Senior Thesis

There is no honors program at Haverford – because every student performs honors work.

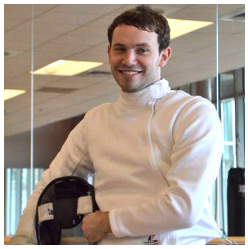
The Senior Thesis is the capstone to a Haverford student's academic career. It is an opportunity to do original research at levels usually reserved for graduate students, in partnership with faculty mentors. Haverford is one of only a few institutions in the country to include a Senior Thesis project as part of every student's academic program.

The process of producing the Senior Thesis gives Fords the opportunity to demonstrate their analytic skills and creatively apply what they've learned during their four years at the College. Students become true scholars, and come to understand at a deep and practical level what it takes to create knowledge and to seek answers to challenging questions. In turn, they become more effective and influential agents for change in whatever field they choose, and in communities they serve.

Tionney Nix, Computer Science

"A Rule Learning Approach to Discovering Contexts of Discrimination"

My thesis is focused on the problem of discovering contexts or niches of discrimination in data sets, i.e. revealing groups of features in a given data set that, when considered together, have a greater degree of discriminatory influence in the data than when any one feature is examined individually. Our approach to this problem involves using the CN2 and CN2-SD rule learning algorithms to identify groups in the data that have significant predictive ability, and then using the Gradient Feature Algorithm to quantify and examine each group's discrimination potential.



Jake Bassinder, Political Science

"Economics and Political Outcomes: Europe's Far Right"

Europe has experienced a growing wave of support for far-right political parties that threatens to completely redefine the continent's long-standing economic and social order. My thesis analyzes the factors behind their success in an effort to not only investigate an influential political movement, but also gain a better understanding of the role that various economic, political, and demographic factors play in the determination of voter choice. Using a combination of regressions and nation-specific case studies, I attempt to isolate the factors behind the electoral performance of the far right and discern the implications of this movement for broader theories of voting behavior.

Ellie Greenler, Anthropology

"Refugees, Radishes, and Relationships: How Urban Gardens Facilitate Social Integration Opportunities for Refugees"

This thesis focuses on how urban farming can provide an opportunity for refugees to become more socially integrated in the communities that they are farming and living in. It uses one organization, Plant It Forward, as a case study to show how and where this social integration process takes place. Through participant observation, literature review of organizational materials, and in-depth interviews with key players, this thesis points to the challenges and successes of integration through urban farming opportunities.

Yannick Villaneuva, Economics

"The Effect of Terrorism on Travel: United States and Europe"

This study provides new evidence that the 9/11 attacks resulted in people substituting air travel for rail or road travel. My economics and psychology classes give various definitions of rationality and I wanted to find out which definition prevailed with regards to terrorism. I applied the rigorous analytical methods from my economics classes to travel statistics in order to explore this question and determine the nature of people's decision making in response to terrorism. Most attacks on airports and airplanes result in a marginal decrease in air fare, which leads to higher levels of air travel. This suggests that people are more responsive to lower prices than higher risks of terrorism.

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Miriam Hwang-Carlos, Comparative Literature

"Locating Belonging in Postcolonial Space: Homeland Narratives in René Philoctète's *Le Peuples des terres mêlées* and Kim Lefèvre's *Retour à la saison des pluies*"

Retour à la saison des pluies and *Le Peuples des terres mêlées* warp relationships between space, time, and body to explore the meaning of human movement and location. *Retour à la saison des pluies* is an autobiographical novel of Lefèvre, who grew up marginalized in Vietnam for her mixed French and Vietnamese ethnicity. In the text, she returns to Vietnam for the first time after thirty years in France. *Le Peuples des terres mêlées* is a magical realist novel that takes place during the 1937 massacre of Haitians living in the Dominican borderlands. I think notions of "home" and "homeland" are complicated and scary—discussions of these topics easily veer either sappy and sentimental or violent and ideological. Who's to say whether I avoided either of those traps, but I learned a lot.

Victor Medina Del-Toro, History

"Experimenting with Rescue: Understanding the American Jewish Joint Distribution Committee's Approach to Rescue from 1938 to 1940"

Efforts to solve the Jewish refugee crisis created by the expansion of the Nazi empire have largely been examined with the hindsight that those efforts failed to rescue the millions of Jews who perished during the Holocaust. Historical literature has focused on explaining why governments and organizations did not do more. This investigation seeks to highlight the understanding of and approach to solving the refugee crisis by those directly facilitating rescue. Analyzing The American Jewish Joint Distribution Committee's approach to solving the refugee crisis reveals that efforts were conducted with highly nuanced understandings of the situation and that impediments to rescue were just as complex. The importance of understanding the multitude of limitations that existed is that refugee resettlement was not simply a matter of will, but a matter of means.

Sarah Betti, AstroPhysics

"VLA Observations of the Magnetic Field of the Smith High Velocity Cloud"

High velocity clouds (HVCs) are interstellar gas clouds outside the disk of the Milky Way Galaxy with velocities inconsistent with Galactic rotation. These primarily-hydrogen clouds are falling into the Galaxy, providing material for future star formation and potentially driving Galaxy evolution. The Smith Cloud is one of the best HVCs to measure how gas falls into the Galaxy due to its large size and close location to the Milky Way Galaxy. It is located below the plane of the Milky Way; however, its orbit around the Milky Way suggests that it has made at least one passage through the disk of the Galaxy. Computer simulations suggest that the cloud should have lost more hydrogen to the Galactic halo than is observed. By measuring the polarization of radio waves, we measure the strength and direction of the magnetic field in the cloud. Our confirmation of the magnetic field of the Smith Cloud along with a detailed morphology of the magnetic field structure will help constrain how HVCs survive the passage through the intergalactic and interstellar media without being stripped of their gas by hydrodynamic processes.

Alex Frost, Biology

"Effects of Disrupted Aging Mechanism on α α-Synuclein Aggregation in a Caenorhabditis elegans model of Parkinson's Disease"

Parkinson's disease is a prevalent neurodegenerative disease that currently has no known cure. This project attempted to find a connection between a gene family that is associated with aging and pathology of Parkinson's disease. A neuronal protein called α-synuclein is a major aggregative component of Lewy body plaques associated with Parkinson's disease and other neurodegenerative diseases. While α-synuclein forms these amyloid-like fibrillar protein aggregates, it is not known whether these fibrils are the primary cause of cellular toxicity. To study the effects of the sirtuin proteins on α-synuclein aggregation, the sirtuin gene in C. elegans was suppressed using RNAi and analyzed using fluorescence microscopy.

Students come to Haverford for a richly intellectual and engaging academic experience based around close student-faculty collaboration and direct engagement with ideas, issues, and questions. The Senior Thesis represents the culmination of a Haverford student's academic experience, and is one of the most important and rewarding ways that Haverford realizes its educational mission.

These are just a few examples of projects by members of the Class of 2017. They represent the depth of intellectual engagement and diversity of interests that define the liberal arts at Haverford.

For more Class of 2017 Senior Thesis stories, check out the Haverblog series, "What They Learned," at **hav.to/wtl**