

# HONORS PROGRAM THESIS ABSTRACTS

## MAY & AUGUST 2007 GRADUATES

### **Amanda Alfano, Psychology**

Dr. Helen Benedict, mentor

#### *The Effects of Parental Substance Abuse on Children's Play Themes in Therapy*

Past and present literature has unequivocally expressed that substance abuse is harmful. However, what are the effects of parental substance abuse on children? One way to analyze those effects is through play therapy, a beneficial tool that allows children to express themselves and communicate their thoughts and problems to their therapist. I will review the current literature about the effects of parental substance abuse on children, and conduct a study to find the effects of parental substance abuse on children's play themes in therapy.

### **Sarah Ashley Alley, International Studies**

Dr. David Uber, mentor

#### *Immigrant Youths and the Contemporary French State: Riots, Responses, and Possible Solutions*

In this thesis I analyze the current problematic relations between suburban, immigrant youths and the French state. I have divided the study into four chapters. The first will examine what historically preceded and thereby triggered the 2005 riots. Using research, mostly books, concerning France's thirty-year economic revolution that began after World War II, I will define exactly who these non-French youth are, where they came from, and how they arrived in their current location—mainly, the slums of greater Paris. In the second chapter, due to the current nature of the topic, I will use mostly online resources—articles from French and American newspaper articles as well as from scholarly journals—to examine the massive outbreak of riots during October and November 2005, which appear to have been the climax of relations between the French and their young immigrant population. The third chapter will contain a description and analysis of the French responses to the riots. I will evaluate the initial, short- and long-term government actions, with the advantage of knowing what changes are actually visible today. In the fourth and final chapter I will suggest possible solutions to the immigration crisis. France will elect a new President in May 2007, and in looking at platforms of the various candidates, I will provide answers to the commonly asked questions, where does political hope lie? and what does it look like?

### **Meredith Amos, English**

Dr. Elizabeth Willingham, mentor

#### *The Image of the Prostitute in American Film and Fiction*

The image of the prostitute presented in fiction reflects the era in which it was created, while also informing popular public opinion. This dual role can be seen explicitly in the evolution of the prostitute's image in twentieth-century American prose and film. As a platform for mass culture, these media can be used to trace the changing ideology surrounding prostitution and American society's attitudes toward that institution. Examining specific examples of the prostitute beginning with Stephen Crane's *Maggie*, *A Girl of the Streets* at the turn of the century, moving to Hubert Selby Jr.'s *Last Exit to Brooklyn* at its midpoint, and concluding with an overview of contemporary cinematic portrayals, a progression of the image becomes apparent. Looking at each instance by exploring the prostitute's power dynamic with her clients and environment, I show how a common thread emerges. That unity is bound up the power of individuality. Through the varied and distinctive portraits of each woman, a sympathetic, humanist tone comes to dominate the American perception of the prostitute.

**Emily Bailey, Telecommunication**

Dr. Joseph Kickasola, mentor

*The Effects of Sexual Content in Media on Women and Adolescents in Contemporary Society*

Body image is an idea that is becoming increasingly more prevalent in our society as it is more widely seen to shape people's concepts of self-worth. As the influence of the media begins to flood every element of daily life, one finds that the media's images play a particularly significant role in determining what is physically desirable. Now more than ever, it is important to take into consideration such effects on the children of a media-saturated society. This is a relatively modern problem, considering that generations past were not forced to absorb nearly the amount of media images that people today do. What impact is this absorption having on those who are subjected to this material from the day of birth? In addition to the influence on children, women have become a second key group of study because the majority of ads which promote a demoralizing or unrealistic body type are geared toward females. Through more carefully and studying the effects of media images, we may be better prepared as a society to attend to the emotional needs of children and those who are negatively affected by these images.

**Luke Baker, Political Science**

Dr. Mark Long, mentor

*The Broader Implications of the Supreme Court's Reasoning in United States v. Seeger (1965):  
How American Culture Transformed the Legal Understanding of Conscientious Objection*

In a landmark church-state case, the Supreme Court ruled in favor of the three conscientious objectors in *United States v. Seeger* (1965). In my thesis I wish to answer this burning question: How did this victory for the church actually signify a loss of moral objectivity for America as a nation? Or put another way, in what sense was the term "conscientious objector" redefined by *United States v. Seeger* in 1965? Where Judeo-Christian values once were the standard for conscience, what replaced it in the Vietnam Era? To answer these questions, I will document the historical characterization of conscientious objectors in America, researching both primary and secondary documents that focus on conscientious objection in different periods of American history. I will also examine Supreme Court jurisprudence in conscientious-objector cases leading up to *United States v. Seeger*. I will devote a chapter specifically to the Seeger case, highlighting its shift in Supreme Court jurisprudence, and also its shift in definition of a conscientious objector. From there, the paper will conclude with a discussion about the implications of post-Seeger conscientious objection, and what the new definition says about our nation's moral objectivity.

**Laura Barth, Journalism & Political Science**

Dr. Sara Stone, mentor

*Buying Bias: An Examination of the Relationship between Market Pressure  
and Bias in the American Media*

My thesis is about the idea of neutrality in the American media, how the market controls the amount of bias in the news, and the people that make those decisions in the media. To break down these topics, my first chapter provides a history of bias in the news with analysis showing how the standard changed between bias and neutrality when the option already in place became boring to the public. My second chapter looks at newspapers and their choices concerning bias: they often fire reporters for any sort of political participation, for instance, regardless of what beat the reporter covers. My third and final chapter talks about the three big transnational media corporations (Time Warner, Disney, and NewsCorp), political pundits on "news" shows, and how both groups deceive the public for profit.

**Holly Renee Briggs, University Scholar**

Dr. Tamarah Adair, mentor

*Characterization of a Distal Tip Cell Mutation in Caenorhabditis elegans*

Using ethyl methanesulfonate to generate random mutations, I screened F1 progeny of mutant *C. elegans* to isolate nematodes expressing a distal tip cell phenotype. These worms are defective in the production and migration of the germ line distal tip cells. After removing possible background mutations through crosses with wild type strains, I used crosses with known mutants to map the mutation to chromosome four of the *C. elegans* genome. In order to determine the mutation's gene sequence, I performed DNA extraction to obtain pure DNA and amplified using PCR. Sequencing was performed by Northwoods DNA, Inc., and the obtained sequence was compared with a known *unc-5(e53)* allele. I have also performed assays measuring phenotypic severity of the distal tip cell defects for further characterization and comparison of the mutation to other known alleles.

**Anthony Cahill, Religion**

Dr. Michael Attas, mentor

*Complexities of Poverty Medicine*

Poverty is a global concern which includes medicine. The purpose of this thesis is to illuminate how poverty medicine includes complexities not found in the typical modern medical practice. The urbanized, capitalistic approach of modern medicine caters to the middle and upper socio-economic levels of society. It is for this reason that the impoverished can become entrapped in their situation. To begin, the thesis evaluates a plethora of hindrances that the poverty-stricken face. These include, but are not limited to, the malnutrition, infestation, and treatment of their ailments. Physicians in modern society are not the only ones who face this complexity.

