



APRIL 15

2016



**EASTERN
CONNECTICUT
STATE UNIVERSITY**



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APRIL 15, 2016

SCHEDULE OF EVENTS

11:30 am – 12:30 pm	Registration , Student Center Café
12:30 pm – 1:00 pm	Opening Ceremony , Student Center Theater (overflow room – Betty Tipton Room)
1:00 pm – 3:00 pm	Oral Presentations, Session 1 , Student Center Meeting Rooms (see pg. 5 for room numbers)
3:00 pm – 3:30 pm	Live Performances , Student Center Theater, Student Center Café, Betty Tipton Room
3:30 pm – 4:20 pm	Poster Session and Photography Exhibit , Betty Tipton Room
4:20 pm – 6:00 pm	Oral Presentations, Session 2 , Student Center Meeting Rooms (see pg. 6 for room numbers)



CREATE 2016 is a celebration of the breadth and depth of Eastern Connecticut State University's undergraduate research, experiential learning, and artistic talent. In support of the University's current strategic plan, CREATE serves to:

- Reinforce high-impact practices such as mentored research and creative projects
- Increase the percentage of students presenting their research and creative work
- Raise public awareness of Eastern's uniqueness and the accomplishments of our students
- Contribute to the intellectual richness of our campus community

Thank you for attending CREATE 2016 and congratulations to all of our participating students for their hard work and academic achievements!

