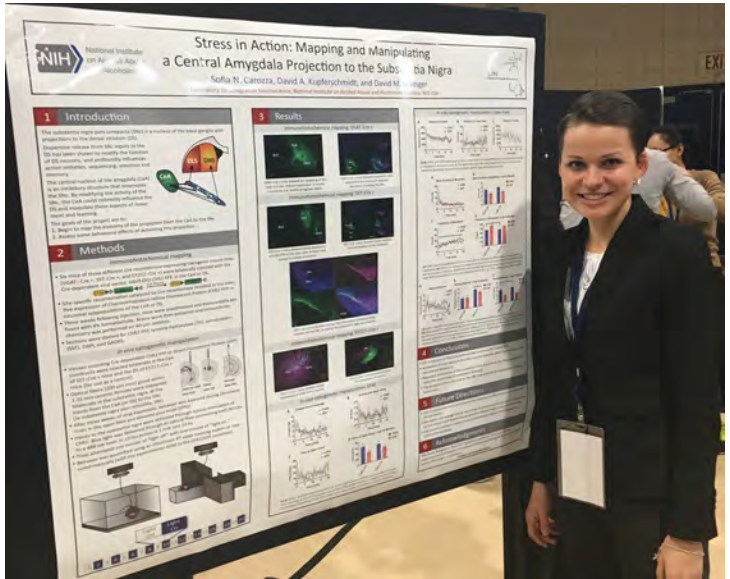
Glynn Family Honors Program
2017–18 Grant Recipients



Glynn Family Honors Program — 2017–18 Grant Recipients

Kristin Andrejko
Class of 2019

- Major: Science-Business
- Hesburgh-Yusko Scholar
- Adviser: Nicole Achee
- Received grant to conduct thesis-related research.

Dedoose Software to Analyze Malaria Pre-Post Knowledge Attitude Practice Surveys

I am using the Dedoose software to analyze data collected the summer after my first year while I was in South Africa conducting Malaria Awareness campaigns. This experience has been hugely influential in helping me decide that I'd like to do a Master of Science in public health or a Ph.D. in epidemiology after graduation. The Glynn Family subsidized some of the costs of my summer in South Africa and the software — I am extremely grateful for their support!

Glynn Family Honors Program — 2017–18 Grant Recipients

McKenzie Brummond
Class of 2018

- Major: Program of Liberal Studies
- Minors: Theology and Constitutional Studies
- Adviser: Leonard DeLorenzo
- Received grant to conduct research for her senior thesis in Minnesota.

A Discipline of Harmony: The Implications of Synesthesia and the Psalms of the St. John's Bible for Christian Unity

As I would like to work in academia, this trip was an excellent learning experience in how to go about the research process. While in Minnesota, I interviewed several people, most notably Father Michael Patella about his work with the Saint John's Bible. In addition, the motifs I observed and the information I was given about the process of making it were essential to my thesis. I most enjoyed getting to see the original folios of the Saint John's Bible. I had seen a couple of online images and done extensive reading on the project, but none of that compared to my amazement when I was actually able to see the hand-crafted pages for myself. This research only strengthened my desire to continue to study theology. I am so grateful to Glynn for funding my research; it would not have been possible for me to travel to Minnesota without this grant.

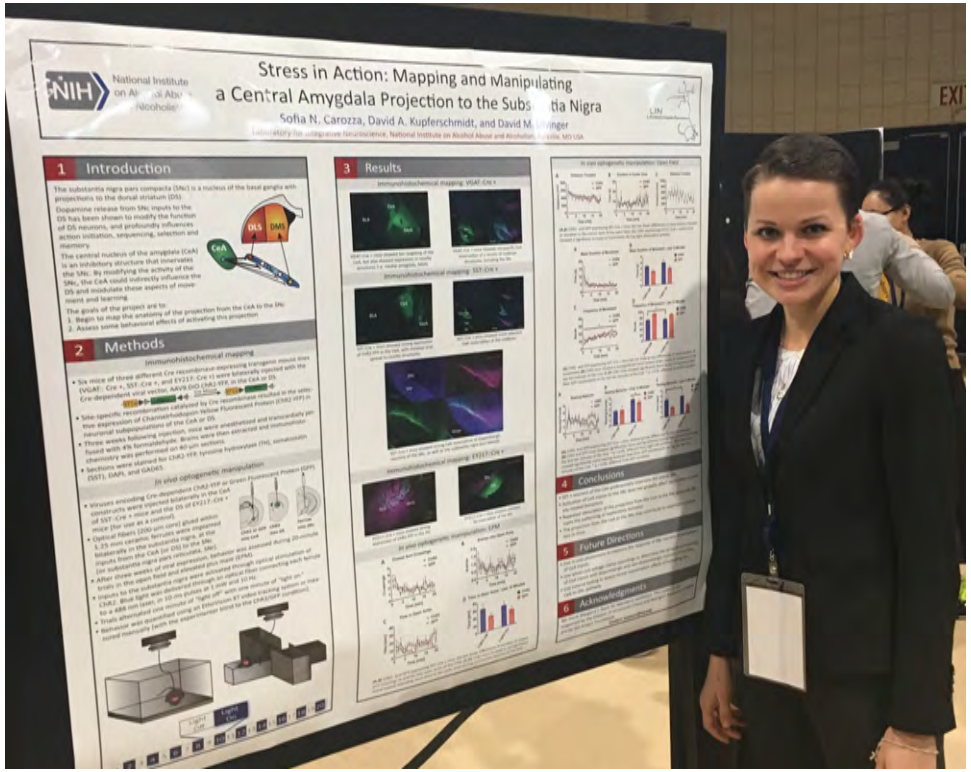
For more information on Brummond's senior thesis, see page 30.

Glynn Family Honors Program — 2017–18 Grant Recipients

Sofia Carozza
Class of 2019

- Major: Neuroscience and Behavior
- Supplementary Major: Theology
- Minor: Philosophy, Politics, and Economics
- Hesburgh-Yusko Scholar
- Received grant to present at an academic conference.

National Conference for Undergraduate Research, University of Central Oklahoma



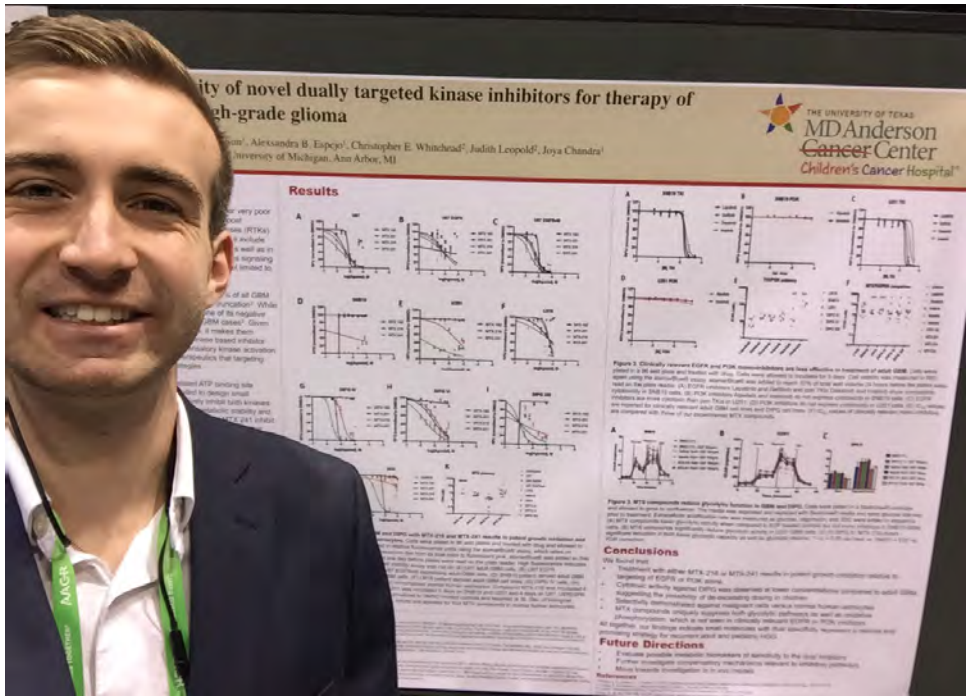
I presented a poster of my research from summer 2017 at the National Institutes of Health, titled “Stress in Action: Mapping and Manipulating a Central Amygdala Projection to the Substantia Nigra.” I greatly benefited from the opportunity to practice oral presentation — an essential skill for graduate school — and from networking with other students and scholars in the field. After graduation, I plan to pursue a Ph.D. in neuroscience. This was an invaluable experience that helped me grow as a scholar, and I would not have been able to attend if not for Glynn.

Glynn Family Honors Program — 2017–18 Grant Recipients

Trever Carter
Class of 2019

- Major: Biochemistry
- Supplementary Major: Spanish
- Received grant to present at an academic conference.

American Association for Cancer Research Conference Chicago, Illinois



I attended the conference and presented my research conducted at MD Anderson Cancer Center in summer 2017. The conference gave me the opportunity to fully delve into the world of cancer medicine and research. It was an excellent exercise in digesting scientific information, as well as taking notes on how best to communicate my own research in the future. I learned an immense amount, and I was surprised by the sheer magnitude of the conference. There were over 30,000 people in attendance, which was overwhelming, but also very heartening and encouraging to see so many people passionate about and pursuing one common goal — the end of cancer. After attending this conference, I am excited to pursue a research post-bac program before applying to M.D. / Ph.D. programs. This trip absolutely would not have been possible without funding from Glynn.

Glynn Family Honors Program — 2017–18 Grant Recipients

Aidan Crowley
Class of 2021

- Major: Neuroscience and Behavior
- Minor: Poverty Studies
- Stamps Scholar
- Received grant to complete an internship in Nicaragua.

Global Medical Brigades Internship in Esteli, Nicaragua

In a weeklong medical brigade to Nicaragua, I gained experience in the medical field, engaged in service, and addressed issues of public health and access to clean water. I shadowed doctors from various specialties, participated in public health education workshops, and helped dig a trench for a well. I chose Global Medical Brigades because I wanted to provide communities with improved access to medical care and help them better understand how to stay healthy. This experience opened my eyes and heart to the needs of the global community. We served about 1,000 people while we were in Nicaragua, much of it through education. We taught children the proper way to brush their teeth and floss, and they each took home their own hygiene kit, funded by the Glynn grant. The Glynn family allowed me to empower these children with the proper tools to stay healthy and to leave a lasting impact on the communities I visited.

Glynn Family Honors Program — 2017–18 Grant Recipients

Michael Foley
Class of 2018

- Majors: Physics and Mathematics
- Received grant to present at an academic conference.

American Astronomical Society 231st Meeting, Washington D.C.

I gave a talk on my senior thesis research on Type Ia Supernovae at near-infrared wavelengths. I also had the opportunity to meet and network with a number of important figures in astronomy. It was my first opportunity to give a talk in a professional setting, and I enjoyed communicating my research to a wide audience. I will be starting my Ph.D. in astrophysics this fall at Harvard. I would ultimately like to become a faculty member and conduct research in astrophysics. This experience solidified my desire to go to graduate school and my career goals.

Foley and two other students with Adam Riess, one of the winners of the 2011 Nobel Prize in Physics for his work on Type Ia Supernovae.

