



UNIVERSITY OF  
NOTRE DAME

ARTS & LETTERS



# 2022

## SENIOR THESIS PROJECTS

Study everything. Do anything.<sup>SM</sup>



### *Greetings!*

I'm delighted to present this collection highlighting senior thesis projects completed by students in the College of Arts & Letters Class of 2022.

Within these pages, 280 seniors describe their 298 theses, capstones and creative projects. This package represents countless hours of original research, practice, analysis, interviews, writing, and creative work.

The projects detailed here are as interesting and diverse as the students who chose them. They include exploring the foundation for cluster algebras, writing a musical comedy, studying the role of faith in political participation, preserving an endangered language, and examining discrimination in the mortgage lending market.

During these endeavors, seniors have worked one-on-one with their advisors, who have provided valuable support, expertise and guidance. Many students also have benefited from generous grants that enabled them to travel, view archived manuscripts, purchase materials, and gain knowledge and cultural experiences. They have also demonstrated tremendous resiliency throughout the many challenges that COVID-19 has posed to their undergraduate careers — including the ways it forced many of them to reshape or recalibrate their projects.

Each year, seniors affirm that both the process and knowledge gained are invaluable, and often transformative.

I am proud of these seniors for pursuing their interests, making discoveries, and contributing to academic scholarship and the creative arts. I'm also extremely pleased that the percentage of Arts & Letters seniors completing theses, capstones, and creative projects has increased from 8% in 2008 to approximately 40% the last few years.

I hope that you enjoy learning about their projects as much as I have.

*Sarah A. Mustillo*

Sarah A. Mustillo

I.A. O'Shaughnessy Dean  
College of Arts & Letters

**Megan Allen**

- Majors: Business Analytics and Economics
- Advisor: Christopher Cronin

## Do IUDs Prevent Abortions?: Using the Colorado Family Planning Initiative to Analyze the Relationship Between Long-Acting Reversible Contraceptives and Abortions

Beginning in 2009, the Colorado Family Planning Initiative (CFPI) provided funding for Colorado Title X clinics to provide long-acting reversible contraceptives (like IUDs and implants) for free.

My project attempted to understand the relationship between the CFPI and abortions to determine if providing free, long-acting reversible contraceptives can be an effective policy step to reduce rates of abortion.

I knew going into the thesis process that I wanted to study something related to public health and policy. The CFPI jumped out because it seemed to be an effective policy that helped improve outcomes for women in Colorado.



### **Camila Antelo Iriarte**

- Majors: Political Science and Economics
- Minor: Computing and Digital Technologies
- Glynn Family Honors Program
- Hesburgh-Yusko Scholars Program
- Kellogg International Scholars Program
- Advisor: Scott Mainwaring

## **Explaining Party System Collapse in Bolivia, 2002-2005**

In order to explain the collapse of parties in Bolivia and the implications and lessons for parties not in power, I discussed the elements that motivated voters to abandon traditional parties and vote for outsider candidates and parties. Why did voters cease to identify with predominant parties? And why did leaders within the established parties not make strategic choices to preempt voter alienation, or to attract alienated voters?

There is extensive literature on party collapse and party system collapse, yet few of these works deal with Bolivia. Bolivia is an excellent case study because the three main parties from 1982 to 2002 (MNR, ADN, MIR) all collapsed within a short time in the 2000s.

In La Paz, Bolivia, I explored the literature and the streets of the country. I found amazing works of literature that I hadn't heard of before in various street stores, markets, and libraries. I got a deeper understanding of the culture, identity, and economy that influenced Bolivian politics. I also became more aware and knowledgeable of cultures in Bolivia and connected with my traditional practices.

*Traveled to La Paz, Bolivia, with funding from the Hesburgh-Yusko Scholars Program.*

**Jiarui Bai**

- Major: Economics
- Supplementary Major: Applied and Computational Mathematics and Statistics
- Advisor: Jing Wu

## The Effect of Passive Investment Strategies on Stock Comovement

Following inclusion in a major stock index, stocks tend to exhibit both abnormal returns and excess comovement with the relevant index. The increase in comovement has raised potential concerns for financial stability, since it may result in wider and accelerated propagation of return shocks across index members. I examined price comovement following index inclusions and investigated its correlation with passive investment.

Passive investment, which seeks to track and mirror a market index or portfolio through minimal trading, is an important financial innovation that offers a low-cost and efficient investment strategy. However, different from active investment strategies, index-linked investing ignores characteristics of individual companies, except those related to index-weighting methodologies, but makes trading decisions based on market environment or sentiment. Hence, despite the efficiency and cost advantage of passive investing strategies, I think it's interesting to analyze whether they will jeopardize financial stability.



### **Alix Basden**

- Major: International Economics (French)
- Minor: Hesburgh Program in Public Service
- Glynn Family Honors Program
- Kellogg International Scholars Program
- Advisor: Lakshmi Iyer

## **Health Outcomes and Corruption in Africa**

My thesis looked at the effects of transparency (as measured through access to information laws) on corruption and health outcomes in Africa. I used the Afrobarometer, a large-scale dataset that asks Africans about their perceptions of government, as my primary source.

My research in the Kellogg International Scholars Program exposed me to the Afrobarometer and all the possible directions it could go. I have always been excited about public health, so this was a great topic to explore.

*Received funding from the Glynn Family Honors Program.*





**Maria Jesus  
Bobenrieth Agurto**

- Major: Economics
- Supplementary Major: Asian Studies
- Advisors: Denise Della Rosa and Eva Dziadula

## Demographic Characteristics of Korean Immigrants in Japan

I contextualized Korean migration to Japan and described the age and gender of immigrant cohorts. Then, I analyzed why the South Korean immigration to Japan has diminished in the last 20 years. I have great interest in Korea and Japanese society. I had a class during my junior year that inspired me to investigate this topic.





### John Boland

- Major: Political Science
- Minors: Philosophy, Politics and Economics; and Classical Studies: Civilization
- Balfour-Hesburgh Scholars Program
- Advisor: Samuel Piccolo

## Potawatomi Relations with British and American Governance

My thesis examined the differences in British and American Indian policy from 1754 to 1838 and how various Potawatomi villages resisted removal. Potawatomi villages across the Old Northwest were removed to different areas at different times by the American government in the 1830s, with the Pokagon band successfully resisting removal altogether. This thesis hopes to better understand the reasons behind these disparities, and my research included traveling to the British Indian Department at The National Archives in Kew over fall break.