CONFERENCE ORGANIZATIONAL COMMITTEE

Carmen Cid

Maureen McDonnell

Amy Coffey

Martín Medoza-Botelho

Robert Collins

Kristen Morgan

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Patty Szczys

Timothy Flannery

Terri Toles-Patkin

Chunying Sandy Jin

Jeffrey Trawick-Smith

Mehdi Khorami

CREATE Detailed Schedule of Events, 12:30-3:00 pm, Friday, April 15, 2016

Time	BT Room	Theater Moderator: Nicole Krassas	MR 107 Moderator: Niti Pandey	MR 113 Moderator: Robert Collins	MR 115 Moderator: Maureen McDonnell	MR 217 Moderator: Chunying Jin	MR 219 Moderator: Terri Toles-Patkin	MR 221 Moderator: Kristen Morgan	MR 223
12:30-1:00	Opening Ceremony								
1:00-1:20	Posters & Photography	<u>Panel Discussion</u> J. Doucette III (Political Science, Philosophy & Geography) Women's Rights as Human Rights: A Contemporary Analysis (1-hour duration)	Tiril Celine Buck (Business Admin.) Hofstede's Cultural Dimension of Masculinity-Femininity and Women in the IT Industry: Comparing Norway, Japan, and Brazil	Anna Shannon (Mathematics and Computer Science) Vacationing with Graph Theory	Emily Komornik (English) Divine Intervention: Images of the Christian Ghost in Shakespearean Tragedy	Colleen Hart (Economics) The Economics of Liberal Firefighting	Anthony DeLuca (Communication) Social Media Communication in the 2016 Presidential Race	Delaney Jordan (Performing Arts) Remediation and Anna Karenina: The Layers of Making a Theatrical Film	ART EXHIBIT
1:20-1:40		Mame Fatou Diop (Business Admin.) A Qualitative Study on Healthcare Consumers Concerns for Privacy and Security in the Adoption of Personal Health Records - Exploring Contextualized	Lindsey Schaffrick (Mathematics and Computer Science) Application of Survival Models to United States and Ireland Life Table Data	Alexis Kurtz (English) Modules to Assist Nutmeggers in Performing Six Major American English Dialects for the Stage and Screen	Thomas Loura (Economics) Microfinance and its Impact on Women	Catherine Allegretti (Communication) The Effect of Gender and Exposure to Political Advertising on Political Cynicism	Matthew Vitello (Performing Arts) Implicit Religion and its Place in Society: How Stephen Adley Guirgis Uses Religion to Incite Social Progression		
1:40-2:00		Karolina Chrzanowska (Business Admin.) The Analysis of Suspicious Transaction Reporting in the Bahamas (Ends at 2:00)	Michael Gargano (Mathematics and Computer Science) Identifying gene-cancer associations through text-mining of biomedical literature	Meg Kelly (English) Humans of Eastern	Shannon Pajer (Economics) Breaking Up the Banks: A Look at Glass-Steagall in the Past and in the Future	Madeline Thumma (Communication) Swipe Right: Getting and Maintaining an Online Relationship	Brennan Yau (Art and Art History) Remedios Varo's Bordando el Manto Terrestre : The Conflict between Women Artists and Surrealism		
2:00-2:20		<u>Panel Discussion</u> C. Morris (English) Divergent Narration: Subverting the Power Dynamics of the Fix-It Shop (Ends at 2:30)	Emily Komornik (History) The Rhetoric of Rebellion: A Comparison of the Great Awakening and American Revolution, 1737-1783	Sarah Maroon (Mathematics and Computer Science) Web application development in the MEAN stack	Megan Velasquez (English) Child Must Have a Ticket: An Analysis Book-to-Stage Adaptations of Alice in Wonderland and Matilda	Emily Bruggeman (Pol. Sci., Philosophy & Geography) Examining the Benefits and Disadvantages of Socialism and Capitalism	Kenneth Saintonge (Sociology, Anthropology and Social Work) ConTEXT: An Inquiry Into Perceived Value of Context Over Different Communication Mediums	Nicholas Khan (Art and Art History) Anatomy of Victorian Architecture: A Study of Willimantic	
2:20-2:40		(Starts at 2:30)	Talia Erris (History) Five Feet of Feminine Anarchy: Press Depictions of Emma Goldman 1892-1901	Ronald Kaiser (Biology) Effects of Hadrurus arizonensis venom on N2a Neuroblastoma cells	Ashlyn Hart (English) 'Just Call Me Aimee': Confronting Stereotypes of People with Disabilities	Sierra Colon (Pol. Sci., Philosophy & Geography) Environmental Policy and Ideology	Emilio Estrella (Sociology, Anthropology and Social Work) The Social Devaluation of Labor: Is it a Choice?	Allison Smith (Women's and Gender Studies) Bringing Women's Studies into the Secondary Classroom	
2:40-3:00	<u>Panel Discussion</u> S. McCulloch (English) Writing for Young Adults (Ends at 3:00)	Christopher Morris (History) Got a Donkey in the Crosshairs: The Partisan Anticommunism of Senator Joseph McCarthy	Sarah Denihan (Biology) Genetic Structure and Conservation of Common Terns, Sterna hirundo, in Manitoba, Canada	Allie Coppola (English) Creative Writing Abroad: Words to Live By	Liah Sinquefield (Pol. Sci., Philosophy & Geography) Critical Thinking and Complex Reasoning	Raquel Estrella (Sociology, Anthropology and Social Work) The First Generation Latino's Pursuit of Higher Education	Sabrina Davis (Women's and Gender Studies) The Zola Story: Sex Work from the Front Line		