The government and faith-based organizations are aiding in this battle. The Medicaid program established in the mid-20<sup>th</sup> century aids the impoverished in their health needs. It is not perfect, nor is it comprehensive or universal, but it certainly offers an opportunity for the impoverished to receive the proper education and healthcare. Likewise, Christianity has particularly influenced healthcare in the United States. Numerous hospitals were established by Christian faith-based concerns, and even now there is an insurgence of communities coming together over the issue. The latter section of this thesis describes the role that these two play in response to the complexities of the healthcare of the poor.

**Dustin Chappell, Religion**

Dr. Joel Burnett, mentor

*Jesus' Laughter: The Gospel of Judas in its Literary and Historical Context*

Second-century Gnostic Christianity is a broad field that covers many belief systems and includes many texts. Last year one of these texts, long believed to be lost, was published and translated by a group of internationally renowned scholars. This thesis seeks to determine the significance of that text, the Gospel of Judas, within the context of the second-century Gnostic Christian framework as it may be understood through the distinct portrait of Jesus it paints. This study will first justify the text's placement within this historical context, followed by a brief survey of other Gnostic Christian texts, and close with an in-depth look at how the gospel paints Jesus distinctly through his laughter. His laughter will be the primary lens by which the portrait is judged because it is an emotion found exclusively within Gnostic Christian literature. By its end, this thesis will demonstrate that the Gospel of Judas paints a portrait of Jesus that is unique, not just with reference to more established Christian literature, but within the field of Gnostic Christian literature as well.

**Katie DeMamiel, Psychology**  
Dr. Charles Weaver III, mentor

*The Effect of Specialized Voir Dire on Capital Case Juries*

Americans have used the death penalty as the ultimate form of punishment since colonial days. However, jurors today are selected for capital juries through specialized *voir dire*, which eliminates all those who would be unable to convict a person if death could be imposed as well as those who would always give death if a person charged with a capital crime was convicted. This leads to population truncation, creating juries excluding a disproportionate number of women, minorities, and persons of low socio-economic status. Jurors who are included tend to be classically authoritarian, are more likely to convict, and return harsher sentences than jurors excluded through the process. One way to correct this problem is to withhold death qualification until after the guilt phase, thus not focusing juror attention on potential sentences before the defendant's guilt is determined.

**Zach Dietert, Economics & Political Science**  
Dr. Thomas Kelly, mentor

*Rationality and Externalities: An Economic View of Drug Prohibition in the United States*

The conventional free-market model of economic analysis holds that social welfare is enhanced when individuals and groups maximize their own utility by voluntarily engaging in production, consumption, and trade. However, even in predominantly market-based economies like the United States, government restricts or prohibits some of these voluntary interactions. This thesis specifically considers the prohibition of currently illicit drugs in the United States, examining and evaluating two possible rationales that attempt to justify prohibition on purely economic grounds. First, standard economic models assume rational beings capable of assessing and weighing their present and future utility levels. If, by their nature, addictive substances inhibit this rationality, paternalistic intervention may be necessary to protect potential users. Second, government regulation might aim to reduce externalities, the negative secondhand effects of drug usage borne by nonparticipating third parties. Finally, the thesis assesses the external costs of drug-prohibition policy that are borne by American businesses that do not directly engage in any drug activity. As a whole, the thesis suggests a means by which citizens and policymakers may incorporate the economic notions of rationality and externalities to more fully evaluate current drug policy and its potential alternatives.

**Rachel Early, University Scholar**  
Dr. Sarah-Jane Murray, mentor

*The Idea of Community in Old French Romance: The Writings of  
Bérout, Marie de France, and Chrétien de Troyes*

The quest for a working community is a theme that runs throughout the history of literature. I have chosen to concentrate on this theme in twelfth-century narrative French poetry, working on three texts specifically: Bérout's *Roman de Tristan*, Marie de France's *Lais*, and two romances of Chrétien de Troyes. Because I believe an author's meaning is closely tied to the individual words he or she uses, I have studied these poems in the original Old French. The questions I have raised are essentially moral. I have treated them through an Aristotelian lens of politics, in which the justice and flourishing of any particular community depends on the degree to which its individual members practice the virtues. Though I hope that my readers will gain from this thesis a clearer picture of the search for community in the twelfth century, I would also like them to keep in mind the universal moral nature of this search. These poets show both how their own society fell short of justice and how we might take the first steps toward living rightly with our own fellow pilgrims on earth.

**David Erwert, Mechanical Engineering**

Dr. Kenneth Van Treuren, mentor

*Solutions to Flow Separation on the Suction Surface of a Pak-B Low Pressure Turbine Blade*

Flow separation from low pressure turbine blades at high altitudes continues to be a problem for modern gas turbine engines. This flow separation leads to a loss in efficiency and higher fuel consumption. Techniques must be developed to reduce or eliminate this separation. A facility has been developed at Baylor University which simulates the streamwise pressure distribution of the suction surface of a gas turbine airfoil over a flat plate. The facility was calibrated to simulate the Pak-B airfoil, which has a problem of separation at low Reynolds numbers. Clean tunnel tests verify that the flat plate reproduces the static pressure profile found on the Pak-B turbine blade. A suction manifold is fitted to the upper surface of the facility and is used to create the flow separation. The dynamic similarity between the facility and the Pak-B blade made it possible to study how the boundary layer develops and eventually separates. Then it was possible to design and implement passive flow control techniques to eliminate this separated flow and restore efficiency. Methods investigated included triangular vortex generators, bumps, and dimples.

**Courtney Fowlkes, Political Science**

Dr. David Smith, mentor

*Freedom's Divorce: Understanding the Dissolution of the Union of Freedom and Restraint*

Since the origin of the United States, political, economic, and cultural liberties have gradually expanded. Although liberty was restrained by limits during the founding era, liberty has become increasingly divorced from the restraints of morality, law, and community values. Without limits, liberty has become identified with something near state-sanctioned license that consists of freedom of choice. However, the freedom of each individual to choose is eroding other kinds of freedoms, upon which such free choice is ultimately grounded.

**Megan Gary, Sociology**

Dr. Paul Froese, mentor

*Understanding the Minimum-Wage Debate in Order to Find a Solution*

Bills have come across the floors of America's Congress in the last several sessions that propose changes to the federal minimum wage, the latest attempt after decades of debate to establish a wage floor in a way that benefits all Americans. Few can agree, though, on what role the minimum wage does or should play in American society. In order to understand the arguments on all sides of this debate and to find the best legislative proposal, this paper reviews the background and rationales of the minimum wage, the successes and failures of past legislation, the differences in current legislative proposals, and the influence of politics over past minimum-wage changes. This paper then argues for a multi-level approach involving a minimum-wage increase and programs such as the Earned Income Tax Credit, and suggests that a five-person board under the Department of Labor, rather than Congress, should set the minimum wage in the future.