I became passionate about Native history, in particular the Potawatomi, after conducting research on their history with Notre Dame. I wanted to explore the nuances of Native American removal, and the Potawatomi provided excellent case studies for instances of Native resistance.

*Traveled to London, England, with funding from the Institute for Scholarship in the Liberal Arts.*



**Tyler Bove**

- Major: Economics
- Supplementary Major: Statistics
- Glynn Family Honors Program
- Advisor: Robert Collinson

## Racial Discrimination in the Mortgage Lending Market

Despite the presence of legal protections, many studies have found that implicit discrimination still influences decisions in the mortgage lending market. This paper quantifies the influence that race has on the likelihood of a loan application being rejected in 52 of the most populated counties in the United States. I examined if there is a differential impact on the likelihood of home ownership and having a mortgage for Black versus white heads of households based on variation in the estimated discrimination levels for these counties.

I chose this topic because it explores the interesting potential tradeoffs between predictive power and equitable lending. Many of the factors that lenders frequently use in their decision process may indirectly (or potentially directly) discriminate against minority applicants. This has major implications for building wealth and generational economic mobility.



### John Burke

- Majors: Program of Liberal Studies and Economics
- Minor: Classical Studies: Civilization
- Advisor: Kirk Doran

## The Ends of Economics

My research delves into the development of decision theory, the history of utility maximization, and especially the contributions of Gary Becker and George Stigler, inventors of human capital theory. The goal of my thesis was to discover how economics moved from a discipline primarily focused on the economy and the market to a discipline whose essential characteristic is the study of scarce resources.

During my first year of college, someone asked me what it meant to study economics. Though in a broad sense, I knew that to study economics was to study the allocation of scarce resources and how people interact with market forces, I could not figure out what it meant more concretely. I wrote this thesis in an attempt to answer that question.

**Matthew Carranza**

- Majors: Economics and Political Science
- Certificate in International Security Studies
- Advisor: Dan Lindley

**International Law and the Arctic Region**

I analyzed the legitimacy of international law in settling maritime disputes between states in order to predict the role that it will play in settling Russia's claims to the Arctic region. I focused on the realist and liberal theories of international relations to analyze previous cases and the current conditions in the Arctic.

I chose this topic because academic literature is divided on whether international law can peacefully settle disputes between states. Realists argue there are outside factors that influence states' actions, while liberals argue that international law has legitimate authority. This split interested me, and I wanted to investigate further.

**Elizabeth Chen**

- Major: Economics
- Minors: Accountancy and Data Science
- Advisor: Maciej Kotowski

## How Do Objectives on Disease Transmission or Mortality Impact Vaccine Prioritization Strategies?

I built theoretical models that describe the transmission of disease within the simulated population in simple structures and analyzed how different parameters such as age groups and mortality can impact the ultimate transmission severity. These models can show us different results that we can achieve by prioritizing vaccination for one group rather than the other if we focus on controlling either mortality rates or contact rates.

During the course of COVID-19, different countries have distributed vaccines based on different age priorities. The United States prioritized elders in Phase 1b, yet China pushed this age group to the end. I was curious how effective the vaccine prioritizations were in achieving different objectives and whether they can contribute to long-term effects.



### Jihan Chen

- Majors: Program of Liberal Studies and Economics
- Advisor: Gretchen Reydam-Schils

## The Myth of Er: An Apology of Poetry

My thesis project aimed to answer the question: Why does Plato use the myth of Er as an ending to the *Republic*? Through this question, I explored how the myth of Er relates to the greater project of the *Republic* and, ultimately, to understand the relationship between poetry and philosophy in Plato's dialogues.

I'm fascinated by Plato's poetic language and his use of myths in his largely philosophical dialogues. This topic helped me to think about the intimate relationship between philosophy and literature.



**Grace Condon**

- Major: Economics
- Supplementary Major: Chinese
- Advisor: Eva Dziadula

## In-State Tuition Policies for Undocumented Immigrants

My thesis analyzed state-level policies that extend access to in-state tuition at public colleges and universities to undocumented immigrants. Since 2001, 20 states have passed legislation offering undocumented students with specific residency requirements access to college tuition subsidies.

My research used a difference-in-difference approach exploiting temporal and state variation in the implementation of these policies and found these policies significantly impact college enrollment of likely undocumented immigrants. Last year, I had an internship at a legal advocacy organization and worked on a team focused on immigration policies. This work sparked my interest in state-level policies that aim to improve outcomes for undocumented immigrants.



**Kate Connolly**

- Majors: International Economics (Russian) and Political Science
- Minors: Computing and Digital Technologies and European Studies
- Advisor: Forrest Spence

## Impact of the 2014 Amendment of Federal Law No. 115-FZ on Russian Migration

I did an economic analysis of the impact of a 2014 migration policy change on Russian immigration numbers, specifically on the Commonwealth of Independent States, to see if the policy was effective in bringing in more economic migrants into the Russian Federation.

I am passionate about migration topics and find Russia's approach to migrant policymaking and control to be unique. I believe that understanding how migration policy functions can allow governments to improve policy and allow for more humane management of migrant flows.

**Kate Connolly**

- Majors: International Economics (Russian) and Political Science
- Minors: Computing and Digital Technologies and European Studies
- Advisor: James McAdams

**The Constitution as an Authoritarian Tool: Orbán and Hungary**

This was a case study of Viktor Orbán's rise to power in Hungary and how he evolved as an authoritarian leader. I identified key characteristics that he exhibits as a leader, and how these characteristics are reflected through his interactions over time with the Hungarian constitution.

I believe that populism and democratic backslides are the biggest threats to international peace. Understanding how authoritarian leaders come to power and how they gain influence is growing even more relevant, and I believe that analyzing Orbán's rise to power can contribute to understanding the populist phenomenon.

**Matthew Cotner**

- Majors: Political Science and Economics
- Minor: History
- Advisor: Brian Fogarty

## How Partisanship Affects School Funding in Indiana

Public K-12 schools receive much of their funding at the local level, making local referendums an important factor in their overall funding. It is unclear how much partisanship can affect these local referendums. To examine these relationships, I used data on Indiana school referendums, presidential vote choice, and the U.S. Census data from November 2008 to May 2019.

My father is a high school teacher, so education issues are important to me. Indiana is my home state, and I know how valuable referendums can be to communities and school quality, so I wanted to analyze what factors play a significant role in their results.