CREATE Detailed Schedule of Events, 3:00-6:00 pm, Friday, April 15, 2016

Time	BT Room	Theater Moderator: Ed Chibeau	MR 107 Moderator: Ari deWilde	MR 113 Moderator: Mehdi Khorami	MR 115 Moderator: Martin Mendoza-Botelho	MR 217 Moderator: Terri Toles-Patkin	MR 219 Moderator: Nicholas Parsons	MR 221 Moderator: Jeffrey Trawick-Smith	MR 223
3:00-3:30	Posters & Photography	Chamber Singers and Opera Performance in Café; Stephanie Madden and Hanna Madler (Performing Arts): The Journey of Theatre Competitions: Performing Scenes from the Irene Ryan Acting Competition (3:00-3:20; Theater); and Documentary Film “Black Lives Matter” by Rachel Sawyer (Women’s and Gender Studies; 3:20-3:30); Coffee Served in Café and Betty Tipton Room							
3:30-4:20		Formal Poster Session and Photography Exhibit (Betty Tipton Room & gallery between the Café and Theater)							
4:20-4:40		Anthony Piccione (Performing Arts) Neo-Melodrama – Reviving and Renovating Old Theatre for New Times	Rebecca Rubin (English) A Poetry Collection	Danielle Robillard (Mathematics & Computer Science) DNA: Knot What You Would Expect	Jessica DeFelice (Poli. Sci., Phil. & Geog.) Women’s Route to Elective Office in the United States	Talene Balian (Business Admin.) Marketing vs. e-Marketing: Which is More Effective and Efficient?'	Matthew Harrington (Sociology, Anthro. and Social Work) Health services for the homeless population of Willimantic, CT.	Sarah Beth Tonzi (Education) Using Literacy to Increase Mathematical Interest in Preschool	ART EXHIBIT
4:40-5:00		(Ends at 4:50) (4:50) Tyler Hinde (Performing Arts) An Introduction to Korean Traditional Music: Danso, Jeongganbo and Arirang	Catherine Allegratti (English) Caulfield’s Cognitive Crisis	Leigh Savoie (Mathematics & Computer Science) Exploring Dance through Knot Theory	Erin Drouin (Poli. Sci., Phil. & Geog.) From Bakke to Schuette: Media Coverage of Affirmative Action in Higher Education Supreme Court Cases, 1978 & 2013	Brittany Bronner (Business Admin.) The Effect of Core Self-Evaluations on the Stress and Job Satisfaction of Police Officers	Chelsea Reel (Sociology, Anthro. and Social Work) Heroin in the Thread City	Samantha Marsh (Education) Effects of block play on mathematics learning in preschool	
5:00-5:20		(Ends at 5:10) (5:10) Alexis Kurtz (Performing Arts) Drawing Photographs: Evidence for the Realities of the Holocaust (Ends at 5:30)	Lauren Teta (English) Creative Writing Abroad	John Harakas (Mathematics & Computer Science) Analyzing Keyboard Vibrations Recorded by Mobile Devices	Alex Cross (Poli. Sci., Phil. & Geog.) Straightening Out the Russian Mold: How Russian Nationalism Ostracizes the LGBT Community	Benjamin Brady (Communication) Complaint Effectiveness and the Greater Good	Matthew Collin (Psychology) CBT for Comorbid Depression and Anxiety: A Review and Synthesis of the Literature	Samantha Marsh (Education) Choices Preschool Children Make During Free Play Time: Effects of Age, Gender, Socioeconomic Status, and Ethnicity	
5:20-5:40		Damon Gray (Communication) All Equals One (Ends at 6:00 pm)	Laura Perez-Handler (Academic Services Center) Stepping Out: Creating a Safe Space for Minority Identities in Writing Centers	Emily Hennessy (Mathematics & Computer Science) The Mathematics of Secret Messaging	Harrison Brooks (Poli. Sci., Phil. & Geog.) The Determinants of Candidate Vote Share in the 2014 United States Senate Elections	Morgan Cunningham (Communication) The Impact of Hazelwood v. Kuhlmeier on School Sponsored Speech	Melody Kramarz (Kinesiology & Physical Education) Behavioral Regulation in Exercise Participation Among College Students	Leah Slawinowski (Education) Effects of Toys on the Play Quality of Preschool Children: Influence of Gender, Age, Ethnicity, and Socioeconomic Status	
5:40-6:00			Emilio Estrella (Labor Rel. and Human Resource Management) Factoring in Rising Student Debt in Calculating Returns to Investment in College Education	Sabreena Croteau (History) Influence and Interference: US Foreign Policy towards Saudi Arabia 156-1971	Alexis Buck (Poli. Sci., Phil. & Geog.) The Study of Philosophy: A Definition and its Importance	Lynn Aldo (Communication) 'One Ringy Dingy' – Ernestine Tomlin	Morgan Considine (History) Dynamite, Terrorism, and the Los Angeles Labor Movement	Jennifer Disco (Sociology, Anthropology and Social Work) Displaying Culture at the New London County Historical Society: Real Life Experience in a Museum	

