hall

“In a newe plantation it is not knowen whether man or woman be more necessary”: Gender Relations in Seventeenth-Century Virginia

The historical narrative of colonial Virginia has traditionally been that of a testosterone-fueled society of aggressive men competing to make a profit from tobacco. Accounts of seventeenth-century Virginia rarely include references to female settlers, and those that do merely mention the skewed gender ratio during the first century. However, a female presence was critical to Virginia's transition from economic outpost to settlement. Although their numbers were limited, women played essential roles in the social fabric of early Virginia society. Men on both sides of the Atlantic believed that there was a direct correlation between women's behavior and the future stability of the colony. In their efforts to establish patriarchal order within the colony, men strictly regulated women's actions. In an environment that lacked many of the traditional English social, religious and political structures, gender roles appeared surprisingly analogous to those in England. However, differences in Virginia's institutional development such as the system of indentured servitude and the high mortality rates influenced the emergence of new patterns of gendered interactions. This thesis explores the question of Virginian exceptionalism by looking at gender in an attempt to understand the extent to which a distinctive environment in Virginia led to similarly distinct gender norms. Using court records and early legislation, I examine women in their conventional positions as servants, wives, and widows and highlight the ways that women violated these norms.

James M. Cook

Advisor: Hilmar Jensen

A Perfect Triangle: Aaron Lopez and the Colonial Mercantile System in Pre-Revolutionary Newport, Rhode Island

Aaron Lopez never made it back to Newport, Rhode Island, after fleeing the British invasion of the city in 1776. Tragically, the esteemed “Merchant Prince of New England,” perished on his triumphant return to the city in 1782, at the age of 51. There is an uncanny symmetry between the rise and fall of Aaron Lopez and the city that made him one of the most successful merchants in Colonial America. The Sephardic merchant's arrival in Newport in 1752 coincided with the ushering of Newport into its golden years, 1750-1774, as an exceptional influx of earnings generated from the Triangular Trade transformed the sleepy port of Newport into

the venerable "Venice of the Atlantic." Lopez embodied the resourcefulness and opportunism that had characterized Newport's celebrated merchant community, and his unique background facilitated the growth of his mercantile empire. As a devout Jew from a distinguished Portuguese family, Lopez was able to quickly enter the Sephardic trading network, and establish ties with creditors in England, plantation owners in the Dutch Caribbean, and merchants in South Carolina. These connections enabled Lopez to build a perfect triangular trade of his own. A key to Lopez's and other Newport merchants' success was smuggling. Due to the British Navy's negligence in enforcing Parliament's mercantilist policies in the decades preceding the American Revolution, Lopez and other Newport merchants were able to smuggle sugar into Newport, distill it into rum, and sell the rum in foreign markets, especially Africa, with a competitive advantage.

Claire E. Lampen

Advisor: John Cole

Hitler's Children: Education as Indoctrination under the Third Reich

My thesis addresses education in Nazi Germany. Adolf Hitler deliberately reworked the existing system to function as a tool of ideological manipulation, instilling in Germany's youth a fervent adherence to Nazism that would ensure the triumph of his movement. I first discuss National Socialism as a belief system, highlighting its basic points as the foundation of the national curriculum after the Nazis came to power. I then explain how the party implemented this doctrine after 1933, and said process' meaning for the school system. The first two chapters comprise a background that places my subsequent source examination in context and provides a point of reference for the next two chapters. These discuss the most salient themes of the National Socialist program manifested in educational materials. Education in Nazi Germany was nothing more than propagandistic instruction: taking this system as a model for the indoctrination of the nation, how does one begin to assign guilt to the German population for the crimes of the Third Reich? In my conclusion, I consider patterns in dictatorships that speak to their treatment of the youth. How much can we blame the perpetrators if those perpetrators are also victims of indoctrination, and how can we continue to learn from the Nazi legacy today?