**Chandler James  
Cunningham**

- Major: International Economics (Chinese)
- Advisor: Forrest Spence

## Singaporean Foreign Domestic Worker Laws and the Female Labor Supply

In 1978, the Singaporean government introduced changes to allow foreign domestic workers (FDW) to obtain visas, with a stated goal to increase the labor force participation rate of female citizens by removing barriers to entry into the workforce. This paper analyzed the effect of this policy change, highlighting how FDWs have impacted labor force, marriage, and fertility decisions for working women in a society in which one in five households today has a helper at home.

Growing up in Singapore, I found myself surprised by the widespread normalization and the quiet inequalities of domestic help in a country that strives for egalitarianism amongst its citizenry. The consensus argued that working women benefit from FDWs. But a dearth of econometric research exists, which provided the impetus for this project.



### Samuel Delmer

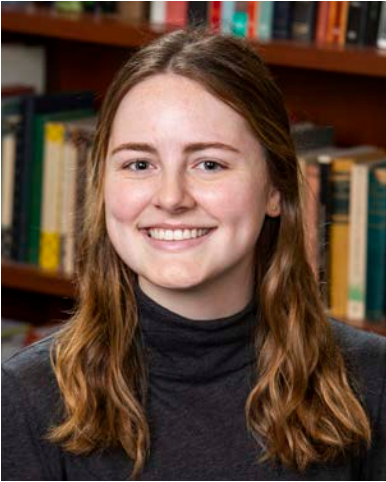
- Majors: Economics and Philosophy
- Minors: Constitutional Studies and Theology
- Glynn Family Honors Program
- Brennan Family Scholar
- Advisor: Michael Pries

## Financial Economics

I explored how a stock's inclusion in the S&P 500 affects its correlation with the market, specifically within the context of the rise of passive investing. Thus, I limited my scope to only those companies from 2000 to 2020 to find trends in their market betas which allow me to reach some conclusion about an index effect in market correlation.

I chose this topic because of my interest in financial economics, which has led me to take several classes on the subject. Thus, when thinking about a thesis idea, I looked at interesting developments over the past 20 years in this field and decided to examine the rise of passive investing.





### Josie Donlon

- Major: International Economics (Spanish; Concentration in Financial Economics and Econometrics)
- Minors: Brazilian and Portuguese Studies
- Advisor: Zachary Stangebye

## The Impact of COVID-19 on Borrowing Costs for Latin American Governments

My thesis looked at the impact of the COVID-19 pandemic on borrowing costs for Latin American governments, as measured by sovereign bond spreads. I used Google Mobility data to proxy for how hard a country was hit by the pandemic and investigated the relationship between COVID-19 and bond yields.

This topic allowed me to use my background in financial economics to investigate how the pandemic has affected bond markets in Latin America, a region of interest for me because of my studies in Spanish and Portuguese.





**Kyle Dorshorst**

- Majors: International Economics (French) and Political Science
- Minor: Constitutional Studies
- Glynn Family Honors Program
- Advisors: Mary Flannery and Denise Della Rossa

## A Comparative Analysis of the French and American Approaches to Competition Policy in the Digital Economy

I compared the approach that France's competition authority has taken to regulate the digital economy to that of antitrust agencies in the United States. In general, the European Union and its member countries like France have brought a greater number of successful cases against Big Tech firms for violating competition rules, while the United States has a lot of political rhetoric regarding the impact of these companies but with comparatively fewer results. I focused on one case, in which France successfully fined Google for abusing its dominance in the digital advertising market.

I chose this topic after researching the role that Facebook played in allowing the French gilets jaunes (Yellow Vests) protests to spread. I did that as part of the Civility in Discourse project with the Nanovic Institute for European Studies and the Dublin Global Gateway during last year's Winter Session. Through this, I discovered how European nations have started to take the lead on grappling with the societal and economic effects that American Big Tech companies have caused around the world.

*Received funding from the Nanovic Institute for European Studies.*



### Kyle Dorshorst

- Majors: International Economics (French) and Political Science
- Minor: Constitutional Studies
- Glynn Family Honors Program
- Advisor: Mary Flannery

## Taming 'MAAMA': The Role of Competition Policy in the Digital Economy

For my thesis, I extended my earlier research to look more deeply into the ways in which the changing structure of the digital economy has affected competition policy/antitrust enforcement. Big Tech firms like Facebook and Google operate quite differently from more conventional companies, since they don't charge their users a fee to use their main services (eg. social media and search). This makes it difficult for competition authorities to use traditional measures based on price to successfully bring antitrust cases against them. Various efforts are underway to address this —from new laws to a reevaluation of the standard approaches, yet the best path forward is still up for debate.

After taking a class on competition policy the summer after my freshman year, I have been increasingly interested in the intersection between economics and the law. At the same time, developments surrounding Big Tech regulation have been consistently in the news during the past few years. This topic seemed like an ideal way to combine my academic interests with an issue of emerging scholarship and current significance.

While the pandemic limited my ability to travel abroad for research, it also influenced my choice of a digitally focused topic. Big Tech firms gained increased economic and social relevance as our lives moved online during lockdowns and social distancing, which had its own benefits and drawbacks. This shift toward the increasing digitalization of our daily lives was already underway, but the pandemic accelerated the trend and its effects are likely here to stay.

*Received funding from the Nanovic Institute for European Studies.*

**Matthew Eaton**

- Majors: Political Science and Economics
- Advisor: Sebastian Rosato

## Evaluating the 'Nuclear Revolution': Why Nuclear Weapons Don't Explain the Peace Between Nuclear Powers

My thesis explored why states possessing nuclear weapons have not gone to war with one another. It is widely accepted that the nuclear peace is a byproduct of a nuclear revolution, which refers to how the massive destructive power of nuclear weapons has fundamentally changed the landscape of international politics. I challenged the explanatory power of different theories of the nuclear revolution and presented an alternative explanation for the nuclear peace.

I have been fascinated by the scholarship around nuclear weapons since I was first exposed to it as a sophomore. I chose this topic so I could further explore the impact nuclear weapons have had on international relations and gain a better understanding of the role they play in today's world.



**Fouad El Zoghbi**

- Major: International Economics
- Advisor: Forrest Spence

## The Effect of the Slave Trade on Modern-Day Levels of Trust

I estimated the effect of the transatlantic slave trade on modern-day levels of trust in Brazil and Argentina. I used data from the seventh wave of World Values Survey (conducted between 2017 and 2020) to obtain different measures to construct a trust variable in Brazil and Argentina. I also used data from SlaveVoyages to get figures associated with the slave trade in Brazil and Argentina. Interpersonal, institutional, and political trust/mistrust have been shown to have significant impacts on economic performance and growth, and is therefore an important variable to study in the field of economics.