For more information on Foley's senior thesis, see page 42.

Glynn Family Honors Program — 2017–18 Grant Recipients

Amber Grimmer
Class of 2020

- Major: International Economics
- Supplementary Major: Peace Studies
- Minor: Poverty Studies
- Adviser: Eileen Botting
- Received grant to conduct research in Hungary.

Politics of Memory in Budapest, Hungary

My project was based on the politics of memory, which explores political contexts, and often competing visions, surrounding construction and reproduction of public memory. I analyzed how an image of the past could reflect understandings, desires, and conflicts of the present. I also wanted to analyze responses to sites of memory, such as monuments, and see how they relate to current political occurrences. This experience helped me with my research interests and skills. I am really grateful I could do this as a sophomore because I now have plenty of ideas where to take my research next and how best to do it. The funding from the Glynn Family Honors Program brought the subject of this project to life, as I was able to experience the monuments and memorials firsthand. I also heard from Hungarians about their lives, history, politics, and their thoughts and feelings on memory.

Glynn Family Honors Program — 2017–18 Grant Recipients

Makenzie Huguet
Class of 2018

- Major: Neuroscience and Behavior
- Minor: Science, Technology, and Values
- Adviser: Jessica Payne
- Received grant to conduct research for her senior thesis.

The Effects of Sleep and Emotion on Direct Associative and Relational Memory

This experience caused me to take on significantly more responsibilities in my lab and grow as a scholar. By taking control of my own project, I learned more about my field and how the research timeline really works. I accomplished things I did not think I was capable of, including sleep scoring an entire dataset independently (which was a first for an undergraduate in my lab). I also had to learn how to manage my time effectively, breaking off small chunks of a very large task. Working with my data was very enjoyable as it was rewarding to understand the numbers so well and know how to manipulate the numbers and interpret the results.

After graduation, I plan to attend medical school. This experience helped me decide that a career in research is not the right fit for me. However, I enjoyed research significantly more once I had control over the process, so I am considering working in a research hospital one day and balancing research and clinical work. The grant from Glynn allowed me to run my study during the 2017–18 academic year. About 80 percent of my participants were compensated with cash, which was funded entirely by this grant.

For more information on Huguet's senior thesis, see page 56.

Glynn Family Honors Program — 2017–18 Grant Recipients

Lauren Jhin
Class of 2020

- Major: Psychology
- Kellogg International Scholar
- Received grant to present at an academic conference.

UNIV Congress, Rome

I presented a paper on moderation, argued from theological and secular viewpoints. I was especially curious about debating with other university students from around the world on theological arguments, and I enjoyed learning from the keynote speaker, the founder of the World Youth Alliance, who spoke about how to teach human dignity in schools. After graduation, I would like to make people's lives feel meaningful by telling their stories through concise and powerful writing — in a way that other people will listen. This experience helped me realize that there are more stories I wish to tell. The Glynn grant made this entire experience possible.

editor

Glynn Family Honors Program — 2017–18 Grant Recipients

Prathm Juneja
Class of 2019

- Majors: Political Science and Computer Science
- Adviser: Paul Ocobock
- Received grant to conduct research in Washington, D.C.

Coffee, Civic Technology, and Politics

The historical Kenyan coffee research appealed to me for many reasons, but it was primarily driven by my sheer love for coffee, especially the new "third wave" of artisan coffee, and the role that coffee plays in our sociopolitical systems. I also wanted to step out of my typical comfort zone of American politics and engage with history, a different country, and a different subject while also building research skills. This trip had a profound impact on my definition of scholarship. My days were concentrated spans of intense learning — meetings with people in politics, academia, and related fields and time spent in the Capitol's museums, libraries, and coffee shops. A trip to D.C. was almost necessary for me to start discerning my future and was crucial to my development. The grant from the Glynn Program made this experience possible.

While in Washington, D.C., Juneja met with Carlos Lozada '93, an associate editor at the Washington Post*, along with other mentors and Notre Dame alumni, to discuss his career options.*

Glynn Family Honors Program — 2017–18 Grant Recipients

Prathm Juneja
Class of 2019

- Majors: Political Science and Computer Science
- Adviser: Paul Ocobock
- Received grant to conduct research in Santiago, Chile.

Government Technology and Turnout

My goal was to gain a deeper understanding of the effects of drastic voter policy, such as the removal of compulsory voting from Chile on voter turnout, and to learn about the role of government and civic technology in a global sense. I saw this research as an incredible opportunity to widen my scope of understanding and to see where the gaps may be between the United States and other countries so that I can tackle issues of voter turnout and government technology as I continue my professional and academic careers. The experience of traveling to a South American country and engaging in the Spanish language — something I have never done before — allowed me to grow in drastic ways. I enjoyed the challenge of changing my perspective and my daily life.

Glynn Family Honors Program — 2017–18 Grant Recipients

Claire Kramer
Class of 2018

- Major: American Studies
- Minors: Theology and Journalism, Ethics, and Democracy
- Advisers: Annie Coleman and Rich Jones
- Received grant to conduct research for her senior thesis in Connecticut.

ESPN, the NFL, and the Concussion Crisis

I was able to conduct independent research with some of the best-known and most knowledgeable reporters in the industry at ESPN headquarters in Bristol, Connecticut. This allowed me to work with professionals and draw my own conclusions, to receive information with a critical eye, and to organize that information to put forth an argument. Everyone at ESPN was so willing to help with my research and speak candidly about the topic, even though they all had a lot of work to do. And the grant from Glynn made everything possible. Without it, I would not have been able to travel to this place I'd seen on television for years and that helped draw me to the sports world.

For more information on Kramer's senior thesis, see page 63.

Glynn Family Honors Program — 2017–18 Grant Recipients

Aileen Markovitz
Class of 2019

- Majors: Music and Economics
- Minor: Constitutional Studies
- Adviser: Kiera Duffy
- Received grant for her junior recital.

Vocal Performance Recital

My junior recital was meant to be a stepping stone for my larger, longer senior recital in spring 2019. In anticipation of that rigorous event, I chose to do a more condensed junior recital with a collection of classical arias, all of which were composed with the words of famous poets. I am majoring in vocal performance and intended to pursue a career in opera performance, so this was a way to improve my technical and artistic skills to prepare for the future. The recital would not been possible without the generous funding from the Glynn Family Honors Program. The funding was used to hire a pianist and print posters and programs.

Glynn Family Honors Program — 2017–18 Grant Recipients

Jacob McKenna
Class of 2018

- Major: American Studies
- Advisers: Perin Gurel and Denise Della Rossa
- Received grant to conduct research for his senior thesis at Stanford University.

German-American Propaganda of the Cold War

My experience at the Hoover Institution at Stanford University was essentially the culmination of my four years of training as an American Studies student. During this short trip, I was required to synthesize large amounts of information, think critically about the importance of certain things over others, read primary sources in historical and cultural contexts, and more. It was exciting to work with physical primary sources, as opposed to digital sources, and holding letters from past presidents and other notable historical figures was amazing. The grant I received from the Glynn Family Honors Program made my entire trip possible. My family and I do not have the expendable money for a trip of this nature, and I would not have been able to complete this research, which served as the centerpiece of my senior thesis.

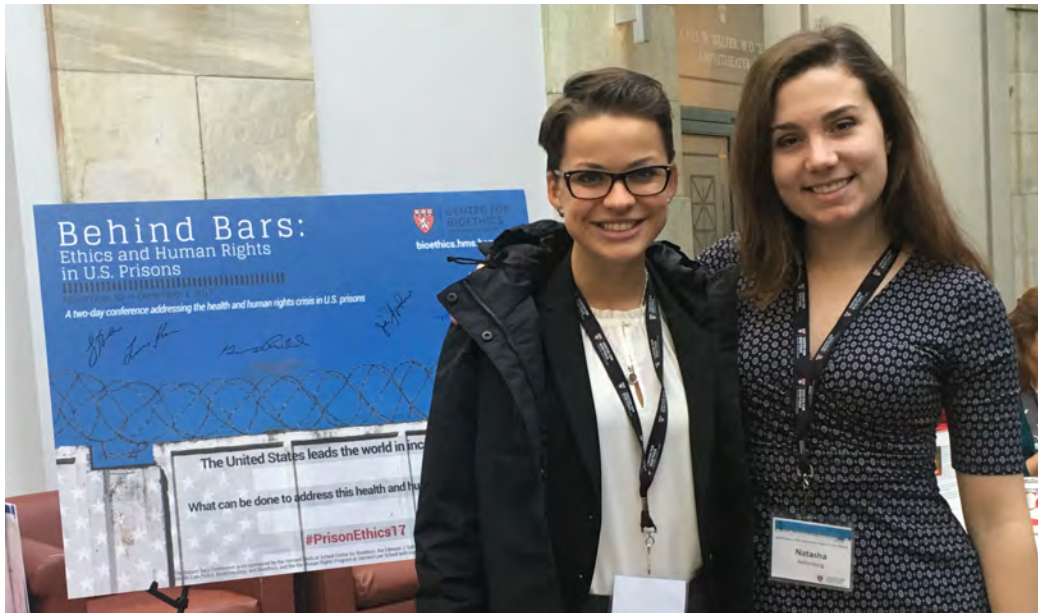
For more information on McKenna's senior thesis, see page 69.

Glynn Family Honors Program — 2017–18 Grant Recipients

Natasha Reifenberg
Class of 2018

- Major: Philosophy
- Minors: Sociology, and Philosophy, Politics, and Economics
- Hesburgh-Yusko Scholar
- Kellogg International Scholar
- Received grant to attend an academic conference.

Behind Bars: Ethics and Human Rights in U.S. Prisons, Boston



This two-day conference was a perfect blend of my academic interests in political theory and human rights and my commitment to criminal justice reform. It helped me explore the role of academia and substantive qualitative research efforts in improving the lives of those who have been most marginalized by our regressive criminal justice system. It was also important for me to see how distinguished professors can be equally committed to their academic endeavors and doing real good in the world, beyond building knowledge and touching the lives of students, of course. The former can be a vehicle for the latter. I saw the real impact of applied scholarship. This experience helped me discern that it is not enough to have a prestigious degree. To do good, direct service with those most affected by policy changes and the current criminal justice system is paramount to being not just an effective, but also a thoughtful, public servant.

Glynn Family Honors Program — 2017–18 Grant Recipients

Gregory Serapio-Garcia
Class of 2019

- Major: Psychology
- Minor: Computing and Digital Technologies
- Received grant to present at an academic conference.

North American Society for the Study of Personality Disorders (NASSPD) Annual Conference, New York City

I presented the preliminary analyses of my Glynn-funded research project, conducted last summer. I learned so many new things from the accomplished academics in personality disorder research at the conference. I was able to grow intellectually by speaking with top clinical psychology researchers in the field. I plan to pursue an interdisciplinary Ph.D. within the computational social sciences. Ultimately, this experience strengthened my presentations skills for future academic research in psychology. The funding from the Glynn Family Honors Program made it possible for me to travel to New York City and stay in the conference hotel at the World Trade Center with the other attendees.

Glynn Family Honors Program — 2017–18 Grant Recipients

Scot Stanulis
Class of 2018

- Major: Biological Sciences
- Advisers: Gary Lamberti and Malcolm Fraser
- Received grant to conduct research on the Galápagos Islands in Ecuador.