Rebecca L. D. Merten

Advisor: Aimée Bessire

"It's All Happening at the Zoo": Plural Visions of Landscape, Animals, and Humans in the Early Days of the Bronx Zoo

This thesis examines the Bronx Zoo from the creation of the New York Zoological Society through the year of 1906, seven years after the zoo opened. This zoo, like other parks and zoos of the time, was born out of larger movements that placed importance on civic public amenities and valued certain open spaces as inherently good. This thesis questions what we can learn about our understanding and use of nature by following this development. Zoos offer a rich context in which to analyze human considerations about the world they occupy because the spaces are heavily constructed yet display natural elements that zoo leaders had to consider, assign value to, organize, and present. By examining the development of the Bronx Zoo, it becomes clear that city officials, park designers, and zoo designers considered nature and its human utility in varied, complex, and even contradictory ways. An analysis of parks and zoos through both archival records and academic writing demonstrates that humans created these spaces in the hopes of bettering the lives of their cities' residents, with their own personal motivations and visions, and with the willingness to create hybrid spaces that offered disparate elements in public green space. This thesis examines the display of nature as the sum of three parts—the development and presentation landscape and architecture, animals and their exhibits, and the display of the human. It focuses on how artificial landscapes were developed and created and the control that the zoo developers tried to exert over the nonhuman elements with which they came into contact.

Josephine B. Reinhardt

Advisor: Karen Melvin

Los “Chicago Boys”: A Powerful Exchange of People and Ideas between Chile and Chicago

On September 11, 1973, Chile broke with its strong democratic history when the military bombed the presidential palace and Augusto Ugarte Pinochet began his 17-year dictatorship. On the day of the coup, a team of Chicago-educated Chilean economists presented a document they had been asked to draft by the Chilean Navy. It called for the abolition of the statist economy that characterized Chile at that time and the implementation of a free-market model. The free-market model that emerged under the dictatorship brought Chile to its position as one of the strongest economies in Latin America and its fundamentals are still in place in present-day Chile. The model is glorified by some and criticized by others because of the authoritarian atmosphere in which it was introduced. But the forced exit of Pinochet in 1990 and return to democracy provides an example to other Latin American countries that a free-market can only be sustained alongside a democratic regime. Drawing from personal interviews, archival material, and historical documents, I examine how and why an exchange between Chilean universities and the University of Chicago began in the mid-1950s and how these ideas have carried through to reshape Chile's economy. I focus on the context in which the exchange

emerged and how the Chicago Boys' policies infiltrated Chile. Ultimately, the longevity of the free-market policies demonstrates that they have been effective in bringing Chile to its superior economic position in Latin America today.

Anna K. Wallman

Advisor: John Cole

The Unbending Pillars of John Adams's Political Philosophy

Though John Adams is rightly seen as one of the most active proponents of the American drive toward independence in the 1760s and 1770s, he was also a staunch opponent of another revolutionary movement—the French Revolution of the 1790s. It has been difficult for scholars to reconcile the “radical” Adams of the 1760s with the apparently “conservative” and wary Adams of the 1790s. Historians have generally taken one of two approaches. Some argue that he underwent a deep and fundamental shift in political philosophy in the 1780s in reaction to a number of political developments in Europe and America. These trends, they argue, led to a wariness of popular control and abandoned faith in the wisdom of the general will. Others contend that he did not change significantly during this period but maintained his previous positions, but they have tended to provide little support for this position with examples from Adams’s own writing. Reading a varied selection of Adams’s writings—some published, like his well-known *Thoughts on Government*, and others virtually unheard of, such as his extended marginalia in Mary Wollstonecraft’s 1794 book on the French Revolution—we see that Adams did not undergo a major shift in political thought. He held a consistent set of political ideals, deeply rooted in the Puritan tradition, and which informed his reaction to many of the events in his lifetime, including the Independence movement in America and the revolution in France two decades later.