**Samuel Fallon**

- Majors: Science Pre-Professional Studies and Economics
- Glynn Family Honors Program
- Advisor: Ethan Lieber

## The Affordable Care Act's Effect on Shingles Vaccine Utilization

The Affordable Care Act mandated that private insurers cover certain preventive health care services with zero cost-sharing, meaning no copays or coinsurance.

My project sought to determine whether this mandate achieved its goal of increasing utilization of important services, focusing specifically on the shingles vaccine to gain insight into the mandate's impact.

I am very interested in public health policy, especially at the intersection between my pre-medical studies and economics majors. I thought exploring this question would be a great opportunity to learn about health policy and strategies to evaluate policy outcomes, especially regarding a significant aspect of a major health care reform law.



### Catherine Fitzpatrick

- Major: International Economics (German)
- Supplementary Major: Applied and Computational Mathematics and Statistics
- Minor: History
- Advisor: Forrest Spence

## The Effect of the 2016 Gender Quota on Female University Enrollment in Germany

In 2015, Germany passed the "Frauenquote," which required 30% female representation on supervisory seats as of 2016. This applied to boardrooms of publicly listed companies that have a 50/50 co-determined supervisory board. The effects of this policy on female human capital decisions was examined using a difference-in-differences empirical strategy. Specifically, women's enrollment to business schools was compared to men's before and after the implementation of the policy. I chose this topic because gender quotas and policies to enforce diversity are controversial and there is a lack of evidence of the effects of such policies.





### Vitor Furtado Farias

- Majors: Mathematics and Economics (Honors)
- Advisor: Christiane Baumeister

## Explaining Economic Fluctuations in Brazil with a Weekly Index

This thesis introduced an innovative economic condition index to measure the state of the Brazilian economy on a weekly basis. It uses a dynamic factor model, exploiting information in a broad range of economic indicators at weekly, monthly, and quarterly frequencies. I used this index to identify the individual contribution of different economic sectors in three recent periods of economic turmoil. I also examined the index forecasting performance on the Brazilian GDP.

Since the start of the pandemic, weekly indicators measuring macroeconomic conditions have been developed for countries around the world, which allows researchers to investigate economic developments that happened in these turbulent years. I saw this thesis as an exciting opportunity to bring this concept to my country and to contribute to the study of recent periods of fast-evolving conditions using a modern approach.

*Received funding from an Undergraduate Research Opportunity Program's Summer Comprehensive Grant.*

**Patrick Gallagher**

- Majors: English and Economics
- Advisor: Kate Marshall

**Madness, Isolation, and the History of the Novel in *Don Quixote***

My project centered around *Don Quixote* by Miguel de Cervantes. This text unabashedly parodies the courtly romance/adventure books that were popular in the 17th century and follows the story of Don Quixote — a Spanish nobleman who becomes mentally ill after reading too many chivalric texts. My specific interest lies with Quixote's mental illness; I am curious about how isolation is related to this character's deteriorating mental state.

The idea for my proposal stems from a past unpleasant experience in my life. Last March, I caught COVID-19 and was isolated for two weeks. The lack of socialization definitely took its toll on my mental health and affected my interpretation of madness in *Don Quixote*.

**Roshni Goela**

- Major: Economics
- Minors: Digital Marketing and Education, Schooling, and Society
- Advisor: Andrea Christensen

## Teacher Methodology and Aesthetic Involvement: A Study of Elementary Schoolchildren's Reader Responses to Multicultural Literature

I was interested in learning about the implementation of multicultural literature in the classroom and best practices associated with it. The demographic landscape of classrooms in the United States is continually changing. The curriculum, however, does not seem to be keeping up with the majority-minority student body, which leads to disengagement and exclusion of students.

Even when measures of inclusion, such as multicultural literature, are brought up, implementation and execution seem to be a problem. This can be attributed to teaching methodology and approach to this newer, different content, as teachers have been found to have effects on student social, academic, and overall development.

Certain methods have benefited students' learning, assessed through aesthetic involvement more than others. These effects are studied through elementary schoolchildren's reader responses to multicultural literature under different teaching methods, teacher interviews, and classroom observations. A more learner-based style was found to push students further along their aesthetic involvement journey, while a learner-based style mixed in with teacher-oriented strategies also showed students well-progressed in the journey, but to a lesser extent than the former.



### Campbell Goff

- Majors: Mathematics and Economics
- Glynn Family Honors Program
- Advisor: Jeffrey Diller

## Convexity, Brouwer's Fixed-Point Theorem, and Some Applications

In my thesis, I engaged with the topic of convexity. I specifically looked at and proved Brouwer's Fixed-Point Theorem. From there, I used the theorem in a few different and interesting ways. One of the most interesting is the Perron-Frobenius Theorem, which was integral to the first algorithm that Google used to rank search results.

I began reading about different topics that I could write about during the second semester of junior year. I was drawn to Brouwer's Fixed-Point Theorem because of an interesting analogy to the real world: In a shaken water bottle, one molecule will end up exactly where it started.



### Liam Hollen

- Majors: History and Economics
- Minor: Chinese
- Advisor: Patrick Griffin

## The Glorious Revolution in Virginia

The late 17th to early 18th centuries was a critical period for determining the makeup of Virginia, which has had a pivotal impact on the course of American history. For my history thesis, I used Virginia's reaction to the Glorious Revolution in 1688–89 to reveal the conditions and trends of Virginia and its relationship with England during this period. I traveled to England and Williamsburg, Virginia to conduct archival research.

I chose the topic since I am from Virginia and have an interest in early colonial formation and English political philosophy.

*Traveled to England and Williamsburg, Virginia, with funding from the Institute for Scholarship in the Liberal Arts and the Nanovic Institute for European Studies.*

**Juliette Kelley**

- Major: Economics
- Supplementary Major: Applied Computational Mathematics and Statistics
- Minor: Computing and Digital Technologies
- Kellogg International Scholars Program
- Advisor: Michael Pries

## ESG Investing & Returns on Investment

In my thesis, I sought to answer whether a change in Environmental, Social, and Governance (ESG) score impacts the return on investment (i.e., cost of capital) that investors can expect.