**Erin Griffin, Biology**

Dr. Rene Massengale, mentor

*Testing the Efficacy of the Aquachlor Chlorine Generator*

The Safe Water system is a program that has been implemented throughout the world by the World Health Organization and the Centers for Disease Control. Several chlorine generators have been recommended for use within this program, one of these being the Aquachlor system. The purpose of this experiment was to test the efficacy of the Aquachlor chlorine generation system and its role in the purification of drinking water. A sodium hypochlorite solution was generated and then tested in water samples spiked with *Escherichia coli*. To quantify these data the samples were filtered and the colonies were grown on MI agar. It was found that a 0.5% (g/ml) chlorine solution was established in approximately 4 hours at any of the three salt solutions. This solution performed as expected in sterile water according to CDC guidelines (CDC, 2005). It killed 99%-100% of bacteria at a concentration of 0.2 g/L. However, it was found that the solution's bacterocidal properties decreased in water with increased turbidity. These differences, due to the presence of organic molecules in most water sources, decreased the efficacy of the chlorine solution and must be accounted for in the field. The system was implemented in Papua New Guinea within a pilot program. Survey results showed the necessity for water quality improvement in that area.

**Jennifer Hailey, English**

Dr. Tamara Rowatt, mentor

*Religiosity and Coping with Nonmarital Romantic Relationship Dissolution*

Psychologist Kenneth Pargament (1990, 1992) found that intrinsic, extrinsic, and quest religious orientations are related to the way in which people cope with stressful life events; this study aimed to replicate these findings in the specific context of nonmarital romantic relationship dissolution. Also, this study looked at specific relationship variables and the way in which they co-varied with coping. Ninety-eight Baylor undergraduate students completed the Coping and Romantic Relationships inventory, and a series of Pearson correlations were run to detect correlations among different variables. While the results closely resembled those of Pargament, there were some specific differences. Specifically, it was seen that people were less likely to use spiritually based coping activities when the relationship was close and the breakup was painful. Interestingly, the length of time a person had dated their partner was the only relationship variable significantly related to feelings of anger with God as a result of the breakup. The specific reasons for these connections should be explored in future research.

**Lindsay Fuller Hatch, University Scholar**

Dr. Paul Sands, mentor

*An Exegetical Interpretation of Pauline Predestination Theology in Romans 9-11*

The coming of Jesus leaves Israel displaced and the subject of much questioning. Paul uses Romans 9-11 to illustrate where Jews and Gentiles stand in relation to God's plan for human history. The election of Moses and Jacob was made with a view towards fulfilling God's promises to Abraham and is set in contrast against individuals such as Esau and Pharaoh who stood in opposition to God's plan. Thus, God must use both mercy and wrath to bring about his will. Israel, on the other hand, is not without fault. They did not recognize the Messiah that the law clearly pointed to and sought to establish their own form of righteousness by following the prescriptions of the law rather than the righteousness that is by faith. Now, the Gentiles are also being adopted as God's people because of their faith. Yet Israel's hardening is only temporary so that the Gentiles may also have a chance to receive salvation. God has preserved within Israel a remnant who have been faithful to the covenant and followed in the footsteps of the patriarchs who received righteousness by faith. Paul shows how the inclusion of Jews and Gentiles within the family of faith has been God's plan since the initiation of the covenant.

**Amanda Heitz, Studio Art**  
Dr. William Jensen, mentor

*The Universal Knowledge of Leonardo Da Vinci and its Effects on Anatomical Drawing*

Given the current understanding of Leonardo Da Vinci, there exists an impending need to assess the anatomical aspect of his life's work. This thesis sets out to explore anatomical aspects of Leonardo's work through a brief exploration of the advent and growing necessity of anatomical art and Da Vinci's crucial role in this development. Da Vinci's role stems from his universal knowledge in many disciplines, which allowed him to relate form and function, and subsequently forced him to view the body as a machine, as a lyrical mirror of nature, and as a hydraulic system. His work is based on visual epistemology and he applied this to his work, along with outside knowledge, to make significant advancements in the areas of the skull, neuroscience, the senses, and the cardiac system. While Da Vinci was limited by the religion and society of his time, he still made significant discoveries which were applicable both to his artwork and to the world of science today.

**Jeannie Hoang, Biology**  
Dr. Bryan Brooks, mentor

*Sub-lethal Responses in Pimephales promelas following Sub-chronic Aqueous Exposure to Sertraline and Bupropion*

Detection of pharmaceuticals in the environment has led to increasing concerns over the impact of human activity on aquatic ecosystems. Of particular interest are pharmaceutical compounds that may affect the nervous or endocrine systems, since such compounds are capable of eliciting effects in aquatic organisms at low concentrations. Due to continuing patient use, pharmaceuticals are being continuously introduced to aquatic environments. Though the pharmaceutical compounds themselves may not be environmentally persistent, their continual reintroduction into aquatic ecosystems may bring about subtle changes throughout the course of a non-target organism's lifetime.

Selective serotonin reuptake inhibitors (SSRIs) are a class of antidepressant drugs used in the treatment of clinical depression, anxiety disorders, and some personality disorders. Among the SSRIs, sertraline, which is manufactured by Pfizer under the brand name Zoloft, has been heavily prescribed in the United States and is considered the most toxic of the SSRIs. While environmental-hazard assessments have tended to focus on traditional endpoints, such as lethality following acute exposure, lethal concentrations often far exceed environmentally relevant levels. This study assesses the effects of sertraline on the fathead minnow (*Pimephales promelas*) following chronic exposure at sublethal concentrations. Results indicate that sertraline can significantly affect behavioral endpoints, such as feeding rate, in *P. promelas* at concentrations as low as 30 ppb.

**Stephanie Howe, University Scholar**  
Dr. Jon Singletary, mentor

*Gender's and Poverty's Influences on Access to Treatment for HIV/AIDS in the Global South*

The purpose of this research is to explore the complex interactions of gender and poverty in the lives of those suffering with HIV/AIDS. In order to provide a comprehensive survey of different situations, the thesis focuses on countries in the Global South: Africa, Southeast Asia, and Central and South America. These areas have a high concentration of countries struggling with HIV/AIDS, gender issues, and poverty. To lay the groundwork for the research, the history of the epidemic in the United States and its responses to the crisis was outlined. Separate explorations of the effects of gender and poverty were made. Current United States policy regarding these issues was researched and recommendations were made as to the future course of such policies. It was concluded that gender and poverty both are significant hindrances to both preventing and treating HIV/AIDS in Global South countries. Furthermore, the United States is not doing enough to combat these hindrances and must dramatically overhaul its foreign policy in such areas.

**Cathryn Hughes, Neuroscience**

Dr. Brad Keele, mentor

*The Effect of Neuronal Excitability on Fear Behavior and Emotional Learning*

Temporal lobe epilepsy may be associated with emotional difficulties such as depression or anxiety. Since the amygdala is involved in both epilepsy and emotion, neural mechanisms in this temporal lobe structure may underlie the emotional disturbances observed in people with epilepsy. The neurotransmitter serotonin (5-hydroxytryptamine, or 5-HT) is implicated in many psychopathologies, and 5-HT also modulates amygdala excitability. Therefore, the present study used the fear-potentiated startle paradigm to investigate the effect of neuronal excitability on fear behavior in rats treated with *p*-chlorophenylalanine (PCPA) to chronically inhibit 5-HT synthesis. PCPA treatment selectively enhanced fear-potentiated startle (FPS) in individually housed rats. The exaggerated FPS response was reduced to control level by the anticonvulsant phenytoin (10mg/kg) and phenytoin (30 mg/kg) further decreased FPS behavior. These data suggest that low 5-HT in the amygdala results in a sub-seizure state of neuronal excitability that may be associated with pathological fear behavior. 2,5-dimethoxy-4-iodoamphetamine (DOI), a 5-HT<sub>2A/2C</sub> agonist, also dose-dependently reduced FPS in these animals, suggesting that serotonin modulates fear learning, in part, through actions at metabotropic 5-HT<sub>2</sub> receptors. These and future studies aimed at defining the neural mechanisms underlying emotional learning may lead to improved treatment options for patients suffering from anxiety disorders and post traumatic stress disorder (PTSD), in addition to the implications for epileptic patients with co-morbid mood disorders.