INTERDISCIPLINARY STUDIES

Sydney A. Hare— See Anthropology

Michael H. Pasek

Advisor: Michael Sargent

In Defense of Israel: How Social Context Affects Jewish-Americans' Moral Reasoning

The American Jewish community is liberal, yet some contend that American Jews become more conservative when thinking about the defense of Israel. Recent research suggests that conservatives base their moral judgments on the foundations of fairness, minimizing harm, in-group favoritism, respect for authority, and purity. By contrast, liberals largely base moral judgments on just two foundations: fairness and harm-minimization (Graham, Haidt, & Nosek, 2009). This thesis expands this research by thinking about how a topic that is important to someone alters their moral reasoning. If Israel is important to someone who is Jewish and if thinking about Israel, specifically in the context of the Israeli-Palestinian conflict, makes American Jews more conservative, they should alter their moral judgments in ways consistent with conservatives. To test this hypothesis, two studies primed Jews and non-Jews to think about Israel or a different location, and measured the accessibility and relevance of moral foundation categories. Results suggest that priming for Israel does not influence the moral reasoning of Jewish-Americans. However, when asked to think about explicit moral violations committed by military guards, Jewish-Americans expressed less concern for the interrogated victim, less anger at the interrogating soldier, and more support for the soldier's actions when the military guards were Israeli, compared to a different location. Irrespective of ingroup identification, when individuals were presented with a moral violation committed by soldiers from a nation that they glorify, individuals also showed a preference for conservative-consistent moral foundations. The results from this study also suggest that previous research may have conflated the effects of ingroup identification and those of group-specific glorification.

JAPANESE

Brendan S. Culliton

Advisor: Brian Steininger

Japanese Manga and Modern Literary Heism: Heroes of Action and Inaction in Japanese Comic Books

From the mid-nineteenth century onward, the "hero" as a literary figure has been problematized by the likes of Sartre and Dostoevsky. Feeding off the philosophies of determinism and existentialism and rejecting the romantic hero that preceded them, these authors argued that true heroism was impossible in the modern age, at least as it was understood up until that point. However, the Japanese authors Mishima Yukio (1925-1970) and Oe Kenzaburo (1935-) constructed a heroic pair dynamic that Susan Napier calls in her dissertation "Heroes of Action and Inaction." These authors pair the hesitant, existentially crippled, and often cowardly intellectual with a more active, unhesitant, and bold hero to create a dynamic that at once satisfies the reader's thirst for an intellectual

perspective of the world, while still offering a heroic figure to inspire both the reader and the intellectual protagonist. This thesis argues that this pairing reappears in Japanese manga (Japanese comic books), most notably in Oda Eiichiro's *One Piece* and Oku Hiroya's *Gantz*, and that it is in fact enhanced by the conventions of the medium.

MUSIC

Karen E. Nicoletti

Advisor: James Parakilas

Program Music and the Influence of Extra-Musical Narratives on Performance

In looking at the responsibilities of the performer of Western Classical music, we must consider music, like many art forms, as a mode of communication. Whether the composer's writing depicts a tangible idea or narrative or expresses less definable emotions, the performer coming to the music grapples with the responsibility of representing that extra-musical content in performance, how those ideas should influence performance style, and what kinds of freedoms the performer has with the written notes on the page. My thesis takes two parts: the first is a performance with a carefully selected program of flute repertoire ranging from pieces as programmatic as Debussy's *Prelude to "The Afternoon of a Faun"*, to J. S. Bach's *Sonata in E-flat*, which presents no programmatic context. I explore these ideas in my written thesis, by isolating three works from my program that represent the variety of programmatic influence found in compositions. In each work I examine the motives of the composer and extra-musical ideas he contemplated while writing. I follow this with in-depth interviews with flute performers and teachers knowledgeable in each respective style of music, discovering their views of extra-musical influences and the weight those carry in performance. Engaging published accounts of the motives and contexts of a musical composition with the opinions of musicians performing and teaching the music today, this thesis explores how extra-musical ideas surrounding a piece are physically manifested and sheds light on the elusive effect that preparation has on a final performance.

