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Professor Miriam Chirico, Department of English
Professor Roland Clark, Department of History
Professor Anthony Cornicello, Department of Performing Arts
Professor Lisa Fraustino, Department of English
Professor Amy Groth, Department of Biology
Professor Mizan Khan, Department of Math & Computer Science
Professor Ross Koning, Department of Biology
Professor Barbara Liu, Department of English
Professor Martin Mendoza, Department of Political Science
Professor Meredith Metcalf, Department of Environmental Earth Sciences
Professor Barbara Murdoch, Department of Biology
Professor Joel Rosiene, Department of Math & Computer Science
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Professor Madeleine Fugere, Department of Psychology
Professor Richard Jones-Bamman, Department of Performing Arts
Professor Denise Matthews, Department of Communication
Professor William Salka, Department of Political Science

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INTRODUCTION

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
**Brooke Baldwin**  
Majors: Elementary Education and English  
Plans to teach Elementary School and pursue a Master’s Degree in Education  
**Thesis Title:** See Me After Class: Student-Teacher Relationships in Short Stories  
The relationship between a student and his or her teacher is a dynamic that is frequently focused on in young adult school story literature. This study involves researching the components of this genre and creating an original collection of six short stories. Each story centers on a relationship between a student and his or her teacher, with changing perspectives of protagonist. The project also features a critical analysis that addresses whether or not the collection could be considered school story literature, what audience(s) the collection would be focused toward, and the challenges and triumphs faced during this creative process.

**Ryan Blejewski**  
Majors: Psychology and History  
Will attend the University of North Carolina and obtain Master’s Degree in Psychology  
**Thesis Title:** A Massacre in Jedwabne: A Psycho-Historical analysis of the events of July 10, 1941  
In 1941 the non-Jewish citizens of Jedwabne murdered most Jews within the town. I asked why the non-Jewish citizens of Jedwabne suddenly turned and murdered all of the Jews that they had known for years. I combined theoretical approaches from social psychology with analyses of primary sources asking whether social psychological methods are useful for analyzing historical events. I made use of Philip Zimbardo’s Stanford Prison experiment, Solomon E. Asch’s conformity theory, propaganda, and Christian Gerlach’s theory of extremely violent societies. I found that situational attribution, the power of conformity, and propaganda were all factors in causing the Jedwabne massacre.

**Samuel Underhill**  
Major: Computer Science  
Minors: Computer Engineering Science  
Plans to Work at Cigna as an Application Developer  
**Thesis Title:** Implementation of Multiplication Across Multiple Computational Platforms  
My project consisted of demonstrating multiplication across the following four platforms: mechanical, digital, cellular, and quantum. For mechanical, I created a simple example of a Pascaline out of Legos, consisting of gears arranged to allow a user to add, subtract, multiply, and divide. For digital, multiplication was shown in different ways. For the cellular example, I used Conway’s Game of Life to do the multiplication. The Game of Life uses a grid of cells, with the cells either becoming alive or dying depending on the surrounding cells. The final platform was quantum, and was demonstrated using the mod qCraft for the game Minecraft, allowing an illustration of how observer dependence and quantum entanglement can be used to implement multiplication.

**Melissa Zablonski**  
Major: History and Social Sciences  
Certification: Secondary Education  
Plans to be a Teacher and Pursue Masters Degree in Preservation and New England Studies  
**Thesis Title:** The Pension Widow: Defining the Criteria for Women in the Revolutionary War Pension Process  
With the formation of the new nation in 1789, the federal government sought to reward its Revolutionary War soldiers and their families for their loyalty and service by awarding pensions. In 1836, pension benefits were extended to soldiers’ widows. Rather than adhering to the official pension laws, which granted pensions based on financial need and war service, congressmen granted pensions to widows based upon their social status and social ties. Fraud and favoritism were used to award pensions to elite women and to deny deserving applicants of the financial assistance they needed to survive.
**Matthew Savona**  
**Major:** English  
**Minor:** Secondary Education  
Pursue a Career as a Language Arts Teacher or a Writer  
**Thesis Title:** Becoming and Staying Popular: A How-To-Guide  
My thesis project is a collection of short stories mostly based off of my own personal life experiences. I attempted to write each short story in such a way so that each had its own unique tone and mood, though all of them were written with a young adult audience (~15-21 years old) in mind. Believe it or not, I had actually proposed writing a novella instead of short stories, yet changed my mind after realizing the creative freedom and variety that short stories allow for. In the end, although the stories are written for a specific age group, I believe they contain themes that people of all stages of life can enjoy and appreciate.

**Kelsey Tuller**  
**Major:** History  
**Minors:** Anthropology, Art History, Writing  
Pursue Masters Degree in Archaeology in the United Kingdom  
**Thesis Title:** From Mystery to Methodism: Untangling Legends of a Cult in Gay City, CT  
The history of Gay City, Connecticut, a small community inhabited for less than a century, was mostly based on legends and folktales. Little is known about the village before the early nineteenth century. Before this, the area was supposedly the center of religious turmoil and the inhabitants were believed to be hard drinking, zealous cult members. Historians relied heavily on old folktales rather than historical facts. This essay looks past the legends and stories found in collections of legends and folktales. Through an investigation of primary source materials, I uncovered what actually happened in Gay City, focusing on its founding and religious transition.