**Shannon Leigh Hunter, Sociology**

Dr. Jerry Park, mentor

*Sociological Factors that Influence Attitudes toward Asian-American Interracial Relationships*

Using data from the Social Capital Benchmark Survey, this thesis explored attitudes regarding interracial relationships, particularly Asian-American interracial relationships. The influence of four sociological factors including age, gender, ethnicity, and socioeconomic status on attitudes concerning Asian-American interracial relationships was studied. I hypothesized that each of these factors has an effect on whether or not individuals oppose or do not oppose Asian-American interracial relationships. Specifically, I hypothesized that males would favor Asian-American intermarriage more than women; younger generations over elderly generations; and Asian and white ethnicities over African-American. I also hypothesized that respondents who have similar socioeconomic statuses are more likely to engage in interracial marriage than respondents in differing socioeconomic statuses. Overall, these hypotheses were not supported by the results; rather the results supported a diverse group which favors Asian-American intermarriage, with little overarching patterns. Future research should continue to examine the interrelationship of these sociological factors and the influence these factors has on attitudes concerning Asian-American intermarriage; particularly the influence of different factors of socioeconomic status such as professions/careers and educational level, and cultural factors such as regions of the country and neighborhood makeup (such as crime levels).

**Ann Lilly, Biology**

Dr. Kevin Pinney, mentor

*Modification of Current Vascular Disrupting Agents*

Vascular disrupting agents are a relatively new form of anticancer therapy that shut down the blood supply to tumors. Attachment to tubulin at the colchicine binding site causes the depolymerization of microtubules resulting in deformation of the tumor vasculature. Tumor specificity due to the differences in the tumor microenvironment creates the capacity for potent anticancer drugs with low toxicity to healthy cells. Pre-existing drugs were used as models to synthesize potentially more efficient anticancer therapies. Oxi8006 served as the basis for the design of a new indole, which may bind more efficiently to tubulin, thereby creating a more efficient therapy. In addition, CA4P was covalently bound to a Nitrous Oxide Synthase inhibitor called LNMMA to counteract re-oxygenation attempts by the tumor. This new analogue complements a currently existing drug which links CA4P to LNMMA through an ionic bond.

**Miranda Madole, Psychology**

Dr. Jim Patton, mentor

*Adult and Adolescent Psychopathy: Diagnosis, Etiology, and Treatment Theories*

Psychopathy is a personality disorder that affects not only the person who has the disorder, but those around him or her as well. Individuals with this disorder take advantage of other people for their own gain and show no remorse for the pain they cause their victims. In this thesis an overview of the diagnostic symptoms and the nature of psychopathy is provided. There are numerous etiological theories that attempt to explain what exactly makes psychopaths different from normal people. Some of the more prominent theories include frontal lobe dysfunction, abnormal lateralization, and the low fear hypothesis. The developmental theory of psychopathy, as well as the contributions of genetics and environment, are examined. Juvenile psychopathy has been investigated less frequently than adult psychopathy, but has become an increasingly important topic of study because most psychopaths begin their lifelong pattern of destructive, antisocial behavior at a very young age. One problem that faces creating a specific diagnosis for juvenile psychopathy is the ethics of attaching a label to these children at such a young age. The study of young psychopaths has important implications in the development of successful treatments because there is reason to believe that early intervention might offer new options. The troubling fact is that treatment theories for psychopathy have, thus far, proven to be unsuccessful.

**Melissa D. Mathias, University Scholar**

Dr. James Marcum, mentor

*The Expanded Role of a Physician as a Political Advocate as Demonstrated by Médecins Sans Frontières*

Expanding on the traditional model of the physician detailed by William May in *The Physician's Covenant*, the current physician must also adopt the role of political advocate. The organization *Médecins Sans Frontières* serves as a model for this expanded role. Through the examination of *Médecins Sans Frontières'* role in South Africa, we see that in global epidemics, politics can be perceived as the actual disease. The historically neutral International Committee of the Red Cross has adopted parts of *Médecins Sans Frontières'* philosophy of activism. The increased activism displayed by the Red Cross during the Abu Ghraib incident shows that the role of a physician must, indeed, be expanded to include political advocacy.

**Adrienne Maxwell, International Studies & French**

Dr. David Longfellow, mentor

*Madame de Pompadour: The Historical Dilemma of a Royal Mistress's Influence*

As mistress of Louis XV from 1745-1764, Jeanne-Antoinette Poisson, Marquise of Pompadour, is a controversial figure whose influence in the area of politics is disputed. This thesis explores the diverse viewpoints addressing the role a royal mistress played in forming diplomatic alliances and influencing Louis XV's political decisions and his selection of government and military officials, especially in the period during the Seven Years' War (1756-1763). The exploration of such an elusive and largely undocumented role must begin with the personal letters of Madame de Pompadour herself, the memoirs of her contemporaries and the "literary underground" of the mid-eighteenth century. As an historiographical examination of Pompadour's influence, this thesis will consider interpretations proffered by scholars and biographers investigating Pompadour's perceived and actual role in the realm of politics. An exploration of primary documents and secondary sources from a variety of scholarly fields offers a dynamic picture of the Marquise of Pompadour's life at Versailles, while confirming the uncertain nature of the role and power of royal mistresses.

**Brittany May, University Scholar**  
Dr. Clay Butler, mentor

*Power in Conversations*

A one-hour conversation in which participants plan the creation of a student organization event traces the shifts in conversational power through various linguistic theories. The thesis contains a literature review of applicable theories, and discusses the Conversation Analysis method which forms the grounding of conversational critical analysis. This thesis identifies conversational power as a result of a number of factors, in which the prime determinant is the perception of access to knowledge relevant to the immediate situation. The end chapter is an application of this theory to business and organizational communications, demonstrating how similar discourse strategies and patterns exist in both this university-level organization and in modern corporations.

**Cara McCarthy, Forensic Science**  
Dr. Julie Anne Sweet, mentor

*Born Identity: Familial Hierarchy and the Birth-Order Connection*

Birth order is not as simple as firstborn, secondborn, and lastborn. This thesis is a survey of literature on birth order that explains the complexity of a person's ordinal position in the family and how it greatly influences all aspects of his or her life. Because personality grows out of birth order, it impacts who you are, the career you choose, whom you marry, and even the relationships you have with your parents, friends, siblings, and coworkers. Knowledge of birth order helps one to have a better understanding of one's behavior and life roles. No birth order position is better than another because each position offers specific limitations and opportunities, strengths and weaknesses. However, it is important to remember that it is not the position as such that makes the person, but how that position is viewed in the family, especially by the person's parents. The importance of birth order cannot be ignored, as it contributes with other environmental factors to leave an imprint on our everyday life.

