

ABSTRACTS OF
THESIS PROJECTS

SPRING 2018

The Honors Program
University Scholars



BAYLOR
UNIVERSITY

HONORS THESIS ABSTRACTS

2018 GRADUATES

Kimberly Andrade, Political Science

Victor Hinojosa, mentor

The Coyote Along the Border

Throughout the years, the United States' migration policy has changed, and these changes have created ripple effects. The United States has avenues for legal immigration, but there are those who are unable to obtain legal status. In these instances, migrants may find themselves compelled to find alternative means to reach the United States. These alternative means may include finding a coyote, a smuggler, who agrees to guide the migrant across the border for a fee. With stricter immigration policy and the increased militarization of the U.S.-Mexico border has created a higher demand for the services coyotes offer. This thesis seeks to first provide an overview of U.S. immigration policy. Second, provide an analysis of migrant accounts of their journey to the United States. Third, demonstrate how the American and Mexican governments have addressed the issue. Finally, provide a concluding section that includes discussions on human rights violations and a call for immigration reform.

C. Carter Barnett, III, History & Arabic

Abjar Bahkou, mentor

When the Crescent Met the Cross: Muslim-Christian Relations during the First Abbasid Period (749 AD – 950 AD)

The Abbasid Empire supplanted the Umayyad Empire in 749 AD and within two-hundred years it had initiated a Golden Age of science, culture, and religious thought. This Golden Age was made possible by both the Muslim and Christian subjects of the empire. My thesis explores the dynamic relationship between Muslims and Christians since the beginning of the Arab conquests in the Levant to the end of the First Abbasid Period in 950 AD. The first chapter examines the defining encounters between Muslims and Christians prior to the Abbasid Empire. The second chapter describes how Christians and Muslims collaborated to initiate a translation movement in the Abbasid empire. The translation movement brought thought from the Greek and Persian empires to the Abbasid capital in Baghdad. The final chapter reviews the historical development of the First Abbasid period so that we might learn from past relations. Overall, this thesis describes the first encounters between Muslims and Christians in order to learn from the past.

Amelia J. Baumgardner, Communication Sciences and Disorders

Marnie C. Abrahams, mentor

Statutes Speak Louder Than Words: An In-depth Analysis of Deaf Education Legislation in the United States

From the inclusion of American Sign Language (ASL) interpreters on Chance the Rapper's *Be Encouraged* tour to the Academy Award win for the short film "The Silent Child" to Apple Inc.'s proposal to include a new ASL signing emoji, 2018 has already been a blockbuster year of recognition for the Deaf community. While often forgotten by the hearing world around them, the Deaf minority in the United States has remain strong and grown a culturally distinct identity for the last century. However, like many other minority groups in this country, they face many systemic inequalities in their daily lives as showcased in the current climate of Deaf education. In my thesis, I look at the history of Deaf education in the United States and highlight the federal legislation that provided Deaf individuals with a foundation to attain equal education to their hearing peers and the state legislation that actually makes it a reality. Focusing first on the Americans with Disabilities Act and Individuals with Disabilities Education Act, I address one of the main paradoxes facing the Deaf community: allowing themselves to be labeled a "Disability group" to receive much-needed services, while rebelling against the idea that deafness is in fact a disability. Similarly, I take a comprehensive look at the legislation in California and Kansas, serving to apportion more rights to Deaf individuals across their states and overcome the remediable ignorance many people have toward the Deaf community. An interdisciplinary amalgamation of history, sociology and policy, this will be the first attempt to review how legislation in America specifically targets the Deaf community and help to address some of the audistic inequalities the hearing world is often unaware of.

Nathanael Beck, University Scholars

Andrew Meyer, mentor

Christian Theology of the Body and the Body Positivity Movement

In this thesis, I review human physicality in Christian history, from the Church Fathers to Pope John Paul II and various Protestant movements, and discuss what it means to use and misuse the body per Christian theology. From there, I look at asceticism and the muscular Christianity movement, two different ways of attempting to orient the body for God's purposes. I review literature on the body positivity movement to extract its most frequently cited goals and values, and find that the body positivity primarily promotes acceptance of all body types, advocating self-love and a common narrative that all bodies are beautiful. I conclude that contrary to the individualistic, affirmative nature of body positivity, Christianity offers motivations for fitness that stem from a humble pursuit of health in the service of others and God's Kingdom.

Dakota Bellow, Environmental Studies

Larry Lehr, mentor

Hybrid Rice: State Intervention, Minority Resistance, and the Future of Agriculture in the Uplands of Northern Vietnam

Vietnam is among the world's largest rice producers, exporting 6 million metric tons of rice in 2017. Much of this success is attributed to the *doi moi* reforms of the late 1980s, credited for decollectivizing agricultural lands, liberating markets, and improving livelihoods. However, some poverty remains, particularly among ethnic minority communities. Recent poverty alleviation efforts have consequently focused on ethnic minorities, as exemplified through policies encouraging the adoption of hybrid rice seeds and disuse of swidden cultivation. However, these policies are often met with resistance. In order to understand this tension, one must first understand its origins in Vietnam's agricultural history. Spanning the origin of wet rice, waves of immigration into uplands, French

colonization and resistance, and the myriad of land reforms within the last century, the agricultural history of Vietnam gives light to these policies and other modern complications regarding agricultural use and environmental concerns among minority communities.

Elizabeth Bender, University Scholars

Linda Cox, mentor

Using Literature with Children and Families Impacted by Illness: A Resource Guide to Children's Literature

Child Life Specialists and other pediatric professionals use a range of children's literature when working with children. Resources that provide a list of literature along with potential follow-up questions and activities to assist professionals working with children and their families encountering illnesses, however, are limited. This thesis compiles relevant children's literature into a resource guide that uses Bloom's Taxonomy to create potential follow-up questions and also provides follow-up activities. The literature detailed is divided into five categories: the hospital experience, the mental and physical health issues, the emotions and feelings, family dynamics, and dying and death. When used appropriately, children's literature can assist individuals working with children facing illness in a variety of settings. These individuals may be ill themselves or may have friends or family members who are ill.

Josiah Bender, University Scholars

JoJo Percy, mentor

Illuminating This Random World

Steven Dietz's play *This Random World* shows the lives of seven people, some of whom have no idea how closely connected they are. Stand Denman directed Baylor University Theatre's recent production of this work, and I had the chance to be the lighting designer. This thesis will follow the process from concept to actualized production, with the director's vision as a through-line: This world is beautiful because of, and not despite, its melancholy and random nature.

Hannah Blanscet, Sociology

Kathryn Mueller, mentor

Changes in The Affordable Care Act and What This Means for Americans With Pre-existing Conditions

America has undergone many changes in its short history with regards to the health care system. Until recently, patients with pre-existing conditions have been left out of the medical care conversation entirely and have had to fend for themselves. This project traces the American health care system back to the very beginning, looking at different methods of health care and if the patients, doctors, or politicians are benefiting the most from the structure of the medical system. Tracing this history up to present day, this work will also look at The Affordable Care Act, the current changes taking place in this area, and what social effect this will have on patients with pre-existing conditions. America has been in desperate need of health care reform since World War Two. With this study of past literature, present articles, and future projections my hope is to construct a health care system better tailored for patients with pre-existing conditions, as well as the general public.

Janessa K. Blythe, University Scholars

Alden Smith, mentor

Rhetoric and Philosophy: Cicero's Model for Moral Education

Cicero recognized that rhetoric was a powerful art and that it was necessary to develop virtue and integrity in those trained as orators. In *De Oratore* he seeks to reunify the subjects of philosophy and rhetoric for the purpose of preparing orators to use the faculty of rhetoric for the proper ends. In the first *Tusculan Disputation* Cicero identifies four immortal qualities of the soul that unite the practices of philosophy and rhetoric, while modeling the way in which philosophy and rhetoric may be used together. For Cicero, philosophy and rhetoric ought to be united because they are both methods by which truth is sought and approximated. By examining Cicero's educational philosophy and the history and status of moral education in America, I argue that Cicero's approach is effective model and that aspects of his approach could be applicable in America today.

Caitlin Charlton, Biology

Clark Baker, mentor

Through the Lens: A Documentary Photography Project on Sustainable Agriculture in Central Texas

Sustainability is one of the most pressing global issues spanning disciplines. How can we achieve a level of sustainability in which we no longer harm the planet, and can reverse the damage we have already done? Promoting sustainable agriculture is one central way we must combat global environmental, social and economic issues. Yet, most people are unaware of the mechanisms and processes by which their food is produced. How can we get people to engage in supporting sustainable agriculture if they do not have any sort of knowledge on what it pertains to? As our culture embraces the use of visual images to share information, I believe that photography can be one of the most effective ways to engage people with sustainable agriculture. In this project, I aim to let my photography of several farms around Central Texas to be a voice for sustainable agriculture, showing various processes food production must move toward if we are to become a truly sustainable society.

Andrea Chellaraj, Biology

Elise Edwards, mentor

Dying a Good Death: End-of-Life Decision-Making for Terminally Ill Christians

With the ever-growing number of medical technologies and treatments that exist that are able to postpone the time of death, the ethics of end-of-life care for terminally ill patients has become a popular area of research in the medical field. While much of this research focuses on factors such as patient education and patient autonomy, there are benefits to taking a theological approach in the study of medical death and dying, as many patients place an importance on spirituality during their last days. This thesis examines end-of-life decision-making for terminally ill patients, and specifically determines how these decisions should be made from a Christian theological perspective. In order to accomplish this, this paper pulls together thoughts and information from various sources on medical ethics, death and dying, and spirituality and theology. From examination of these sources, it was determined that there is not one end-of-life decision that is definitively "right"; rather, there is a correct way in which to make these decisions that can result in a good death. Terminally-ill Christians should work towards being within God's will when making these decisions, and decision-making should involve an attitude of humility, prayer, and seeking of godly counsel.

Arianna Cheney, Political Science

Lori Baker, mentor

The Origins of Etruscan Religious and Sacrificial Burial Practices at San Giuliano

This paper seeks to analyze policies and practices surrounding Etruscan burial and religious practices and determine what, if any, influences came from surrounding areas. Specifically, the treatment of women in regards to burials will be the ultimate goal of this thesis. To expand on this topic, ceremonial rituals including feasting, cremation, and the presence of human and animal bone will be of primary concern in this analysis. To accomplish this, the academic research from previous studies will be looked at in comparison to the current research being conducted in the region. Experts in the field will be consulted to analyze the materials and seek for answers about what lifestyle these people lived.

Nicholas Coker, University Scholars

Robert Miner, mentor

The Malady of Busyness: A Psychological and Philosophical Approach to Curing a Modern Problem

Man has ever sought to distract himself from introspection and boredom; however, with the rapid development of technology in the digital age, and with the pressing need for productivity which seems to be pressed on us from a young age, this avoidance of introspection and leisure has become a growing epidemic in modern life. This thesis seeks to examine this problem from multiple angles to get a solid picture as to why modern man abhors the idea of leisure so much. I first outline the current situation, and how this abhorrence of leisure continues to negatively affect our lives. Then, I examine the malady of busyness from the viewpoints of Friedrich Nietzsche and Blaise Pascal, comparing the two philosophers and giving their ideas on the necessity of leisure and introspection. Finally, I end the thesis by giving a few methods of curing tendencies toward busyness and turning toward leisure.