NEUROSCIENCE

Caroline B. Neville

Advisor: John Kelsey

The β -lactam Antibiotic Ceftriaxone as a Treatment for the Symptoms of Parkinson's Disease and L-DOPA-Induced Dyskinesia in 6-OHDA-Lesioned Rats

Parkinson's disease (PD) is a progressive neurodegenerative disorder caused by the loss of dopamine (DA) neurons in the substantia nigra. The most effective treatment is DA replacement therapy using the DA precursor L-DOPA, which can unfortunately often result in L-DOPA-induced dyskinesia (LID). Animal studies in hemi-Parkinsonian rats have shown glutamatergic NMDA receptor antagonists to be effective in treating both PD symptoms and LID, however, the cognitive side effects prevent these drugs from passing clinical trials. Upregulation of GLT-1, the primary glutamate transporter that removes glutamate from the synapse, could be an alternative to direct receptor antagonism. The β -lactam antibiotic ceftriaxone has been shown to substantially increase GLT-1 protein expression and activity in the brain without side effects. In Experiment 1 it was found that sub-chronic injections of 100 mg/kg ceftriaxone in unilaterally 6-OHDA-lesioned rats caused a 44% increase in impaired forepaw stepping, a measure of bradykinesia, that lasted at least 30 days after the last ceftriaxone injection. In Experiment 2, sub-chronic injections of 50 mg/kg ceftriaxone resulted in a 41% increase in impaired forepaw stepping that was found to be equivalent to that produced by 10 mg/kg L-DOPA. However unlike ceftriaxone, treatment with L-DOPA resulted in the development of L-DOPA-induced dyskinesia. Ceftriaxone was able to slow the development of LID, but not decrease the expression of pre-established LID. Indicating that the effects of ceftriaxone on forepaw stepping were due to enhanced GLT-1 function, injections of the selective GLT-1 inhibitor, dihydrokainate (DHK) reduced the improvement in stepping produced by ceftriaxone. Collectively, these data indicate that ceftriaxone may be a superior treatment for Parkinson's disease than L-DOPA.

PHILOSOPHY

Daniel R. Lambright

Advisor: Lauren Ashwell

Objective Chances in a Deterministic World

Determinism argues that the state of the world at any time uniquely determines the state of the world at all future times. Our best scientific theories seem inconclusive as to whether our world is deterministic. Our world could very well be either partially or completely deterministic. But determinism is not as innocuous as it seems; the truth of determinism seems to come into conflict with many intuitive concepts. One such concept is objective chance. Our intuitive notions of objective chances are tied to the belief that events could have turned out differently than the way they actually occurred. Though many philosophers have declared that this conception of objective chance is incompatible with deterministic worlds, some have tried to provide accounts that render the two compatible. In this thesis I investigate what a theory of deterministic chance could be. Working within certain metaphysical constraints on chance, I craft out a new dispositional account of chance grounded in properties that objects have.

POLITICS

Catherine S. Elliott

Advisor: William Corlett

Political Change through Narrative

When faced with well-organized opposition, political organizations often incorporate new strategies into their campaigns. Some progressive organizations situate their work within overarching frameworks or perspectives called narratives, which are designed to shift the terms of public discourse to favor particular social and political goals. Despite the theoretical significance of narratives, actual efforts to connect everyday change-making activities to narrative development are often complicated by practical and theoretical obstacles. I address this dilemma in collaboration with Maine People's Alliance (MPA), a progressive community action group with 32,000 members throughout Maine. We ask how an organization such as MPA can pursue the abstract goal of a "narrative" while remaining committed to more concrete change-making activities that measure an organization's success. To

answer this question and the three tensions of power, practicality, and perceptions that it spawns, we build on the work of community organizers, social movement framing theorists, scholars who study political myth, narrative analysts, and policy analysts. We explore a new integration of narratives and policymaking that simultaneously develops an alternative perspective and accomplishes measurable political change. This investigation uncovers the two tiers of narrative: organizational narratives and public worldviews. By focusing on organizational narratives, we explore various methods of story collection and evaluation to develop a model of narrative development that accommodates the varied realities and complexities of MPA, MPA membership, and the current political environment.