Avian Feeding Behavior and Associated Morphological Adaptation in the Galápagos

I surveyed a variety of Galápagos bird species and observed their feeding behaviors. I compared the behaviors and morphologies of multiple birds within different habitat categories (land birds, seabirds, and coastal birds) to identify categorical differences. The results indicate that it is likely possible to make predictions about a bird's feeding behavior by observing its morphology. I have always been inspired by Darwin and his research on the Galápagos Islands, which eventually led to the formation of the theory of evolution. The birds of the Galápagos are fantastically unique and it was an incredible experience to observe them close-up in their natural habitat.

Stanulis on North Seymour Island in front of a juvenile Blue-Footed Booby, a subject of his research project.

Glynn Family Honors Program — 2017–18 Grant Recipients

Julia Szromba
Class of 2018

- Majors: Philosophy and Film, Television, and Theatre (FTT)
- Hesburgh-Yusko Scholar
- Adviser: Olivier Morel
- Received grant to conduct research for her senior thesis in Kentucky.

Calls From Home

I traveled to Whitesburg, Kentucky, to create a documentary about a weekly radio program that connects incarcerated people to their loved ones. I learned how to direct and produce a short film from start to finish. I was responsible for all interviewing, shooting, editing, and more. I also learned how to best incorporate academic research into a creative project. I loved being able to travel and meet interesting people as part of my research, and I really loved exploring Appalachia and capturing it on film.

I was surprised by how strongly the audience reacted to the final film. It made me proud to know that my work could have an emotional impact on people. After graduation, I'll be working for for O'Malley Creadon Productions, a documentary production company in Los Angeles. Completing my thesis was a good confirmation that this is the work I want to do. Without the thesis grant from the Glynn Family Honors Program, I would not have been able to travel to Whitesburg to film.

For more information on Szromba's senior thesis, see page 94.

Glynn Family Honors Program — 2017–18 Grant Recipients

Abigail Whalen
Class of 2019

- Major: Philosophy
- Minors: Middle Eastern Studies and Philosophy, Politics, and Economics
- Adviser: Therese Cory
- Received grant to conduct research for her senior thesis in Jerusalem and Bethlehem.

The Unity and Transcendence of the Abrahamic God

My research deepened my theological knowledge of Jewish and Muslim conceptions of theism. Furthermore, I was able to identify strains of philosophical similarities (ultimately, from Neoplatonism in early Christian communities) between the three main monotheistic faiths. As a result, I will better be able to more fully address the theological implications of freedom, oneness, and eternality in philosophy of theology for writing my thesis. My favorite part of my experience was interacting with other scholars both at the Tantur Ecumenical Institute and in the city at large. I learned so much from people of amazingly diverse backgrounds — from a rabbi finishing his training in yeshiva to a French atheist with an interest in Thomas Aquinas. While my archival research was my central focus, the time I spent in the Holy Land really impacted the way I view my project. I now have a very personal connection to my research, having seen sites of so much significance to each of the three Abrahamic faiths.

Glynn Family Honors Program — 2017–18 Grant Recipients

Sadie Yates
Class of 2018

- Major: Theology
- Minor: Teaching English to Speakers of Other Languages (TESOL)
- Adviser: Timothy Matovina
- Received grant to conduct research for her senior thesis in Peru.

La Virgen de la Candelaria: An Andean Case Study in Catholic Inculturation

With the grant from Glynn, I was able to attend five days of this festival in Puno, Peru. It was incredible! I saw first-hand how inculturation played out in an indigenous festival. I was also privileged to pray with the people of Puno and understand better how they worship and how they understand their faith. Without this trip, I could not have given such a full treatment to this subject. The experience of watching and participating was irreplaceable. Next year, I will pursue a master's in theology through Notre Dame's Echo program, and I hope to work with the Latino population in the U.S., as they make up a huge portion of our Church. This experience confirmed my passion for Latino and other cultural expressions of Catholicism and helped me improve my Spanish.

For more information on Yates' senior thesis, see page 106.

Glynn Family Honors Program
2018 Senior Thesis Projects

Claire Alexander

- Major: Neuroscience and Behavior
- Glynn Family Honors Program
- Adviser: Nathan Rose

Reliability and Validity of the Cognigram: A New Computerized Cognitive Task for Concussion Assessment

This study focuses on the correlation between the CogniGram brief cognitive battery and clinical decision-making by neuropsychologists evaluating concussion in boxers. It also examines the reliability and validity of the CogniGram, as compared to established computerized testing. Concussion testing is a sensitive but extremely important topic, and computerized cognitive testing has been aiding the process of correctly diagnosing concussions and keeping patients from further traumatic brain injury. It also relates to my career path in clinical neuropsychology, as I would like to focus on traumatic brain injury, neurodegeneration, and rehabilitation.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Alec Biscopink

- Majors: Neuroscience and Behavior and Music (Violin Performance)
- Glynn Family Honors Program
- Adviser: Kasturi Haldar

Neurofibromatosis Type 1 Meta Analysis

My thesis expands on a case study a few years ago looking at a unique manifestation of NF1 in a 4-month-old female infant. I compiled patient records for MHIN (local Indiana population) to determine prevalence and symptomatology and then compared this with the case of the female infant as well as other population studies of NF1. I chose this topic after taking a class on rare and neglected diseases. One of the best experiences I had in the class was meeting patients and their families on “Rare Disease Day.” We also video conferenced with families around the world sharing their experiences. One of the most common complaints was the long and emotionally exhausting diagnosis process.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Kelly Bishop

- Major: Neuroscience and Behavior
- Concentration in Arts and Letters Pre-Health
- Glynn Family Honors Program
- Adviser: Julie Braungart-Rieker

Cortisol Reactivity During Marital Conflict in Dual- vs. Single-Earning Couples Related to Division of Labor

I believe that conflict over division of household labor is a growing issue in the modern family, and an issue so central to family happiness deserves attention. My study uses data from a larger project, the Family Interaction Study, to examine this aspect of marital dynamics in modern single- and dual-earning families. The study's premise is that higher degrees of conflict over division of household work will largely influence a couple's overall marital stress and detract from marital quality, which was measured using cortisol reactivity during a marital discussion in the lab. Earner status and marital satisfaction were analyzed as moderators.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Robert Black

- Majors: Chemistry, Mathematics, and Chemical Engineering
- Glynn Family Honors Program
- Adviser: Graham Lappin

Interactions Between Complex Cations and Anions

The secondary interactions resulting in intermolecular attractions between multi-atom charged species contribute significantly toward defining their crystal structure. Due to the size of these species and availability of electron density donors and acceptors, these structures can be difficult to anticipate without an experimental basis to make determinations. Inorganic synthesis is an interesting field to be involved in since the emphasis differs from the more intense world of organic chemistry. The bench chemistry is often more simple, which allows for involved studies of kinetics and mechanism that are sometimes lost in striving to perfect a multi-step synthesis, a common practice in organic chemistry.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Daniel Bland

- Majors: English and Science Preprofessional Studies
- Glynn Family Honors Program
- Adviser: Laura Knoppers

"Some Subtleties o' th' Isle": Moderating Postcolonial Discourse in The Tempest through the Green World Framework

Postcolonial interpretations of *The Tempest* have contributed greatly to our understanding of it. However, the postcolonial reading has become such a default that every reading is ultimately litigated through that lens. This often flattens the play's characters, casting aside their complexity. I propose a reading of the play through Northrop Frye's Green World framework to demonstrate the value of alternative readings. I became interested in *The Tempest* due to its fascinating hybrid structure, which is part revenge tragedy and part comedy, and due to the complicated nature of Caliban — possibly one of the most litigated characters in all of Shakespearean criticism.

Glynn Family Honors Program — 2018 Senior Thesis Projects

McKenzie Brummond

- Major: Program of Liberal Studies
- Minors: Constitutional Studies and Theology
- Glynn Family Honors Program
- Adviser: Leonard DeLorenzo

The Discipline of Harmony: An Examination of the Hope for Christian Unity Through Synesthesia, the Psalms, and the Saint John's Bible

I researched the implications of color-sound synesthesia — in which one sees colors when they hear — in praying through the Psalms, and the composition of the Saint John's illuminated Bible's psalter in relationship to a renewed understanding of the possibilities and need for Christian unity. I have color-sound synesthesia, and my time at Notre Dame has instilled in me a passion for ecumenical dialogue. In a conversation with my adviser, he explained to me how the Saint John's Bible is meant to be a synesthetic experience and embodies Saint Augustine's theology of the Psalms.

Traveled to Collegeville and Moorhead, Minnesota, with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

John Patrick Bruno

- Major: Economics
- Supplementary Major: Applied and Computational Mathematics and Statistics
- Minor: Hesburgh Program in Public Policy
- Glynn Family Honors Program
- Adviser: Jeffrey Bergstrand

Estimating Partial and General-Equilibrium Effects of Eliminating NAFTA

In my thesis, I first estimate the partial effect of different types of economic integration agreements (EIAs) on the amount of trade between countries. I then use these estimates to simulate a general equilibrium model which estimates the effect on welfare of a potential dissolution of NAFTA. I am fascinated with trade agreements and all that goes into designing and negotiating them. I also work as a research assistant on the database of EIAs that I use as a main source of data.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Devon Chenelle

- Major: History
- Minors: Italian and Philosophy
- Glynn Family Honors Program
- Adviser: Randolph Ford

And After Thee Shall Arise Another Kingdom: Investigation into the 418 Visigothic Settlement in Aquitaine

This project is an inquiry into the causes, circumstances, and consequences of the fall of the Western Roman Empire. I studied invading or immigrant barbarian groups' relationships with the empire they displaced and the native inhabitants they dominated through research into the land grant conditions of the agreements between the Roman Empire and "barbarians." Among a broad range of cases, I focused on the 418 accord with the Visigoths in Aquitaine. This is a critical event in the fall of the Roman Empire — a historical subject more interesting to me than any other — with implications for ethnogenesis, conflict dynamics, and civilizational collapse.

Traveled to Transylvania, Romania, with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Daniel Childers

- Major: Physics in Medicine
- Glynn Family Honors Program
- Adviser: Sylwia Ptasinska

Effects of a Helium Atmospheric Pressure Plasma Jet on Plasmid DNA

Plasma medicine is an emerging field of study that is investigating the fourth state of matter's applications in areas such as disinfection, healing, and cancer. My research has consisted of exposing plasmid DNA to a helium atmospheric pressure plasma jet and studying the results. I chose this topic because I thought it was a very nice fit for my interests in physics and medicine.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Spencer Clark

- Major: Physics
- Minor: Energy Studies
- Glynn Family Honors Program
- Adviser: Vinicius Placco

Stellar Archeology: Using Photometric Analysis to Discover Our Galaxy's Oldest Stars

My group is interested in "carbon-enhanced, metal-poor" stars within and around the Milky Way that are remarkable due to their old age and purity. My work is focused on coming up with and testing new ways to analyze large astronomical surveys in order to efficiently find and identify these stars. I was passionate about space and astronomy and stumbled upon my adviser's group during my sophomore year. I spent the summer at Notre Dame with funding from the Glynn Family Honors Program stipend, working on the relevant science with the group.

Received funding from the Glynn Family Honors Program and the College of Science.