Katie Colanero, University Scholars

Christopher Pieper, mentor

Content Analysis of Member Participation Regarding Natural Childbirth on Pinterest

People are using online resources for an increasing variety of uses. One particular use that is rising, is personal healthcare. While people use many online tools to gain information, a wealth of information is obtained from social media websites. This study seeks to examine behavior of people on the social media website Pinterest regarding natural childbirth. Pinterest was selected due to its prevalence among the target audience and its current lack of existing research. A group of "boards" was collected in order to analyze the "pins" for certain variables such as: real image vs. illustration, medical orientation, part of a blogging community, gender and race of poster, etc. These variables were then examined through a sociological lens.

R. Holland Coleman, Religion & Philosophy

Paul Martens, mentor

Local Church Responses to Structural Injustice

This thesis explores the ways that Christians can contend for justice in a globalized world. Specifically, American Christians are complicit in structural injustice by participating in unjust political, social, and economic structures, without committing any individual injustice. In order to find solutions to this problem, the discussion first argues

that there is a broad consensus across the Scriptural witness which conceptualizes justice as the individual's care for the neighbor. Next, it argues that social structures mediate relationship between people who have never met, thus establishing an ethical burden upon Christians who participate in these structures. The third chapter argues that the American church in general is ill-equipped to deal with these issues because it has been misshaped by individualism and consumerism; it also recommends the practice of Koinonia as an exercise in the virtues necessary to contend for justice amid these structures. The fourth and final chapter draws upon the work of Wendell Berry and Wes Jackson to argue that in order for an economy to be just in the biblical sense, it must be an economy of place. The argument concludes with a proposal for local church bodies to invest in the justice of their cities, along with practical recommendations.

John Cooper, Biology

Christine Limbers, mentor

Implementing Health: A Meta-Analysis of the Effects of Implementation Intentions on Childhood Obesity Interventions

The obesity epidemic is undoubtedly the United States' most urgent health crisis, and the underlying causes are complex and difficult to tackle. Previous studies have linked childhood obesity to both an increased risk of adulthood obesity and increased morbidity. Implementation intentions are often used in a variety of health-related interventions in adults to improve health behavior (quitting smoking, increasing productivity, reducing stress, and losing weight, just to name a few), and their effectiveness on adults has been well-documented. However, their usefulness on children is not nearly as well understood. This study attempts to analyze the effectiveness of implementation intentions on children according to the current literature, both in regards to weight-loss related behaviors and other goal intentions.

Randolph Davidson, University Scholars

Melinda Nielsen, mentor

De Consolatione Philosophiae Transcription, Translation, and Analysis

Boethius' *De Consolatione Philosophiae* inspired all took and read its philosophy in the Middle Ages. Through the unique employment of prosimetrical writing, Boethius created a dialogue between himself and Lady Philosophy. In the dialogue, Lady Philosophy reminds Boethius, awaiting his wrongful execution, of his liberal arts training. Having remembered, Boethius no longer pays heed to Fortune's Wheel and rather happily submits himself to the providence of God. Through the Green Scholar's Initiative, we have access to a manuscript of this medieval text. I have very graciously been allowed to this manuscript which has never been worked on before. In my thesis, I analyze the artifact and give a provenance for it. Then I transcribe the first book of the *Consolatio* along with the many scholia present, and translate the scholia. Afterwards, I analyze the scholia and determine both which commentary tradition it comes from and for what purpose this manuscript was used.

Alexandra and Nicole Dawood, Management Information Systems (both)

Jonathan Tran, mentor

Individualism and Identical Twins: A Unique Perspective on Individuality

As prominent theory in Western culture, individualism has several implications for personal development. One example of those implications lies in its necessity for individuals to act independently in order to be considered unique. Consequently, individualism serves as a dilemma for identical twins, both because they have genetic similarities, and because their close relationship constitutes a unique part of their identity. This thesis examines the implications of individualism for identical twins and contrasts individualistic living with the theological vision for communal identity.

Riley DeHaan, Electrical and Computer Engineering

Yang Li, mentor

Ray-tracing Techniques and The Simulation of In-Flight Wi-Fi Signal Propagation

As consumer expectations for data usage continue to rise, the acceptance of poor connectivity on airplanes will become increasingly untenable. Reliable, high speed in-flight connectivity is in high demand in the airline industry. One challenge associated with designing in-flight wireless networks is understanding how electromagnetic waves propagate within the airplane cabin. In this thesis, a passenger airplane is modeled using FEKO CAD software, and ray-tracing simulations of Wi-Fi signal propagation throughout the plane are conducted. Large-scale fading parameters are extracted from the simulation results and compared to those of field tests performed by other authors. The modeling results show good agreement with those of other authors and of theoretical predictions and validate the use of ray-tracing techniques in simulating wireless propagation in aircraft cabins.

Blayke Drury, Applied Music

Jeffrey Peterson, mentor

Beyond Talent: Understanding Longevity in Classical Music

This project is a cross-section of the habits and experiences of several singers, directors, and teachers involved in the business of classical singing. Over twenty interviews were conducted, delving into each individual's journey and approach to a successful career. These interviews informed an in-depth discussion of what an opera career really looks like, and how best to achieve balance. All of the direct quotes and analysis are intended to highlight any continuities within the overall group in order to provide guidance and inspiration for a new generation of singers. The discussion takes an honest look at the realities of loneliness and relationships while on the road, and offers advice and strategies for finding comfort and confidence through the rigorous audition processes experienced by singers. It also examines the role that spirituality plays in career longevity and suggests characteristics that are conducive to a successful career, questioning the definition of success as an opera singer.

Meridyth Everette, International Studies

Peter Campbell, mentor

An Ideological War on Terror: Deradicalization Programs and the Future of Counterterrorism

The rise of radical Islamist extremism has plagued the international community throughout the 21st century. More than 32,000 people died as a direct results of terrorist activity in 2014 alone, and that year terrorism cost the global economy \$52.9 billion. The international community has employed a variety of tactics to try to stop radical Islamist groups from continuing operations or growing in influence, but traditional efforts fail to address the

ideological threat posed by radical Islamism. Programs aiming to deradicalize individuals with extremist affiliations seek to fill this gap by reducing the legitimacy of radical organizations and their ideology, which reduces their capacity to operate. Since deradicalization in the context of radical Islamism is a relatively recent concept, I examine both successful and unsuccessful programs in order to determine the elements required to implement a program that effectively graduates deradicalized individuals.

Kelsea Francis, Anthropology

Joseph Ferraro, mentor

Skill Acquisition in Saw Kerf Class Identification

The qualifications of expert witnesses are under scrutiny following the *Daubert* ruling. However, there is little consensus as to what defines an expert in a forensic field. There is no designated definition of 'expert' that courts use to determine whether someone is qualified enough to be an expert witness, but level of education and years of experience are important factors. This work is a preliminary analysis of the rate of skill acquisition in regards to saw mark, or kerf mark, analysis. Some kerf marks could be learned and expertly identified by analysts in as little as 5 minutes, whereas other kerfs could not, even after 30 minutes of preparation. Our findings suggest that there are some concepts within kerf mark analysis that can be mastered with high accuracy and others that cannot.

Morgan Frey, Secondary English Education

Tony Talbert, mentor

The Examined Life: A Transformational Journey towards Holistic Education

Receiving a kindergarten through twelfth grade education is foundational for every individual because individuals are prepared for careers and understand their roles as global citizens. Ultimately, education must not be built around the parameters of a school building, but built around the ongoing process and examination of learning throughout all of life. As an educator, my fear is not that students will not pass the state test or that they do not turn in an assignment, but rather they would be unchanged, disconnected, and void of any purpose in learning. Teaching is a form of transformation, therefore, the individuals that choose to teach must be transformed and understand the power in teaching not only to the standards, but to the heart of the students passions, dreams, and experiences. Therefore, I desire to present an educational model that brings the heart back into both teaching and learning, and that will ultimately rebuild education to its original wholeness and influence. The model presented contains four main categories: knowledge, heart, relationships, and experiences. The various categories can be used to drive classroom discussion and lesson plans or will help teachers as they prepare students with practical experiences for dealing with their own internal dialogue. In addition, the model equips students with tools on how to examine and impact the world around them with care, courage, and confidence. This thesis presents a practical, yet transformational model that will radically bring life, purpose, and meaning back into the classrooms and hearts of both schools, teachers, and students.

Micah J. Furlong, University Scholars

Todd Buras, mentor

Inevitabilism: Hope for the Salvation of All

In this thesis, I establish an argument that a subset of free will universalism I call "inevitabilism" is the best orthodox Christian response to the problem of hell from a biblical and philosophical perspective, and I defend the thesis against the philosophical objections of Eleonore Stump, Jerry Walls, and Zach Manis.

Amanda Garrison, Social Work

Christopher Pieper, mentor

A Proposal for Improving Reproductive Health in Rajasthan

Young women living in rural India are an incredibly vulnerable population that lacks adequate reproductive healthcare resources. Their vulnerability is exacerbated by low education levels, young marriage ages, and high poverty rates. This results in poor health outcomes for mothers and babies. The goal of this thesis was to develop a program proposal within the scope of improving reproductive health for women living in the rural villages of Rajasthan. I researched influencing factors such as legislation, religion, class division, geography, and education. Governmental resources implemented in public hospitals and through rural health workers are promising, but often they are inadequate, inaccessible, and expensive. I completed a program evaluation of current initiatives to see how NGO's attempt to resolve shortcomings in governmental care. With that foundation of research, I developed a program proposal to fill in the gaps of current governmental and non-governmental care with a goal of providing culturally competent services.

Paul Gaschen, University Scholars

Todd Buras, mentor

Cartesian Dualism and the Problem of Interaction

There are numerous ways to consider the form and essence of humans. This is no less true in the discipline of philosophy. In general, philosophers consider the human in two different ways: either through materialism or through dualism. Materialism, the idea that all things causally significant to the human are physical, stands in direct opposition to the dualist position, that there are some things about the human that cannot be reduced to the physical. In this thesis, I will explain and parse the specific idea called Cartesian Dualism. As a form of *substance* dualism, this position faces the unique challenge of answering how physical and non-physical substances interact. Following a detailed discussion of Cartesian Dualism, I will present this problem of interaction and consider whether it truly poses a significant threat.

Will Gober, Supply Chain Management

Josh Strakos, mentor

Logistics-Focused Partnerships Between For-Profit Companies and Humanitarian Organizations: A Content Analysis

Logistics is one of the most important functions of a humanitarian organization, however research has identified major shortcomings of humanitarian logistics (HL) in comparison to effective for-profit logistics operations. Little research has been conducted regarding logistics-related partnerships between for-profit companies and

humanitarian organizations. Existing research indicates that these partnerships are helpful and might improve humanitarian logistics operations overall. The purpose of this thesis is to provide a structured assessment of cases relating to logistics-focused partnerships between for-profit companies and humanitarian organizations, and from these cases identify commonalities which contribute to the success of the partnerships. The author employs literature review and qualitative content analysis methods. The literature review provides a brief overview of the current state of HL and explains the origins of the research questions. The content analysis assesses five case studies and identifies commonalities between cases. Key findings of the case analysis are that cross-sector HL partnerships are successful and beneficial for both parties. These partnerships especially improve humanitarian groups' proficiency in logistics. Additionally, the research indicates establishing shared values and principles, and outlining deployment criteria for new partnerships reduces difficulties in initiating and maintaining partnerships. This knowledge is valuable because mechanisms for overcoming barriers to partnerships can be utilized by HL practitioners to facilitate more successful cross-sector collaboration in the future.