**Patrick Boyne**  
**Majors:** Computer Science and Communication  
Anticipates a Career in Television  
**Thesis Title:** Eastern Explores  
In the fall of 2013 the Glastonbury Board of Education introduced a program, referred to as the “iPad initiative”, to distribute iPads to its high school students. Since that time the program has been met with mixed reviews. *Eastern Explores* offers a balanced look at the program to provide an unbiased account of how the iPad initiative is being received. As technology continues to advance questions of how and why it should or should not be integrated into education will become more common and this creative thesis seeks to add to that discussion.

**Alice Difrancesco**  
**Major:** Psychology  
**Minor:** Biology  
Plans to attend Medical School  
**Thesis Title:** Expression and Function of ODD-2 in the *C. elegans* germline  
The *C. elegans* odd-2 gene is closely related to the mammalian genes OSR1/OSR2, which are involved in developmental pathways and diseases including gastric cancer. ODD-2 was studied using a mutation strain and a transgenic strain. Temperatures and primers were optimized for gradient PCR. A transgenic outcross was attempted, but the transgene was on an unstable array. Attempts were made to cross the transgene to the mutant to rescue larval lethality; these crosses are still in progress. Future directions include *in situ* hybridization and antibody fluorescence staining. Results from these would provide valuable information regarding the function and expression of ODD-2.
**RENEE DROUIN**

Major: English  
Minors: Writing, History  
Will attend Rutgers-Camden to pursue Master’s in Writing Studies  

**Thesis Title:** Adaptations of Anne Boleyn  

“Adaptations of Anne Boleyn” is a study of literature from multiple genres, all of which detail the life of Anne Boleyn, a British queen from the 1500s, best known for her tragic death. Due to our cultural fascination with Anne Boleyn, stories involving her try to continue her life past her death. One way authors choose to do so is to make her a doppelganger, another self, of the novels’ point of view characters. Via historical and cultural lenses, I establish Anne’s popularity, define adaptations and doppelgangers, and the nuances of making her this ‘double self’.

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**KELSEY FULLER**

Major: Music  
Minor: Women’s Studies  
Will attend the University of Colorado-Boulder as a Ph.D. student in Ethnomusicology with a Teaching Assistant Fellowship  

**Thesis Title:** Cultural Cohabitation: Swedish Jazz and the Folk Revival  

In the late twentieth-century, jazz in Sweden ceased to be solely an American import, and transformed into a unique musical expression due to affiliations with the Swedish folk revival, which peaked in the 1960s. Syncretism between Swedish folk music and jazz becomes evident through resulting aesthetic, socio-cultural purposes, and identity value of folk-based “Swedish Jazz;” it aided in establishing new national identity following WWII and the institution of the Social Welfare State. “Cultural Cohabitation” illustrates how elements, like music, collaborate to contribute to a cultural movement such as redefining what it means to be Swedish in the twentieth-century and beyond.

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**ALEXANDRA ROGAN**

Major: English  
Minor: Writing  

Plans to Pursue a Graduate Degree  

**Thesis Title:** Ideology and Identity Crisis in Atheist Social Movements: The Case of the Sunday Assembly  

In my thesis, I utilize rhetorical and sociological scholarship to understand how The Sunday Assembly (TSA), an “atheist church” turned inclusive group for people who wish to celebrate life, has built and maintains a collective identity that may help them attract and retain members. I discuss differences between TSA’s worldwide, externally-directed rhetoric and their local, internally-focused rhetoric (as I observed at multiple TSA meetings) to form conclusions about how these differences affect its collective identity and classification as a social movement. This analytical approach provides insights into TSA’s potential for further growth and sustainability as well as a potential methodology and set of research questions for future scholarship on social movement rhetoric.

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**MEGAN SARGENT**

Majors: Elementary Education and English  
Pursue Masters Degree in Physical Education at Springfield College  

**Thesis Title:** Meaningful Links to Literacy: Journaling in the Classroom  

Writing is undervalued in the classroom. The process of writing is either disregarded or taught in a standardized format that often overlooks children’s interests and capabilities. Many times writing is integrated into other subjects because there isn’t enough time to focus on writing. Since journaling is a writing tool used to reflect, my thesis explored this tool with the students in a classroom, examining the roles of writing beyond the classroom. I wanted to observe what my students wrote about and how the students chose to express themselves. It allowed students to experience a memorable and meaningful interaction with writing, while connecting their literacy experiences outside of school with their literacy practices inside of school.
ANTHONY MICLON
Major: Communication
Minor: Business Administration

Thesis Title: Steps of a Short Film
This creative thesis involved writing, shooting, and editing a short comedic film about religious missionaries who resort to hostage taking and violence to convert others to their religion.