Romina Istratii

Advisor: Jason Scheideman

Dams over Nukes: Explaining Indian Water Treaties

In 1947 India and Pakistan, sworn enemies on all fronts, managed to settle a water dispute on the Indus Basin eventually signing one of the most successful treaties that has since existed on water issues. I investigate this puzzle of cooperation in my thesis. Ultimately I show that the Indus Waters Treaty succeeded due to the intervention of an epistemic community which managed to depoliticize the dispute and establish an equitable treaty between the two sides. Without the contribution of the epistemic community the outcome of cooperation would most likely have been unsuccessful. I specify also that the initial impetus for cooperation came in the form of an international idea on dam construction that “convinced” India and (epiphenomenally) Pakistan that the dispute on the Indus needed to be resolved urgently and cooperatively. This is only part of the explanation however; the research conducted in this thesis leads to the conclusion that the distribution of bargaining capabilities between the signatories played a central role in determining the empowerment of the epistemic community, which then intervened to ensure a successful outcome of cooperation.

Kelsey E. LaFreniere

Advisor: James Richter

Commemorating the Holocaust and Communism: The Politics of Hungarian Public Memory

Nations and nationalists make use of historical narratives in their quests to build unity and achieve other political goals. Those who control memories of the past are often able to affect changes in the future. Hungary is no exception; it is also a particularly historically conscious society with a dark and discontinuous recent

past, which is currently being tackled by an increasingly controversial political leadership. This thesis explores this dynamic between power and history by examining public memories of the Holocaust and communism, as represented in the public sphere by museums. It focuses on the narratives told by those with power and seeks to identify the functions of these stories. What motivates groups to tell which stories and what purpose do these public memories serve? This thesis analyzes the texts and symbolism used, the narratives deployed, and other characteristics of historical museums. It examines the unique representations of the Holocaust and communism, and identifies when memories of the two events converge. These public memories, whether advanced by official or other powerful voices, often present narratives of a continuous Hungarian nation, interrupted by foreign-imposed oppression and victimization.

Justin G. Lipton

Advisor: Clarisa Pérez-Armendáriz

Multinational States, Multicultural Nations: The Challenge of Liberal Multiculturalism in Nested Nations

This thesis questions the possibility of liberal multiculturalism, both normatively and in practice. In particular, it explores whether multicultural group rights may fail to achieve their liberal ends when distinct minority claims conflict. Through liberal multiculturalism presents a seemingly uniform justification of minority rights, national minorities and immigrant minorities are treated differently both in the literature and as a matter of policy. Often, national minorities – historically continuous and territorially bound – have demanded and received significant degrees of self-government within larger states. Is this culturally based self-government compatible with multicultural accommodation for nonmember immigrant minorities, or does it deny this possibility? I develop this question through an organized survey of the literature, and contextualize both types of minorities in relation to the nation-state. I conclude that universal and differentiated citizenship cannot be reconciled on principle alone. For this reason, I further explore this theoretical puzzle through case studies. I develop hypotheses about scenarios where the national minority self-government is most likely to be compatible with the integration and accommodation of immigrants, and test these hypotheses in two “most likely” cases, Quebec and Catalonia. Ultimately, I draw these findings together to consider whether and how an approach to minority rights can better account for competing claims.

Gina C. Sima

Advisor: James Richter

Revising Sovereignty: A Case Study of Kosovo, East Timor, and South Ossetia

Recently, the international community has been motivated to intervene in situations of humanitarian crises. However, such collective action, despite its noble purpose, is in clear violation of the principle of sovereignty. This thesis argues that the meaning of sovereignty has changed from an inherent, inalienable right of international state system membership to a version that incorporates the responsibility to protect, thus adding an element of accountability and better standards of behavior into sovereignty's definition. By looking at Kosovo, East Timor, and South Ossetia, this thesis tracks the construction of the revised meaning of sovereignty as it observes the way the international community attempts to integrate clashing notions of sovereignty (the principles of nonintervention and territorial integrity) as the existing governing principle of the international system and emerging trends of human rights and humanitarian intervention.