Arianna Gomez, Public Health

Beth A. Lanning, mentor

Through the Eyes of Brazilian Youth: A Photovoice Study on Quality of Life

Adolescent health can be classified using common morbidity and mortality data, but these do not provide information about environmental factors, perceived society norms and peer pressures that often influence adolescent behaviors. Photovoice is a qualitative method which allows individuals to combine photography and personal narratives to demonstrate the realities of their daily lives. It is aimed at creating social change for marginalized individuals and communities. In this project photovoice was used to prompt discussion surrounding major themes regarding adolescent community members' perception of factors that affect their health and quality of life in Anchieta, a coastal town in southeastern Brazil. The participants presented their findings to community members and leaders in order to facilitate discussions about future health initiatives. Overarching themes from this study included: spirituality, friendship, family bonding and community building. Results will be used to develop future health interventions in collaboration with the Baylor in Brazil program directors.

Harrison Chase Gottlich, University Scholars

Sara Alexander, mentor

Colonialism and the Development of the Tanzanian Healthcare System

This thesis examines how Colonialism has had lasting effects on the formation of the Tanzanian Healthcare system. Identified key characteristics of the Colonial Health Model include regional specialization, direct taxation, hospital-based care, and physician leadership. The effect of these characteristics is evaluated considering Tanzanian domestic policies and reports together with international health developments, including the 1978 Alma Ata Declaration and the 1993 World Bank Report. A finding of this thesis is that an overreliance on the Colonial Health model has stifled the development of the Tanzanian healthcare system. Two historically informed recommendations are submitted to correct this issue and to support the development of a more preventative-focused health model in-line with the Tanzanian 1967 Arusha Declaration and Second Tanzanian Development Plan.

Matthew Payne Graff, Great Texts

Ralph Wood, mentor

The Examined Life: A Critical Evaluation of Rod Dreher's The Benedict Option

This essay explores Rod Dreher's *The Benedict Option* through three main evaluative tools. First, it offers an important framework for understanding the purpose of *The Benedict Option* in an exploration of the concept of sacramental imagination and the importance of the Christian Tradition. Second, it explores the narrative arc of Rod Dreher's life, particularly how this arc leads to his ultimate proposal. Finally, it evaluates the success of *The Benedict Option* by exploring the critical reception of the work. Ultimately, I argue that Rod Dreher's *The Benedict Option* must be understood in light of both Rod Dreher's life and in light of the Christian Tradition which Rod Dreher is writing into. This allows me to further argue that Dreher's work should be viewed not as a definitive treatise, but as the beginning of a longer conversation which he calls all Christians to join.

Annalise Hastings, Great Texts

David Corey, mentor

Music and the Soul: Character Formation to Transcendence

This creative thesis explored music's affects on the human soul. I used the lenses of Plato's "Republic," Alan Bloom's "The Closing of the American Mind," and Rodger Scruton's "Understanding Music," to explore music's power to shape humans. The second part of my project was a lecture-recital, in which I shared my research and performed solo Bach, Sarasate's "Carmen Fantasy," and Massenet's "Meditation from Thais." Each piece served to illustrate an aspect of my research. The goal of this thesis was to blend the practical with the theoretical, demonstrating academically and experientially the power music has to shape the human soul.

Daniel Joseph Hibbs, University Scholars

Alden Smith, mentor

To Gladden the Heart: Brewing and the Monastic Tradition

The main elements of the Benedictine Rule, "ora et labora" or prayer and work, combined with the emphasis on hospitality came together in the process of monastic brewing. The development of the brewing tradition within monastic communities allowed for the development of self-sustaining communities. Intellectual, spiritual and physical exercises interact to give monastic brewing its distinctive characteristics. The beer produced in these communities reflects a concern for quality, for local sourcing, and for "gladdening the heart." This is, indeed, the correct way to both make and consume beer.

Abigail Higgins, University Scholars

Barry Hankins, mentor

Evangelical Responses To Science Fiction Film And Television, 1960-1980

This project examines the nature of evangelical interactions with popular culture in the 1960s and 1970s in America, specifically in regard to responses to science fiction film and television. The evangelical movement within Protestant Christianity was gaining traction in this era, as conservative Christians coming out of fundamentalism began to intentionally reengage secular culture. Simultaneously, secular culture was going through radical changes of its own. In response to technological developments and a growing focus on the future of humanity, the genre of science fiction became more prevalent in the media. The development of the Star Trek franchise and the growth of fandom around it are covered here as an indication of the importance of the genre. This study examines the

intersection of these two emerging movements of evangelicalism and science fiction. Looking at reviews of and articles on science fiction film and television in an evangelical publication, Christianity Today, with a mainline Protestant publication, the Christian Century, as a comparison, this project advances the argument that Christianity Today's treatment of science fiction film and television mirrors the increased openness on the part of evangelicals to engage with popular culture in a thoughtful way on secular but relevant matters, while not yet embracing secular culture as wholeheartedly as the Protestant mainline.

Thomas High, Biology

Bryan F. Shaw, mentor

Using Computer Assisted Detection of Leukocoria (CRADLE)

The red reflex test is an outdated and inaccurate method for determining ocular abnormalities in children. A possible solution to this problem is utilizing modern technology through the usage of Computer Assisted Detection of Leukocoria. This program requires less training, has a lower cost, and has a higher sample size when in direct comparison with the red reflex test. The advantages and disadvantages of using Computer Assisted Detection of Leukocoria to detect ocular abnormality in children is further explored.

August P. Holdrich, University Scholars

Nick Henry, mentor

Orthographic Effects on the Perception and Production of Certain Japanese Phones by L2 Learners

The purpose of this thesis is to test the influence of orthography on how second language (L2) learners of Japanese perceive and produce sounds absent from their native language English. The study tests whether Japanese L2 learners perceive and produce the Japanese phonemes / ϕ / and / ζ / as closer to their transcription equivalents /f/ and /h/ than non-learners do. The study uses a language (Japanese) where Roman orthography is not used frequently, testing the limits of L1 orthographic effects, as well as looking at the phonemic rather than the word level. It was found that orthography did not influence the perception of Japanese phones at the phonemic level, and that in general there are limits on orthographic effects in this scenario. But, instances of orthographic influence were found for the production of words, which indicates that auditory perception is likely being overridden by an orthographic effect, most likely in the lexical representation of a word.

Austin Hubbert, Baylor Business Fellows, Economics (MS), Mathematics & Biology

David VanHoose, mentor

Unintended Consequences of Well-Intended Regulation: The Procyclical Effects of the Basel I Capital Regulations on the U.S. Banking Industry

Numerous solutions have been posed to address the risks that fractional reserve banking systems cause for depositors. The newest regulatory trend to combat these issues has been capital regulation. Many critics have accused capital regulation of increasing the natural procyclicality of bank loan supply. However, to date the literature appears to say little on whether or not the Basel I capital regulations have any effect on the natural procyclicality of bank loan supply. To test this, I constructed a new loan supply function to determine the relationship between the business cycle and the real loan supply. A Chow Test was then conducted to determine whether this relationship changed at the date of Basel I implementation. I found that this relationship increased significantly after the implementation of Basel I, allowing me to conclude that the Basel I capital regulations increased the natural procyclicality of bank loan supply

John Isaacson, International Studies

Ivy Hamerly, mentor

To Fear or not to Fear? Offensive Structural Realist and Institutional Examination of Germany

A powerful Germany, both militarily and economically, has not always boded well for the continent of Europe. As of today, Germany has the largest European economy in terms of GDP, it has the largest population, and it is a central player within the European Union. Should Germany's neighbors hold a favorable view of German influence, despite its success? This thesis will test the explanatory power of two International Relations theories in regards to German popularity by other states. The two theories are Offensive Structural Realism, which predicts that Germany's neighbors should not view a rising German influence as favorable, and Institutionalism, which predicts that institutions like the EU do allow German neighbors to view German influence as favorable. The thesis will involve two German test cases: Germany from 1871-1914, and Germany from 2008-2014. This thesis' concludes by showing that Institutionalism holds more power than Offensive Structural Realism. Indeed, states will not react to Germany based on German power capabilities alone. Instead, states will react to Germany based on the possibility of cooperation and the predictability of German intentions.

Yealeen Jeong, Biology

Cheolho Sim, mentor

Distribution and Seasonal Abundance of Culex quinquefasciatus and Aedes albopictus (Diptera: Culicidae) Populations in Central Texas

Mosquito surveillance was carried out in Central Texas to examine the effects of meteorological and environmental factors on *Culex quinquefasciatus* and *Aedes albopictus* populations and to investigate the species' infection status with West Nile virus, chikungunya virus, and Zika virus. Ten trapping sites in the central and suburban areas were selected to monitor any alteration in the mosquito population in every two to three-week period from April 2016 to October 2017. The seasonal monitoring showed that the *Cx. quinquefasciatus* population, but not *Ae. albopictus* population, was highly affected by precipitation while the variable of subarea had no effect on the mosquito abundance. West Nile virus, chikungunya virus, and Zika virus were not detected in the sampled mosquitoes in Central Texas.

Yoomin Jo, University Scholars

Bryan W. Brooks, mentor

Role of Directly and Indirectly Acting Chemicals on Development and Oxidative Stress in Various Early Life Stages

Recent studies in our laboratory comparatively explored toxicity responses associated with oxidative stress (OS) pathways in fathead minnow (*Pimephales promelas*) and zebrafish (*Danio rerio*) at early life stages. However, discrepancies between responses of these two common fish models have not been fully investigated across developmental ages. The objective of this study was to examine how OS responses vary: 1. throughout development; 2. between directly acting chemicals and metabolized chemicals; 3. between fathead minnow and zebrafish. Fathead minnow and zebrafish were exposed to R-(-)-carvone or bisphenol-A (BPA). Fish were exposed to control and 40% of the 96-h LC₅₀ value. At 24, 48, 72, and 96 hours post exposure, mortality, hatching rate, and developmental deformity were assessed. Expression of select OS associated genes was measured using qPCR. Results showed that responses to study chemicals varied throughout development. Moreover, differences in toxicity of directly and indirectly acting compounds appear to be unique to age.

Elliott Jost, Mechanical Engineering

David Jack, mentor

Non-Destructive Inspection Approach Using Ultrasound to Identify the Material State and Internal Temperature for Amorphous and Semi-Crystalline Materials

Presently, many invasive techniques exist to identify the temperature and phase of a semi-crystalline material. Most current methods require physical contact or implicit techniques utilizing light reflectance of the specimen. This work presents an ultrasonic nondestructive inspection approach that circumvents these disadvantages to identify phase change regions and infer a material's internal temperature. An experiment is constructed and performed to capture the ultrasonic characteristics of a wax as it undergoes melting and subsequent cooling. Results show a clear relationship between material speed of sound and temperature. The range of temperatures over which the semi-crystalline material melts is readily identified by the speed of sound represented as a function of material temperature. The investigated ultrasonic NDE method has direct applications in many industries, including oil and gas, food and beverage, and polymer composites, in addition to many implications for future capabilities of nondestructive inspection of multi-phase materials.