Glynn Family Honors Program — 2018 Senior Thesis Projects

David Connelly

- Major: Neuroscience and Behavior
- Minor: Actuarial Science
- Glynn Family Honors Program
- Adviser: Robert Rosenbaum

A Proposed Biological Mechanism for Balanced Network Theory

My thesis involved modeling neuronal growth and connection activity using the computer program Matlab. We proposed dendritic spine scaling as a possible mechanism by which balanced network theory can be maintained in real cells. We also investigated the effects of competition and how that may be relevant in human cortex. I sought out Professor Rosenbaum because his research in computational neuroscience combines my two biggest interests — neuroscience and math. After meeting with him, I decided on this project because of recent advancements in the field of balanced network theory.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Caitlin Crosby

- Major: Program of Liberal Studies
- Minor: Business Economics
- Glynn Family Honors Program
- Adviser: Henry Weinfield

Scourge and Minister: The Duty of a Christian Prince in Hamlet

My thesis explores how Hamlet's sense of duty as a Christian prince — which is influenced by a variety of political texts from the Renaissance — affects his action (or lack thereof) in the play. I originally wanted to study some aspect of religion in *Hamlet*, but quickly realized that such a question would become embroiled in the politics of the play. I settled on the problem of exploring the role of the Christian prince for Hamlet to study the interaction of these two forces in the play.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Kathleen Davin

- Major: Biological Sciences
- Minor: Philosophy, Religion, and Literature
- Glynn Family Honors Program
- Adviser: Zainulabeuddin Syed

Attractants to Pestiferous Fruit Fly, Drosophila suzukii

Unlike other fruit flies, Drosophila suzukii is a problematic pest that targets fresh fruits as an egg-laying substrate, damaging their nutritional and economic value. Currently, there are no effective management strategies that successfully mitigate this damage. My thesis expands upon previous genetic, chemical, and electrophysiological work to elucidate the shift in D. suzukii's olfactory responses and oviposition behavior responsible for their pestiferous behavior. Senses are the primary means through which all organisms, from fruit flies to humans, interact with the world around them. I was fascinated by the opportunity to integrate diverse fields of study to investigate the complex factors that drive behavior in even the simplest of organisms.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Emma Dopheide

- Major: Neuroscience and Behavior
- Supplementary Major: Spanish
- Glynn Family Honors Program
- Adviser: Susan Latham

An Analysis of Emerging Rehabilitative Therapy Services in Gonaives, Haiti

My thesis investigates the implementation of a community-based rehabilitation program in Gonaives, Haiti, with an emphasis on children with developmental disabilities. My goal was to discover and outline the community's needs in terms of rehabilitation and disability services and determine how the clinic was meeting those needs. In addition, I investigated which strategies employed by the clinic could be generalized and expanded to other areas in need of rehabilitation and disability services. I want to be an occupational therapist working with children with developmental disabilities. I was especially interested in exploring therapy programs for children in Haiti, where I had traveled before.

Received funding from the Glynn Family Honors Program to travel to Gonaives, Haiti.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Stephanie Dubois

- Majors: Economics and Sociology
- Glynn Family Honors Program
- Adviser: Kasey Buckles

The Beauty Premium and the Fitness Premium

The way someone looks is an enormously personal decision — with huge social, economic, and physical consequences. After conducting qualitative research on perceptions of the decisions that go into appearance management, I conducted an econometric analysis of the importance of fitness and stature as it plays out in labor market outcomes. My thesis began with the idea of investigating the Lipstick Effect — the notion that individuals invest more in cosmetics and appearance management products during harsh economic times. After working to understand the sociological implications and mechanisms of this, I found a theme that spoke to the importance of fitness.

Traveled to New York City with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Julia Erdlen

- Major: English
- Minors: Computing and Digital Technologies (CDT) and Science, Technology, and Values (STV)
- Glynn Family Honors Program
- Adviser: Janet Kourany

STEM Women's Rocky Road to Stockholm: The Institutional Obstacles that Prevent Women in Science from Winning the Nobel Prize

Women in STEM have been historically disadvantaged, and only 17 women have won scientific Nobel Prizes. The obstacles and discrimination they face is exacerbated by the institution of the Nobel Prize. My thesis blends narratives of women in STEM with the broader societal issues they face. As a former STEM major and a Science, Technology, and Values minor, I wanted to use what I studied to tell the stories of these brilliant scientists.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Shaun Evans

- Major: Philosophy and Theology
- Supplementary Major: Classics
- Glynn Family Honors Program
- Advisers: Ann Astell and Thomas Flint

Scorched Beauty: The All Saints' Day Sermons of St. Aelred of Rievaulx

St. Aelred of Rievaulx, a 12th-century abbot of the Cistercian Monastery of Rievaulx in northern England, produced nine substantial sermons for the Feast of All Saints — five of which remain untranslated. My thesis is a translation of these five sermons from Latin to English, with introduction, commentary, and notes. My love of the Latin language, together with my interests in medieval theology and philosophy and Scriptural exegesis, excited me about the opportunity to engage in close study of several fine pieces of medieval Latin Homiletics.

Traveled to the remains of Aelred's monastery in Rievaulx, England, with funding from the Rome International Scholars Program Ravarino Grant.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Michael Foley

- Majors: Physics and Mathematics
- Glynn Family Honors Program
- Adviser: Peter Garnavich

Advances in Supernova Cosmology

Type Ia supernovae are brilliant stellar explosions that allow us to measure the expansion rate of the universe. Consequently, they allow us to put precise constraints on the properties on dark energy. My thesis presents work on one survey of these objects that resulted in the tightest constraints on dark energy to date, another that will improve those measurements by 35 percent, and an exploration of the light curves of Type Ia supernovae at near-infrared wavelengths. I started researching Type Ia supernovae during my sophomore summer at the University of Chicago, and I fell in love with the topic. I have been involved with projects investigating them since, so my thesis is a synthesis of the work I've done.

Traveled to La Serena, Chile, with funding from the the Glynn Family Honors Program, Flatley Center for Undergraduate Scholarly Engagement, and the College of Science.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Maloney Foster

- Major: Applied and Computational Mathematics and Statistics
- Minor: Environmental Earth Science
- Glynn Family Honors Program
- Adviser: Antonio Simonetti

Nuclear Forensics

My geochemistry thesis is focused on applications to nuclear forensics, specifically investigating differences between altered and pristine uraninite samples and how they ID differently using nuclear forensics techniques. I selected this topic because of my longstanding personal interest in geology, as well as nuclear forensics' relevance to my future career in the U.S. Navy.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Kaitlin Frei

- Major: Biological Sciences
- Minor: Theology
- Glynn Family Honors Program
- Adviser: Mary Ann McDowell

Validation of Neuropeptide F as an Insecticide Target in Aedes aegypti Mosquitoes

My work validates the neuropeptide F receptor as a drug target in Aedes aegypti mosquitoes. As mosquito-borne diseases remain prevalent in many parts of the world, new insecticides are key to minimizing and, hopefully, eliminating the spread of such diseases. With the receptor validated, an insecticide targeting the neuropeptide F receptor can be designed and marketed. Because I aspire to become a veterinarian, it seemed fitting to work on a drug development/discovery project, since pharmaceuticals play a large role in veterinary medicine.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Jenna Galuska

- Major: Mathematics
- Minors: Education, School, and Society (ESS) and Actuarial Science
- Glynn Family Honors Program
- Adviser: Nicole McNeil

Stereotype Threat and Students Studying Math and Applied Math

We've all heard before that women are underrepresented in STEM fields. One reason is that women experience gender-related stereotype threat in fields like mathematics — meaning that they underperform compared to men, when they actually have similar skill levels. I wanted to learn more about whether women studying mathematics and applied mathematics at Notre Dame experience gender stereotypes differently. As a math major working in a psychology lab, I was excited to work with a topic that applies to my experiences in college.

Glynn Family Honors Program — 2018 Senior Thesis Projects

John Gibbons

- Majors: Economics and Program of Liberal Studies
- Glynn Family Honors Program
- Adviser: Robert Goulding

The Catilinarian Conspiracy and the Formation of Cicero's Political Philosophy

My thesis explores the four orations Cicero delivered during the Catilinarian conspiracy of 63 B.C., the year of his consulship. I explore how his political philosophy was developed through this event and was later formalized in his writings, particularly in his *De re publica*. I read Cicero in a class and enjoyed his style and philosophy. After studying abroad in Italy my junior year, I also appreciated the culture and history of ancient Rome, so I decided to explore these two interests with my thesis.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Matthew Gregory

- Majors: Psychology and Environmental Science
- Glynn Family Honors Program
- Adviser: Rev. Terrence Ehrman, C.S.C.

Proposing a Model for Integrating New Atheism into the Catholic Educational Context

New atheism poses interesting questions for Catholic education. In my thesis, I propose a model for integrating new atheist thinking into Catholic classrooms. Several prominent public intellectuals maintain a hostile view of faith and religious life. I wanted to understand more about their views and how Catholics should respond to them.

Traveled to the Galápagos Islands with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Gregory Greif

- Majors: Honors Mathematics and Physics
- Glynn Family Honors Program
- Adviser: Brian C. Hall

Lie Groups and Spin in Quantum Mechanics

Quantum mechanics is notorious as a counterintuitive subject. In my thesis, I discuss the mathematics behind the quantum mechanical angular momentum operators and use this viewpoint to explain the property known as spin, in particular the strange behavior of electrons, in which their spin vectors must be rotated 720 degrees to return to their original state. I chose my thesis topic because it is an important subject in quantum mechanics, but also has connections to many areas of mathematics that interest me. For example, group theory, linear algebra, and topology all come into play when describing angular momentum in quantum mechanics.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Andrew Grose

- Majors: Spanish and Science Preprofessional Studies
- Glynn Family Honors Program
- Adviser: Ben Heller

An Ambiguous Nation, A Man in Conflict: Exile, Nationalism, and Dialectic in Roque Dalton's Taberna y otros lugares

I examined the theories of Hegel and Derrida on knowledge before applying them to Salvadoran poet Roque Dalton. In exile, Dalton struggles with a "Derridean dialectic" between artistic and political priorities as he writes about his nation and himself in his most famous work, *Taberna y otros lugares*. It is an exploration of literary theory and epistemology through exile theory and Salvadoran experimental poetry. After a summer doing medical work in El Salvador, I was inspired to return. I am working to develop a better understanding of the political, social, and cultural history of El Salvador.

Traveled to El Salvador.

JP Gschwind

- Major: Program of Liberal Studies
- Minor: Business Economics
- Glynn Family Honors Program
- Adviser: Thomas Stapleford

The Aristotle Option: Virtue Ethics and Economic Practice in Alasdair MacIntyre's After Virtue *and Michael Novak's* The Spirit of Democratic Capitalism

I explored how the role of classical virtue ethics in modern capitalism helps to illuminate the divide between traditionalist conservatism and classical liberalism. Alasdair MacIntyre and Michael Novak serve as compelling representatives for their respective schools of thought because they both unite Aristotelian virtue ethics and economic practice with their larger political philosophies. I am deeply interested in the philosophical influences that inform modern American conservatism and the tension between traditionalist conservatism and classical liberalism. Additionally, I enjoy studying virtue ethics and its application to economic practice because it integrates my academic interest in political philosophy with my vocational interest in business.