**Celeste Mitchell, University Scholar**  
Dr. Jeanette Denton, mentor

*Haruki Murakami's "Lederhosen": A Study in Translation*

This thesis is a case study of translation, based upon the translation of Haruki Murakami's short story "Lederhosen." It includes a brief overview of translation theory from its beginnings up to the present century, an introduction to Murakami's life and works, and a translation of the full text of the story, complete with notes and observations on the translation and the process of translating, and a comparison with Alfred Birnbaum's translation of the same story.

**Trae Morcomb, University Scholar**

Dr. Heidi Hornik, mentor

*Agnolo Bronzino: Selected Church Patronage in Sixteenth-Century Florence*

Agnolo Bronzino was a sixteenth-century Florentine painter at a pivotal point in Christian heritage: the Counter Reformation. In 1563, the Council of Trent released decrees about the current state of art and its concurrent reformation within the Roman Catholic Church. Simultaneously, the Florentine churches of the Dominican and Franciscan order, S. Maria Novella and S. Croce, respectively, were renovated to satisfy a new approach to religion that included more participation from the layman in Mass. Bronzino received commissions to paint chapel altarpieces for both of these major churches as well as S. Annunziata, the Servite church. Although successful, his Mannerist paintings pushed the limits of the Council of Trent's instructions for religious art.

After introducing the artist's life and his oeuvre, the thesis describes the changing religious and artistic atmosphere in Florence during the Counter Reformation. The focus of the thesis is on the *Resurrection of Christ* (1552), S. Annunziata, and the *Christ in Limbo* (1552), S. Croce, and *The Raising of Jairus' Daughter* (1566), S. Maria Novella. Through an analysis of the patrons, the formal and iconographic elements of the altarpieces, including how the precise location of the panel in the church has an impact on the meaning of the painting, the thesis will establish that Bronzino's altarpieces not only acquiesced to the Council's decrees but required Florentines to reflect in a different, more contemporary way on their Christianity.

**Scott Morgan, Mechanical Engineering**

Dr. Carolyn Skurla, mentor

*A Continuing Study on the Effects of Freezing on Intrinsic Circumferential Tensile Properties of Bovine Medial Meniscus*

Menisci serve an important function as shock absorbers and stabilizers in the human knee, allowing for proper function of the joint. In order to do meniscal research, bovine meniscus is often used as a model for human meniscus that is inexpensive and readily available. However, during the research process, the bovine menisci are often frozen and thawed repeatedly in order to maintain freshness through transport and during the study. Previous studies did not take into account the effects of multiple freezing and thawing cycles (FTC's) on the mechanical properties of the meniscus during transport and specimen preparation. The previous study done by Christopher Towe attempted to address the possible effects that multiple FTC's had on menisci mechanical properties. Unfortunately, due to a small number of specimens and the large variances between different specimens, no conclusive answer was found. This new study continues to measure the effects, if any, of repeated FTC's on the mechanical properties of bovine meniscus. Five test groups were created again: Control, One FTC, Two FTC, Three FTC, and the Extended FTC was replaced by a Four FTC. However, within each group the medial menisci number was increased from two originally to twelve to counteract the effects of pretreatment property variations. After treatment, multiple, thin circumferential slices were taken from each meniscus and stressed in tension at low strain rates until failure. Force, displacement and specimen dimensions were measured, and maximum stress, Young's Modulus, and toughness were computed.

**Nathan Myers, Economics & International Business**

Dr. Kent Gilbreath, mentor

*Income Growth of Whites, Blacks, and Hispanics from 1974-2004: Winners and Losers*

This paper examines the real income growth of white, African-American, and Hispanic-American households from 1974 to 2004. Tools such as regression analysis, standard deviation analysis, and geometric growth calculations were used to compare the income growth statistics across these ethnic groups. To further compare and gain insight into the income changes of whites, blacks, and Hispanics, data were collected and compared for two subsets of the general population: single- and dual-income earner households and households in the top and bottom quintiles. This paper determines the relative “winners” and “losers” for income growth over the period, and discusses the income inequality effects of the divergent income growth rates.

**Lydia Nations, Business Administration**

Dr. Joseph McKinney, mentor

*Foreign Aid, NGOs, and Sustainable Development*

This paper begins by discussing current issues associated with the effectiveness of official foreign aid. With the forces of globalization increasing people’s awareness of other nations’ economic, social, and political struggles, the goal of foreign-aid-facilitated sustainable development in developing nations is receiving increasing attention. Sustainable development is acknowledged by the world’s most influential leaders to be a tool for reducing the risk of conflict and improving the integrity of a nation’s government. Perverse incentives, inconsistent accountability measures, and destructive, self-perpetuating practices on the part of both the donor community and recipient nations have contributed to the failure of foreign aid to achieve sustainable growth and development among developing countries in the recent past. This paper examines the rise in nongovernmental organization (NGO) activity and explores the possibility that these groups may be able to use their resources more efficiently and produce more effective foreign aid efforts than their governmental counterparts.

**Megan Rapp, Economics & French**

Dr. Stephen Gardner, mentor

*Globalization and Microfinance in Haiti*

Haiti is the poorest country in the Western Hemisphere. Its economic, environmental, governmental, and institutional weaknesses continue to draw Haiti into a deeper poverty. Economic development in Haiti must be holistic, encompassing environmental, political, social, and economic issues. Microfinance should be one part of this strategy. Microfinance provides small loans to poor entrepreneurs, encouraging the community to self-develop. It has provided positive results in Bangladesh, but has had little success in Brazil. Haiti needs to develop an individualized model of microfinance. Microfinance is already working in Haiti, and this progress must be encouraged and sustained with the help of international institutions. Globalization in Haiti has both adverse and beneficial aspects. With regulated globalization, Haiti can thrive. If Haiti uses globalization to its advantage, the country could reduce its extreme poverty. With expanded employment of microcredit, and with a focus on the empowerment of women, the human and knowledge capital of the country can rise and contribute to broader economic and social development.

**Sarah Rose Roberts, University Scholar**

Dr. Kevin Pinney, mentor

*Chaotic Abnormalities: Unusual Factors May Provide Hope in the Treatment of Malignant Tumors*

Tumor cells and the blood vessels that feed them differ drastically from healthy tissue. By exploiting these divergences from normal tissue, vascular disrupting agents (VDAs) specifically target the endothelium of tumor vessels by changing their shape and thereby starving the tumor of oxygen and nutrients. Unfortunately, the outer edge of the tumor is in close proximity to healthy vessels and is left to re-proliferate after VDA treatment, making the use of combination therapies necessary. Bioreductive drugs are potent anti-cancer agents that selectively kill tumor cells by damaging DNA. Many bioreductive drugs are detoxified in aerobic environments, thereby reducing their potential efficacy in the well-oxygenated outer rim. However, there is a class of bioreductive agents related to the indolequinone EO9 that are oxygen-independent and activated by DT-diaphorase, a substrate up-regulated in tumors. The aim of the current research is to combine potent VDAs with EO9 derivatives to create novel drugs that will successfully cleave within the tumor microenvironment to their active forms.