Brian King, Mathematics & Statistics

Daniel Herden, mentor

Inhomogeneous Diophantine Approximation

Diophantine approximation is a topic of number theory concerned with rational approximations of real, typically irrational, numbers. In other words, we seek $q \in \mathbb{Z}$ for a given $\alpha \in \mathbb{R}$ such that $||q\alpha||$ (the distance from $q\alpha$ to the nearest integer) is small. This thesis serves as a primer on many of the famous results in this field. First, the fundamental result of Diophantine approximation, Dirichlet's theorem, is presented along with several methods of proof. Other theorems involving limits of accuracy are given before moving into inhomogeneous approximations (of the form $||q\alpha - \beta||$ for some $\beta \in \mathbb{R}$). Finally, recent results in the inhomogeneous case are used to prove a theorem on irrational circle rotations with connections to ergodic theory.

Emma King, Psychology

Wade C. Rowatt, mentor

Religious Commitment, Religious Support, and Need Satisfaction: A Correlational Study

This study examined the connection between religious commitment, religious support, and need satisfaction (according to Maslow's hierarchy and Self-Determination Theory). Participants in this study were American college students at Baylor University ($n=135$) and American adults recruited through Amazon's mTurk ($n=303$). Participants completed an online survey with measures of religiosity, religious commitment, religious support, intellectual humility, impression management, esteem need satisfaction, belongingness need satisfaction, and self-actualization need satisfaction. Correlation analyses revealed that religious commitment is correlated with both religious support and need satisfaction. Religious support is also correlated with need satisfaction. Mediation analyses confirmed that, for this set of data, religious commitment positively correlates with satisfied needs only through the effect of religious support. Results from this study can be used to inform further research on components of religion and practices for religious counseling.

T. C. Kniphfer, History

Jeffrey S. Hamilton, mentor

Nobility, Knighthood, and Chivalry in Medieval Britain: William Marshal and Simon de Montfort, 1150-1265

Chivalry is a word which holds complex meanings. During the Middle Ages, the idea of chivalry was at the heart of the conception of what it meant to be both a knight and a noble. In this thesis, I argue that through comparing the careers of William Marshal, earl of Pembroke (c.1147-1219) and Simon de Montfort, earl of Leicester (c.1208-1265), one may see how chivalry evolved in Britain during the twelfth and thirteenth centuries. Originally chivalry was purely military in its outlook, but by the mid-thirteenth century other elements such as courtly behavior and administrative service had contributed to an alteration of its original conception. By examining the political changes that occurred in the lives of William Marshal and Simon de Montfort, I demonstrate how the political role of the nobility changed. This provides another way of looking at the constitutional history of medieval England during this period.

Vivian Kwok, Medical Humanities

Robert Darden, mentor

Finding Refuge after the Fall

American service men, service women and many others around the world who were affected by the Vietnam War would be reluctant to discuss their experiences and emotions even decades after. According to one military journalist, many people think of war in terms of the military. However, he said those who suffered the most are the people—citizens of the country where war is present. Many Vietnamese, from the north and the south, would experience great loss, witness the Communists' cruelty and live with the others tragedies of war and its aftermath. An intensified uncertainty plighted their lives after the fall of Saigon in 1975. Some of the Vietnamese survivors would flee the country, enduring the struggles as a refugee. Many of them would later find safety, freedom and opportunities to rebuild their lives in a new place. However, other Vietnamese would remain under the Communists' regime, living in fear and without freedom. My thesis recounts the stories of the Vietnamese during their war. It documents some of the major events retold by refugees, American troops, journalists at the scene and others who were thrust into the Vietnam War.

Heather Lanier, Biology

Chris Kearney, mentors

Evaluating and Isolating Analog of SWEET14 Nectar Promoter from Arabidopsis: Towards the Development of Mosquitocidal Nectar

Mosquito-borne diseases are a major problem, infecting hundreds of millions of people every year and leading to numerous deaths across the world. Although there have been some improvements in mortality rates from preventatives such as mosquito nets and pesticides, there is much room for improvement. Because mosquito populations have been shown to be dependent on plant nectar as an energy source, creating plants that express mosquito-specific toxins in their nectar would be a novel approach for mosquito control. In order to express mosquito toxin in the plant's nectar, a nectar-specific promoter must be isolated. One nectar-specific promoter that would be ideal to isolate is the analog of SWEET14. Construction of BLAST databases from the RNA-seq data was verified as a method to isolate SWEET14 through artificial chromosome walking. Testing the effectiveness of this promoter in *Impatiens walleriana* would be done by combining SWEET14 with enhanced green fluorescent protein (EGFP) and would be used in the transformation of *I. walleriana*. Successfully expressing mosquito-specific toxins in the nectar of *I. walleriana* can effectively control harmful mosquito populations and can further be applied as an expression model for other insect species, providing a much broader application.

Alexa Larsen, Neuroscience

Beth A. Lanning, mentor

The Impact of Health Literacy on Health Behaviors of Waco Residents

Literacy, especially health literacy, is lacking in the U.S. adult population, especially among people of low socioeconomic status. According to the 2003 National Assessment of Adult literacy, 36% of adults have below average competence in interpreting and acting upon health information. Low health literacy has been linked to poor patient outcomes and higher rates of negative health behaviors, but results of studies examining the association of health literacy with smoking and drinking behaviors have been mixed. Furthermore, few, if any, studies have investigated the relationship of health literacy with health anxiety. In this study, we measured health literacy among adults at the Waco Family Health Center using the Newest Vital Sign tool. Smoking and drinking behaviors were gathered from EPIC medical records as reported by patients to their primary care physician. Health anxiety was tested using a shortened Whiteley Index. The data were then analyzed for correlations between health literacy and each variable separately, controlling for demographic factors such as race and socioeconomic status. Results indicate that smoking is associated with lower health literacy, but no relationship was found between health literacy and drinking. There was no statistically significant relationship between health literacy and health anxiety; however, trends in the data indicate that lower health literacy may be associated with higher health anxiety. The relationship between health literacy and risky health behavior like smoking highlights the importance of adequate health literacy education and indicates a potential benefit of screening for health literacy in a primary care setting.

Alexander Law, Baylor Business Fellows, Finance & Economics

James Henderson, mentor

Does Medicare Increase Opioid Drug Usage?

Recently, the overuse of opioid medications in the United States has garnered national attention, spurring many leaders to declare it a national epidemic. Medicare Part D provides prescription drug coverage for various medications including opioid drugs. The problem of moral hazard in insurance predicts that services insurance covers will be overused because of the covered risk and financial burden. With Medicare, I find no statistically significant increase in opioid usage from the age threshold for Medicare eligibility. Because insurance choice is endogenous, I use age as the running variable for a sharp regression discontinuity design, where a dummy variable for the eligibility threshold is used to indicate Medicare eligibility. Any statistically significant results from various combinations of covariates disappear when the age bandwidths are narrowed, and similarly, there is no effect with individual drug dosage.

John Lawrence, Physics

Kenichi Hatakeyama, mentor

Testing of New Front-End Electronics for the Hadron Calorimeter at CERN

The Hadron Calorimeter (HCAL), a major component of the Compact Muon Solenoid (CMS) detector at CERN, is designed to detect hadrons produced in proton-proton collisions supplied by the Large Hadron Collider (LHC). The HCAL is currently being upgraded with new readout modules that contain Silicon Photomultipliers (SiPMs), photodetectors that accept light from scintillator tiles and convert them to charge signals. Using a test beam capable of producing the same types of particles measured in the CMS detector, the new readout modules were tested in conditions like those of the CMS detector to fully understand their functionality before installation. Since the SiPMs in the new readout modules process the signals very differently than the hybrid photodiodes in the old readout modules, the analysis of test beam data provides insight into the features of the SiPMs. A virtual SiPM simulation was also created to assist in the analysis.

Isaac Lill, Biochemistry

Mary Lynn Trawick, mentor

Investigation of cruzain inhibition by thiosemicarbazone compounds

Chagas disease, the result of infection by the protozoan parasite *Trypanosoma cruzi*, is transmitted by blood-feeding insect vectors that are members of the Reduviidae family called kissing bugs. The vectors are found throughout Latin America, and predominantly in Texas, New Mexico, and Arizona in the United States. Chagas is responsible for about 12,000 deaths per year and it is estimated that 6-8 million people worldwide are infected. While autochthonously transmitted human infections are rarely reported in the United States, several risk factors are present including high infection rates in vector species and numerous instances of canine infections. Treatment during the acute phase when the parasite is found in the blood is effective, but this phase may only last a few weeks and is often asymptomatic. The chronic phase can result in heart disease, gastrointestinal abnormalities or neurological symptoms. There is currently no approved treatment for eliminating the parasite during its chronic phase after it has migrated into tissue, although benznidazole, which has many serious side effects, may be helpful in preventing disease progression. Thus, there is an unmet need for treatment agents. One validated target is cruzipain, a potent cysteine protease that is necessary for the parasite's survival throughout its life cycle including immune evasion, tissue infection, processing and degradation of proteins, and reproduction. This study used cruzain, which is a recombinant form of cruzipain to test inhibition of enzyme activity with a focused library of thiosemicarbazone compounds. Potential inhibitors were evaluated using a fluorogenic enzyme assay to assess the cleavage of 7-amino-4-methylcoumarin (AMC) from the cruzain substrate Z-Phe-Arg-AMC. Several compounds in this series had IC₅₀ values less than 100 nM with the substituted benzophenone thiosemicarbazone KGP434 the most effective (IC₅₀ =17 nM). Kinetics studies were performed to determine the mode of inhibition. Progress curves and reversibility studies indicated that KGP434 was an active site directed, time-dependent, and slowly reversible inhibitor of cruzain. The importance of the enzyme S2 binding pocket was supported by docking studies of cruzain with inhibitors, which indicated that thiosemicarbazone compounds that positioned their thiocarbonyl group in close proximity to and in the correct orientation for covalent attack by the enzyme active site cysteine-25 residue were most potent.

Tori Lindberg, University Scholars

Arna Hemenway, mentor

No One Saw

In this short story, a girl named Kasey finds herself grappling with the effects of being molested by a teacher who has since passed away. In addition to the abuse, Kasey has another secret: she is girl. In order to win a prestigious scholarship, she is going to an all-boys school. In the midst of all this, Kasey struggles with friendship, connection, identity, and love. My story explores deep philosophical questions about the human experience through human eyes.

Cynthia Liu, University Scholars

Julia Heyduk, mentor

Borrowed Flames: Intertextuality in Lucan's Bellum Civile

Intertextuality is far from a linear or one-directional relationship. Rather, it is a radiating and multi-faceted conversation between authors. This thesis explores Lucan's intertextual allusions by tracing how Lucan treats and mutates the works of his literary predecessors. Lucan's readers familiar with Virgil, Ovid, and elegy will see the foundation on which he builds his epic and the background by which his story is informed. However, his readers

will also find his adaptation of these sources redirecting their reading of those same sources. More often than not the contexts in which Lucan puts his allusions problematize the sources themselves. The genius of his intertextual allusions lies in his rearrangement of echoed material, repurposing and recombining motifs, images, even verbatim echoes from Virgil, elegiac poets, and Ovid, to not only ironize his own passages and multiply layers of meaning but also to question, rebut, and problematize his sources.

