Successful thesis projects are typically the result of the contributions of many people; but none are more important than those of the thesis advisor. The following professors contributed time, energy, and expertise in the oversight of Honors Thesis projects during the 2017-2018 academic year.

Professor Ann Anderberg, Education Department
Professor Jennifer Brown, Economics Department
Professor Caitlin Carenen, History Department
Professor Timothy Cochran, Performing Arts Department
Professor Brendan Cunningham, Economics
Professor Darren Dale, Kinesiology & Physical Education Department
Professor Jeffrey Danforth, Psychology Department
Professor James Diller, Psychology Department
Professor Reginald Flood, English Department
Professor Megan Heenehan, Mathematical Sciences Department
Professor Joshua Idjadi, Biology Department
Professor Mizan Khan, Mathematical Sciences Department
Professor Kurt Lucin, Biology Department
Professor Kenneth McNeil, English Department
Professor Benjamin Pauley, English Department
Professor Kristalyn Salters-Pedneault, Psychological Science Department
Professor Jeffrey Trawick-Smith, Education Department
Professor Allison Speicher, English Department
Professor Patricia Szczys, Biology Department
Professor Barbara Tucker, History Department

 Appreciation is also due the following members of the University Honors Council who contributed their time, energy, and expertise as Second Readers of honors theses.

Professor Amy Bataille, Department of Kinesiology & Physical Education
Professor Maryanne Clifford, Department of Economics
Professor Timothy Cochran, Department of Fine Arts
Professor Steve Muchiri, Economics
Professor Benjamin Pauley, Department of English
Professor William Salka, Political Science Department
Professor Patricia Szczys, Department of Biology

Special thanks to Zosia Carlquist, Honors Program Secretary, for her creative and skillful editing of this booklet and her support of the University Honors Program.
The students featured on the following pages are to be congratulated for their outstanding academic achievements. These students have responded exceptionally well to the challenges and opportunities afforded them through their participation in the University Honors Program, with their efforts culminating in the production of an original work of scholarship. The quality of the thesis projects described in this booklet is impressive and reflects well on the individual students, their respective thesis mentors, and the overall quality of the educational experience offered by the University. The outstanding scholastic achievements of these students has set a high standard for future Honors graduates.

Patricia Szczys
Interim Director
University Honors Program
**HARRISON BROOKS**

Majors: Political Science, Economics
Minor: History

Accepted to the House Republicans Office at the Connecticut General Assembly as a Legislative Outreach Coordinator before continuing Studies in International Public Policy

**Thesis Title:** The Rhetoric of American Foreign Aid Provision to the Palestinians: Evidence from the Clinton and Bush Administrations

This research elucidates the rhetorical strategies used by American officials to justify the United States’ aid provision to Palestine in light of substantial public and political support for the Israelis. It also demonstrates how presidential rhetoric is influenced by the media, public opinion, and Congress. When those actors react to an event they perceive to threaten Israel, they respond by calling for the revocation of aid to Palestine. This pressures the executive to justify this aid as essential to Israeli and American security. Aid, then, is justified not in terms of benefitting the Palestinians, but as a benefit to Israel.

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**AMANDA BURKHART**

Majors: Mathematics, Secondary Education

Anticipates teaching Mathematics at a Middle School in Washington, D.C.

**Thesis Title:** Prime-centered Triples

In the 17th century, Pierre de Fermat was a mathematician studying prime numbers that could be written as a sum of two squares. In order to extend his findings, we defined prime-centered triples (PCT) as three consecutive integers that could each be written as a sum of two squares when p is a prime congruent to 1 modulo 4. After analyzing a list of thousands of PCTs, a pattern was found. Prime numbers that can be written as $8n^2 + 1$ always produce prime-centered triples, of which there are infinitely many.
**ANDREA SLATER**  
Majors: History, Sociology  
Minor: Women’s Studies  
Pursue a Master’s Degree in Library and Information Science at Simmons College  
**Thesis Title:** Social Impact of the Development and Decline of Streetcars in Hartford, 1900-1950

During the peak of the streetcar industry, streetcars offered greater mobility among Connecticut residents and therefore allowed people to live beyond the city limits of Hartford. Streetcars, therefore, shaped the residential development of the city and suburban communities in the early twentieth century. At this time, however, racism was still both formally and informally perpetuated in public policies and practices. The greater mobility that streetcars offered worked in tandem with discriminatory public policies to further separate people based on race and class status. By understanding the causes of residential segregation in Hartford and its suburbs in the early twentieth century, we are better able to understand how our state functions today.