PSYCHOLOGY

Kristen J. Gavin

Advisor: Kathryn G. Low

Perceptual Asymmetries and Lateralization in Adults with Attention Deficit Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurobehavioral disorder characterized by poor attention, impulsivity, and/or kinetic over-activity. Many studies have found support for the theory that ADHD is the result of right hemisphere dysfunction. Additionally, those with ADHD often resemble older adults or patients with right hemisphere lesions who show clear signs of left hemi-spatial neglect. Several studies have attempted to identify differences in lateralization between the ADHD subtypes, although the results have been conflicting. The current study aims to clarify these conflicting results by controlling for a number of relevant factors including age, gender, and ADHD sub-type. In part 1 of the study, participants completed a screening task comprised of both ADHD and handedness measures. In part 2, participants found to be eligible completed a number of lateralization measures. Results of a line bisection task were not significant, however the overall trends were consistent with those found in previous research,

indicating evidence of a slight leftward perceptual bias in controls known as pseudo-neglect, a stronger leftward bias in ADHD-I groups, and a contrasting rightward bias in ADHD-C/H groups. On a cancellation task, participants with ADHD-C/H made significantly more left- than right-sided omissions, as well as more left-sided omissions than the ADHD-I group. Results of the lateralization drawing task indicated that both ADHD groups showed a tendency to draw objects more toward the right side than controls. Implications of the current study and ideas for future research are discussed.

RHETORIC

Ryan T. Katon

Advisor: Charles I. Nero

Nerd Up: The Rise of Nerd Media and the Co-Optation of Narrative in Advertising

Advertisements are rooted in the Narrative Paradigm: they produce a good story that is probable and relevant to the consumer's life. In the interest of relevance, advertisers often borrow narratives from cinema, which increases the probability of narrative recognition among the consumers. The construction of narrative is predicated upon the ability of the advertiser to create a protagonist or spokesperson that can satisfy audience expectations and inspire the viewer to accept the brand message. Thus, classic cinematic heroes or likenesses dominate the advertising world. But in light of recent economic struggles and shifting modes of production, the successful and fiscally responsible nerd has stolen the spotlight from the classic hero/adventurer as defined by Joseph Campbell. Given the rise of the nerd in cinema, advertising narratives have started to include this atypical character. However, the nerds that are represented in advertising are not the same as the nerds in cinema. Nerds in film are often portrayed as Jewish or African Americans; in advertising, nerd qualities are co-opted into a character that is exclusively Caucasian and stripped of all religious identifiers for mass consumption. Yet, the nerd has the ability to appeal to white audiences as well as minority demographics such as African Americans, Jews, and homosexuals because the character embodies semiotic signifiers of difference. This makes the nerd the most versatile spokesperson because the nerd can reach broad demographics without incriminating the brand.

Kevin B. McCandlish
Advisor: Jan M. Hovden

The Categorical Balance of Safeguarding Honor: A Cluster Analysis of Rhetorical Value Hierarchies in the Ninth Circuit's United States v. Alvarez

On July 23, 2007, elected public official Xavier Alvarez rose to introduce himself at a water district board meeting of directors in California. His brief statements formed a sequence of inexplicable mendacities, which included fabrications about serving in the U.S. Marines and having been awarded the Congressional Medal of Honor. Punishable as criminal under the revised Stolen Valor Act of 2005 (Public Law 109-437), these falsifications resulted in the legal case *United States v. Alvarez*, which reached the United States Court of Appeals for the Ninth Circuit. In a highly contentious decision authored by Judge Milan D. Smith, Jr., the Stolen Valor Act of 2005 was ruled unconstitutional on account of its overly broad abridgement of First Amendment protections. This judicial decision invoked an explicit weighing between the legal value of First Amendment protections and the societal value of preserving the sanctity of military service medals. Utilizing the theories developed by Chaïm Perelman and Lucie Olbrechts-Tyteca on value hierarchies and their rhetorical implementation in arguments, this thesis critically views the *Alvarez* decision authored by Judge Milan D. Smith, Jr. through the methodological lens of cluster analysis. The deliberate word associations cultivated within the legal language, and the frequency and intensity thereof, provide a unique insight into the justifications made in the weighing of two values long deemed paramount in American culture.

