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 2013-2014 academic year.

Professor Caitlin Carenen, Department of History
Professor Lisa Fraustino, Department of English
Professor Pete Johnson, Department of Mathematics
Professor Richard Jones-Bamman, Department of Performing Arts
Professor Nicole Krassas, Department of Political Science
Professor Margaret Martin, Department of Sociology
Professor Brett Mattingly, Department of Biology
Professor Kristen Morgan, Department of Performing Arts
Professor Stephen Nathan, Department of Environmental Earth Science
Professor Jamel Ostwald, Department of History
Professor Niti Pandey, Department of Business Administration
Professor Russell Sampson, Department of Physical Sciences
Professor Patricia Szczys, Department of Biology
Professor John Toedt, Department of Physical Sciences

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 Jennifer Brown, Department of Economics
Professor Peter Drzewiecki, Department of Environmental Earth Science
Professor Madeleine Fugere, Department of Psychology
Professor Denise Matthews, Department of Communication
Professor Maureen McDonnell, Department of English
Professor Patricia Szczys, Department of Biology

Special thanks to
Zosia Carlquist, Honors Program Secretary,
for her creative and skillful editing of this booklet.
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.

William M. Salka
Director
University Honors Program
**TIMOTHY BUGDEN**  
Major: Environmental Earth Science  
Concentration: Sustainable Energy Science  
Pursue a career in Environmental Earth Science and attend Graduate School  
**Thesis Title:** Investigating a Western Pacific Climate Shift Through Stable Isotope Analysis of Planktic Foraminifera  
Predicting future changes in the Earth's climate requires a better understanding of past climate. This project investigates the timing of a dramatic change in Earth climate, as documented by a major shift in ocean chemistry that occurred between 7 million years ago and today. We study planktic foraminifera within an ocean sediment core sample from the Western Pacific. Most species of foraminifera precipitate chambered shells of calcium carbonate, which are excellent proxies of climate change due to their stable isotope content. Stable isotopic changes in the foraminiferal assemblage may be due to changes in regional and/or global climate.

**KATHERINE BUISE**  
Major: Accounting & History  
Minor: Business Administration  
Plans a career as an Accountant in the Not-for-Profit Accounting Sector  
**Thesis Title:** Muscular Evangelism: At the Crossroads of Sport, American Fundamentalism and Media, 1891-2011  
This thesis was a case study of three Christian athlete-evangelists (Billy Sunday, Gil Dodds and Tim Tebow) and what their media representations could reveal about public perception of fundamentalist Protestantism over a span of approximately one hundred years. An increase in negative perception was discovered. Additionally, this study suggests that American athletes have surpassed classic Victorian, British muscular Christianity to create a new, uniquely American phenomenon I have called "muscular evangelism."
ERIN CONN
Major: Biology
Pursue PhD in Cell Biology at Georgetown University

Thesis Title: Identification of Novel Microsatellite Loci in the Whiskered Tern (Chlidonias Hybridus)

Microsatellite markers are locus-specific, short tandem repeats, and have been the predominant tool for studying population genetics and evolution since the 1980's. Studies concerning populations and their structure are increasingly important, as understanding population connectivity is vital for both monitoring avian flu outbreak potential and conservation efforts. Currently, no microsatellite markers have been developed specifically for the whiskered tern, Chlidonias hybridus, which makes population studies of the species difficult. I employed enrichment methods in my attempt to identify a novel microsatellite region specific to this species. I successfully created enriched genomic libraries for 11 individuals but was unable to identify microsatellite loci from sequences of positive clones.