**Kacy Sandidge, History & Sociology**

Prof. Kay Mueller, mentor

*Unequal Development: A Comparative Look at the Global Feminization of Poverty*

Since the 1970s studies have shown that women and children are more likely than men to be the poorest citizens throughout the world. This thesis explores the causes and consequences of the feminization of poverty around the globe. In categorizing nations according to their level of development, patterns emerge to show the similarities and differences in the causes of poverty among women in these nations. Gender discrimination, government policies, and educational opportunities emerge as determining factors in women's ability to prosper. By comparing these issues globally, I seek to develop a comprehensive social theory on the feminization of poverty.

**Katherine Schnell, Biology**

Dr. Michael Attas, mentor

*Religion and Healthcare: An Analysis of the Arguments Presented by  
Dr. Harold G. Koenig and Corresponding Criticism*

Recent studies have emerged supporting a significant positive relationship between religion and health. Dr. Harold G. Koenig of Duke University is currently recognized as a leading scholar within this rapidly advancing field. Critics not only attack the field in general as inappropriate but also criticize the methods and conclusions of Dr. Koenig in particular. An in-depth analysis was compiled summarizing both Dr. Koenig's findings and his critics' opposition. Dr. Koenig personally suggested particular articles and books that best summarize his position. Articles from his critics were widely available among medical and religious journals. The analysis is concluded with a theological criticism highlighting the similarities between the legitimization of Christianity through the Social Gospel and the current trend to validate Christianity in the medical field. Although Dr. Koenig has attempted to support his own religious convictions, modern society forces him to explain the reality of a Trinitarian God through empirical science, thus diminishing the truth of Christianity.

**John Scott, Mathematics**  
Dr. Brian Raines, mentor

*Dynamics of a Cubic Polynomial Family*

This thesis investigates the dynamics of a family of cubic polynomials  $h_\alpha(x) = 3\alpha x - \alpha x^3$ . Using topological methods, we detail the dynamics of two members of this family,  $h_\alpha$  for  $0 < \alpha < \frac{1}{3}$  and  $h_1$ . We reduce the first case to two sets of points exhibiting different behavior, one set containing points which converge to the origin and the other set containing points which diverge. In the second case, we find two invariant Cantor sets and a countably infinite number of subsets eventually mapped to one of these Cantor sets. Moreover, we prove that  $h_1$  is chaotic on each Cantor set. We conclude this thesis with remarks and conjectures about other bifurcations of  $h_1$ .

**Kim Sharp, History**  
Dr. Jeff Hamilton, mentor

*Convent and Community: The Role of Nuns in Late Medieval English Society*

The communities of Benedictine convents in the Diocese of Lincoln during the 14th and 15th centuries are a fair representation of convent life in England during the time. Becoming a nun was the only option available to late medieval noblewomen apart from marriage, and as such studying convent life reveals the function and purpose of an exclusively female community within a male-dominated society. The primary sources used include bishop-visitation records, registers of specific convents, St. Benedict's *Rule* and other religious texts, architecture, wills, papal registers, and some popular literature including Chaucer. These sources were written almost entirely by men while most secondary sources about convent life are written by female scholars. Therefore biases are taken into account when interpreting the sources. The structure consists of a historiography section and three subsequent sections exploring the internal convent community, the place and power of the abbess and bishop, and the convent's relation to the outside community. I argue that while nuns were expected to remain enclosed in the highly regimented convent, it was necessary for them to interact with the outside community for practical and financial reasons, especially the abbess who wielded great power in the abbey in her conflicting yet interdependent relationship with the bishop.

**John Solter, Finance, Entrepreneurship, & Real Estate**  
Dr. Pedro Reyes, mentor

*Business System Dynamics: A Constraints Approach*

This thesis investigates the fundamental principles of the Theory of Constraints (TOC) management system. The primary sources are the writings of Dr. Eliyahu M. Goldratt, originator of TOC, and works of authors who elaborate upon his conclusions. The central argument is that recognition of binding constraints in organizations logically necessitates a radically different system than conventional management, and this system is TOC. Considering the underlying forces that any management system must address in combination with knowledge of constraints and the failings of conventional management lead naturally to the structure of this system. Logical argumentation and simplified models of business situations are used to illustrate underlying principles and the system components required to properly manage them. All TOC functional-level strategies may be consolidated into three areas: management, financial decision making, and marketing. The areas are discussed in that order.

**Christina Staroschak, Biology**

Dr. Michael Attas, mentor

*The Progression of HIV/AIDS in America*

This thesis delves into the early days of the HIV/AIDS epidemic and traces its progression to the present day. Exploring four main facets of American culture—religion, government, media, and education—the thesis explores the depths and the repercussions of HIV/AIDS. The first chapter covers religion, discussing the initial response of the Church, proposals for the action of the Church in the midst of the epidemic, and examples of successful outcomes of the work of Christian institutions in the fight against HIV/AIDS. The second chapter explores the United States government, specifically the early governmental response to the outbreak, profound changes in US policy due to HIV/AIDS, and the governmental need for support nationally. Thirdly, I researched the influential facet of the American media looking into the progressive response of that media to HIV/AIDS and the sociological impact of the media on American citizens. Education is the last factor that is explored. The education of the gay community, efforts at promoting awareness among American youth, and specific educational initiatives of the government are all considered. Through these four facets, the social progression of HIV/AIDS in the United States reveals the response and lack of response by the American people. As we understand more about our past, we will understand more about our efforts to fight HIV/AIDS in the future.

**Amber Steves, Neuroscience**

Dr. Tamara Rowatt, mentor

*Implicit Measures of Body Image Attractiveness*

Traditionally, researchers have studied body image attractiveness by using explicit measurements, but one of the difficulties that occur when using explicit tests is that the participant may answer dishonestly and/or omit important or relevant information. The Implicit Association Test (IAT) was designed to measure attitudes and beliefs which may be implied but not directly expressed, by calculating an individual's response time to a stimulus. The Body Image IAT (BIIAT) was designed for this experiment as potential measurement of an individual's perception of body image attractiveness and his or her eating behaviors. Subjects completed explicit measures designed to assess self-esteem, body image, and disordered eating behaviors in addition to completing the BIIAT. During the BIIAT, subjects were asked to respond as quickly as possible to the pairing of thin or average size figures of women with attractive or unattractive words. The primary hypothesis of the study was that subjects who were at risk for eating disorders (anorexia and bulimia nervosa) would more readily associate a thin figure with attractiveness than an average-size model. Consistent with the hypothesis, the study's results showed that individuals who were at risk for bulimia had a negative implicit attitude towards the average model. The results also suggest the use of implicit measures in future research of body image and eating disorders.

**Jillian Striker, Nutrition Sciences**

Dr. Paul Larson, mentor

*Utopia and Dystopia as Presented in Doña Perfecta*

Critics have applied a variety of theories and perspectives to Benito Pérez Galdós' first *novela de tesis*, *Doña Perfecta*. But a theme that most critics have perhaps overlooked is that of the counter-utopia or dystopia present in nearly every aspect of the novel. The setting, character interaction, and plotline demonstrate a reversal of the Romantic idea of a bucolic paradise with a favorable ending between the young lovers. Galdós, as an observer of the culture of Spain and of the surrounding European nations, had an opportunity to comment on the possible future awaiting his country given its political and social climate. His work in *Doña Perfecta* suggests that Spain, suffering from economic ruin and an enormous cultural divide between those living in the city and those in the country, would be in danger of destroying itself in the conflict between the opposing cultures.