I conducted a study in which the date on which the ESG score changes is an “event,” and examined how the abnormal returns of a stock do or do not change after the event to determine whether the change in ESG score affects these abnormal returns.

I’m interested in the effect that ESG investing has on companies and their stocks. If having a higher ESG score is good for a company, this could motivate companies to have better practices. That could have further implications not only for established businesses but also when considering sustainable development and investing in developing countries.



### **Brian Kelly**

- Major: Economics
- Supplementary Major: Applied and Computational Mathematics and Statistics
- Glynn Family Honors Program
- Advisor: Jeffrey Campbell

## **Central Bank Digital Currencies**

My thesis evaluated the necessity for and the consequences of launching a central bank digital currency (CBDC) in the United States. I discussed three recent trends in how Americans use money and how those trends are changing the American financial system. I considered which trends might warrant the launch of a CBDC in response. To conclude, I analyzed some general repercussions of introducing a CBDC into the American economy.

I developed an interest in central bank digital currencies while taking a class on monetary policy during my junior year. Convinced of CBDCs' potential to transform the way we'll spend money in the near future, I was inspired to further explore the topic.







### Genevieve Klein

- Major: International Economics (French)
- Supplementary Major: Global Affairs
- Minor: Data Science
- Advisors: Denise Della Rossa and John Firth

## Violence and Health Care in the Democratic Republic of Congo

My senior research project analyzed the relationship between conflict and health outcomes in the Democratic Republic of Congo following economic sanctions enacted by the United States to prohibit sourcing tin, tantalum, and tungsten for electronic manufacturing. In addition to heightened violence and decreased household incomes posing as barriers to the uptake of health services, the eastern Congo remains fraught with sexual violence against women and male-dominated gender dynamics that decrease the demand for health care services.

Over the summer, I interned with USAID's Integrated Health Program in the Democratic Republic of Congo. I was tasked with identifying the program's greatest successes, using data analytics on its key indicators. Despite the efforts of USAID interventions, there was little uptake. Therefore, I was curious to explore the underlying cultural and social dynamics that could influence the demand for health care.



### Alexander Kuptel

- Majors: Economics and Philosophy
- Minor: Data Science
- Sorin Scholar
- Advisor: Jeroen Dalderop

## Critical Slowing Down in Technology Adoption

Some technologies, including those needed to mitigate climate change, seem to explode in popularity after reaching a tipping point. And creating policies to target those tipping points would rapidly reduce the costs of green technologies and reduce emissions. To do this, we need to predict when a tipping point is near. In other fields like physics and Earth science, tipping points are predicted with “critical slowing down.”

As a system approaches a tipping point, its recovery rates to small shocks slow because the factors that keep the system in that equilibrium are being weakened. So, critical slowing down serves as an “early warning signal” of a tipping point. However, this model has not widely been applied in the social sciences, especially technology studies. My thesis was the first paper to statistically analyze whether critical slowing down precedes growth in technology adoption, especially in green technologies like electric vehicles and renewable energy.

I liked that this project was an interdisciplinary topic that applied a model from the physical sciences to a social phenomenon. I also liked that it had real consequences on climate change mitigation. If this method could predict tipping points in technology adoption, we could time those policies to bring green technologies over those tipping points and decrease their costs.

**Mia Lecinski**

- Majors: Philosophy and Economics
- Minors: Collaborative Innovation and Italian
- Advisor: Meghan Sullivan

## A Friendship Philosophy Following the COVID-19 Pandemic

My thesis described how we can discover philosophical truths through our friendships with others. I began by exploring ancient friendship philosophies outlined by Aristotle and Confucius and proceeded by building off the works of Edith Stein and Albert Camus. I coined my model of friendship as “existential friendship.”

Unlike how we typically conceive of friendships, an existential friendship doesn’t require similarity or familiarity; it can occur between two complete strangers. I argue this type of friendship occurs when we employ empathy and experience ourselves in community with another person. This bond is existential because the interaction makes us aware of what it means to be human. For this reason, existential friendship requires bonding with all kinds of different people so that we may gain knowledge of all of ourselves.

I chose this topic because my God and the Good Life course freshman year emphasized how philosophy is a deeply practical discipline, and should inform how we live. During lockdown in March 2020, I found myself missing strangers more than my closest friends.

In order to understand this phenomenon, I turned to philosophical works. As a result, I have learned why strangers are so important to my conception of self and my philosophy of friendship. My hope is that my thesis also demonstrates for others how a more inclusive friendship philosophy has major sociopolitical implications for a society recovering from a pandemic.



### Andrew Lege

- Major: Economics
- Supplementary Majors: Applied Computational Mathematics and Statistics; Theology
- Advisor: William Evans

## The Impact of Medicaid Expansion on Hospital Bed Count

As a result of the passage of the Affordable Care Act (ACA), all but 12 states have expanded their Medicaid programs. Much of the literature examining the impacts of the ACA have focused on the impact of Medicaid expansion on health outcomes, health care usage, and insurance coverage rates.

In this paper, I exploited the variation across states in Medicaid expansion decisions to examine the impact of higher insurance coverage rates on hospital beds per capita. Hospitals have historically charged off billions of dollars annually in unreimbursed care due to uninsurance. Many predicted that the Medicaid expansions may strengthen a hospital's financial viability, reduce hospital closures, and increase expected access to inpatient services. Comparing per capita bed counts of expansion and nonexpansion states, I found that Medicaid expansion has had little to no effect on hospital beds in the United States, which suggests that the ACA has not drastically impacted access to hospitals or hospitals' financial wellness.

I am pursuing a career in health care administration, so I knew I wanted to examine something at the intersection of health and economics. Medicaid expansions have been controversial and limited research has been done on how it affected hospitals in the United States. I found this topic to be relevant to both my upcoming career and my understanding of how health policies can affect providers of health care.

**Amelia Love**

- Majors: Program of Liberal Studies and Economics
- Advisor: Thomas Stapleford

## Christian Ecology

My thesis explored how different interpretations of Christianity impact the way humans interact with the environment. I traced Lynn White's argument that historically people have interpreted Christianity as an anthropocentric religion: one that prioritizes humanity over all other living beings. White argues that this interpretation has contributed to climate change.

I then explored how Pope Francis' understanding of Catholicism in *Laudato Si'* has the potential to fight against climate change. I chose this topic because I was interested in learning more about sustainability and climate change. As I began researching, I realized how important it was to explore how religious beliefs shape how humans view themselves and their place in the world around them.