Note that some presentations may have more than one author, but in the interest of conserving space, only the first author is shown above. Please see program abstracts for further information about each presentation and for full author details. Faculty mentors are also shown in program. Posters will be on display in Betty Tipton Room throughout conference.

ARTWORK – ABSTRACTS

Artwork will be on display throughout the day at the Art Exhibit in MR 223.

CIDER MILL

Grace Amione (Art and Art History)

Faculty Mentor: Caroline Valites

Digital ink jet, 24 in. x 36 in.

This photo was taken during a foggy night at the Middle school of my town, Cider Mill. I tried to show how during the day, the playground is full of children and bright colors, but at night it is lifeless and eerie. I chose the perfect foggy night to really capture the darkness of an empty playground.

ZEN

Margaret Berkovich (Art and Art History)

Faculty Mentor: Afarin Rahmanifar

Acrylic and pen, 24 in. x 30 in.

This piece started out as a study on mandallas but slowly turned into something more. I wanted to free hand everything and go with what I was feeling.

IMAGINATION IS THE ONLY WEAPON

Adina Bernstein (Art and Art History)

Faculty Mentor: Terry Lennox

Photography, Adobe Illustrator and Photoshop, 24 in. x 18 in.

Digital Illustration:

Alice's Adventures in Wonderland by Lewis Carroll (Charles Lutwidge Dodgson)

Artwork

FALL FUNK

Kendra Borders (Art and Art History)

Faculty Mentor: Steffanie McCrady

Photoshop, 11 in. x 17 in.

Nature is the perfect subject for art in any form, this textile design features a single section of a landscape photograph. The design shows great depth with vibrant colors of reds, oranges, and yellows that displays the calming feeling of fall. Fall was the inspiration of this piece.

MAKE AMERICA GREAT AGAIN

Alison Brundrett (Art and Art History)

Faculty Mentor: William (Andy) Jones

Oil paint on canvas, 16 in. x 20 in.

A big election is currently taking place and the future of our country for the next four years is in the balance. Politics are usually not an everyday conversational topic, but I decided to create a piece to get people talking about what might be in store for America in the future. Andy Warhol and his pop art style portraits inspired me, as well as the fictional character Ron Swanson. This character, played by actor Nick Offerman in the program, *Parks and Recreation*, is one that is meant to be an All-American man's man. Ron hunts, drinks whiskey, eats red meat, and is a strong believer in his Constitutional rights and freedoms. He believes that the government should not dictate its people, but that the people should dictate their government. He's a stoic patriot with a mustache of gold, and the ideal future President. I coupled Ron's black and white portrait with the bold color pattern of the American flag behind him, and titled the piece with the newly famous campaign slogan of candidate Donald Trump. I hope through this piece's satirical humor and use of pop culture elements it can generate a real conversation about politics among the audience.

THE HARLEQUIN OF THE DARK WALK

Dominique D'Costa (Art and Art History)

Faculty Mentor: Caroline Valites

Digital ink jet, 36 in. X 25 in.

THE 4 E'S OF SOCIAL WORK

Meghan Eichelberg (Sociology, Anthropology and Social Work)

Faculty Mentor: Pamela Chiang

Fountain, 24 in. x24 in. x24 in.