Emily Gust

- Majors: Economics and Political Science
- Glynn Family Honors Program
- Adviser: Andrew Gould

The Rise (and Fall) of Scottish Nationalism: Analyzing the Causes of the 2014 Scottish Referendum on Independence and Beyond

My thesis examines the rise of Scottish nationalism, focusing on the years leading up to the independence referendum held in 2014. Paying special attention to the Scottish National Party, I analyze why the referendum occurred, as well as why it ultimately failed. I am interested in the rise of nationalism throughout the world. I studied abroad in London and worked in Parliament under the Secretary of State to Scotland, which piqued my interest in Scotland specifically.

Traveled to London and Edinburgh, Scotland, with funding from the Kennedy Scholars program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Catherine Hayes

- Major: Political Science
- Minor: Poverty Studies
- Glynn Family Honors Program
- Hesburgh-Yusko Scholar
- Adviser: Connie Mick

Urban Food Policy

I wrote my thesis on the enablers and barriers to successful urban food policy, centered around a case-study comparison of food policy in Boston and Detroit. I have worked for several nonprofits related to food justice, and it is a personal interest of mine. In addition, my urban policy focus is a good way to combine my political science major and poverty studies minor.

Sarah Herzog

- Major: Biochemistry
- Minor: Theology
- Glynn Family Honors Program
- Adviser: Amanda Hummon

Analysis of Gene Expression of Nutrient Restricted Colorectal Cancer

Several combinations of chemotherapy and radiation are available for treatment of colorectal cancer. However, given cancer's unique metabolic needs in relation to normal cells, additional measures beyond medicine — such as reduced sugar consumption — may increase treatment efficacy. My thesis explores gene expression by use of in vitro modeling of sugar restriction in colorectal cancer and its impact on several combination drug therapies. This out-of-the-box approach is important to analyze in the lab. Limited data is available that definitively discusses the benefits of sugar and nutrient restriction in colorectal cancer, so this thesis contributes to a growing library of evidence for the efficacy of dieting for cancer patients.

Received funding from the Glynn Family Honors Program and the College of Science.

Glynn Family Honors Program — 2018 Senior Thesis Projects

John Michael Hogue

- Major: Theology
- Glynn Family Honors Program
- Advisers: David Lincicum and Anthony Pagliarini

Jesus of Nazareth and Scriptural Exegesis: Benedict XVI's Historical, Faithful, and Relevant Portrait of Jesus

My thesis sketches Benedict XVI's method for Biblical interpretation and illustrates that methodology with examples from his three-volume work, *Jesus of Nazareth*. Benedict respects the work of the historical critical method, yet acknowledges its limits and supplements it with the Church's tradition and with a concern for the text's meaning. Benedict's Scriptural exegesis is inseparable from his theology of history. I first began researching Benedict's compelling exegetical method in a New Testament class. I decided to return to this topic because of the captivating beauty of God's word and because of the tremendous theological consequences of Biblical interpretation.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Jane Horvat

- Majors: English and Romance Languages and Literatures
- Glynn Family Honors Program
- Adviser: Johannes Göransson

Triune Goddess

Triune Goddess is a creative nonfiction exploration of identity and the areas of life that help shape it. The narrative tells the non-chronological story of an attempt to accept oneself, while bringing in critical theory, feminist essays, and poetry. The concept of identity is integral to our global society as we struggle to accept and better ourselves. Over the past four years, I realized I had been unconsciously focusing on identity, on how people wear masks without even recognizing it, on how complex my identity had become. Eventually, I decided my search for my identity was the story I needed to tell.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Makenzie Huguet

- Major: Neuroscience and Behavior
- Minor: Science, Technology, and Values (STV)
- Glynn Family Honors Program
- Adviser: Jessica Payne

The Effects of Sleep and Emotional Salience on Direct Associative and Relational Memory

This study demonstrated the benefit of sleep in memory consolidation of direct associative and relational memory, as tested by a two-part study with a memory task. Overall, emotional salience played a role in memory consolidation for associative memory only. Further, an interesting correlation between REM sleep and memory was found, suggesting that REM's function is specific to different forms of memory. I have worked in the Sleep, Stress, and Memory lab since my first year, and I chose this topic as a follow-up to a study conducted a few years ago. I am particularly interested in the function of individual sleep stages on our daily lives.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Rachel Iverson

- Major: Psychology
- Minor: Education, Schooling, and Society (ESS)
- Glynn Family Honors Program
- Adviser: Nicole McNeil

Examining the Relation Between Cardinality and the Order Irrelevance Principle

The cardinality principle is well studied and typically regarded as the most difficult aspect of counting for children to understand. The order irrelevance principle has been studied significantly less often and very rarely in conjunction with cardinality. My thesis aims to start filling in that research gap. I was interested in further investigating incidental evidence I had observed during previous experiences collecting data about how children learn to count. Additionally, I was motivated by the great significance that children's understanding of counting holds for their future academic trajectories.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Katharine Janes

- Major: Political Science
- Glynn Family Honors Program
- Adviser: Joshua Kaplan

Exploring State and Voluntary Sector Welfare Provision for the Elderly in Various U.S. States

I explored the relationship between the state and nonprofit sectors in welfare provision in U.S. states. In particular, I considered how federal funding changes impact this dynamic and how health and socioeconomic outcomes for the elderly are affected accordingly. I have always valued philanthropic engagement. However, after taking a course on social policy at Oxford, I realized that individual volunteering is not enough to fix extant systems that marginalize demographics of people. To this end, my project explores how state and nonprofit resources can be employed in conjunction to combat relegation.

Received funding from the Flatley Center for Undergraduate Scholarly Engagement.

Glynn Family Honors Program — 2018 Senior Thesis Projects

John Kessler

- Majors: Mathematics and Philosophy
- Glynn Family Honors Program
- Adviser: Don Howard

Virtuous Artificial Agents

My thesis explores the possibility of developing artificial moral agents. I advocate for designing AIs that operate under Aristotelian virtue ethics, as well as potentially expanding our definition of moral patient to include inorganic objects. This topic allows me to blend philosophy with computer science, in which I intend to work.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Sophia Kiernan

- Major: Sociology
- Supplementary Major: Arts and Letters Pre-Health
- Minor: Poverty Studies
- Glynn Family Honors Program
- Adviser: Kraig Beyerlein

Health Provider Experiences with Somali Immigrants in Northeastern Wisconsin and London: A Comparison Study

I compare interviews with individuals in London and northeast Wisconsin in order to contribute to the limited body of knowledge about caring for Somali immigrants —an underserved population that is increasing in size, especially in Wisconsin. I am from northeast Wisconsin, and my high school was incredibly diverse. We had a substantial number of Somali immigrants at my school, which sparked my interest in this topic. This project also combines my interests in sociology, health care, and poverty studies.

Received funding from the Glynn Family Honors Program and the Department of Sociology to travel to London.

Joshua Kolb

- Major: Biological Sciences
- Glynn Family Honors Program
- Adviser: Kevin Vaughan

Relationship Between Sphingolipid Metabolism and Gene Transcription

The possible functions of sphingolipid metabolites as intracellular signaling molecules have yet to be extensively explored, and my thesis proposes that it is primarily an interruption of extracellular sphingolipid metabolism that causes the disease phenotype found in Niemann-Pick Disease Type C. I chose this topic upon examining literature related to Niemann-Pick C and other lysosomal storage diseases and finding a number of possible avenues of exploration related to sphingolipid catabolism and metabolism that could potentially account for the breakdown in cholesterol and lipid transport observed in these diseases.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Calvin Kraft

- Majors: Neuroscience and Behavior and Program of Liberal Studies
- Glynn Family Honors Program
- Adviser: Francesca Bordogna

The Use of Neuroscience in U.S. Criminal Law

My thesis investigates the increasing use of neuroscientific evidence in American criminal courts and the implications of this change for individual rights. I chose this topic because it is a good synthesis of two of my interests — neuroscience and philosophy.

Traveled to Washington, D.C., with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Claire Kramer

- Major: American Studies
- Minors: Theology and Journalism, Ethics, and Democracy
- Glynn Family Honors Program
- Advisers: Annie Coleman and Rich Jones

Man Down: ESPN's Coverage of Injury in the NFL

The concussion crisis has rocked the National Football League and changed the way fans and teams think about injuries. I examine how ESPN covers injuries and concussions in the NFL — especially considering its close commercial relationship with the league — and how this coverage has changed. The concussion crisis may have permanent effects on players and their families, and I wanted to study how the community created by football and media is made aware of this phenomenon. I'm passionate about storytelling and connecting communities, and the way media report on the game changes how fans, players, teams, and the league view it.

Traveled to ESPN headquarters in Bristol, Connecticut, with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Patrick LeBlanc

- Major: Mathematics (Honors)
- Minor: Philosophy, Politics, and Economics (PPE)
- Glynn Family Honors Program
- Hesburgh-Yusko Scholars
- Adviser: Liviu Nicolaescu

Entropy and Shannon's Coding Theorem

Information theory is a fascinating topic. It describes how to efficiently and reliably transmit information via encoding schemes, and therefore, undergirds our entire electronic system of communication; whenever one sends a message online, the message is first encoded as binary bits. In encoding, we might expect a trade off between efficiency and reliability. I examine this trade-off and how to escape it. I wanted to explore this system, both to gain a better appreciation for the world as we have constructed it and to explore a beautiful area of mathematics.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Daniel Loesing

- Major: Philosophy
- Minor: Philosophy, Politics, and Economics (PPE)
- Glynn Family Honors Program
- Adviser: Robert Audi

Rossian Intuitionism: Problems and Prospects

In the past several decades, Sir David Ross — a champion of the once dark-horse intuitionist school — has come to be recognized as one of the major ethicists of the last 100 years. By explaining and interpreting his ethical theory and addressing some of its major issues, I hope to illustrate the promise of intuitionist ethics. In reading Ross's major work, *The Right and the Good*, I was struck by how sharply its genius contrasted with the fact that neither I, nor any undergraduate philosophy student I talked to, had ever heard of Ross, his book, or intuitionism.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Marisa Lucht

- Major: Applied and Computational Mathematics and Statistics
- Glynn Family Honors Program
- Adviser: Gina Svarovsky

XX Does Not Compute: The Key Factors Affecting Female Disengagement in Computing

In a world shaped by technological developments, women have increasingly disengaged with the field of computing. Building on historical and sociological theoretical frameworks, I analyzed key factors influencing the expectancies, values, and identities of young women interested in a career in this field. Through quantitative data analysis and qualitative interviews, my results revealed that factors including influential experiences and self-efficacy strongly affect whether young women pursue college. After researching this topic in a Science, Technology, and Society course, I became curious about why females were not engaging in the field. My interest in education and experience as a data science intern in Silicon Valley influenced my choice of topic and research methods.

Incorporated the results of her thesis into a TED Talk she presented at TEDxUND in April. Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Luke Maillie

- Majors: Physics and Science Preprofessional Studies
- Minor: International Development Studies
- Glynn Family Honors Program
- Kellogg International Scholar
- Adviser: Sara Sievers

A Lottery of Lament: How Access to Care is Left to Chance for Rural Cancer Patients in Tanzania

This project is an exploration of how rural cancer patients in Tanzania are forced to rely on transient systems of health care, instead of health systems. I have spent three summers traveling to Tanzania and working with different non-profit organizations and physicians who are working to treat cancer patients in Tanzania.