Cynthia Liu, University Scholars

Alden Smith, mentor

Chrysis: Text, Translation, and Commentary of Enea Silvio Piccolomini's Latin comedy

Enea Silvio Piccolomini's *Chrysis*, a Latin comedy written in 1444, was lost until the 19th century when a single manuscript of the play was found hidden in a library in Prague, surviving the humanist-turned-pope's general holocaust of his earlier secular works. Though little has been written on Piccolomini and still less on this comedy, the *Chrysis* holds a wealth of classical reception and social commentary that will prove beneficial to understanding both ancient theatre and the social dynamics of the 15th century renaissance. This thesis is the first English critical edition of the *Chrysis*, complete with introduction, established text, translation, and commentary. The commentary gives attention primarily to Piccolomini's adaptations of his classical sources, specifically Epicurean philosophy and Plautine comedy. The introduction will focus on the text as a manifestation of Piccolomini's mental and spiritual shift as he moved from poet laureate to future pope, marking the end of 1444 and the beginning of 1445, when he took up holy orders.

Kate Lovell, Biology

Janelle Walter, mentor

Non-nutritive sweeteners and oral health

Non-nutritive sweeteners were introduced in the early 1900's and were used in many different ways with the most notable being a sugar substitute. While nutritive and non-nutritive sweeteners share similar properties, each hold various impacts on the human body. In the first chapter, I will be using primary sources to complete the literature review of my thesis that will explain the similarities and differences in these sweeteners. In the second and third chapters, I will be both conducting and explaining my experimental data found through my scientific research to prove my hypothesis. In my scientific research, I will determine the difference between iced coffee and Greek yogurt sweetened with sugar and those made with Splenda. This thesis will close by connecting the significance of diet on oral health, as this thesis is a combination of both my passion for the sciences as well as an eagerness to help my future patients in the dental field.

Sarah Lunsford, University Scholars

Scott Moore, mentor

Re-Membering Home: Wendell Berry's Response to the Gnostic Abstraction of Place

The modern world is by and large in a cultural crisis of displacement. This is allowed for by gnostic tendencies that place the entire vale of home in the abstract qualities of it and disregard the worth of particular places. Wendell Berry's fiction shows a counter to this. Grounded in firmly fixed communities running generations deep, his stories show how the cultivation of place breeds affection and attachment to it in the midst of a cultural current that offers no explanation of or defense for homes. The physicality of place matters as it interacts and leads upward to

spiritual realities. This is seen in the love of Hannah Coulter, the faith of Jayber Crow, and the hope of Andy Catlett, given to their place and given to them through their place. In these ways places, and especially homes, have sacramental value with the ability to lift one upward to the ultimate and final Home.

Courtney Lyons, Psychology

Jim Huggins, mentor

Tailoring Forensic Interviews to Developmental Level of Verbal Ability in Victims of Child Sexual Assault

Performing legally sound forensic interviews is an integral part of any court case. However, the same methods used for adults are not effective for children, and in order to obtain a testimony that will be admissible as evidence specially trained professionals are required. This thesis describes the proper methodology of a child forensic interview for children who are possible victims of child sexual assault in terms of differing levels of verbal ability, language barriers, and cultural considerations in interview settings. It also discusses the role of Children's Advocacy Centers in seeking justice for victims and their families, and the various professionals who take part in these cases. Experiences from a summer internship are discussed in the context of information presented.

Andrew Mackenzie, University Scholars

David Corey, mentor

Socratic Citizenship As A Model for Christians in Liberal Societies

Many Christians today are struggling with the question of how to reconcile their religious identity with the pressures of citizenship in a liberal society, while others question whether reconciliation is possible at all. The purpose of this essay is to examine Socrates' unique approach to citizenship and suggest that his example provides a model that is both relevant and worthy of emulation. I take it as granted that Christians cannot merely abandon society to liberal secularization; Christians are right to recognize their duty to "seek the welfare of the city." Nor can Christians accede to the liberal anthropology of man and its hyper-individualist conception of human flourishing. Instead, the Great Commission burdens Christians with the active pursuit of the substantive good of their fellow man regardless of the cost. But how is this work to be done within a context that is antithetical to much of the Christian message regarding that good? My argument is that Socrates is instructive in the way that he engages the work of morally forming his fellow-citizens—a work that he was also divinely commissioned to do—despite the barriers imposed by his society.

Julia Massie, Geology

Stacy C. Atchley, mentor

Petrophysical Well Log Attributes of the Late Devonian Duvernay Shale in Alberta, Canada

The Duvernay Shale is an upper Devonian interval of organic-rich laminated, dark, bituminous carbonates that are interbedded with gray-green calcareous shales, and is currently an active unconventional exploration target within Alberta, Canada. This study compares standard qualitative well-log data with observed depositional facies in order to identify predictors of organic richness within the East Shale Basin. The data is then compared to its liquid rich counterpart, the West Shale Basin of the Duvernay Formation. Data maps were constructed through the analysis of more than 400 vertical well-logs within the study area through the Duvernay Shale. Five data parameters (interval thickness, gamma radiation, photoelectric effect, estimated source rock percentages, and estimated source rock thicknesses) were collected and recorded from these logs in order to determine the petrophysical attributes for hydrocarbon potential within the East Basin.

Angelica Maze, University Scholars

Lenore Wright, mentor

Girl Talk: An Oral History Examination of Feminism's Impact on Three Generations of American Women

Feminism has perhaps never been so present in American popular culture and social discourse as it is today, and yet there is a worrisome lack of clarity in examinations of its impact on the lives of individuals, its effectiveness in facilitating sociopolitical progress, and its relevancy in a pluralistic culture which tends to value the freedom of the individual over that of the many. How, then, has the feminist movement historically influenced the lives of American women and discourse about gender equality, and what does that influence look like on an individual level? Through the use of oral history and feminist theory, I examine three generations of women in my family and the impact feminism has had on their lives, focusing on their formative adolescent years. In doing so, I trace the evolution of the feminist movement from the midsixties to the present and reveal the ways in which class, race, culture, and politics have interacted with feminist discourse and the impact this has had on the formation of three remarkable women.

Emily McCalley, University Scholars

Bill Hoy, mentor

Catholicism, Contraception, and the Bottom Billion: A Grounded Theory Study of Family Planning and Global Poverty

The World Health Organization and leading global aid distributors have made access to contraception one of their number one priorities for global health intervention this century, citing the corresponding improvements in maternal and infant mortality rates, lowering of family size, and higher education levels in areas with recent access to birth control. Yet historically, the Catholic Church has condemned artificial contraception as antithetical to a Christian understanding of marriage, sexuality, and family and an ultimate danger to community life. This original qualitative study uses classical grounded theory techniques to investigate how Catholics and non-Catholics with experience in low-income countries navigate the social justice issues around contraception and poverty. Analysis of data from 16 semi-structured interviews with priests and health care providers showed that respondents' accounts of historical narrative, spiritual authority, and ultimately of human flourishing are critical to how they frame these questions. These fundamental differences lead to varying accounts of the way that contraception can enhance or harm the lives of women and societies in developing countries.

Luke McCowan Perez, University Scholars

Davide Zori, mentor

The Prover of Weapons and the Maker of War: An analysis of Norse Masculinity as represented in the Sagas

From sports, teams to modern media the Norse warriors of the Viking age often symbolize extreme or idealized masculinity. However, how did these Norsemen view their own masculinity? What traits did they perceive as essential to being a man and a warrior? Throughout my thesis, I will answer these questions through an examination of nine selections from the vast range of saga literature produced in medieval Iceland. For these individuals their identity as warrior bonded closely with their identity as men. The heroes, outlaws, and kings in these sagas exhibit important ideal traits like courage, wisdom, honor, ferocity, wealth, and kingly sovereignty. The writers of the sagas used legendary and historical figures to present a picture of ideal masculinity. An analysis of Norse masculinity reveals how these men perceived themselves and their ancestors. In addition, it illustrates how literature influences masculinity within a culture.

Katie Mendez, International Studies

Sarah Walden, mentor

Puerto Rico and the United States: how the political relationship led to a humanitarian crisis in the island

Former governor Alejandro García Padilla's announcement that Puerto Rico could not pay its 72-billion-dollar debt prompted debates regarding the role the United States should play in Puerto Rico's ability to restructure and pay the debt. Throughout the presidential election, when debate surrounding the issue increased, the predominant argument was that the United States did not play a role in creating the financial crisis. This thesis directly examines this argument by through an interdisciplinary study of the role of the United States in Puerto Rico's political and socioeconomic status. More specifically, this thesis analyzes policies surrounding women's reproduction, race issues, the establishment of democracy and citizenship in Puerto Rico, acts of violence in the island, and economic policies to explain their effect in the creation of the debt crisis. Lastly, this thesis ends by analyzing the modern implications of the political and financial relationship between Puerto Rico and the United States and how the two sides can move forward.

Kayla Sue Murphy, Biology

Bob Kane, mentor

Improving Transplant Efficacy

The development of tissue and organ transplantation has been an important achievement in medicine. Extensive research into medications and preservation techniques has improved the success of transplants. However, ongoing research continues to find new ways to improve transplant efficacy and durability. Our area of transplant research involves the bioconjugation of immunosuppressant medications onto the surface of pancreas islet cells prior to transplantation. This thesis will introduce current advances into organ transplantation as well as significant challenges that remain. Chapter 2 will describe our research aimed at demonstrating the use of a novel anti-inflammatory medication in islet cell transplantation. Chapter 3 will present our investigations of chemical linkers as model studies to be extrapolated onto other tissue and organ types. Our research ultimately aims to create a more protective and safe biological environment for transplanted tissues.

Riley Neal, University Scholars

Natalie Carnes, mentor

Sovereignty and Salvation: Engaging the Problem of Free Will with the Augustinian Tradition

The problem of the relationship between divine sovereignty and human activity in conversion is one theologians continue returning to over the centuries. Augustine established one line of interpretation by arguing that divine choice is determinative in conversion. However, others have leveled criticism against this view for leaving no room for human agency, violating free will, or making loving human response impossible. This thesis engages in a close reading of primary texts, from Augustine (ancient), John Calvin (Reformation) and John Piper (modern) to examine their response to these problems. Through attention to the particular vocabulary of each theologian, this thesis argues that four common tenets are foundational to their understanding and argumentation: inability of the human will, divine initiative, decisive divine work, and human free willingness upon conversion. Their defense against objections hinges on establishing the first tenet and then the logical compatibility of these four ideas. I explore how language of both God leading the will and moving the will, and also language of conversion over time and conversion as a moment, are consonant with this shared framework and contribute to the broader reformed understanding.

Stacy Nguyen, University Scholars

Michael Scullin, mentor

An Experimental Investigation of Sleep Restriction and Discrimination

Inequalities of gender, sexual orientation, and race have spurred recent protests against discrimination. The resource depletion theory of discrimination argues that cognitive resources suppress the expression of internal prejudice, but that because cognitive resources are limited, discriminatory behavior may emerge when resources are depleted. We investigated whether sleep deprivation can affect cognitive resources and thus increase discriminatory behavior. 44 adults participated in a two-session study consisting of several cognitive and discrimination tasks. Participants were randomly assigned to bedtimes of either 10:30pm or 1:30am with wake times of 7:30am for four nights in between the two sessions. Sleep-restricted individuals showed more attentional lapses, higher mood disturbances, and greater subjective sleepiness. Sleep restriction also resulted in harsher ratings toward medical mistakes and female job applicants as well as a shooter task bias toward White-person stimuli. Interestingly, regardless of sleep, participants revealed an overall race bias toward Black-person stimuli in total shots fired.