ERIN DALY
Majors: Political Science & Elementary Education
Plans to teach Elementary School and Pursue a Masters Degree in Education

Thesis Title: Assessing No Child Left Behind: A Study on the Efficiency of Connecticut Schools

In 2001, the No Child Left Behind Act was passed in an attempt to close the growing achievement gap in American schools. While the results of this legislation have been disappointing nationally, this research focuses on its effect specifically in Connecticut schools. CMT score data from 5th grade students in all Connecticut schools in the years of 2001, 2005, and 2009, was collected. The scores of children buying full lunch and free and reduced lunch were compared. It was found that while the gap is slowly closing in the more wealthy districts, it is widening in the poorest districts, where there is the largest need for change.
**JESSICA EDWARDS**  
Major: Biology  
Plans a career in the Medical Field and attend Graduate School  

**Thesis Title:** The Effect of Forest Structure on Seed Removal Rates by two Consumer Guilds (Arthropods and Rodents)  
In a fragmented landscape, we evaluated how habitat structure (i.e. forest, edge, and field) impacts seed removal rates by rodents and arthropods. Our results reveal species-specific differences in removal rates, whereby rodents exhibited preferences for larger seeds, and smaller seeds were more frequently removed by arthropods. Our study shows location has the greatest impact on seed removal rates, with most activity occurring in the forest and field. Consumer identity was a second deciding factor for removal rates. These guild-specific differences in removal rates further our understanding of how granivores help shape the diversity and composition of plant communities in fragmented landscapes.

**MOLLY GOSSELIN**  
Majors: English/Secondary Education  
Plans to teach High School English  

**Thesis Title:** Is This Real Life?: An Exploration of Dreams, Grief and Reality in a Young Adult Novella  
Grief is an experience that can significantly damage a person’s sense of self and reality. This concept is explored through the character Sarah “Sadie” Kurac, a teen that loses her mother prematurely to lung cancer. Although their relationship is strained in life, Sadie rekindles a bond with her mother after her death through the chaotic landscape of her dreams. She draws comfort from her mother's lingering presence and uses her to overcome her struggles with performing solo music. This connection becomes an issue when Sadie is no longer able to clearly navigate the boundaries between the world of her dreams and reality. This project will offer insight into how humans cope with grief and how we shape our identities.

**LINDSAY WITKOSKI**  
Major: History/American Studies  
Minors: Business Administration & Sociology  
Pursue Graduate Degree in Human Communication Studies at the University of Hartford  

**Thesis Title:** Intellectual Origins of 20th Century Domestic Terrorism  
This project is an intellectual history which addresses the following philosophies: anarchism, transcendentalism, rugged individualism and social radicalism. I argue that left-wing radical social movements and right-wing anti-government movements of the twentieth century embodied nineteenth century social radical and rugged individualist ideologies. Furthermore, I describe how these diverse ideologies correlate to one another and contributed to twentieth century extremism. Additionally, I make the argument that the domestic terrorists I examined were adherents to John Locke’s Social Contract Theory and Michael Bakunin’s definition of communal anarchism.
ADAM ST. DENIS  
Major: Computer Science  
Minor: Sustainable Energy Studies  
Plans a career in the field of Sustainable Energy  

Thesis Title: The Process of Creating a Meteorology and Astronomy Viewing Station for the Eastern Connecticut State University Planetarium  
My honors thesis work involved the process of building a computer to be used for the display of meteorological and astronomical data for the ECSU Planetarium. This display center was installed in the lobby of the planetarium to be used as an instruction tool and to entertain guests before events. Displayed on the machine is weather data from radar and satellites, wind maps, day and night transitional maps, video feeds from the International Space Station, a virtual space simulation engine, and more. All of these data is displayed through a digital signage program created for the machine.

DORJI TAMANG  
Major: Social Work  
Pursue Masters Degree in Social Work at Columbia University  

Thesis Title: Self-immolation in Tibet: An Exploratory Study  
Self-immolation in Tibet is a new social phenomenon. This research explores the meanings of self-immolation and the perceptions of Tibetans to better understand the nature of this act. A mixed methodology is employed using secondary data, as a quantitative method, to examine the characteristics of the self-immolators that took place in Tibet between 2009 and 2013. Qualitative interviews with six Tibetans living in Connecticut give in-depth understanding of the nature of this behavior. Theories are explored to help guide the framework of the analysis based on the findings from the secondary data and the interviews. The theories will further enhance understanding and examine the theoretical knowledge from a holistic perspective. The research provides a better comprehension of the context and meaning of self-immolation. This research also seeks to generate future discussions and study.