**KALEY VERA**  
Majors: Elementary Education, Spanish  
Plans a career in Elementary Education  
**Thesis Title:** Second Language Acquisition: A Creative Approach

Second language acquisition requires engagement across the four domains of language: listening, speaking, reading and writing. Logic puzzles engage students in building logic, critical thinking and problem solving skills. In combination, a rich educational experience is provided for students aiming to learn a second language. Taking the creative thesis approach, Kaeley created a series of nine logic-grid puzzles in the Spanish language to model how this tool can support second language learning (of any language, not just Spanish) when paired with basic language instruction.

**HANNAH BYTHROW**  
Major: Music  
Concentration: Vocal Performance  
Plans on Exploring New Places and Eating Exotic Foods  
**Thesis Title:** Melancholy Music: A Performer’s Approach to Mentally Unstable Romantic Composers and their Works

In Romantic Germany, authors and composers glorified deep psychological connection to music in a culture that was intrigued by mental illness. Studying Romantic composers with mental illness (eg., Robert Schumann and Franz Schubert) provides insights into how melancholy, mania, and obsession were channeled into music. Close readings of primary sources and compositions demonstrate that Schubert and Schumann were fascinated by mental illness. Modern performers of these compositions face this question: How can we portray mentally unstable characters in both a historically accurate and culturally sensitive way? Since nonchalant attitudes towards mental health persist, performers should acknowledge cultural context while maintaining appropriate creative interpretations.

**TESS CANDLER**  
Majors: Political Science, Economics  
Minor: Spanish  
Offered position at Cognex Corporation as an Associate Financial Analyst  
**Thesis Title:** Determining the Distributional Effects of the Regional Greenhouse Gas Initiative

This study considered if the effects of the Regional Greenhouse Gas Initiative, an emissions trading scheme, are unequal in their distribution among socioeconomic groups. Results indicated that the impact of RGGI on improving air quality was not dependent on race, though counties with more regulated facilities and higher income experienced less air quality improvements. There was no evidence that the program had a distributional economic impact through its effect on electricity prices. This study contributed to the literature by conducting a case study of the distributional effects of the RGGI and focusing on two, rather than one, distributional effects.
Michele D’Agata
Majors: Sport and Leisure Management
Concentration: Sport Science and Performance
Will attend the University of Delaware Graduate Program in Exercise Science
Thesis Title: Does the Order of Exercise Type (Strength Training versus Plyometric Training) Affect Performance-Related Measures in Collegiate Women Soccer Players?
The purpose of this research was to determine whether the order of exercise modes performed during a single session differentially affect outcomes of sports performance. Sixteen collegiate women soccer players were randomized into two groups, a Strength-First (SF) group or a Plyometrics-First (PF) group. All participants completed a twice-weekly training program over a six-week period. The sport performance measures tested were vertical jump, lower body strength, and an agility T-Test. Results showed non-significant mean differences on all measures. This finding allows coaches to provide variation with respect to the order in which exercise modes are prescribed within individual training sessions.

Megan Deacon
Major: Biology
Minor: Spanish
Pursue a Masters Degree in Occupational Therapy at Tufts University
Thesis Title: Population Differentiation of the North American Black Tern Chlidonias niger surinamensis: A Regional Population Genetics Study to Enhance Conservation
Since the 1960s, the North American Black Tern, Chlidonias niger, has experienced significant population declines generating concern from the public and conservationists alike. This study explores the population genetics of three Black Tern populations in the northeastern and Great Lakes region to identify genetically distinct or related populations. A total of 32 individuals from three locations, Maine, Ontario, and Michigan, were genotyped at eight microsatellite loci. This study reports that the sampled Black Tern populations have maintained genetic variation, as measured by allelic richness and heterozygosity, despite observed and reported population declines. The apparent population connectivity calls for regional and international conservation management collaboration.