Thanh Nguyen, Biochemistry

Sung Joon Kim, mentor

Molecular changes in Staphylococcus aureus fem (factors essential for methicillin resistance) mutants, analyzed via Mass Spectrometry

As *Staphylococcus aureus* is becoming increasingly resistant to beta-lactam antibiotics, it is important to identify the mechanism of resistance on a molecular level. This study seeks to explore the molecular changes in cross-linking, cross-linking efficiency, alanylation, and O-acetylation of the *S. aureus* peptidoglycan in fem (factors essential to methicillin resistance) mutants which control glycine bridge linkage. Three different samples, BB255, UK-17, and UT34-2 were accessed by mass spectrometry, which is a technique used to measure the different molecules within the sample. The data was analyzed for changes in the cell wall via a program created by a Baylor graduate student within MassLynx. Results indicated that femB with three glycine linkages has a greater crosslinking efficiency than femA. Alanylation was similar for both mutants, and O-acetylation was slightly more prominent in femB. These results are consistent with previous experiments that used nuclear magnetic resonance techniques. Triglycine bridges of *S. aureus* peptidoglycan seem to yield more resistance to methicillin antibiotics than monoglycine bridges do.

Drew Otey, Baylor Business Fellows, Finance & Mathematics

David Ryden, mentor

Sharkovskii's Theorem Under Set-Valued Functions

Sharkovskii's remarkable theorem from 1964 demonstrated significant results about periodic orbits of continuous functions on the real line. His work produced the Sharkovskii ordering shown below. If $m \gg n$ in the Sharkovskii ordering, then if f has a periodic orbit of period m , it must also have a periodic point of period n . While Sharkovskii worked with classical continuous functions, this paper expands Sharkovskii's theorem to a class of set-valued functions. In particular, we show that the ordering holds for upper semi-continuous set-valued functions with the strong intermediate value property. The Sharkovskii ordering: $3 \gg 5 \gg 7 \gg \dots \gg 3 \cdot 2^1 \gg 5 \cdot 2^1 \gg 7 \cdot 2^1 \gg \dots \gg 3 \cdot 2^2 \gg 5 \cdot 2^2 \gg 7 \cdot 2^2 \gg \dots \gg \dots \gg 2^3 \gg 2^2 \gg 2 \gg 1$

Grace Jacquelyn Ouellette, University Scholars

Allyson Irom, mentor

Hispanic Culture and Dental Caries Risk Assessment

Dental decay is one of the most prevalent infectious diseases in humans and is a complex process involving both protective and pathogenic factors. Dental caries risk assessment is a methodology utilized by dentists to assess the risk factors of each patient to determine treatment recommendations and prevent the disease process of caries. Culture influences our daily decisions, including those that affect oral health. This thesis examines the four categories of caries risk assessment (Fluoride Exposure, Caries Experience, Sugary Foods and Drink, and Dental Home), as defined by the American Dental Association, and the effect Hispanic Culture has in conjunction with each risk assessment category.

Kaylie Page, University Scholars

Junius Johnson, mentor

Prepared for Glory and Grace: Dynamics of Divine Presence in Creation

This world is God's creation and reveals His nature, but to what end? And how did God's relationship to the world change when His good creation was corrupted by the Fall, the advent of sin and death into the world? These questions guide this thesis, which explores God's relationship to the created world in its original form, under sin, and in the eschaton. I argue that God relates to all creatures through a connection I term 'participation', a connection that defines both the creature's nature and its ultimate purpose. While creaturely being is based on this connection to God's nature, God relates to creatures by intending their natures from eternity and by creating each one individually in order to embody and reveal something of His glory. Although this glory is hidden from human eyes under sin, it was visible to us in original creation and will be again when the natures of all creatures are fulfilled and elevated to perfection in the resurrection.

Chae Park, Biology

Thomas McGrath, mentor

Medicinal Properties of Garlic and Its Derivatives

With more than 3000 research papers and many ongoing investigations into its biochemical effects, garlic is one of the most studied medicinal plants. The objective of this study is to provide an understanding of the effects of garlic's organosulfur compounds and specifically, their antimicrobial, cardiovascular, and anticancer effects. It also examines the pharmacological effects and mechanisms of black garlic, a type of aged garlic derivative. By reviewing studies that explore the mechanisms of these compounds in both *in vitro* and *in vivo* investigations, the study provides evidence for garlic and its derivatives' potential as natural and safe pharmacological agents.

Alexander Patterson, University Scholars

Mark Olsen, mentor

Prophets in the Sky

Prophets in the Sky is the story of a single mother whose son comes out as gay. The main theme of the work is unconditional love: both of mother to son, but also son to mother. It is the responsibility of the mother to love and care for her son, just as it is the responsibility of the son to love and care for his mother. Many families lose sight of

this while struggling to deal with issues of sexuality and gender identity. Many parents insist it is not right and try to control their kids, while the children call their parents bigots and ignore them. Often times, neither side is right. Both see the issue as an impossible divide, but it does not need to be. *Prophets in the Sky* is an exploration of the middle ground based in my experiences while coming out, greater theological arguments, and the unconditional love of family.

Rebecca Peirce, Baylor Business Fellows & Economics

Jason Aimone, mentor

Charitable Giving and Its Effects on Altruistic Behavior

Prosocial behavior, specifically the acts of volunteering and charitable giving, is an aspect of human behavior that has been analyzed by economists in the recent past. When the acts of volunteering and contributing to charity are analyzed at surface level, it appears that those individuals who participate in these actions do so only for the benefit of those less fortunate or for the betterment of society. Research has shown, however, that one's desire to volunteer can stem from various motives, one of which is warm glow motivation. Warm glow motivation is the desire to engage in prosocial behavior not because the prosocial behavior benefits society, but rather because it provides the individual engaging in the prosocial behavior with positive feelings that boost self-image (Lilley and Slonim 2013). The research conducted in these laboratory experiments further analyzes prosocial behavior in order to draw conclusions regarding charitable giving and the manner in which it affects an individual's altruistic behavior. Specifically, the laboratory experiments focus on the ways in which different social settings, including the public knowledge of one's charitable donations, affect an individual's altruistic behavior and the motivations underlying this behavior.

Carrie Plapp, Psychology

James Huggins, mentor

Miss Marple to Bones: How Crime Fiction Draws Women to Forensic Science

The field of forensic science has become female-dominated in recent decades. Research regarding the cause of this phenomenon has been scarce, although speculation abounds. In this thesis, I argue that the development of crime fiction opened the door for women who wanted to study and practice real-world forensics. To do so, I trace the evolution of crime fiction from its late-nineteenth century progenitors to current television and film, revealing the influence and inclusion of women at each stage.

Halley Platz, Theatre Performance

DeAnna Toten Beard, mentor

A Real Bitch: Developing a New Original Play

The road to completion for an original full-length play is long, hard, and well worth the wild ride. Great plays, both on the page and presented in front of an audience, create a compelling story that encourages reflection, discussion, and even change, all while allowing an audience to collectively experience a group of characters. My first original full-length play follows the story of an unconventional, twenty-something bridal party who have come together to celebrate their friend, the bride, even as she struggles with an increasing illness that threatens her life. In preparation for writing, I looked to contemporary playwright including Donald Margulies, Aziza Barnes, and Sarah DeLappe, as well as masters of form and style such as Anton Chekhov. Furthermore, I researched both native

historical aspects and contemporary entertainment representations of Hawaiian culture, as well as interviewed a Native Hawaiian resident, so as to most accurately depict the play's setting of Oahu. After two years of writing, I worked with a creative team within Baylor University Theatre Department to workshop a staged reading of the play, allowing me to both observe an audience's reaction to my work and realize how the script could evolve further to wholly reveal the story I wanted to tell.

Justin Potter, University Scholars

Marnie C. Abrahams, mentor

Most Restrictive Environment: The Impacts of a Mainstream Education on Deaf Children

Deaf students are taught in a variety of different educational settings, from deaf only residential schools to mainstream education classrooms. The current laws governing Special Education state that deaf students should be educated with their hearing peers to the maximum extent possible, which leads to a clear majority of deaf students being placed in mainstream environments that are rarely effective. This thesis will discuss the history behind these laws and the negative impacts they have on Deaf Education and the students' opportunities for learning. Focusing on the typical experiences a deaf student has, this paper will offer a breakdown of the different issues that have been caused by these laws, as well as suggest changes to the current legislation. These suggestions will help to ensure that deaf students are evaluated and placed in a manner that would improve their quality of education.

David Lewis Pottinger, University Scholars

Lizbeth Souza-Fuertes, mentor

Origins of Democracy in Costa Rica and Nicaragua

An incredible disparity exists between the current political state of affairs in Costa Rica and Nicaragua. Costa Rica is a stable democracy with a high rate of development for its region, while Nicaragua is widely considered to be drifting towards authoritarianism and is one of the poorest countries in the hemisphere. This begs the question: what could possibly account for this divide? After all, Costa Rica and Nicaragua share many aspects of culture and geography. Although the broadness of this question means that innumerable answers could be given, this thesis will attempt to demonstrate that a single factor primarily accounts for these differences: the contrasting outcomes of the "Liberal Reform" period (1821-1909) for the two nations. While Costa Rica began pursuing reforms early and gradually, and was largely free from foreign intervention, Nicaragua was repeatedly stymied in its efforts to modernize, both by internal strife and interference from the United States.

Becca Richards, University Scholars

Trent Dougherty, mentor

Justice: a Comparison of Values in Socialism, Liberalism and Libertarianism

Socialism, liberalism and libertarianism contain both explicit and implicit accounts of justice within their theories. I attempt to map these accounts and important concepts within justice theories as a comparative study. These maps are based off the theories of significant representatives of these traditions. In the first section, I compare socialism and liberalism through contrasting T.H. Green (1836-1882) with Karl Marx (1818-1883), John Dewey (1859-1952) with Eduard Bernstein (1850-1932), and John Rawls (1921-2002) with G.A. Cohen (1941-2009). In the

second section, libertarians Robert Nozick (1938-2002) and Peter Vallentyne (1952-present) are contrasted with each other and the other two theories. It is difficult, if not impossible, to clearly delineate political theories. Thus, I have chosen certain authors rather than attempt a definition through all relevant theorists. I map these theories with the concepts of equality, freedom, property and rights prioritized within each view. I then compare respective theorists as viewing justice as systemic or relational and internal or external.

Carolyn Robbins, Sociology & Philosophy

Sam Perry, mentor

Corrections: Mass Incarceration and the Reproduction of Systematic Disadvantage among Families

My research is concerned with the effects of mass incarceration on American families, particularly on families of color who live in impoverished neighborhoods. Incarceration in the United States is concentrated among low-income uneducated young Black men who live in urban areas. These trends are the result of institutional racism that has become deeply enmeshed in American culture in order to exercise control over Black bodies since the post-Civil War era. I examine the specific social effects families experience when fathers are incarcerated, when mothers are incarcerated, and when children are incarcerated. I also explore the gendered nature of these effects between parents and their children. I found that families suffer primarily economically when a father goes to prison, relationally when a mother goes to prison, and in both of these regards when a child goes to prison. Each scenario damages mental health, increases behavioral issues among children, and launches inmates and their children into a cycle of incarceration and recidivism that is all but impossible to exit.