**Trevor Lwere**

- Major: Economics
- Supplementary Major: Global Affairs
- Minor: Philosophy, Politics, and Economics (PPE)
- Glynn Family Honors Program
- Hesburgh-Yusko Scholars Program
- Kellogg International Scholars Program
- Advisor: Amitava Dutt

## Growth and/or Development: Africa's Experience with Modernity

Africa's post-independence leaders have been preoccupied with the question of (economic) development, i.e., how to transform Africa into a prosperous continent and to significantly improve the material well-being of Africans. Yet, despite all the earnest effort undertaken, development has seemingly eluded Africa.

This paper analyzed two cases of attempts at modernization in Africa: the Ujamaa experiment in Tanzania and the neoliberal experiment in Uganda. The study examined reasons for the failure of these efforts and explored alternative paths to development for the next generation of African leaders to consider.

*Received funding from the Glynn Family Honors Program.*

**Julia Mackey**

- Majors: Economics and Global Affairs
- Brennan Family Scholars Program
- Glynn Family Honors Program
- Advisor: Kraig Beyerlein

## Black Lives Matter and Protest Behavior

Based on a survey of adults in the United States conducted in summer 2020, I examined the ways in which religious Black Lives Matter supporters relate to prayer and protest as means of social involvement. More specifically, are prayer and protest viewed by religious BLM supporters as substitutes — in which each activity takes the place of another — and supporters will choose prayer or protest as means of social action? Or are they complementary — in which supporters perform both activities (prayer and protest) concurrently? I also measured whether other factors, such as religious affiliation and frequency of prayer reported, are related.

I chose this topic because I am interested in understanding the factors that motivate people to mobilize. As a supporter of Black Lives Matter, I wanted to explore what gets people out on the streets to protest.



**Andrew Mariados**

- Majors: Finance and Economics
- Advisor: Jeffrey Campbell

## The Exposure of Real Estate Equity to Monetary Policy Risk

This paper aimed to answer the question of how exposed real estate is to monetary policy risk. I find that the real estate market is relatively unaffected by Federal Reserve communications over the medium run, but that in the short run monetary policy surprises affect real estate prices more than the capital asset pricing model would suggest given the risk exposure of real estate to the overall market.

I chose this topic because I was curious about how monetary policy affects real estate, which is a broad asset class. Although I focused on real estate equities due to the liquid nature of the securities, I thought that this question would be of interest to anyone involved in the real estate market — from homebuyers to commercial entities.





### Michael Marino

- Majors: Environmental Sciences and Economics
- Minor: Theology
- Advisor: Joseph Kaboski

## Agricultural Soil Quality Impacts of Conservation Incentives Provided through the USDA's Environmental Quality Incentives Program

In 2020, the U.S. Department of Agriculture's Environmental Quality Incentives Program (EQIP) provided more than \$1.8 billion in technical and financial assistance to farmers in the United States to implement conservation practices expected to generate public environmental benefits, including cleaner runoff and healthier soils. This project attempted to assess, at both national and intrastate scales, the soil quality impacts of certain EQIP practices expected to improve soil quality. Specifically, soil organic carbon contents are monitored in relation to conservation practices.

U.S. agricultural soils are clearly headed on an unsustainable path of degradation that leads to negative environmental outcomes and creates new challenges for farmers. Many agroecological solutions have succeeded in addressing this issue on a small scale. But large-scale change requires large-scale solutions such as those already offered by the USDA through EQIP and similar programs.

A critical question requiring further research is whether sustainable farm management can be profitable and productive. Environmental sciences and economics offer exciting potential to validate the management changes that seem so urgently necessary for the nation's dying soils.

**Michael McElroy**

- Major: Economics
- Supplementary Major: Applied and Computational Mathematics and Statistics
- Minor: Theology
- Glynn Family Honors Program
- Advisor: Eric Sims

## An Evaluation of Average Inflation Targeting in a New Keynesian Model

To test the hypothesis that average inflation targeting yields better macroeconomic outcomes relative to a fixed symmetric policy rule, I used MATLAB (a programming and numeric computing platform that can analyze data, develop algorithms, and create models) to simulate the response of inflation to economic shocks under backward-looking, forward-looking, and hybrid policy rules. I measured the relative performance of each policy rule under a fixed set of parameters, then adjusted parameters individually to evaluate the robustness of the inflation response under each rule.

I chose to study this topic because I was curious about the potential implications of the Federal Reserve's adoption of average inflation targeting (AIT) in August 2020. AIT is a relatively novel and unexplored area of monetary policy research and needs more macroeconomic research for future policy discussions.

**Brigid Meisenbacher**

- Major: Economics
- Supplementary Major: Mathematics
- Minor: German
- Glynn Family Honors Program
- Advisor: Kirk Doran

## The Impact of Immigration Enforcement on the Economic Resources of Unauthorized Immigrants

I estimated how increased immigration enforcement has impacted the public benefits usage of unauthorized immigrant households in the last decade to further investigate the relationship between enforcement and take-up. I am interested particularly in public benefits addressing food insecurity, health care, and financial insecurity.

I used empirical methods that combine the likely unauthorized status with state-level immigration enforcement activity to determine if variation in enforcement leads to variation in benefits usage for these households. Research on households with unauthorized immigrant parents indicates that children of these households are vulnerable to several risk factors associated with their parents' unauthorized status. Additionally, national immigrant enforcement policy has faced many reforms in the last decade that provide a natural context for further exploration into public benefits and immigration.

**Greg Miller**

- Major: Applied and Computational Mathematics and Statistics (ACMS) and Economics
- Minors: Hesburgh Program in Public Service and Constitutional Studies
- Advisor: Rob Collinson

## Rent Stabilization and Tenant Welfare in Manufactured Housing Communities: Evidence from California

While significant research attention has focused on rent stabilization in site-built housing and apartments, there is a lack of evidence on the unique role of rent stabilization in manufactured housing parks (MHPs). These ordinances stabilize the rent of the land underneath the housing and not the housing itself, an important distinction from traditional measures levied on apartment complexes, as most MHP residents own the commercial coach that rests on the land.

Using heterogeneous differences in rent stabilization policies in MHPs across California, this paper was an effort to fill the gap in literature. It may be the first paper to analyze the welfare implications of MHP rent stabilization ordinances.

Manufactured housing is the largest source of unsubsidized affordable housing in the United States as it boasts half the costs per square footage as conventional alternatives. MHPs accommodate more than 17 million people in the United States. Hedge funds across America have found opportunity, saying tenants are like “Waffle House customers tied to their booth.” In our housing crisis, manufactured housing may be an avenue to homeownership and intergenerational wealth for low-income Americans but only if it’s stable and not exploitative.