Received funding from the Glynn Family Honors Program and the Kellogg Institute for International Studies to travel to Tanzania.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Olivia May

- Major: Classics
- Glynn Family Honors Program
- Adviser: Catherine Schlegel

Rusticus es, Corydon: Generic Self-Consciousness in Vergil's Eclogue 2

My essay seeks to demonstrate generic self-awareness in Vergil's *Eclogue 2* — as the shepherd Corydon attempts and fails to reconcile the differences between him and his beloved, he simultaneously raises our awareness of the conflicts within the pastoral genre. I chose this topic because I was fascinated with the incongruities in pastoral — its sophisticated style and rustic setting, its emphasis on leisure in a strenuous walk of life. Reading *Eclogue 2* for the first time, I was particularly struck by the pathos of its love story, and I wanted to explore how the generic norms of the poem worked alongside this emotional angle.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Jacob McKenna

- Major: American Studies
- Glynn Family Honors Program
- Advisers: Perin Gurel and Denise Della Rossa

Culture Kraft: Christopher Emmet, the American Council on Germany, and Cold War Cultural Activism

My project analyzes the work of Christopher Emmet and the American Council on Germany in order to understand how they manipulated German and American culture during the Cold War to turn Germans from enemies to allies. I chose this topic because I am particularly interested in the time period, and the historical movement of Germans from our enemies to our allies has always struck me as worthy of further exploration. It was also a great opportunity to do original research on a topic that has not been deeply explored.

Traveled to the Hoover Institution at Stanford University with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Madeline (Maddie) McKenna

- Major: Neuroscience and Behavior
- Minor: Science, Technology, and Values
- Glynn Family Honors Program
- Adviser: Kristin Valentino

Maternal Broad Autism Phenotype as a Moderator of Emotion Regulation in Autism Spectrum Disorder

My thesis looks at maternal broad autism phenotype — the idea that parents of children diagnosed with autism spectrum disorder can also display autistic traits without a concrete diagnosis — as a mediator in the severity of preschool children's autism spectrum disorder, particularly in regards to their ability to respond appropriately in emotional situations. Over the past three years conducting research in the Development and Psychopathology Lab, I have become very interested in the subject of emotion regulation. I wanted to use my thesis to expand this research into the still-developing field of autism spectrum disorder.

Glynn Family Honors Program — 2018 Senior Thesis Projects

William Morgenlander

- Majors: Physics and Biological Sciences
- Glynn Family Honors Program
- Adviser: Xin Lu

Interplay Between SPOP and CHD1 Knockout in Prostate Homeostasis

Genetic alterations in SPOP define a molecular subset of prostate cancer which enriches for CHD1 deletion. Using genetically engineered mice, I investigated the consequences of SPOP deletion, CHD1 deletion, and the combined knockout of both SPOP and CHD1. Prostate cancer represents the most common non-cutaneous form of cancer in men. Currently, therapeutic strategies for many cancers remains indicated by the organ of origin. There is, however, a movement towards treating cancers based on molecular characteristics, which has significantly benefited patients. My project looks to characterize a specific molecular subset of prostate cancers.

Received funding from the Glynn Family Honors Program and the College of Science.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Daniel Moylan

- Majors: Economics and Science Preprofessional Studies
- Glynn Family Honors Program
- Adviser: David Betson

Short of Breadth

I analyzed the primary care physician shortage in the United States and projections of future shortage. I propose that while the United States has enough primary care physicians in aggregate, there is a distribution issue that causes regional shortages. This topic was a meaningful intersection of my interests in health care and economics. I sought to examine a problem that is prevalent in health care literature through an economic lens. As an aspiring physician, I hope to be able to use my multidisciplinary education to improve health care.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Hannah Mumber

- Majors: Spanish and Science-Business
- Glynn Family Honors Program
- Adviser: Dominic Vachon

Comparative Study of Medical School Training in Areas of Empathy and Patient-Physician Relationships in Latin America and the U.S.

I conducted a cross-cultural study to uncover how education in empathy and communication skills compares between medical schools in the United States and those in Latin America. This thesis expounds upon research I conducted in South Bend, Indiana, in Nicaragua, and in Cuba. After taking the Compassionate Care in Medicine course and reflecting on my own observations in clinical settings, I became intrigued by what makes a good patient-physician relationship.

Traveled to Cuba and Nicaragua with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Hannah Mumber

- Majors: Spanish and Science-Business
- Glynn Family Honors Program
- Adviser: Jaime Pensado

La Medicina Ilustrada: Las Representaciones de la Medicina Tradicional en México por las Artes Visuales

My Spanish thesis explores the representation of traditional Mexican medicine through the Mexican visual arts of murals, film, and photography. I studied abroad in Puebla, Mexico, and was introduced to traditional medical practices in both rural and urban settings. After studying Mexican film and art history, I became intrigued by how these visual arts portray traditional medicine and by the social implications of their portrayal.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Gabrielle Mungcal

- Major: Biological Sciences
- Minor: Science, Technology, and Values
- Glynn Family Honors Program
- Adviser: Reginald Hill

Investigation of GRP78 Survival Mechanisms and ER Stress in PDAC

As pancreatic cancer (PDAC) continues to provide a grim diagnosis for all those affected, more effective treatments are increasingly necessary. The inefficacy of current treatments is partly due to PDAC's strong chemoresistance mechanisms, a quality the Hill Lab has shown to be closely associated with GRP78. We sought to further examine these mechanisms in two ways — inhibition of HSP70 family members and treatment with Bortezomib, in combination with GRP78 inhibition. Having worked with Dr. Hill since my freshman year, it made sense to do my thesis on his lab's work; however, choosing this topic was so much more than that. PDAC is a truly devastating disease, and the sense of urgency and gravity to the work has been truly inspiring. I hope that, through my thesis, I am making my own small contribution to the cause.

Received funding from the Glynn Family Honors Program and the College of Science.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Laura Neis

- Major: History
- Glynn Family Honors Program
- Adviser: Rory Rapple

Rare Women and True Martyrs: Female Martyrdom under Queen Elizabeth I

During the reign of Queen Elizabeth I (1558–1603), Catholics were considered traitors to the crown, a crime that merited execution. Because of this, hundreds of Catholics met their death during these years. Only three were women. My research examines how the state viewed executing women, and why these three were executed. These women's lives were impacted by the interplay between religion and politics — a subject becoming increasingly applicable to the modern world. Although historians have studied Catholicism under Elizabeth, the treatment of female Catholics is in need of a deeper look.

Traveled to London.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Lauren O'Connell

- Major: Anthropology
- Supplementary Major: Arts and Letters Pre-Health
- Minor: Latino Studies
- Glynn Family Honors Program
- Kellogg International Scholar
- Adviser: Vania Smith-Oka

Envuelto en Estrés (Wrapped in Stress): Health Decision Making and Tobacco Use Among Medical Students in Puebla, Mexico

Tobacco use among medical professionals in Mexico is higher than among the general population. What cultural and social factors influence the decision to smoke despite extensive scientific knowledge of the negative consequences? How does this impact a physician's ability to counsel patients on cessation? I chose this topic after studying abroad in Puebla, Mexico, and noticing the popularity of cigarettes among medical students. As a student interested in culture and global public health, I was intrigued by this trend and wanted to explore further.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

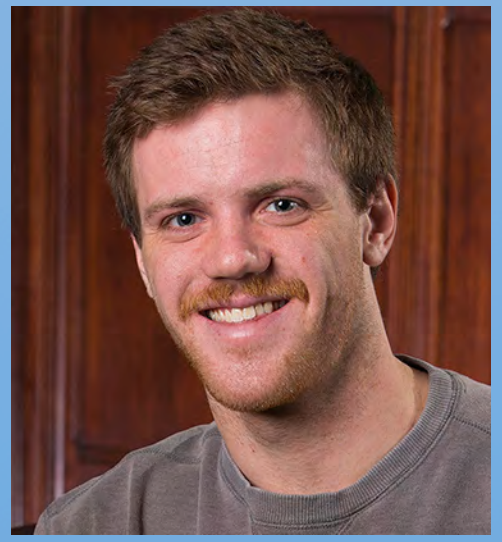
Treasa O'Tighearnaigh

- Majors: Biological Sciences and Economics
- Minor: Theology
- Glynn Family Honors Program
- Adviser: Siyuan Zhang

Role of Mitochondrial Transfer in Breast Cancer Adaptation to the Brain Microenvironment

My project looks to contribute to our understanding of the mechanisms underlying breast cancer metastases in the brain. Breast cancer brain metastases are an urgent clinical problem. I investigated the potential that mitochondrial transfer occurs between the surrounding brain cells and breast cancer cells in the tumor microenvironment. Further, my project looks to understand how this transfer contributes to breast cancer cell survival and proliferation in the brain. I am very passionate about efforts to combat cancer and this project has provided me wth the opportunity to explore that passion, learn about these efforts, and personally contribute. It means so much to me that I have been able to have a role — albeit small — in the fight against cancer.

Received funding from the Glynn Family Honors Program.



Henry Orlowski-Scherer

- Majors: Philosophy and Psychology
- Glynn Family Honors Program
- Adviser: Daniel Lapsley

Moral Foundations and Epistemic Orientations

This thesis investigates the relationship between moral intuitions and epistemic cognition, or the ways in which people understand argument and evidence. We hypothesize that people who understand the relationship between evidence and conclusions in simple terms will have more moral intuitions involving authority, purity, and loyalty, whereas people who have more sophisticated epistemic cognitions will have moral intuitions involving kindness and fairness. I am interested in moral philosophy and research psychology, and this study was an obvious way to integrate the two.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Benjamin Padanilam

- Major: Program of Liberal Studies
- Minors: Business Economics and Philosophy, Politics, Economics (PPE)
- Glynn Family Honors Program
- Adviser: F. Clark Power

Fame or Blame: An Ethical Evaluation of Major League Baseball's Steroid Era

A large portion of MLB players used steroids from the late 1980s to 2000s, a time in baseball that became known as the "steroid era." I evaluate those players' decisions through two case studies, Barry Bonds and Roger Clemens, and their claims to recognition in the Hall of Fame. My evaluation was done through a dialogue between three philosophers — Aristotle, John Stuart Mill, and Immanuel Kant. I really enjoyed the ethics class I took in PLS, and combining it with my passion for sports made the research process even more enjoyable.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Candice Park

- Major: Biological Sciences
- Minor: Anthropology
- Glynn Family Honors Program
- Advisers: Vania Smith-Oka and Mark Schurr

Analysis of Stable Isotopes and Socioeconomic Status of a New Delhi Population

I investigate whether differences in dietary patterns among populations of varying socioeconomic status can be captured by carbon and nitrogen isotopes of fingernails among residents of New Delhi. To accompany the collected fingernail samples, I distributed brief demographic questionnaires and 24-hour diet recall surveys to participants. I became interested in Indian culture after participating in the Kellogg Summer Internship Program and traveling to India for eight weeks with Child Family Health International. I wanted to combine my previous research experience in stable isotope analysis with my interest in food and nutrition in India.