Mary Mamdouh Rofaeil, Political Science, Middle East Studies & Arabic

Lisa Lacy, mentor

The Defeated Pharaoh: The Fall of Hosni Mubarak

The Arab Spring of Egypt, The Revolution, took place in 2011 when the public demanded the end of the thirty-year-old Hosni Mubarak's regime. President Mubarak was the only president that many Egyptians knew, and he ruled his country with gratitude for his first two terms. However, as Mubarak kept controlling the presidency, his regime held much of the power and forgot to represent the Egyptians and their needs. The rise of the Egyptians was justified because they lived through difficult conditions under the regime. The eighteen-day revolution caught the attention of the world as thousands of Egyptians marched the Tahrir square to demand improvements to their country and the resignation of Mubarak. While Mubarak resigned on February 11, the revolution was not successful as it did not lead to any major changes to Egypt. To have had more impact, Egyptians needed to address major issues such as lack of education and population growth.

Hannah Rogers, University Scholars

Robert Miner, mentor

The Psychology of the Criminal in Nietzsche and Dostoevsky

At surface level, Friederich Nietzsche and Fyodor Dostoevsky are two completely different authors, in that Nietzsche completely rejects the faith which is so important to Dostoevsky's novels. However, in his letters, Nietzsche refers to Dostoevsky as the only psychologist from whom he had anything to learn and comments on the deep kinship he felt when reading his work. In my thesis, I examine this affinity, focusing on the similarities in both

men's portrayal of the criminal and demonstrating how these harmonies indicate a deeper likeness between the two. Both Nietzsche and Dostoevsky emphasize the importance of the subconscious in the formation of the criminal and make a distinction between the weak and strong criminal's reactions to their crime and punishment. These similarities reveal Dostoevsky and Nietzsche's similar conceptions of the role of the subconscious in man's psychology and the difference between weakness and strength.

Emily Runnels, English

Ginger Hanchey, mentor

Rethinking Disabilities: A Collection of Short Stories

Our world is obsessed with normal, but it is also fascinated with the anomalous. We go through our day to day lives and forget how blessed we are with our bodies, our minds, our functions. In these four stories, I explore what is considered to be outside the realm of normal. Disabilities are stereotyped in our world filled with judgments. The goal of these short stories is to portray people living with disabilities as *people*. It is simple. No one knows how to interact with someone who has Down syndrome, probably because they do not understand it. Through working at a camp for people with different abilities, I learned that the differences are minimal. Physically we may be different, but we are all human.

Blake Schorlemer, University Scholars

Phillip Donnelly, mentor

Recovering Purpose: Teaching the Common Topics of Invention

Most educators would agree that reading and writing are some of the most important and fundamental skills that students can learn in school. The tradition of classical education offers a rich approach to rhetoric through the topics of invention. The topical approach is a way of finding arguments. I will argue that the particular rhetorical purpose heavily influences the topics at use. The common topics of invention that I will address in the three chapters of this thesis are definition, comparison, and relationship. In each chapter, I will explain, show through example, and provide means of construction using the topic. Within the example section, I will address the topic with respect to each rhetorical purpose: forensic, demonstrative, and deliberative. The purpose of these chapters is demonstrative. I intend to demonstrate to students what each topic is, what they look like in literature and culture, how they help the student to read insightfully, and how to practice using them in their own writing. The concept of topics of invention presents challenges to the modern student, so I hope that my thesis helps clarify these ideas for others and so aids the teaching of rhetoric in classical education.

Kendyl Schreiber, Biology

Matt Bradshaw, mentor

Qualitative Analysis of Health Care Protocols for Patients with Cognitive Impairments

The National Task Group on Intellectual Disabilities and Dementia Practices developed a protocol for caring for patients with cognitive impairments in 2015. However, the literature indicates there are still problems in implementing this protocol effectively or with this protocol in general. A qualitative analysis interview study was used to gather a wide range of perspectives and responses concerning the current problems with health care protocols used to care for patients with cognitive impairments. Both medical professionals and family members of patients with cognitive impairments were interviewed. Problems identified included: communication difficulties, the role of the caretaker, medication, and the importance of advanced care planning and education. The problems identified highlighted possible areas for future study.

Jessica Schurz, Psychology & Economics

Jo-Ann Tsang, mentor

Engaging the Other: Examining How Empathy Facilitates Self-Efficacy

Self-efficacy is the belief that one can affect change by one's actions. One way to increase self-efficacy is through "vicarious experiences," or identifying with someone who has been previously successful. This paper tests the hypothesis that empathy mediates the relationship between vicarious experiences and self-efficacy. 174 participants from MTurk were recruited to test a correlational, cross-sectional study. Results confirmed the hypothesis that the relationship between vicarious experiences and self-efficacy is mediated by empathy. Within the facets of empathy, perspective taking is a positive mediator while personal distress and fantasy are negative mediators. These results suggest that it may be possible for one's self-efficacy to increase after simply taking the perspective of the other, rather than personally identifying with someone else. This finding is particularly helpful for people vulnerable to lower levels of successful social modeling. Further research should explore the extent to which perspective-taking can foster self-efficacy within specific contexts.

Hannah Schwartz, University Scholars

Ginger Hanchey, mentor

Jesus Christ Warrior-King: Analysis of the Old English Christ and Satan

The Old English poem *Christ and Satan* is an interesting and important work of literature, but various circumstances have left it without the widespread scholarly attention or fame of other Old English poems. This thesis begins by demonstrating the ways in which *Christ and Satan* makes use of traditional, Germanic-heroic literary practices to tell its distinctly Christian story and how this intermingling of traditions casts Christ into several distinctly heroic roles within the poem, including that of the warrior-king. Subsequent chapters compare specific scenes from the narrative of the poem, those of Christ's descent into hell and his temptation by Satan in the desert, to similar scenes from other poems in the Old English and Old Saxon poetic canons. These comparisons are made in search of increased understanding of both the poetic inner-workings of *Christ and Satan* and how and why it was composed within its unique historical, literary, and religious context.

Sonja Smeding, Biology

Paul Gordon, mentor

Association between sleep duration and metabolic syndrome in young adults

Metabolic Syndrome (MS), which is the clustering of several cardiovascular risk factors, has become a growing concern in today's society resulting in an increasing prevalence of cardiovascular diseases and type 2 diabetes. Once observed only in older adults, metabolic syndrome is now highly prevalent across the life span. Insufficient sleep duration has been suggested to play a role in the development of metabolic syndrome, thus it is desirable to look more closely at the effects of sleep duration on each individual risk factor. A total of 60 subjects (50% male, ages 18 – 29) were recruited and participated in this study. Their 7-day sleep duration was obtained using SenseWear equipment. Subject data collected on the participants' waist circumference, fasting blood glucose, fasting high-density lipoprotein cholesterol, fasting triglycerides, and blood pressure, which are MS variables under the National Cholesterol Education Program (NCEP)/Adult Treatment Panel III (ATP III) criteria, were obtained along with BMI, fat mass, body fat percentage, lean body mass, and calculated fat mass index. This study presents the data analysis on these young adults and comments on possible concerns for the relationships found.

Courtney Smith, University Scholars

Sarah Jane Murray, mentor

Forbidden Salvation

Princess Ilenia's beloved Sae kingdom is locked in war with the powerful Medean empire. When the dark elf Perilon arrives in the kingdom and kidnaps the Sae Queen and Medean King, Ilenia is forced to ally with her archenemy, the Medean Prince Hiatin, on a desperate quest to save their parents. Along with her shape-shifting companion, a young Prilix girl, and a dangerous dazpen, Ilenia and Hiatin traverse the continent in search of an elven diadem that may be the only way to defeat Perilon. Along the way, Ilenia and Hiatin struggle to reconcile their differences, jeopardizing the mission. In the end, Ilenia must come to terms with her own powers in order to finally triumph over the dark elf. Facing her own fears and failures, Ilenia overcomes her pride to save her mother, her kingdom, and the entire continent from destruction.

Samuel Still, Great Texts

Ralph Wood, mentor

Walker Percy's Comic Vision: Reconciling Grace in a Racially Riven Culture

Walker Percy, one of the finest writers to have arisen from the literary tradition of the American South, is drastically under-read. Percy, among his other merits, stands in a uniquely well-suited place to comment satirically and constructively upon the shortcomings of Southern culture. Raised by his Stoic uncle Will, a Southern aristocrat-planter, and converting later on to Catholicism and realizing his calling as a writer, Walker Percy offers in both his fiction and his nonfiction a well-informed historical, ethical, and theological perspective from both the Stoic and Christian traditions. In this thesis, I bring Percy's reflection from his essays and novels on the American issue of the race question into conversation with the history of racial ethics in Southern Stoic tradition, as well as trends in the practical theology of the Southern church during the Civil Rights Era. Percy's reflections offer not only scathing critique of the moral and ethical shortcomings of both the Southern Stoa and Southern church, but also a comic corrective and vision for a reconciled life together.

Charlotte Stoltzfus, University Scholars

Steven Jug, mentor

Side Effects May Include Peace: Richard Nixon, the Soviet Union, and the Strategic Arms Limitation Talks (SALT)

In today's climate, when each day seems to revisit conflicts of days gone by, particularly the Cold War, examination of the history of international relations is more important than ever. In my research, I examined the Strategic Arms Limitation Talks (SALT) between the United States and the Soviet Union. Through a close reading of recently declassified government documents including memorandums, meeting minutes, and transcripts of conversations between the negotiating powers and within the Nixon administration, I found that US diplomacy at the time was marked by inter-administration competitiveness, ignorance of other cultures, and strategic pragmatism. In this thesis, I examine the early events of the nuclear age which influenced SALT, and the three-year process of the talks, from the drafting of potential treaty options to lobbying for legislative approval. I ultimately argue that SALT was not a tool of peace, but a tool to enhance President Richard Nixon's domestic image, and to maintain the United States' defensive power.

Cassidy Story, Sociology

Jerry Park, mentor

"Terrorist Threat," Punitive Public Policy, and the Intersectionality of Racial and Religious Prejudice

Following the events of September 11, 2001, the concept of "terrorist threat" intensified and the demand for public policy protecting American citizens from subsequent attacks accompanied more overt prejudicial attitudes and discrimination towards Muslim Americans and/or those of Middle Eastern descent. The intersectionality of race and religion is especially prevalent and dangerous, since individuals are clustered together based on demographic characteristics associated with terrorist groups, regardless of obvious differences in religious ideology or race/ethnicity. This study examines stereotypes and perceived threat for three groups: Muslim Americans, Arab immigrants, and Middle Eastern refugees. After administering a survey and analyzing the data of over 1,400 Amazon Mechanical Turk respondents, I find that all three groups are viewed as equivalent in stereotyping and level of perceived threat. Furthermore, such perceived threat results in a support for punitive public policies targeting all three groups, regardless of differences in race/ethnicity and religion.