### Ana Miravete

- Majors: Economics and Russian
- Minor: Computing & Digital Technologies
- Glynn Family Honors Program
- Advisor: Jeffrey Campbell

## Predicting Cybersecurity Attacks and the U.S. Response to Cyber Threats

My thesis looked at cyber attacks from the past 20 years that exceeded more than \$1 million. I analyzed the Department of Defense's spending on cybersecurity since the 2000s and analyzed if there is a way to predict cyber attacks on the United States and around the world.

I chose the topic because of my interest in cybersecurity. I learned about its importance at my job as a digital forensics analyst with Notre Dame's Cyber Crimes Unit. Working as a cyber incident response associate during the summer, I was exposed to the detrimental effects of cyber attacks and I wanted to further explore if there were trends as to why specific targets were chosen.

**Margaret (Adair) Molinsky**

- Major: Economics
- Supplementary Major: Spanish
- Minor: Hesburgh Program
- Advisor: Timothy Dunne

## Establishment Size and Intergenerational Entrepreneurship

In my thesis, I used data from the U.S. Census Bureau and County Business Patterns to test the relationship between the size distribution of establishments in 1980 and entrepreneurial activity in the period 2012 to 2016 at the county level. The motivation for this analysis was a 1961 paper by economist Benjamin Chinitz. I tested his claim that the propensity to become an entrepreneur is passed on from parent to child.

I chose this topic because I am interested in economic topics related to competitive markets and innovation, and I see entrepreneurs as central to both of these areas. For this reason, I wanted to study possible determinants of entrepreneurship.

**Tess Monahan**

- Major: Economics (Honors)
- Supplementary Major: Global Affairs
- Advisor: Patrizio Piraino

## Evaluating the Effects from Changing the Age of Enrollment in Grade R (Kindergarten) in South Africa

My thesis examined how the 2002 amendment to the South African Schools Act of 1996 — which changed the age at which children born in the first semester of the year could begin grade R (kindergarten) — affects later student outcomes. With data from the Quarterly Labor Force Survey from 2018 through 2021, I took cross sections of students who were born pre- and post-policy change to examine the relationship between birth dates and educational attainment.

I chose this topic because of my interest in the ability to use early childhood education as an opportunity to diminish inequality in schools for children of different socio-economic statuses. South Africa presented a particularly interesting example as new policies were developing in the wake of the end of apartheid.



**Brennan O'Brien**

- Major: International Economics (Italian)
- Minor: Real Estate
- Advisor: Forrest Spence

## The Effect of the Euro on Italian Olive Oil Exports

When a country adopts a shared currency with other countries, it relinquishes its ability to conduct its own monetary policy. Thus, a country cannot weaken its currency to make its exports more attractive. Having a shared currency, though, can facilitate trade with other countries in the union, among other benefits. I intended to determine what effect Italy's adoption of the euro had on its exports of olive oil.

I thought it was interesting to talk about a product so integral to Italian culture, as well as to its economy. Wearing a mask during the first couple weeks of this semester hampered my learning process, but I was able to overcome this with hard work.



**Annie O'Neil**

- Major: Economics
- Minor: Sustainability
- Advisor: Timothy Dunne

## Labor Transition Plans for Coal Miners at Shut-Down Coal Mines

I developed a labor transition plan for the coal miners of Petersburg, Indiana, and Campbell County, Wyoming. I used information and data from previous coal mine closures to develop a proper transition plan. I am very interested in the energy industry and wanted to include an economic aspect in my sustainability capstone project. We have seen coal miners struggle to transition into a new career after coal mines shut down, and I want to help people avoid that situation in the future.



### **Catherine Prather**

- Major: Economics (Concentration in Financial Economics and Econometrics; Honors)
- Minors: Sociology and Hesburgh Program in Public Service
- Honors Economics Program
- Advisor: Jeffrey Campbell

## **Uncovered Interest Parity in Eastern European Markets**

My thesis examined uncovered interest parity (UIP) in Eastern European markets using the carry trade. The countries under focus were Poland, Czech Republic, Romania, and Hungary, which are part of the European Union but not the Eurozone.

UIP is tested by seeing if carry trade returns are on average non-zero and/or predictable based on previous returns and monetary policy indicators.





**Philip Quinton**

- Majors: Political Science and International Economics
- Advisors: Denise Della Rossa and Davin Raiha

## The Impact of Youth Football Academies on the Success of Their Parent Clubs

By examining the entire history of Spanish football clubs and their creation of youth academies, I used a difference-in-differences approach, along with ordered probit and logit models, to analyze nine independent variables that measure the impact of youth academies on parent clubs' success both contemporaneously and with lags.

I found there is a statistically significant relationship between the establishment of a youth academy and the on-field success of the club. Youth football academies produce the top football talent in Europe — players who are worth millions of euros at a fraction of the price that it costs clubs to buy players. This is just one way youth academies impact the decisions of football clubs as economic agents.

**Lillie Renck**

- Majors: Psychology and Economics
- Glynn Family Honors Program
- Advisor: Daniel Lapsley

## College Student Engagement in and Abstinence from Risk Behaviors: A Self-Determination Theory Approach

Risk-taking, long considered a hallmark of adolescence, is also a common activity during the protracted transition to responsibility known as emerging adulthood. While there is a plethora of research that points to experimentation as a developmental rite of passage, there is little research on why individuals might choose to abstain from these behaviors.

My thesis investigated differential motivation for risk engagement and avoidance in emerging adulthood using self-determination theory as a lens, which suggests that motivation can be characterized based on internalization. Affectionately known as my fan letter to researcher Sam Hardy, my thesis is an investigation into individual decision-making. I was inspired by my coursework in developmental psychology and the behavior of college students to question the motivation behind seemingly typical decisions of this age group.

**Grace Scheidler**

- Majors: American Studies and Economics
- Glynn Family Honors Program
- Advisors: Korey Garibaldi and Joshua Specht

## What's for Lunch? A Cultural History of the National School Lunch Program

My thesis is a cultural history of the National School Lunch Program (NSLP) from its origins following World War I through the present day. In 2022, we are at a crossroads with the NSLP, like we were in 1968. I used lessons from the near century of the program's existence to argue for the path the program should take going forward. Ultimately, the best way to achieve the program's original goals of feeding America's future is through universal free lunch.