SOCIOLOGY

Nicolle H. Bugajski
Advisor: Emily W. Kane

**“That was all me. I did it. And the government helped me, definitely, but if I didn’t put forth the effort, I wouldn’t have come anywhere. It was a mix.”
Perceptions of Individual Versus Government Responsibility to Help the Poor**

Poverty is a growing problem in the United States and households headed by single women have the highest poverty rates. Sociologists often emphasize the structural determinants of poverty, yet have discovered that a majority of United

States citizens tend to believe in more individualistic explanations—leading the general public to think that the poor should be responsible for helping themselves rather than receiving government assistance. The literature demonstrates that despite low-income single mothers' experience with poverty, they tend to adopt individualistic ideologies, similar to those of the broader public. This becomes problematic as it further perpetuates socioeconomic inequalities that many sociologists argue can only be resolved at the social level. This thesis updates past research by analyzing General Social Survey data from 2008 and 2010 to determine current public opinion in the United States regarding where to place the responsibility of helping the poor. In that analysis, low-income single mothers appeared to share the same opinions that individuals should help themselves to at least some extent. In addition, qualitative interviews with low-income single mothers who are also Lewiston Housing Authority residents were conducted and analyzed. Based on their responses, it appears that these women agreed that both the government and individual were required to reach economic success, but seven out of eight of the women emphasized the significance of individual agency. Despite this stress on individualism, there were clear tensions between how to distinguish the roles of both government and individual action in assisting low-income families.

Jordan A. Conwell

Advisor: Emily W. Kane

The Inverse Relationship between the Black Immigrant Paradox and Black Nonimmigrant Disadvantage: A Comparative Analysis of Test Outcomes for Black Immigrant and Black Nonimmigrant Students

This thesis investigates the performance of black immigrant students compared to that of their black nonimmigrant classmates on tests in reading, math, and general knowledge/science in kindergarten, third, fifth, and eighth grade. I utilized data from the Early Childhood Longitudinal Study- Kindergarten Cohort to analyze differences in mean test scores, independent samples t-tests, and regression models. Black nonimmigrant students are suffering from a consistent, statistically significant performance disadvantage relative to white nonimmigrant students. However, their black immigrant peers are not suffering from the same disadvantage that befalls black nonimmigrant classmates. Instead, their disadvantage is much less consistent across tests and grade levels, and sometimes fully mitigated by controls. I argue that a potential black immigrant advantage (or black immigrant paradox) and a potential black nonimmigrant disadvantage (a loose derivative of oppositional identity) are closely linked theoretical inverses of one another within the marginalized space of blackness in the U.S. school context. The two may interact with other factors at the child, home, school, and neighborhood/ community levels to contribute to the observed divergence in black student school performance. I advocate for a sociohistorical understanding of both potential orientations toward

schooling and school performance that neither praises black immigrants nor blames black nonimmigrants based on under-informed conceptions of 1) their orientations toward schooling, and 2) the ways in which such orientations may interact with structural factors to impact black students' school experiences and outcomes.

Kerry M. Gross

Advisor: Heidi Taylor

“Women's Rugby isn't That Feminine”: Challenging Gender Norms through Participation in Women's Rugby