Each and every day all over the world lives are being touched by people who are striving to help others. Nevertheless, the type of help you get from social workers is particularly based on theory, research, and practice. Social workers serve individuals, families and communities not only in their empathy and compassion, but also in their values and core beliefs of social justice and equality. In this combination of masonry artwork and creative expression, this fountain of Social Work's 4E's, is aimed to convey the spirits and values of social work that encompasses the profession. The Fountain is symbolic in many ways. On several different tiles is writing which lists a collection of different ideas that I believe make up the multifaceted field of social work. They include Policy, Advocacy, Resources, and The 4 E's which are empathy, empowerment, evolving, and ethics. A fifth E could even be included, because social work is a profession that provides evidenced based practiced to everyone, and it's nondiscriminatory. Also at the bottom of the fountain it states that social work is a collective action of many hands and agencies working together to improve the quality of life. In the middle of the fountain are two sculpted hands. These are two different hands (mine and my stepdaughter's) coming together to provide water for the Fountain Below. Social work is more than just one person; it's many people working together, and it uses resources to improve the quality of life for anyone who needs its services. The water symbolizes many things in itself. Without water we could not live. Water is a symbol of life. It is also something that we are all made of and is in each and every one of us. Water symbolizes many different things including, Life, Motion, Renewal, Intuition, Reflection, Transformation, and Metamorphism. Without it we could not survive, and that is why I used it as an essential component of my project. I believe that social work is essential to our communities and lives. The water is symbolic of the resources used by social workers to improve the quality of life for those in which they are able to assist. This is a well-rounded profession. It is also a field that continues to evolve over time, and continues to do research and implements the evidence-based practice for its clients.

FALL REFLECTIONS

Morgan Hagearty (Art and Art History)

Faculty Mentor: William (Andy) Jones

Acrylic on canvas, 18 in. x 24 in.

This painting focuses on the contrasting features of light, water, and space in defining an image. Vibrant colors and glazes help to make a reference photo into a tangible atmosphere.

THE BRIDGE AT THE ELM CREEK ESTUARY

Nicholas Khan (Art and Art History)

Faculty Mentor: William (Andy) Jones

Acrylic on canvas, 18 in. x 18 in.

This painting recalls the romantic era paintings of the early 19th century, renowned for their dramatic skies. It is based on the works of JMW Turner, Thomas Cole, and Phillippee-Jacques de Louthembourg. The prevalence of luminosity from the sun and deep colors within the shadows establish a relationship

Artwork

where the two elements blend together. The implementation of a bridge and boats in the composition serves as a reminder of the presence of mankind in the otherwise natural landscape.

SELF PORTRAIT

Nicholas Khan (Art and Art History)

Faculty Mentor: William (Andy) Jones

Acrylic on wood board, 15.5 in. x 19.5 in.

The painting, on a cradled wooden board, is created using a buildup of numerous glazes. The handmade frame was created specifically for this painting.

HIBISCUS

Emily Kohn (Art and Art History)

Faculty Mentor: William (Andy) Jones

Oil on canvas, 8 in. x 10 in.

This oil painting focuses on the subtle details of the natural world.

HAND HOLDING THE GLOBE

Emily Kohn (Art and Art History)

Faculty Mentor: Afarin Rahmanifar

Pastel on paper, 18 in. x 24 in.

The cracked hand represents my overworked self. The globe represents a deceptively flourishing earth that is controlled by greed and evil.

THE FOREST SPIRIT

Justin McCabe (Art and Art History)

Faculty Mentor: Terry Lennox

Adobe Photoshop, 18 in. x 24 in.

Digital Illustration: *Princess Mononoke* by Hayao Miyazaki

SEARCHING FOR SHAPES

Brick Palazzo (Art and Art History)

Faculty Mentor: Steffanie McCrady

Digital Textile-Design Repeat, 11 in. x17 in.

Searching for Shapes was created purely out of a need for something hard on the eyes. While uncovering many secrets of textile design I had an idea to create something that would show that a design could be more than something objective. Using a few simple shapes and copying and pasting multiple times, a quarter of the piece emerged. Once I realized a repeat could be created, I began the process. After centering the piece and finding the correct position, it was obvious to myself that the design of this piece was more than abstract and it was almost as if you are searching for the original shape that created this piece.