I'm a major foodie and 20th-century America is my favorite time period to study. I knew when choosing my thesis topic that I wanted to bring together these two areas of interest, as well as write something with potential for positive social impact.



### Diana Spencer

- Majors: Economics, Global Affairs, and Gender Studies
- Glynn Family Honors Program
- Hesburgh-Yusko Scholars Program
- Advisor: Alejandro Estefan

## Financial Inclusion for Women Micro Entrepreneurs: A Comparative Study of Conventional and Islamic Microfinance in Senegal

My research focus combined my three majors. I examined the financial empowerment of women in developing countries where they have limited access to formal financial services, which prevents them from growing their entrepreneurial ideas and reaching their full potential.

Conventional microfinance offers a path toward financial inclusion by bridging the gap between the disadvantaged and formal financial institutions. However, microfinance may create a cycle of debt due to its relatively high-interest rates. Indeed, high-interest rates increase the cost of debt for micro-entrepreneurs and reduce their disposable income.

Some scholars believe the debt burden created by conventional microfinance also increases stress levels and negatively affects productivity and feeling of empowerment. As an alternative to conventional microfinance, Islamic microfinance presents lending in a distinct way: It prohibits interest on loans by emphasizing the religious principle of profit and loss sharing. Hence, my hypothesis stated that Islamic microfinance would better serve female micro-entrepreneurs.

I tested that hypothesis by comparing ways that conventional and Islamic microfinance affect the earned income and feelings of empowerment of female entrepreneurs in Senegal. I administered surveys to 28 female entrepreneurs in the regions of Dakar, Rufisque, and Thies, and conducted an ethnographic study to examine the way they understand and use microfinance. While results indicated no difference in either income or feeling of empowerment between the two groups, there was an interesting correlation between the level of education and the type of microfinance they chose.

*Received funding from the Glynn Family Honors Program to travel to Senegal.*



### Anna Staud

- Majors: Economics and English (Honors Concentration in Creative Writing)
- Minors: Theology and Latino Studies
- Advisor: Orlando Menes

## *A Prayer of Sorts: A Poetry Collection*

Through its five sections of poetry (Remembrance, Devotion, Confession, Lamentation, and Canticle), my creative thesis explored how prayer and our lives are marked by paradox. *A Prayer of Sorts* challenged the binary between the sacred and profane and attempted to answer how art and song can carry loss and create hope “in a world where grief and joy zipper like hands.”

This poetry collection is a culmination of my time at Notre Dame. My love of music and fascination with memory influenced *A Prayer of Sorts*, as did my work on the Notre Dame Folk Choir’s newly composed ritualization of Christ’s Passion.



**Erin Swope**

- Majors: Accounting and International Economics
- Advisor: Forrest Spence

## The Fiscal Neutrality of Reduced Post-Secondary Tuition in France

One argument for free college tuition is that, as post-secondary graduates tend to earn more, they will essentially pay back the government for their tuition through higher income taxes, making free or reduced tuition an implicit loan. My paper took an accounting approach to estimating whether reduced college tuition in France is fiscally neutral. These calculations may provide a basic understanding of how post-secondary earnings increase government tax receipts in relation to what the government spends on post-secondary tuition.

As the United States debates free public higher education, it is necessary to examine the affordability of other higher education systems that offer significantly subsidized tuition. As I am also interested in France's social mobility, I wanted to understand whether post-secondary government subsidized tuition increases post-secondary educational opportunities for students of all backgrounds there, especially those from less wealthy backgrounds.



**Ashton Weber**

- Majors: Gender Studies and Economics
- Hesburgh-Yusko Scholars Program
- Advisor: Gail Bederman

**Queer Femme Theology**

My thesis project sought to expand the archive of queer femme studies by focusing on the experience of queer people who were raised Catholic. I utilized autoethnography, oral history, and literature review to construct a femme theology. I concluded that queer community-building is a form of theological praxis, as many queer people who were raised Catholic experience God now through their queer communities.

As a queer woman who grew up in a conservative sect of the Catholic Church, I have experienced a lot of pain at the hands of religion. I will be pursuing my Master of Divinity degree after graduation and focusing my studies on queer theology. This topic is therefore relevant to my lived experience and my future plans.

*Received funding from the Hesburgh-Yusko Scholars Program.*



### Martin White

- Majors: Political Science and Economics
- Minor: Constitutional Studies
- Advisor: Ricardo Ramirez

## Welfare Politics in America During Times of Crisis

Americans have a uniquely negative perspective on social welfare policy compared to other nations. They consider programs that are too generous as damaging to the economy, as encouraging of free-loading, and unnecessary. People can get ahead through hard work, and utilizing the social safety net is considered a sign of weakness.

In times of economic crisis, however, these views may shift or change as Americans need to use welfare. My thesis explored whether crises like the COVID-19 pandemic that cause widespread unemployment and financial strife cause American perspectives on welfare to change and, if so, whether the changes are long-lasting.

Over the summer, a friend sent me a *New York Times* article discussing how the enhanced welfare benefits employed to counteract effects of the COVID-19 pandemic were associated with the largest single-year drop in poverty in American history. The writer interviewed Americans across the political spectrum: Some said we should continue to employ similar programs if they changed people's lives, while others claimed they should only be temporary and might do more harm than good.

I wanted to explore how, why, and for how long American perspectives on welfare change in times of crisis, and what lessons lawmakers can learn from these shifts. I had hoped there might be polling data related to how people felt about the welfare benefits employed during the pandemic once the crisis had ended. The COVID-19 pandemic, however, is ongoing. I adapted by finding new questions and data that still addressed what I was hoping to find.



### Ella Wisniewski

- Majors: English (Honors Concentration in Creative Writing) and Economics
- Brennan Family Scholar
- Glynn Family Honors Program
- Advisor: Joyelle McSweeney

## *things Bodies do: A Collection of Poems and Short Stories:*

My thesis is a collection of poems and short stories titled *things Bodies do*. Unsurprisingly, my work centers on women and their bodies — the beautiful, the sensual, the visceral, the grotesque. Through flash fiction, ekphrasis, and urban legend, I created and explored my own definitions of womanhood and embodiment.

My work is heavily influenced by short story author Carmen Maria Machado; individual works also drew on Salvador Dalí, Maggie Nelson, Francesca Woodman, Aimee Nezhukumatathil, and Dana Ward. I love the capability of creative writing to express emotion, and am interested in the portrayal of the female body in literature.