While the link between culture and sport is a complex and reciprocal relationship, this relationship both affects and is effected by normative understandings of gender. Since the origin of modern sport, this institution has been gendered to leave female participants, in comparison with their male counterparts, with less access to opportunities and rewards found in the arena of sports. While gender inequalities are common across nearly all social institutions, scholarship from the sociology of sport indicates that the institution of sport (and its intersection with culture) may be an ideal location to challenge gender norms. Drawing upon sociological literature, I examine how female rugby players use individual and group identities to create collective action for change, and present a possible challenge to gender norms within two distinct cultural contexts, the United States and Argentina. As a method of investigating this hypothesis, I completed several interviews with female rugby players in both national contexts. Although these women share rugby as a common pastime, their interviews demonstrate a broad range of distinct backgrounds, including stratification along the lines of age, sexuality, and economic status. In analyzing these interviews, I found that although the possibility to challenge gender norms through the concurrence of motivated identities exists in both the United States and Argentina, the differing cultural and gendered legacy of each nation shapes the discourse and actions of women in each setting. In the United States, where feminism has experienced significant advances granting women expanded access to sport across the last forty years, the women's rugby players interviewed identified strongly as women who play rugby. Rather than conceptualizing this identity as problematic, they viewed it as empowering to their personhood as strong women, and as promoting their equality to men in all situations. However, instead of advocating for explicitly gendered challenge to norms, they explained that norm challenging would be most effective if it promoted equal opportunity along multiple aspects of identity, including racial and economic statuses. In contrast, in Argentina, where machismo still dominates all gendered relations and women are only recently participating in sports, the women's rugby players presented a more complicated set of individual identities. They try to negotiate their need to be feminine with their desire to play rugby like their male counterparts; however, despite relative confusion about their gendered identities as

female rugby players, these women's accounts coincide to demonstrate that they believe rugby is not only an important method to challenge gender, but that it is a vital method to show their peers how both the institution of sport and other social institutions more generally need not be dominated by men. From these distinct findings, I argue that sport can be an important location to challenge gender, that individual identity forms an important base for the challenging of gender norms, and that the collective action of rugby teams in both the United States and Argentina could help to continue the quest for gender equality.

SPANISH

Dhariana M. González

Advisor: Baltasar Fra-Moliner

La dominicanidad desde la diáspora: La literatura y historiografía en *La breve y maravillosa vida de Óscar Wao*

In 1492, Christopher Columbus "discovered" the Americas, setting into motion a series of human displacements that have had several consequences, including the fragmentation of Dominican history and identity. Centuries later, this displacement continues. The development of a Dominican diaspora involved economically, politically, and culturally in the Dominican nation has created a multitude of hybrid sites that challenge the hegemonic norms that forced Dominicans to emigrate. This thesis analyzes the historiography and literature in *The Brief Wondrous Life of Oscar Wao*, by Junot Díaz, in order to challenge the hegemonic definition of Dominicanity and to present a more complex Dominican history, which includes subaltern voices and considers the European presence, the African presence, and the indigenous presence in the Caribbean. The circumstances that led to the creation of the Dominican nation, especially its independence from Haiti, a black republic, has led the Dominican oligarchy to develop practices and discourses that emphasize Catholic and Hispanic roots while marginalizing African roots. On the other hand, the female voice has also been silenced. The female body has been reduced to an object that men need to "conquer" in order to prove their masculinity. I propose that Díaz's novel is a historiographical project that seeks to challenge our knowledge and expose the contradictions inherent in Dominicanity. To reach a more inclusive definition of Dominicanity, the Dominican community has to relearn Dominican history and understand the burden that history holds on their daily life.

THEATER

Elizabeth A. Castellano

Advisor: Paul Kuritz

“This is a reckoning.” A Project in Directing Henrik Ibsen’s A Doll’s House

Fantasized realities cripple a seemingly ideal marriage through lies, deception, and ultimate imprisonment in a socially constructed world. Societal obligations and expectations are shattered in Henrik Ibsen’s A Doll’s House as individuality and gender equality take center stage. Set in an era of well-defined gender roles and established social mores, A Doll’s House sheds light on the strength and perseverance of the individual, and exposes the stark contrast between social responsibility and personal awakening. My project involves directing a production of Ibsen’s A Doll’s House after completing a supplementary written investigation of Ibsen’s biography, production history, and play analysis. The design of this production of A Doll’s House is anchored on the concept of an influential outside environment providing contrast to the seemingly insular comfort of the Helmer home. The production is set in New York in the second decade of the twentieth century, circa World War I. The exterior city environment symbolizes both freedom and oppression in a world driven by societal expectations and appearances. This thesis seeks to present a production of A Doll’s House that incorporates Ibsen’s truthfulness regarding the human condition with the powerful influences of an outside city environment that speaks to a modern audience.