Daniel Thomas, University Scholars

Eric Martin, mentor

An Examination of the Merit of Climate Science From the Perspective of Imre Lakatos' Methodology of Scientific Research Programs

There is a great deal of turmoil and disagreement regarding the role that human activity has played in precipitating climate change. While the scientific community is generally in agreement that man has brought about the observed increases in temperature, the general public is far less unified. Given that there has been copious data given by scientists to justify their claims, there must be another reason besides insufficient evidence why people choose not to agree with them. While political and ideological motivations elucidate this rift to a certain degree, they do not seem to provide a sufficiently comprehensive explanation. A reasonable solution is that people do not trust the scientific merit of climate science. Therefore this paper will examine climate science from the perspective of Imre Lakatos, a 20th century philosopher of science. His theory of what constitutes real science will be explored and compared to the theories of some of his contemporaries such as Thomas Kuhn and Karl Popper. In short, Lakatos' theory of novel predictions will enable the debate over climate science to be viewed from a different perspective. The indications are that climate science has made accurate and novel predictions about shifts in the climate and therefore would be regarded as a progressive research program by Lakatos.

Victor Tran, Biology

Allyson Irom, mentor

Challenges in Healthcare: Cultural and Structural Barriers to Care for Hispanic Children

Hispanics are both the largest and youngest major ethnic or racial minority in the United States, and the majority of the individuals in this group are the U.S. born children of foreign born parents. They have a distinct cultural identity and are socioeconomically disadvantaged compared to the general population of the United States. These factors present challenges to healthcare providers and policymakers. Cultural influences on beliefs and behaviors affect the health outcomes of Hispanic children by shaping the decisions that they and their parents make. Socioeconomic disadvantage makes access to healthcare more difficult for Hispanic children, especially in the United States, where the cost of healthcare is exceptionally high. As public policy makers work to increase the accessibility of healthcare, and medical professionals seek to emphasize cultural competence in their practice, understanding the peculiar challenges facing Hispanic children will assist in the formulation of more effective strategies for caring for this segment of the population. This thesis describes some of those challenges and assesses the efficacy of current and proposed solutions.

Daniel Truesdale, Medical Humanities & Biology

Karol Hardin, mentor

Implementation of a Spanish Language Track at a Family Medicine Residency Program

U.S. legal and ethical standards for healthcare dictate that patients with limited English proficiency receive language-concordant treatment, yet patients commonly receive inappropriate care due to inadequate language provision from an interpreter or healthcare provider (Flores et al., 2003; Prince & Nelson, 1995). Few studies have measured and reported objective data on the success of language instruction during medical residency programs. This thesis outlines the development of a Spanish language track for the Waco Family Medicine Residency Program and reports on its first phase of implementation. Five first-year residents volunteered and qualified for the 3-year program designed to improve their proficiency to the level necessary for independent communication. Participants' training included workshops, role-play, and presentation of patient histories to bilingual physician mentors. Qualified dual-role interpreters were recruited to serve as models for residents. Pre- and post-test Spanish language proficiency was measured through objective and subjective assessment via an external oral medical language exam and participants' self-assessments. After 6 months, the 5 residents improved significantly, increasing their scores by an average of 8%. If this trajectory continues, graduates from the program should be able to independently provide healthcare in Spanish and thereby establish positive relationships with the Spanish-speaking patient populations they serve.

Corrie Tung, Biology

Vincent Yang, mentor

God Through the Book of Poetry: The Ancient Chinese and Their Loss of Theistic Faith

Looking at modern-day China, it can be hard to comprehend that theistic faith was ever widespread among her people. Yet, it was once an integral part of Chinese culture, as evidenced by writings such as the Book of Poetry. In this paper, I seek to explain the ancient Chinese belief in God and why that same belief led to the decline of theistic faith. Selections from the Book of Poetry are translated and used to elaborate on the various aspects of early dynastic religion. The historical and social contexts are also discussed alongside the poems to reveal why belief in God had waned by the end of the Western Zhou dynasty.

Joshua Upham, University Scholars

Elizabeth Corey, mentor

A New Light: Examining Collegiate Admissions After the Fisher Case

The use of race-based affirmative action in college admissions has a well established history in the Supreme Court. But with recent trends, has it finally gone too far? Asian interest groups argue that student of Asian descent are held to different standards than their peers, and are currently suing Harvard University in federal court. With quantifiable metrics supporting their case, its outcome could be different than recent cases which lacked evidentiary justification. In this paper, I first examine the legal history of race-based affirmative action and then America's legacy of discrimination against Asian immigrants. Finally I apply the Supreme Court's prior rulings to the facts of the Harvard case and discuss potential outcomes and their implications.

Hannah Vecseri, University Scholars

Charles M. North, mentor

Indigent Defense Counsel Appointments and Criminal Case Outcomes: A Study on the Definition of Indigency and its Effect on Criminal Punishments

In the United States, the Sixth Amendment guarantees criminal defendants the right to counsel. In criminal cases where defendants are financially unable to hire an attorney, the Supreme Court requires judiciaries to appoint an attorney to that indigent defendant. These appointed attorneys are paid by the Federal Government, an expense the government incurs as a result of the Sixth Amendment. Unfortunately the government has never defined a set of criteria by which eligibility for court-appointed attorneys might be consistently determined, and instead leaves the decision on whether a defendant is “financially unable to hire an attorney” up to the states and their judiciaries. This study analyzes McLennan County’s formula for determining indigency, and evaluates whether defendants whose financial situations put them either just above or below the indigency line experience significantly different case outcomes as a result of whether they did or did not qualify for a court-appointed attorney.

Baylee VerSteeg, Professional Writing

Kristen Pond, mentor

“Thy Damnation Slumbereth Not”: A Study of the Effects of Shame in Literature from the Industrial Era

This thesis discusses the effect of shame on young women represented in Naturalist literature who have violated the sexual social contract of the late Nineteenth century. The research looks primarily at three works: *Tess of D’Urbervilles* by Thomas Hardy, *Maggie: A Girl of the Streets* by Stephen Crane, and *Sister Carrie* by Theodore Dreiser, as well as at the critical work surrounding these authors. Shame in these novels is depicted as an unnecessary weight placed on the shoulders of a character by an indifferent society and when heeded, this shame causes ultimate destruction.

Rebecca Voth, University Scholars

Victor Hinojosa, mentor

Balancing Justice and Mercy: Two Approaches to Transitional Justice in Latin America

In Latin America’s third wave of democracy the region faces challenges with regard to its dark past left behind by abusive authoritarian leaders. Human rights abuse can hinder a nation’s ability to develop strong democratic institutions and discourage popular participation in government. This thesis compares two approaches that respond to past human rights abuses and focus on the aspects of justice and mercy respectively. I argue that justice, represented by human rights prosecutions, ought to be complementary to mercy, represented by the Christian creative peace process, and that these transitional measures working concurrently can strengthen democracy. My inquiry proceeds with an examination of the recent dramatic increase of human rights trials in the region and compares this approach to that of the Christian creative peace process, using Guatemala as a case study. Through this inquiry, I hope to inspire a sense of hope about the future of democratic institutions in Latin American and prove that both justice and mercy play a vital role in the transitional process.

Jeffrey Wang, Baylor Business Fellows & Biology

Bill Neilson, mentor

Improving Post-Hospital Care for Patients with Complex Medical and Social Needs: Evaluation of a Transitional Care Clinic

The Hospital Readmissions Reduction Program (HRRP), created in 2010, was a sweeping national effort to reduce preventable readmissions by linking them to hospital payment. However, the law's effects at the aggregate level have been mixed. Aiming to find a path forward on readmissions, this thesis studies one Arizona hospital's approach to improving post-hospital care through developing a multidisciplinary transitional care clinic. It describes the clinic's model of addressing the needs of its largely low-income and chronically ill patient population, and analyzes data to evaluate this model. Patients who attended the clinic were found to have a significantly lower readmission rate over 30 and 90 days compared to patients who enrolled but did not attend. This effect held after accounting for several other factors that predict readmission. This thesis concludes by discussing how lessons from this hospital's experience could be applied to other institutions and detailing areas for further study.

Austin Weynand, University Scholars

Charles M. Garner, mentor

Monomerization and Cyclization of Terpene-based Molecules for use with Separation of Right- and Left-Handed Enantiomers in Gas Chromatography

In this study, the terpene-based compounds α -pinene and β -pinene were monomerized to contain both epoxide and alcohol functional groups such that they could cyclize into a barrel-shaped oligomer through cyclization procedures. The purpose was to see whether or not a more useful alternative to cyclodextrins could be synthesized for use with separation of right-handed from left-handed enantiomers in chiral gas chromatography. Extensive synthetic procedures were devised to create the monomers, and attempts were made to cyclize them by varying the solvent used in the cyclization reaction, metal used for its "template effect," and method of heating. High-resolution mass spectrometry was used to analyze potential oligomers after cyclization, and minor successes were discovered.

Ryan White, Linguistics & Anthropology

Davide Zori, mentor

Approaching the Dead: A Study of an Etruscan Cemetery

This study focuses primarily on providing a report of the data gathered through the San Giuliano Archaeological Research Project in regards to the survey of the Etruscan cemetery encompassing the perimeter of the site. I outline major themes of Etruscan burial practices and the uses of ceramics to provide chronologies for tomb burials. These factors are focused on as a way to understand the changing social structures of the Etruscan society in regards to funerary ritual. Data collected from the last two field seasons will be analyzed for typologies and patterns in tomb layout. Implications of these finds will be discussed in regards to the future goals of the project for bettering our interpretation of the site of San Giuliano and the Etruscan approach to the dead.

Brittany Winters, Baylor Business Fellows

Stephen Gardner, mentor

Factors Affecting Positive Expectations of Social Mobility Opportunities: A Cross-Sectional Analysis

Positive perceptions of an individual's or family's social mobility opportunities can be influenced by a variety of factors. In this study, the point of interest is the positive perception of social mobility opportunities rather than the actual social mobility potential, which has been the focus of many other analyses. We measure the effects of both Institutional level country differences and Individual level characteristics to study their effects on the overall positivity levels within given years and countries. We find that Institutional level factors such as unemployment rates and GDP per capita are, unsurprisingly, influential factors that detract from and contribute to positivity, respectively. The most influential institutional variable is the presence of a recent major economic or political shock. On the individual level, we find that a person's self-reported social position is the most influential factor for their positivity. While this study is not all-encompassing due to limited data, it does present some unexpected results that indicate the fruitfulness of further research into the subject.

Katie Alexandra Zamora, Arabic & Middle East Studies

Mark Long, mentor

Analyzing the Islamic State from a Lockean Perspective

As the threat of religious extremism continues to capture global attention, it is necessary to dissect the aims and motives behind an organization's acts of terror. At the time of this project, the Islamic State had established a foothold in Iraq and Syria while promising those under its occupation a society free of western corruption. This thesis analyzes the structure of the Islamic State's self-proclaimed society and how it compares to the ideal societal structure as prescribed by John Locke. First, this thesis analyzes the integral pieces of Locke's political philosophy focusing on toleration and the separation of the public and private spheres as outlined in his *Letter on Toleration* and his *Second Treatise of Government*. Second, this thesis investigates the merging of the public and private spheres under the Islamic State's governance. Third, it compares the two opposing perspectives of a flourishing society and identifies the pitfalls in the Islamic State's social construct. Finally, this analysis prompts further discussion regarding the prevention of violent extremism.