Rachel Pilver
Major: Psychology
Minor: Criminology
Enrolled in Crime and Justice Studies and Mental Health Counseling dual degree programs at Suffolk University
Thesis Title: Improving the Public Image of Psychology: Who should Interventions Target?
Studies have been done to explore why people think negatively of psychologists (Guest, 1948; Hartwig & Delin, 2003; Webb & Speer, 1986; Wood et al., 1986; McCarthy & Frantz, 2016; Furnham & Hughes, 2014; Webb, 1989), and solutions have been proposed to help (Lilienfeld, 2012; Hartman et al., 2016; Cordella et al., 2016; Ferguson, 2015). A gap exists with respect to whom these interventions should target so multiple measures were used to assess the current status of the problem. The results suggest that men, people outside of the United States, and non-students may be the primary targets for future intervention.

Alexa Potter
Major: History
Minors: Anthropology, Business Administration
Plans a Career in Outdoor Recreation/Park Guide
Thesis Title: There must be something in the Water: The Industrial Pollution of the Naugatuck River, 1850-1930.
The Naugatuck River has suffered from decades of industrial waste pollution at the hands of northwestern Connecticut’s “Brass Valley.” Contagious diseases spread throughout the valley during the early 1900s and this river was perceived as a source of the contamination. From 1850 to 1930 the harmful substances that were disposed of into the river concerned the community, however, the inability of the local government to enact and enforce policy change coupled with the unwillingness of business to reduce waste disposal left an unsatisfied public. My thesis explores industry policy, and political and community response to the contamination of this environment.
Christopher Morris
Majors: English and History
Minor: Writing
Plans to publish a novel and pursue PhD programs in English Literature and Creative Writing
Thesis Title: Juvenilism: A New Theoretical Perspective on the Origins and Mechanics of Contemporary Literary Portrayals of Children
Up until now, there has not yet been a literary theoretical perspective which analyzes the perspectives and portrayals of juvenile characters. This project thus proposes “juvenilism,” which seeks to both: (1) dissect societal preconceptions about children and (2) understand literature from the “perspectives” of its child characters. Through both a historical study of how the modern definition of the term “child” emerged during Victorian England’s children’s rights movement and an analysis of two contemporary texts-Gillian Flynn’s Sharp Objects and Stephen Kin’s IT-this project exemplifies how juvenilist theory might be practically applied to literature.

Lindsay Pattavina
Majors: Elementary Education, English
Title: Picture This: African American Cultural Representation in Children’s Literature
A lack of racial diversity is widely observed children’s literature. For example, the Collaborative Children’s Book Center notes that only 286 of 3,400 children’s books published in 2016 were about African American characters and only 93 of those books were written by African American authors. I focused on texts in which African Americans are represented and studied the quality of those representations by comparing books written by white and African American authors. I found that the texts have some common topics such as family structure, appearance, and dress but there is sometimes a difference in the ways that the topics are handled. By elucidating differences between these books, I demonstrate the importance of an author’s perspective and personal experiences in shaping their writing.

Stefanie Dominquez
Majors: Early Childhood Education, Communication
Plans on a Teaching Career in Special Education
Thesis Title: A Qualitative Study of the Play of Dual Language Learners in an English-Speaking Preschool
Little research has been conducted on the play of children of very low English proficiency within English-speaking preschool classrooms. In the present investigation, we recorded and described the naturalistic free play of four dual language learners (DLLs) and compared their interactions to those of four English-speaking children. Units of interaction were identified, transcribed, named, and categorized. Illustrative transcriptions of individual interactions were selected and probed more deeply. The trustworthiness of the investigation was established by triangulating these qualitative findings with a quantitative measure of children’s social participation in play. Findings indicate that DLLs play and talk with peers less frequently, interact in less sustained and positive ways, and are more reliant on teachers to support their play than their English speaking peers. Implications for scaffolding DLLs’ play in classrooms and for future research are presented.