MORNING REFLECTION

Kevin Shaw (Art and Art History)

Faculty Mentor: Caroline Valites

Digital ink jet, 18 in. x 24 in.

VIBRATIONAL FERN

Brennan Yau (Art and Art History)

Faculty Mentor: Steffanie McCrady

Digital Textile Design, 17 in. x 11 in.

Vibrational Fern is a piece created from simple materials: fake ferns and pink paper. The overall goal was to create a vibrating structure that mimicked the jarring juxtaposition of the pink and green hues. Through experimentation in different arrangements of mirroring the shapes, I was able to create compositions that I felt were both calming and stimulating.

DOCUMENTARIES – ABSTRACTS

See *Detailed Schedule of Events* (pg. 6 of this booklet) for times and locations of documentaries.

ALL EQUALS ONE

Damon Gray (Communication)

Faculty Mentor: Andrew Utterback

All Equals One: The Story of ECSU Rugby by Damon Gray (16) and Nick Aconfora (15) was produced as an Independent Study in the Spring Semester of 2015. The film was acquired by CPTV and aired in both December of 2105 and January of 2016.

BLACK LIVES MATTER

Rachel Sawyer (Women's and Gender Studies)

Faculty Mentor: Maureen McDonnell

Black Lives Matter is a movement to create equality for the oppressed. Black Lives Matter represents not only Blacks, but also includes LGBT lives, trans lives, Muslim lives, immigrant lives, and others who are systemically oppressed in this country. In America, African Americans live in a constant cycle of systemic oppression stemming from this country being built on White supremacy. They are oppressed in all areas in life including their race, class, gender, and even the hue of their skin color. By creating a short video, it will shed light on the movement, specifically, police brutality. This project will show the multitudes of privilege that Black men and women lack due to the color of their skin. At Eastern, we do not acknowledge our privileges as much as we should, and this video will bring important relevant issues that are happening everyday. The video will touch all areas of how African Americans lack simple privileges like living in constant fear of being murdered, arrested, racially profiled, etc.

ORAL PRESENTATIONS – ABSTRACTS

See *Detailed Schedule of Events* (pgs. 5-6 of this booklet) for times and locations of oral presentations.

'ONE RINGY-DINGY' – ERNESTINE TOMLIN

Lynn Aldo (Communication)

Faculty Mentor: Terri Toles-Patkin

In today's corporate environment, many organizations are forming virtual teams. These allow companies to access individuals and resources from all over the world and to maximize their intellectual and networking resources. The purpose of these virtual teams is to enable individuals to collaborate information and accomplish workplace tasks without the inconveniences of traditional face-to-face communication. As face-to-face meetings and virtual meetings bring people together to collaborate on different topics, the technology involved needs to be perfectly fitted if it is going to be maximizing efficiency and performance levels. There are specific tools for all different types of jobs and it goes the same for meetings whether they have a social presence or not; whether they are asynchronous or synchronous. Effective virtual communication will be explored through the lens of social presence and descriptive theories of communication.

CAULFIELD'S COGNITIVE CRISIS

Catherine Allegretti (English)

Faculty Mentor: Lisa Fraustino

Finkelhor and Browne identify four traumagenic symptoms that provide a framework to assess the psychological injury to victims of childhood sexual abuse. These symptoms include traumatic sexualization, betrayal, stigmatization, and powerlessness. In J.D. Salinger's *Catcher in the Rye*, these symptoms are evident in the protagonist, Holden Caulfield. After a fight at his school, Holden runs away. His ensuing journey through New York City shows the unraveling of his psyche as he engages in self-destructive behaviors and struggles to preserve the innocence of his sister Phoebe. Holden's dialogue shows evidence of his past sexual abuse as he shares the 'perverted' things that have happened to him and his deep discomfort with his own sexuality. As the novel progresses, Holden's psychological crisis is deepened further as he displays each of Finkelhor and Browne's traumagenic symptoms and calls out to readers for help.