**Rahana Sunesara, Forensic Science**

Dr. Michael Attas, mentor

*Muslim and Arab Contributions in Medicine*

In the Middle Ages, the medicine of the Arab world was superior to the health sciences of the Europeans. This thesis delineates the contributions of Arabs and Muslims who helped transfer medical knowledge from the ancient world. The Graeco-Arabic translation movement is closely examined, highlighting important translators and scholars who spearheaded the translation of ancient texts into Arabic and Persian during the medieval period. The lives of famous Muslim physicians, such as Ibn Sina, Al-Razi, and Al-Zahrawi, are also studied to provide a unique perspective of Arabic medicine. The innovations of these physicians are also described with reference to how they affected modern medicine. Various works from contemporary historians were examined to demonstrate the wealth of knowledge arising from the Arab world. Passages from the English translation of the Canon of Medicine are also commented upon to show the importance of the treatise during the Middle Ages and beyond. By providing innovative links between the Galenic and Hippocratic medical traditions and modern developments in health care, the Arab world played a crucial role in the development of modern medicine.

**Rachel Suter, Biology**

Dr. James Marcum, mentor

*The Reductionistic and Organicistic Views of Carcinogenesis*

Cancer is a complex, multistep disease. The traditional view of carcinogenesis stems from the somatic mutation theory, which is the basis for the reductionist point of view as outlined by Weinberg. Reductionism reduces cancer to its molecular components and seeks to prove that mutations in genes cause cancer. In contrast, organicism is best illustrated by the work of Mina Bissell, which asserts that changes to the extracellular matrix around the cells and flaws in the communication between cells induce cancer. However, scientists like Harry Rubin propose theories that work towards a synthesis of the two theories. In breast cancer, tumor-suppressor genes such as BRCA1 and BRCA2 are inactivated, while oncogenes like HER2 and c-Myc are overexpressed. Growth factors, angiogenic factors, apoptotic signals, and estrogen receptors all play a role in breast cancer. Structural components, cytokines, and enzymes in the extracellular matrix influence the activity of the surrounding cells and the genes within the cells. By examining all possible genes and extracellular components involved in breast cancer, therapies can be developed that target certain pathways in order to treat and prevent the disease.

**Jonathan Thiele, University Scholar**

Dr. Darrell Vodopich, mentor

*Altruism vs. Self-Deception: Have Selfless Genes Evolved or Are We Only Fooling Ourselves?*

The new field of evolutionary psychology sheds light on the paradoxical question of altruism's existence. If altruism is defined as a motivation to help others without reward and with sacrifice to oneself, how is it possible that, through the assuredly selfish processes of evolution, selfless behavior could exist? My stance is that it is impossible for altruism to exist in the natural world without invoking a supernatural explanation. Yet a person's ability to perceive, through self-deceptive processes, altruism where it does not in fact exist, is overpowering. In my thesis, I explore and refute opposing opinions and support my hypothesis with current research, evolutionary logic, and philosophical insights; and finally discuss its ramifications.

**Mary Beth Townsend, Music Education**

Dr. Georgia Green, mentor

*A Study of the Relationship between Baylor University's Choral Music Education Curriculum and Student-Teacher Preparedness*

The purpose of this study was to investigate the relationship between Baylor University's Choral Music Education curriculum and the preparedness of new student teachers in order to evaluate and assess the current curriculum of the program. Professional music educators who have mentored Baylor student-teachers provided information through written, open-ended surveys. The survey used in this study asked participants to evaluate specific elements of musical and pedagogical skills and gave an opportunity for participants to give suggestions for the program's curriculum. Participants in this study were professional music educators at the high school, middle school, and elementary school levels who returned surveys (N=11). The data was summarized in charts for each question in the survey under the categories "Music" and "Pedagogy." Specific comments participants made in the "General" category were utilized in further discussion of the data.

Based upon the opinions of the participants in this study, many of Baylor University's new Choral Music student-teachers are less than adequate in their piano skills and their classroom management and disciplinary techniques. This study indicated that Baylor University needs to improve the curriculum of its Choral Music Education degree program in the areas of piano skills and classroom management and disciplinary techniques. Results also indicate that further research is needed concerning the preparation of its Music Education student-teachers.

**Adam Urrutia, Religion & Philosophy**

Dr. Robert Miner, mentor

*Providence according to St. Thomas Aquinas*

This project concerns the doctrine of Providence according to Thomas Aquinas. Thomas defines providence as "the exemplar of things ordered to an end." God has created all that is; and all that is, is ordered to God as to its ultimate end. It is the exemplar of this order that resides within the mind of God; it necessarily resides within His mind because He is the Creator and what is created pre-exists within His mind. Insofar as providence is the business of His intellect, God must know all things, but whereas Aristotle and Muslim philosophers contemporary with Thomas deny Him knowledge of singulars, Thomas affirms the contrary—God knows singulars as well as universals. Providence can also, less technically, signify God's government of Creation. Rational creatures may exercise their own sorts of providences. These providences, or governments, are included in the supreme government of God. God is intimately connected with Creation in that He is omnipresent and preserves things in existence, and since nothing happens except through His will. The government of God, determinative though it be, does not destroy contingency among created things, which would include real causality and human freedom.

**Jennifer Variste, Biology**

Dr. Marie Level, mentor

*The True Story of African Children's Literature*

If the American story is about expansion and pursuit of the American Dream, the African story concerns heritage. All Africans, no matter their region, can recite the history of their ancestors. African languages unite in that they use literature to impart history and culture to the next generation. True African children's stories function to share the purpose and history behind the traditions of a culture. Despite the following authors being from different African countries, children's literature written by Chinua Achebe, Cyprian Ekwensi, and Meshack Asare include similar motifs and themes that constitute the archetypal characteristics of authentic African children's literature. In a sense, children's stories unite the continent by promoting values and ideas originating in the village. African stories told in Western countries lack this authentic quality. In my thesis, I share examples of authentic African children's stories and explain why literature published in the West inaccurately expresses the African tradition.

**Matthew Waller, Journalism**

Dr. Ralph Wood, mentor

*The Club of Queer Trades: A Watermark in the Art and Thought of G.K. Chesterton*

In the fiction of G.K. Chesterton—a journalist, Christian apologist and detective writer from the early 20<sup>th</sup> century—Chesterton’s first collection of detective short stories, *The Club of Queer Trades*, remains a neglected work due to its fantastic and seemingly flippant content. Yet far from being an anomaly in Chesterton’s writing, it reflects ideas from *The Defendant*, which upholds intellectually unfashionable elements of his era’s popular culture; it refines and débuts ideas that would later appear in his literary and philosophical critique, *Heretics*; and it marks Chesterton’s first attack on materialistic rationalism. It appears between *The Napoleon of Notting Hill*, which warns against commercial cosmopolitanism, and *The Ball and the Cross*, which would further the attack on materialistic rationalism. This thesis surveys all the aforementioned works, investigates the various connections among them, and concludes that *The Club of Queer Trades* represents significant advances in both the art and thought of G.K. Chesterton.