Nicole Green
Majors: English, Elementary Education
Will attend the University of Florida to pursue PhD in English
Thesis Title: Beyond the “Mother-Teacher”: How Teaching Became Women’s Work
In the nineteenth century, women were called into the growing profession of teaching by school reformers, hoping to provide a cheap and morally superior teaching force. Seen as nurturing and motherly, they were deemed “mother-teachers” to represent the stereotypical and idealized view of the female teacher that was widespread at the time. I analyzed a diverse selection of personal writings of eight women teachers and compared them to the works of the prominent school reformers of the nineteenth century, finding that, unlike reformers, the teachers prioritized religion, financial exigency, and personal independence, not motherliness, as their motives for teaching.
ELIZABETH HILTON  
Major: Psychology  
Minor: Biology  
Anticipates a PhD in Clinical Psychology  
**Thesis Title:** Sleep Hygiene, Psychological Symptoms, and Sleep Quality in College Students  
Previous studies have targeted college students for sleep hygiene interventions with little success and have advocated for acceptability testing. The current study evaluated sleep hygiene knowledge, practice, and acceptability using a newly developed self-report measure, and examined their relationship to psychological symptoms and sleep quality. Students (N = 202) knew, on average, 17 out of 27 sleep hygiene practices. Significant positive relationships were found between sleep hygiene knowledge, practice, and acceptability, but these were not correlated with sleep quality. Sleep hygiene knowledge was negatively correlated to depression, while depression and anxiety were positively correlated to poor sleep quality. Additional results, psychometric properties of the newly created measure, and implications for sleep hygiene interventions in college students, are discussed.

LILLIAN HYDE  
Major: Biology  
Minor: Biochemistry  
Pursue Graduate Studies in Biomedical Research  
**Thesis Title:** Assessment of Microglia Function in Brain and Blood Microenvironments  
Microglia are the central nervous system’s main immune cells. Although found in extracellular fluid, similar to cerebrospinal fluid (CSF), microglia are cultured with fetal bovine serum (FBS). It is unclear if FBS-cultured microglia accurately represent their native environment. Microglia are activated to a pro-inflammatory (M1) or anti-inflammatory (M2) phenotype based on their environment. M1-activation damages neurons, while M2-activation promotes growth. This study assesses if activation differs between FBS and CSF-cultured microglia. By establishing a baseline of microglial function in their natural environment, their role in health can be better modeled. Our results suggest CSF promotes M2-activation, while FBS promotes M1-activation.

THOMAS LUCKNER  
Majors: Mathematics, Economics  
Pursue PhD Program at the University of South with concentration in Algebra and Number Theory  
**Thesis Title:** Lattice Tetrahedra  
We will first discuss a beautiful theorem published in 1899 for lattice polygons in R2. This theorem is called Pick’s theorem after its discoverer Georg Alexander Pick. A topological proof will be given of this theorem by the use of primitive triangles. We will then discuss a theorem by White that defines a specific class of lattice tetrahedra known as empty lattice tetrahedra. A simplified proof of this theorem will be given to provide clarity for similar research in the future.

EMILY MENENDEZ  
Major: Mathematics  
Minor: Coaching  
Will attend Quinnipiac University to pursue a Graduate MAT Degree in Secondary Education  
**Thesis Title:** The Firefighter Problem  
The Firefighter Problem can be used to model the spread of fires or diseases throughout a population. Consider when a fire breaks out at one or more vertices in a graph. In each round, we place f firefighters on vertices while the fire spreads to the other adjacent vertices. We focus on containing fires on square grids, hexagonal grids, and general graphs with specific objectives. First, we want to determine the minimum number of firefighters needed at each time step in order to contain the fire. Second, if firefighters do not respond immediately, we must determine if they can still contain the fire. Finally, we want to save the most vertices possible.