Traveled to India with funding from the Undergraduate Research Opportunity Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Joseph Pennacchio

- Majors: Economics and Applied and Computational Mathematics and Statistics
- Glynn Family Honors Program
- Advisers: Danielle Schiavazzi and Marinho Bertanha

Analyzing Economic Applications with Sparse Regression

In my thesis, I analyzed the sparsity of different economic applications, including the effect of eminent domain and economic outcomes and constructing forecasts of GDP. Algorithms such as OMP and the Lasso were used to perform sparse variable selection. Ideally, all of the applications would be sparse, and only a few predictors would be needed to explain things, but that is only sometimes the case. I chose this topic because I am passionate about applications of math in the real world, especially economic ones. I enjoy economic and statistical analyses, and this project allowed me to combine the two seamlessly.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Nikolas Pervan

- Major: Physics
- Glynn Family Honors Program
- Adviser: Michael Hildreth

Chicane Based Energy Spectroscopy for Linear Colliders

My thesis investigates the feasibility of using a chicane based energy spectrometer in the linear colliders of the future. We are determining whether this method is more precise than the currently accepted methods. The experiment was run at a test facility in Japan. I have been working on this research with my adviser for several years. Having precise knowledge of the incident beam energy will be very important for some upcoming experiments in particle physics. A new, large linear collider is currently being planned and this system could be implemented there.

Received funding from the Glynn Family Honors Program.

Rosemary Pfaff

- Major: Neuroscience and Behavior
- Minor: Poverty Studies
- Glynn Family Honors Program
- Adviser: Jessica Payne

The Effects of Power Posing on Selective Emotional Memory Consolidation Under Stress

When presented with emotionally salient images, central objects will be better remembered at the expense of the surrounding background. This phenomenon is known as memory trade-off, an effect enhanced when cortisol is raised during memory consolidation. The recently popularized theory of "power posing" — inducing a neurochemical change through one's posture — suggests that "high-power" (expansive) poses can reduce neuronal cortisol levels, whereas "low-power" (contractive) poses will have the opposite effect. I chose this topic to further my lab's research on memory trade-off and test the recent pop-culture phenomenon of power posing.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Katherine Portman

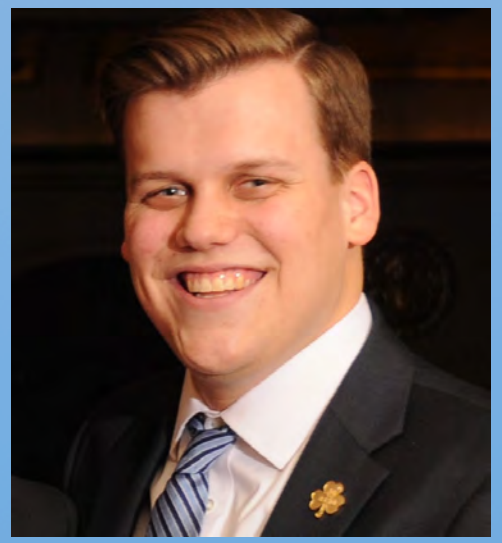
- Major: Anthropology
- Supplementary Major: Applied Computational Mathematics and Statistics
- Glynn Family Honors Program
- Adviser: Donna Glowacki

Water Management on the Mesa: Communal Resource Use in Park Mesa, Colorado

Many archaeologists have argued that water management reflects a society's sociopolitical structure. Typically, the more complex a society, the more complex its water management. I challenge that model by examining four reservoirs on Park Mesa in Mesa Verde National Park in southwest Colorado and the changes in their surrounding communities between AD 700–1200. I want to be an archaeologist, and I have recently become interested in how ancient peoples managed water. We all need water to live, and I think it is fascinating to compare how people develop and maintain different systems of water management based on their societal structure.

Traveled to Mesa Verde National Park, Colorado.

Glynn Family Honors Program — 2018 Senior Thesis Projects



Jack Puetz

- Major: Political Science
- Minors: Business Economics and Constitutional Studies
- Glynn Family Honors Program
- Adviser: Vincent Phillip Muñoz

Justice Scalia's Church-State Jurisprudence

In my thesis, I examine Antonin Scalia's free exercise and establishment clause jurisprudence by reading his written opinions, and I attempt to find a consistent theory to unite his church-state views. Scalia is, perhaps, my favorite U.S. Supreme Court justice, and I love reading his opinions. Supreme Court opinions can be dry at times, so it is nice to read someone as entertaining as Scalia.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Helena Qu

- Major: Science-Business
- Minor: Poverty Studies
- Glynn Family Honors Program
- Adviser: Ying (Alison) Cheng

Not Just Senioritis: Why Do Students Not Take AP Exams?

Half of the students enrolled in Advanced Placement classes do not sit for the AP exam at the end of the school year. My thesis analyzes the relationship between various demographic and student-engagement factors that might influence the decision to take the AP Statistics exam and student performance. As a Poverty Studies minor, I am intrigued by the opportunities a strong education can open for the most disadvantaged among us. I am also interested in identifying the factors that stop students from going one step further.

Natasha Reifenberg

- Major: Philosophy
- Minor: Sociology
- Glynn Family Honors Program
- Hesburgh-Yusko Scholar
- Kellogg International Scholar
- Advisers: Paul Weithman and Jocelyn Viterna (Harvard University)

Punishing Gender at the Street Level: Extending Theories of Gender Governance and Street-Level Bureaucracy to Explain Reproduction-Related Crimes in El Salvador

My thesis, a case study of reproduction-related crimes in El Salvador, seeks to refine certain aspects of feminist state theory. I also argue that street-level bureaucracy theory is well suited to provide a theoretical basis for real-life scenarios of gender regulation. Most feminist scholarship of the state conceptualizes it as embodied in abstract principles. By studying cases of women going to prison for "aggravated homicide" after suffering stillbirths, I started to see how institutional gender regimes exist not so much at a macro-political level, but at the micro- level. This thesis also dovetails nicely with the advocacy work I do on behalf of women incarcerated unjustly for reproduction-related crimes.

Traveled to El Salvador.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Stephanie Reuter

- Major: Program of Liberal Studies
- Minor: Theology
- Glynn Family Honors Program
- Adviser: Jennifer Newsome Martin

Apocalyptic Optics: Hans Urs von Balthasar and the Grotesque Fiction of Flannery O'Connor

I argue that O'Connor's fiction can be interpreted as a literary, dramatic performance of Balthasar's theological aesthetics, theo-drama, and theo-logic, on the grounds that both represent species of apocalyptic. Apocalyptic discloses hidden mystery through rhetorical strategies including hyperbole, violence, and visionary-sensory symbolism that shock the reader into a new way of seeing reality. O'Connor's stories are apocalyptic parables that dramatically reveal the presence of God, before whom none can remain neutral. I was interested in exploring how Balthasar's capacious Trinitarian, Christological aesthetics resonate with O'Connor's fiction, which is noted for its violence and grotesque figures and may seem disturbingly ugly at first glance.

Traveled to Emory University, Andalusia Farm, and Georgia College in Georgia. Received funding from the Glynn Family Honors Program and a Neus Family Senior Thesis Grant.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Megan Schomaker

- Major: Applied Computational Mathematics and Statistics
- Supplementary Major: Economics
- Minors: Actuarial Science and Studio Art
- Glynn Family Honors Program
- Adviser: Justin Barfield

Internal Conflict Series

My thesis is comprised of five abstracted paintings and an artist statement that describes my inspirations, influences, process, and methodology. The overarching theme is my internal conflict, with each painting focusing on a specific conflict. I explore the distinction between joy and happiness, the contrasting nature of internal and external self-perceptions, and the difficulty of accepting dependence. The arts at Notre Dame have been an especially formative part of my education. Art has always been a means of self-discovery and is instrumental in my personal growth. This thesis allowed me to capitalize on the self-knowledge art provides as I prepare for the next phase.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Tim Seida

- Major: Economics
- Minor: Philosophy, Politics, and Economics (PPE)
- Glynn Family Honors Program
- Adviser: Christiane Baumeister

Recovering Market Expectations from Futures Prices in the Copper Market

My thesis quantifies and extracts risk premia in copper futures prices and derives the corresponding market-price expectations, which are an integral component for macroeconomic forecasting. It conducts a forecasting horse race between existing econometric models in the literature to calculate the most accurate estimate of risk premia and therefore recover the implied price expectations. I expected to find my thesis topic by first coming up with a question and then a methodology to answer it. The reverse happened. I wanted to apply Professor Baumeister's analysis of the oil market to another commodity to build my programming skills and develop further quantitative research experience.

Glynn Family Honors Program — 2018 Senior Thesis Projects

David Shaw

- Majors: Physics and Mathematics
- Glynn Family Honors Program
- Adviser: Rebecca Surman

Fission and Reheating in Neutron Star Merger Nucleosynthesis

Stars form the elements up to iron via nuclear fusion. Heavier elements are created through other means, such as the rapid neutron-capture process, or r-process. This occurs after the merger of two neutron stars, which establishes ideal conditions for r-process nucleosynthesis. In my research, I have extended thermodynamic data from merger simulations and generated nuclear fission yield data for use in r-process nucleosynthesis calculations. Working with Professor Surman's research group on this project has been a wonderful opportunity. Our work attempts to answer the fascinating question of where the heavy elements originated. All of the elements around us came from somewhere in space long ago, and I enjoy contributing toward an understanding of those origins.

Received an Advisor's Research Grant from the Department of Energy.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Scot Stanulis

- Major: Biological Sciences
- Glynn Family Honors Program
- Adviser: Dominic Vachon

'Being With' — A Characterization of Therapeutic Presence and its Benefits Across Medical Specialties

Therapeutic presence, or "being with," is a concept that is perceived very differently across medical specialties. My paper explores the conception of therapeutic presence and seeks to define it in a way approachable to all clinicians, in hopes of fostering beneficial cross-specialty research and discussion. I will be attending medical school next fall and wanted to write my thesis on a topic that will benefit me as a physician. I had the fantastic opportunities to take a Compassionate Care in Medicine course and to serve as a hospice caregiver over the summer, both of which taught me the importance of therapeutic presence and left me with some important questions.

Julia Szromba

- Majors: Philosophy and Film, Television, and Theatre (FTT)
- Glynn Family Honors Program
- Hesburgh-Yusko Scholar
- Adviser: Olivier Morel

Calls From Home

Calls From Home is a documentary that follows the production of a weekly radio program in rural Kentucky that records and broadcasts messages from friends and loved ones of those incarcerated in nearby prisons, as a free, alternate means of communication. After creating a documentary last year about a man released on parole after nearly 40 years, I became interested in prison reform. I learned that phone calls out of prison are unregulated, meaning that they're often prohibitively expensive — one study found a prison charging $14 per minute. *Calls From Home* presents a free alternative, and I wanted to document their work.