JACQUELINE LAGASSE  
Major: Biochemistry  
Minor: Biology  
Pursue a career in Research and Development at Pharmaceutical Companies in New England  

Thesis Title: Gel Electrophoresis Quantification of Bovine Serum Albumin Using an Internal Standard  
Quantifying concentrations of proteins is important to understanding biological systems. The purpose of this thesis is to establish an experimental design to accurately quantify concentrations of the protein bovine serum albumin (BSA) with sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). Gel-to-gel variation in intensity did not allow for the development of a single accurate quantification scheme for gel analyses. However, the use of internal standards was found to be an accurate method of quantification for BSA. The intensity can be predicted within an average of 1.896% error using internal standards, compared to an average of 25.179% error without internal standards.

CHRISTOPHER LORENTSON  
Major: Environmental Earth Science  
Concentration: Sustainable Energy Science  
Minor: Economics  
Plans a career in Sustainable Energy  

Thesis Title: Geospatial and Physical Assessment of Central Connecticut Glacial Deposits to Better Site Ground-Source Heat Pumps  
Poor geothermal system design can be partially attributed to a poor understanding of the physical properties of glacial sediments comprising the subsurface. The physical characteristics of glacial sediments influence heat transfer and dictate how efficiently ground-source heat pumps (GSHPs) perform. By knowing the physical properties of these glacial deposits, GSHPs can be installed at lower costs and operate with greater efficiency. Sediment cores from 17 Connecticut locations were analyzed for their thermal and physical properties. Statistical correlations and significance tests were created to generate conclusions as to which sediment types found in CT best assist heat transfer in GSHPs.
ZACHARY MAROTTE
Major: History
Minor: Writing
Plans a career in the State Department or Department of Defense
Thesis Title: The Persistence of the Ancients: The English Army's Gradual Adoption of Modern Military Theory, 1660-1728
The early modern European military theorists were fascinated by the Ancients. This influenced them to implement Ancient tactical formations, strategies, and technologies into the Modern context of warfare. When England withdrew itself from continental Europe in 1642 due to the outbreak of its Civil Wars, the English Army continued to rely on Ancient military theories. With the Restoration of Charles II in 1660 and for the next twenty-eight years, the English Army largely remained disconnected from continental Europe. This resulted in the Ancients persisting in the military theories of the English Army for decades afterward.

MAURA MCCABE
Major: Business Administration
Minor: Psychology
Relocate to North Carolina to work in Recruiting
Thesis Title: Sustainable Solutions: A Business Plan
Sustainable Solutions, LLC. is a Connecticut-based environmental sustainability consulting firm that assists companies who are looking to implement sustainable practices and become socially responsible. Sustainable Solutions is a sustainability consulting firm focused on human resource practices. The objective of Sustainable Solutions is to consult for other businesses and implement procedures to hire, and retain sustainable employees. Sustainable Solutions will cater to the Greater New York City Area, and be a small business alternative for sustainability consulting companies, while still offering comparable service.

NICOLE PRASSER
Majors: Elementary Education & Mathematics
Plans to Teach Elementary School and Pursue Master's Degree in Educational Leadership
Thesis Title: Alignment of the Common Core State Standards and Assessments in the State of Connecticut for Third Grade Mathematics
There have been significant changes in education with the implementation of the Common Core State Standards. The new standards have led to the creation of a new assessment known as the Smarter Balanced Assessment Consortium, which will replace the Connecticut Mastery Test. I created an alignment formula between the new standards and the two assessments with a focus on the third grade mathematics. The alignment formula I used consisted of four criteria: Categorical Concurrence, Depth of Knowledge, Range of Knowledge, and Balance of Representation. The alignment provided insight to educational changes that are occurring in the state of Connecticut.

KERI SMART
Major: Technical Theatre-Costume Design
Pursue MFA Degree in Costume Design and Construction at UConn
Thesis Title: Costume Design for The Birds by Aristophanes, Adopted by Walter Kerr
My thesis covers the creative process used in designing the costumes for The Birds by Aristophanes, adopted by Walter Kerr and then bringing them to life on stage. I discussed how I used the director's concept as well as my own to research historical costumes and birds. I then discussed the process of designing and rendering the costumes so I could order the supplies and create them. Finally, I covered the success of the costumes in relation to the production.