THE EFFECT OF GENDER AND EXPOSURE TO POLITICAL ADVERTISING ON POLITICAL CYNICISM

Catherine Allegretti, Anastasia Dzikas (Communication)

Faculty Mentor: Jehoon Jeon

Political advertising has long been studied and with a presidential election approaching in 2016, its significance is even greater. Younger demographics are often considered more difficult to reach, with lower numbers of college-aged students voting and participating in political elections. Much research has been done on the effects of political advertising and its ability to motivate candidates not only to vote, but also to side with and understand the issues and agenda of a particular candidate. Research has shown that women tend to have more positive images of candidates and that exposure to political advertising can cause some to take a more active role in politics. Additionally, a specific focus is usually made on negative advertising and the negative impact this can have on voters' perceptions of candidates and politics. The point of our present study was to determine whether advertising, negative or positive, has an impact on the cynicism that is often associated with college-aged students. This will help pinpoint the attitudes and feelings of this demographic of voters and help to understand ways to reach and encourage this population.

MARKETING VS. E-MARKETING: WHICH IS MORE EFFECTIVE AND EFFICIENT?

Talene Balian, Sherry Gilronan, Taylor Roberts, Amy Dziewaltowski (Business Administration)

Faculty Mentor: Branko Cavarkapa

It happens quite often; you access the Internet, and off to the side there you notice a sponsored advertisement promoting something we were just searching for the previous day. How did this happen and how do they know what we searched for? Is it just a coincidence? Ever since marketing was brought into the world of technology, it changed the game. Many companies that market their products online are able to reach out to more consumers than ever before, and at a fraction of the cost. Throughout the years, multiple techniques have been developed in order to reach the exact consumers being targeted through complex methods involving social sciences and businesses. But where do traditional marketing and the brand new e-Marketing techniques meet? E-Marketing is still new, and many businesses are still in the process of integrating digital techniques into their marketing plans. The purpose of the research that was conducted was for businesses to understand all the benefits of e-Marketing. The other main idea of the research is how e-marketing can be mixed with traditional marketing methods for the businesses to reach their maximum potential. We believe it is important for any business to keep up with today's marketing techniques in order to grow.

COMPLAINT EFFECTIVENESS AND THE GREATER GOOD

Benjamin Brady (Communication)

Faculty Mentor: Terri Toles-Patkin

Customer complaints create both challenges and opportunities. This study examines the interaction of communication styles and presentations of complaints to measure their effectiveness. Through interviews with customer service representatives and disgruntled customers alike, the effective and

ineffective strategies will be identified. This research is important because customer satisfaction is the cornerstone of any business's bottom line and its culture. Issues of conflict, workplace stress and burnout, and emotional labor are also considered.

THE EFFECT OF CORE SELF-EVALUATIONS ON THE STRESS AND JOB SATISFACTION OF POLICE OFFICERS

Brittany Bronner (Business Administration)

Faculty Mentor: Niti Pandey

The effect of core self-evaluation dimensions (self-esteem, locus of control, self-efficacy, and emotional stability) on job performance is well established in research. However, fewer studies have examined the mechanisms through which all dimensions of core self-evaluation affect stress and job satisfaction. This study examines the extent to which the four dimensions of core self-evaluation influence job stress and job satisfaction mediated by perceptions of job difficulty. Data collected from police officers are examined to present a framework of a context-specific relationship between core self-evaluation, stress, and job satisfaction.