Traveled to Whitesburg, Kentucky, with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

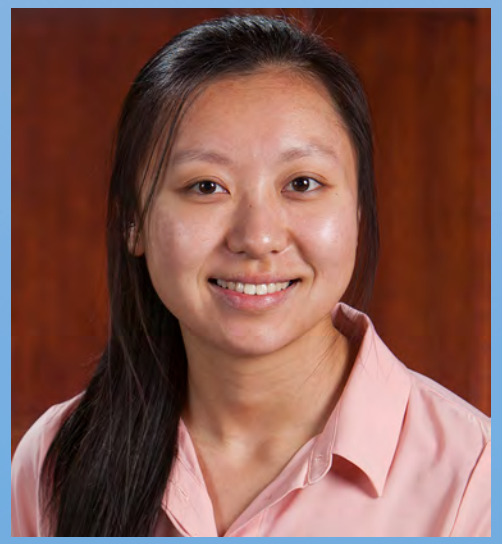
Joseph Tang

- Major: Music
- Supplementary Major: Arts and Letters Pre-Health
- Glynn Family Honors Program
- Adviser: John Liberatore

The Harmony in Us

For this interdisciplinary project, I wrote an original, multi-movement orchestral composition with musical themes derived from the organ systems of the human body. With a long-standing interest in musical composition, I hope to be able to reflect my interest in medicine via this unique pursuit.

Glynn Family Honors Program — 2018 Senior Thesis Projects



Leigh Anne Tang

- Major: Statistics
- Minor: Latino Studies
- Glynn Family Honors Program
- Adviser: Steven Buechler

Measuring the Organ Systems Impacted by Rare Gene Variants

The functions of many gene variants remain unknown. Unveiling these functions could facilitate the diagnosis of rare diseases in precision medicine. I linked diseases, phenotypes, and phenome-wide association studies results to organ systems impacted by rare gene variants. In patients with gene variants related to genes that cause Mendelian diseases, I expected to observe an enrichment of phenotypes in the organ systems affected by the diseases. While at Vanderbilt, I was fascinated by the Undiagnosed Diseases Network, a group of clinicians and researchers dedicated to diagnosing patients who suffer from rare diseases. This opportunity to contribute to UDN's research perfectly aligned with my interests. The constantly growing body of data makes this an exciting area of research.

Traveled to Vanderbilt University with funding from the Glynn Family Honors Program and the Center for Career Development.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Robert Teresi

- Major: Economics
- Glynn Family Honors Program
- Adviser: Illenin Kondo

Uncovering Heterogeneity in the Effects of Chinese Import Penetration

In my thesis, I build upon existing work analyzing the effects of Chinese imports on the American economy. I found that within a labor market, urban centers are systematically protected from the harmful economic effects of Chinese imports that their surrounding areas experience. I then attempted to discover the channels through which this phenomenon occurs. After initially being interested in papers exploring the effects of globalization and increased trade on the economy, I noticed a gap in research on how trade shocks changed economic equilibria within geographic labor markets, rather than just across them.

Yi Lok Tsang

- Majors: Philosophy and Economics
- Glynn Family Honors Program
- Adviser: Don Howard

The Design and Use of Artificial Moral Agents: A Virtue Ethics Approach

I examine the concept of artificial moral agents and the ultimate goals and consequences of creating such entities. I take virtue ethics, an agent-centered ethical theory, as an alternative model for artificial morality. My research focuses mainly on social robots, such as caregiving robots and companion robots. I am interested in the progress of artificial intelligence, the growing relationship between humans and artificial agents, and how the integration of moral machines in our society would change or enhance our moral and social capabilities.

Traveled to London with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Maria Vigil

- Major: Music Performance (Piano)
- Supplementary Major: Arts and Letters Pre-Health
- Glynn Family Honors Program
- Adviser: John Blacklow

Senior Recital

I presented a degree recital, consisting of works by Schumann, Schubert, Chopin, and Grieg. This, in conjunction with a recital I gave in April 2017, will be presented alongside extended program notes describing the selections and their composers. As a music major, performance is an integral part of my education. Creating a recital program that presents my technical ability combined with an understanding of the history surrounding the compositions is an apt culmination of my studies.

Emily Vincent

- Majors: Anthropology and Chinese
- Minor: Business Economics
- Glynn Family Honors Program
- Hesburgh-Yusko Scholar
- Adviser: Eric Haanstad

Power and Face: An Exploration of Foreign NGOs in China

My thesis is an anthropological evaluation of the evolution and current state of foreign non-governmental organizations in China involved with the welfare of abandoned children with disabilities. I chose this topic because I am interested in the trend of child abandonment in China, which I have been studying since high school. I'm interested in the intersection of international relations, cultural pressures, and historical precedent as they affect foreign NGOs that deal with vulnerable child populations in China.

Traveled to Beijing, China, with funding from the Flatley Center for Undergraduate Scholarly Engagement and the Hesburgh-Yusko Scholars Program.

Kelly Volk

- Major: Biochemistry
- Glynn Family Honors Program
- Adviser: Sharon Stack

An Exploration of Gene AMIGO2 and its Effect on Metastatically Robust Ovarian Cancer

Ovarian cancer, despite being the fifth leading cause of cancer deaths in American women, is commonly misdiagnosed and difficult to treat once found. Development of a simple, effective therapy would substantially improve the survival rate. This study explores a potential method for the stifling of robust ovarian cancer in vivo. Metastasis poses a great threat to the prognosis of cancer patients and is especially prevalent with ovarian cancer. The gene AMIGO2 is hypothesized to upregulate the metastatic competence of ovarian cancer cells; in order to quench these effects, the gene is silenced via siRNA and the metastatic capabilities of the cancer remeasured. Aside from this application, I am excited by the potential of gene silencing for the discovery of other cancer mechanisms. I hope this research can someday improve survival chances for cancer patients.

Received funding from the Glynn Family Honors Program and a Harper Cancer Research Institute Summer Fellowship.

Brigid Walsh

- Major: Neuroscience and Behavior
- Glynn Family Honors Program
- Adviser: Sarah Mustillo

The Types of Books Parents of Low SES Children in Chile are Reading to Their Children and Its Impact on Literacy Achievement

My thesis explores what types of texts parents of low socioeconomic status preschool children in Chile — specifically, those with the least access to books and teaching — read with their children. And, for the lowest access group, I look at what effect the type of text has on later achievement. Susana Mendive, my faculty adviser from la Católica in Chile, was able to share her research with me and help me explore a new topic in the realm of early literacy development.

Traveled to Santiago, Chile, with funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Rachel Warne

- Major: Program of Liberal Studies
- Minor: International Development Studies
- Glynn Family Honors Program
- Adviser: Michael Hoffman

Developing Effective and Inclusive Aid Programs: Outreach to Female Refugees

With 22.5 million refugees worldwide, limited resources require aid programming that is highly efficient and well targeted. Those most at-risk within their own communities are also most vulnerable to deficient aid and services. Female members of Arabic-speaking refugee communities are one such distinctly marginalized group. My thesis examines the hardships faced by these women and how aid organizations might work more efficiently and effectively. I completed interviews in Germany, Canada, and the United States through partnerships with local NGOs. Respondents emphasized the value of women-only spaces and the importance of considering the unique obstacles facing female refugees before and after they leave their home country.

Traveled to Eichstätt, Germany; Pittsburgh, Pennsylvania; and Saint Catharines, Ontario, Canada; with funding from the Kellogg Institute for International Studies.

Liz Wildenhain

- Majors: Philosophy and Physics
- Glynn Family Honors Program
- Adviser: Anjan Chakravartty

Firming Up the Foundations: Concretizing Structure in Epistemic Structural Realism

Structural realism is the view that scientific theories give true descriptions of only the structure of the unobservable world. Although some argue that an epistemic form of structural realism (ESR) is desirable, the popular Ramsey sentence version faces a potentially fatal challenge. I investigate whether incorporating "concrete structure" into ESR could produce a satisfactory version that dispenses with the Ramsey sentence approach. As an aspiring physicist, my motivation is to discover non-trivial features about how the world works. For this reason, I would like to be a scientific realist, and I feel I can only responsibly be one if there is a defensible version of scientific realism.

Glynn Family Honors Program — 2018 Senior Thesis Projects

Luke Wojtalik

- Majors: Philosophy and Mathematics (Honors)
- Glynn Family Honors Program
- Adviser: Timothy Bays

On Intensionality and Self-Reference in Gödel's Incompleteness Theorems

I evaluate two claims Gödel makes in a 1931 paper — first, that sufficiently strong theories cannot prove their own consistency, and second, that the so-called Gödel sentence states that it is unprovable. I consider various attempts to formalize the notions of expression of a property by a formula and self-reference. My tutor at Oxford suggested I work on self-reference in formal theories, and I found that the topic was relevant to a broad range of philosophically interesting questions.

Sadie Yates

- Major: Theology
- Minor: Teaching English to Speakers of Other Languages (TESOL)
- Glynn Family Honors Program
- Adviser: Timothy Matovina

La Virgen de la Candelaria: An Andean Case Study in Catholic Inculturation

My thesis explores inculturation — the idea in Catholicism that Christian doctrine must be explained and expressed in culturally appropriate ways. I performed a case study of the festival of La Virgen de la Candelaria that occurs each February in Puno, Peru, and identified successful realizations of and obstacles to full inculturation in this context. As a theology major and devout Catholic, I have always had an interest in Mary and in diverse cultural expressions of spirituality. Last summer, I taught English in Puno, Peru, and after learning about this festival and falling in love with Andean culture, I knew that this would be a meaningful project.

Traveled to Puno, Peru, with funding from the Glynn Family Honors Program.

Zofia Zdanowicz

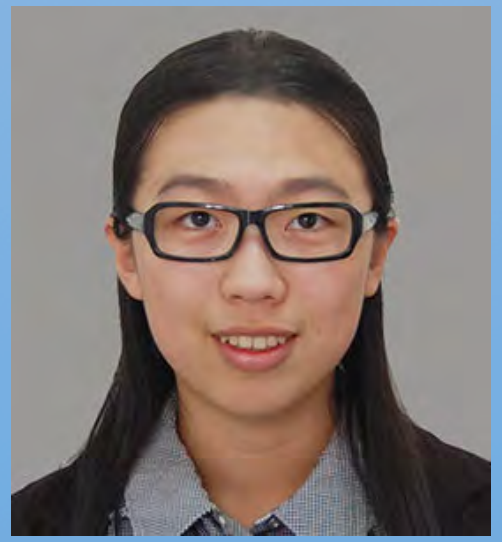
- Major: Neuroscience and Behavior
- Minor: Poverty Studies
- Glynn Family Honors Program
- Adviser: Nicole McNeil

Cognitive Math Deficits due to Socioeconomic Status

There is up to a two-year gap in mathematical knowledge between children from low and high socioeconomic statuses when entering kindergarten. My thesis examines the role of gesture in mathematical activities, as gesture has been suggested to be an indicator of formulating knowledge. Hopefully, my results can be applied to education settings in order to foster and encourage mathematical growth in children. I am a poverty studies minor and have been involved in community service in South Bend for years. As a neuroscience major, the cognitive component of development also fascinates me.

Received funding from the Glynn Family Honors Program.

Glynn Family Honors Program — 2018 Senior Thesis Projects



Yuchen Zou

- Major: Economics and Applied and Computational Mathematics and Statistics
- Glynn Family Honors Program
- Hesburgh-Yusko Scholar
- Adviser: Eric Sims

Quantitative Easing and Market Liquidity

My thesis quantifies the impact of the U.S. Federal Reserve's large-scale asset purchase programs (also known as QE1, QE2, and QE3) on market liquidity, identifies major channels, and evaluates the efficiency of the three waves of U.S. QE programs. I chose this topic because I am really interested in monetary policy. In the long term, I want to work in the field of macroeconomic research for think-tanks and central banks.