**Benjamin Walther, English**

Dr. Ralph Wood, mentor

*The Lord of the Rings and the Sacraments*

My thesis concerns the sacramental nature of Tolkien’s *Lord of the Rings*, focusing on the various penitential and Eucharistic scenes that occur throughout the text. My sources are primarily Tolkien and theology scholars, though I also reference various primary texts, such as *The Confessions* of St. Augustine, Nietzsche’s *Genealogy of Morals*, and the Catechism of the Catholic Church. The thesis begins with a short explanation of the Catholic understanding of the sacraments and progresses towards an in-depth analysis of Tolkien’s writing. My research has consisted primarily of reading various scholarly journals, though I have conducted two interviews—one concerning the numerous languages Tolkien creates for the trilogy and the other concerning the history of penance.

**Sierra Wilson, University Scholar**

Dr. Sarah-Jane Murray, mentor

*Guarding against Vice: The Quest for Morality in the Harley Manuscript of the Lais of Marie de France*

Even in their works of fiction, the medievals wrote with a mind to edifying their readers and encouraging them towards a great love and understanding of God. In this thesis, I look at the moral themes that run through the *Lais* of Marie de France, using the order of the Harley Manuscript as a guide to how Marie’s ideas of morality were interpreted by the scribe of that manuscript.

**Mary-Kathryn Woodward, English**

Dr. Richard Russell, mentor

*Mrs. Dalloway: Literary Modernism and the Stream of Consciousness Technique*

This project is an in-depth examination of Virginia Woolf’s *Mrs. Dalloway*, placing Woolf in the context of literary modernism and discussing both the content and the style of the novel. The first chapter analyzes the modern world which Woolf strove to portray in *Mrs. Dalloway*. The second chapter delves into the content of the novel, emphasizing Woolf’s demonstration of perspectivism and her melding of the internal lives of the characters with the external world to present a more accurate illustration of human experience. The third chapter defines stream-of-consciousness writing and discusses Woolf’s specific use of the technique. Both the content and the style of the novel reflect Woolf’s philosophy concerning the relationship between the individual and her community: while an individual’s unique perception of the external world isolates her from the community, individuals maintain the capacity to connect and to communicate with others.

**Holly Young, History**

Dr. Thomas Kidd, mentor

*Evangelicalism and the Foundations of Northern African-American Churches*

The thesis will explore the foundations and formation of northern African-American churches during the Revolutionary and Antebellum periods. In my thesis, I will look at how the opportunity for leadership within radical evangelicalism first helped draw in slaves and freed African Americans, and then at the ways in which evangelicalism formed early church leaders, such as Absalom Jones and Richard Allen. I will also explore the ways in which the needs of their community formed their churches and their specific articulation of Christianity. Within this context, I will discuss how the tensions between emerging theories of race and ideas of evangelicalism shaped the northern African-American church leaders' efforts toward moral and intellectual reform. Also I will question whether this kind of reform left the black churches and the black communities in general with a negative or positive legacy.

**Richard Zaleski, Classics**

Dr. Brent Froberg, mentor

*A Reinterpretation of the Grecian Altar as a Key for Determining the Presence of the Deity*

This thesis examines ancient Greek sanctuaries, studying both literary and archaeological evidence. It delves into two issues concerning Greek sanctuaries: first, whether or not the presence of the deity lies within the sanctuary complex itself; and second, exactly where the presence of the deity resides. Three different sanctuaries are analyzed: the Sanctuary of Zeus at Olympia, the Acropolis at Athens, and the Sanctuary of Apollo at Delphi. The hypothesis states that within each sanctuary the divine presence rests at the altar structure instead of in the temple building itself. This presence, moreover, only remains while religious festivals are celebrated. Each sanctuary was assessed based on its architectural features. These included the sanctuary buildings, imagery within the complex, and rituals performed there. The findings of the thesis suggest that the altar is the most important structure of Greek sanctuaries because of its ritualistic activity and the presumed presence of the deity.

**Jackeline Anderson, Neuroscience**

Dr. Brad Keele, mentor

Topic: *The Role of Serotonin in Impulse Control in the Amygdala*

**Joshua Lynn, Finance & Economics**

Dr. Steve Green, mentor

Topic: *The Use of Unexpected Inventory Changes to Forecast Real GDP Growth*

**Scott Milam, University Scholar**

Dr. Margaret Tate, mentor

Topic: *Tears and Tragedy: The Proper Role of Emotion in Tragic Dilemmas*

**Ben Van Ruitenbeek, Computer Science**

Dr. Jeff Donahoo, mentor

Topic: *Frameworks for Supporting AJAX and JSF Components: Function and Pedagogy*

**Jonathan Westerfield, English**

Dr. Mary Lynn Klingman, mentor

Topic: *Transitions of the Heroine: Studies in Nineteenth-Century British Novels*

## PROSPECTIVE DECEMBER 2007 GRADUATES

### **Daniel Aaron, Applied Music**

Dr. Jean Boyd, mentor

Topic: *Beethoven's Fifth Piano Concerto: Contexts & Reception*

### **Santos Garcia, Biology**

Dr. Bryan Brooks, mentor

Topic: *Effects of Phosphorus on the Function and Structure of Stream Mesocosms*

### **Osione Itegboje, Marketing & Economics**

Dr. Thomas Odegaard, mentor

Topic: *Globalization and the Eradication of Poverty*

### **Casey Leever, Psychology**

Dr. Charles Weaver, mentor

Topic: *Memory, Emotional Communication, and Alzheimer's Disease*

### **Amanda Mitchell, Political Science & International Studies**

Dr. Mark Long, mentor

Topic: *Osama bin Laden and the Islamic Metanarrative*

### **Ayesha Mohiuddin, Psychology**

Dr. Helen Benedict, mentor

#### *Childhood Bereavement: The Developmental Impact of Loss during Childhood*

The thesis will look at different aspects of the childhood bereavement process in the context of sibling and parental loss. A discussion on grief, bereavement, and the grief process will be incorporated into the thesis. The risk factors for loss of a sibling or parent during childhood as well as developmental effects will also be considered. Influences of the nature of the death, the relationship, and the developmental age will be explored. Also the importance and impact of parent and sibling relationships will be discussed. Lastly, a model for the healthy coping of grief will be hypothesized.

### **Tiffany Presley, Great Texts**

Dr. Phillip Donnelly, mentor

Topic: *Chaucer's Treatment of Wisdom in the Tale of Melibee*

### **Katie Smith, University Scholar**

Dr. Laurel Zeiss, mentor

#### *Rhetoric in the Letters and Music of Mozart*

This project concentrates on the set of string quartets Mozart composed and dedicated to Haydn in 1785. The first two chapters will research the philosophical and rhetorical trends that influenced Mozart in his formative education and in writing his letters. The third chapter will suggest that the principles of literary rhetoric praised by many Enlightenment thinkers carry over into his musical composition. Mozart's rhetoric is interdisciplinary, as it occurs in both his letters and in his quartets. In the fall, I intend to give a lecture-recital, explaining these ideas while intermittently performing selections of his 'Haydn' string quartets that best demonstrate these rhetorical techniques.