JESSICA PATERIZ
Major: Biology
Minor: Physical Education
Will attend Osteopathic Medical School in the Fall

Thesis Title: Can Extracellular Matrix Molecules Enhance Neurogenesis in the Chick Olfactory Epithelium?
Both traumatic brain injury and stroke result in the death of brain cells and loss of function. Most brain regions cannot readily regenerate lost cells, but the olfactory epithelium (responsible for smell) can via neurogenesis. Mechanisms regulating neurogenesis are mostly unknown, but may be linked to the cell's environment, including extracellular matrix molecules. I sought to determine the developmental expression of these molecules in the chick olfactory epithelium and how combinations affect neuron production. Additionally, using a combination of molecules, I successfully cultured neurons. Mechanisms of regeneration could one day be applied to the brain to help restore lost functions.

SAMANTHA HUGH
Major: Psychology
Minor: Studio Art
Pursue Master's Program in Art Therapy and Counseling at Springfield College

Thesis Title: A Personality Investigation of the First Three Presidents of the United States of America
This research seeks to discover the personality and character of Washington, Adams, and Jefferson, our nation's first three presidents. Using two descriptive and one developmental model of personality, this thesis seeks to describe in detail these men's personalities, but also to explain how and why their unique characters emerged and developed. Results will contain an in-depth description of Washington, Adams, and Jefferson's personalities, along with an analysis of how their personalities developed. These men's personalities will be examined based on how they influenced each of their lives and their success as revolutionary men.

MONIKA KALINOWSKA
Major: Biology
Minor: French
Plans a Career in an Ecology-Based Field

Thesis Title: Limnological Studies on Church Farm Pond: A Small Man-Made Pond in Ashford, CT
This limnological study looks at a century-old, man-made pond in New England between early September and March. Church Farm Pond (CFP), located in Ashford, CT, has been minimally studied; the purpose of this project was to investigate the abiotic characteristics and zooplankton community shifts that occur across seasons. The source of water for the pond appears to be rainwater and run-off based on low values compared to groundwater sources. Nearly undetectable levels of nitrates and phosphates, as well as watershed evaluation, indicate no fertilizer and pesticide contamination. The zooplankton community was consistently dominated by filter-feeding cladocerans, apart from two collection dates.
**BRYAN LEHNER**  
Major: Biochemistry  
Minor: Biology  
Pursue Doctoral Studies in Molecular Plant Science at Virginia Tech  
**Thesis Title:** Catalytic Efficiencies of Enolase from Fast-and Slow-Killing Genotypes of *Paenibacillus larvae*  
*Paenibacillus larvae*, the causative agent of American Foulbrood, is one of the main causes for honeybee population decline in the last half century. Due to its multiple functions in *Paenibacillus*, the enzyme enolase has been implicated in bacterial infection. This study suggests enolase’s catalytic function in sugar metabolism warrants further investigation for understanding American Foulbrood virulence. Assayed for kinetics, enolase from a fast-killing genotype of *Paenibacillus* had a three-fold higher catalytic efficiency than enolase from a slow-killing genotype. The difference in enolase kinetics was traced to a single amino acid mutation preceding the enolase active site.

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**RICHARD MAGNER**  
Major: Mathematics  
Minors: Computer Science and Writing  
Pursue PhD Program for Mathematics at Boston University  
**Thesis Title:** Number Theory and Algebraic Geometry: The Weil Conjectures for Algebraic Curves  
This thesis has two major components. In the first, we trace some results from elementary number theory and apply them to the study of modular hyperbolas, an example of a curve over the integers modulo n. We give a lower bound on the number of ordinary lines spanned by these objects, and an application to proving a classic result on quadratic residues. In the second part, we develop the machinery to prove the Weil Conjectures for algebraic curves, three statements about the behavior of zeta functions associated to algebraic varieties of dimension 1.

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**LAURA MARKLEY**  
Major: Environmental Earth Science  
Minor: Geographic Information Systems  
Pursue Master's Degree in Earth and Environmental Science from Lehigh University  
**Thesis Title:** Arsenic in Groundwater Resources of Lebanon, Connecticut: Geologically Sourced or Anthropomorphic?  
In October of 2013, traces of arsenic were reported in well water at Lebanon Elementary School. Although carcinogenic, arsenic is not typically analyzed in well water. As such, potential sources of arsenic were evaluated by sampling and analyzing wells for water quality parameters across Lebanon. The concentration of arsenic was examined with respect to additional water quality parameters, bedrock lithology, and groundwater flow conditions using geographic information systems. Flow conditions indicated that landfills/agricultural waste were not contributing to arsenic contamination. However, the distribution of arsenic suggested a geologic source with potential contributions from agriculture and/or altered water chemistry.

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**HARRISON MCNAIR**  
Major: Political Science  
Plans to attend Graduate School in Political Science  
**Thesis Title:** Political Integration in South America Using Economic Opportunity to Realize Political Cooperation in a Common Market  
Relatively underdeveloped, South America contains the potential for a strong political cooperative union, with economic opportunities often being the best place to spark integration efforts. With Brazil and Argentina as regional leaders in this effort, the soybean market is used as an example of an expanding economic opportunity for both states. A political and economic context is established as it involves the soybean industry, which provides a marker of the applicability of neo-functionalist integration theory. While integration criteria for this market are not met, there is still a positive outlook for the region as they continue to develop.