THE DETERMINANTS OF CANDIDATE VOTE SHARE IN THE 2014 UNITED STATES SENATE ELECTIONS

Harrison Brooks (Political Science, Philosophy & Geography)

Faculty Mentor: William Salka

This study analyzes the determinants of candidate vote share using the results from the 2014 United States Senate elections across the states. Existing literature suggests that vote share is largely a function of candidate experience, spending, district partisanship, and candidate type. In addition to these variables, I hypothesize that President Barack Obama's low approval rating put Democrats at an inherent disadvantage during the 2014 midterm election. Through the use of univariate and bivariate analyses on 70 candidates, evidence confirms conventional understanding that partisanship, campaign expenditures, candidate type, and candidate quality are among the most decisive factors in electoral outcomes. Moreover, the low midterm performance of President Obama negatively impacted Democratic candidates and put the Republicans in a position to take control of the Senate.

EXAMINING THE BENEFITS AND DISADVANTAGES OF SOCIALISM AND CAPITALISM

Emily Bruggeman (Political Science, Philosophy & Geography)

Faculty Mentor: Hope Fitz

In this presentation, I will explore certain differences and similarities between socialism and capitalism, two of the most common economic structures. I will analyze how the two systems are manifested in society, how they are conducive or resistant to human behavior, and how they can both yield economic success and disparity. This examination will be done primarily through the lens of Ayn Rand, a Russian philosopher who pioneered an extreme approach to capitalism and the laissez-faire method. It will be

supplemented by views from socialist thinkers such as G.A. Cohen, which will help illustrate the alternative perspective. Lastly, in this paper I will discuss whether or not capitalism or socialism can yield a near-utopian society, and if not, what can? The intent is to juxtapose the two ideas, and reveal how they could complement each other in unexpected ways.

THE STUDY OF PHILOSOPHY: A DEFINITION AND ITS IMPORTANCE

Alexis Buck (Political Science, Philosophy & Geography)

Faculty Mentor: Hope Fitz

Many current and prospective post-secondary students are unaware of what it means to study philosophy. Without an awareness of its primary functions and relevance, the field becomes discredited, swept under the rug, and scrutinized as an option for a major or minor. My paper, "Philosophy: A Definition and its Importance" is therefore intended to tackle the questions: What is philosophy? What does it mean? The goal of philosophy is explained along with its most fundamental questions that deal with the nature of reality, morality, and knowledge. Skills that are naturally acquired through philosophic study as well as its application to the human experience are then explored with help from an introductory philosophy textbook, American philosopher Amelie Rorty, and Albert Einstein.

HOFSTEDE'S CULTURAL DIMENSION OF MASCULINITY-FEMININITY AND WOMEN IN THE IT INDUSTRY: COMPARING NORWAY, JAPAN, AND BRAZIL

Tiril Celine Buck (Business Administration)

Faculty Mentor: Niti Pandey

Hofstede's model of national culture examines the cultural differences among over 70 countries. This study examines the influence of one cultural dimension, masculinity-femininity, in the context of the information technology industry. Firms in this industry from three countries, Norway, Japan and Brazil, are studied to determine their human resource practices as affected by their national cultures. Specific attention is paid to women in the workforce since they tend to be globally underrepresented in this industry. The aim of this study is to be able to explain the influence of culture on the workforce participation of women in a male dominated industry.

THE ANALYSIS OF SUSPICIOUS TRANSACTION REPORTING IN THE BAHAMAS

Karolina Chrzanowska (Business Administration)

Faculty Mentor: Maryanne Clifford

This paper explores the impact of the global anti-money laundering campaign on the financial sector of The Bahamas, more specifically the implementation of the suspicious transaction reporting requirements in noncompliant nations. Furthermore by examining the financial sectors of two vastly different economies, this paper seeks to analyze the financial implications of the suspicious transaction reporting system. The Bahamas and Switzerland have been chosen for this paper because both are known for the significance of offshore banking within their economies. It is noted that since the time of

its independence in 1973, The Bahamas has used offshore banking as a strategy for economic development and is considered to be a prime offshore financial centre (OFC), while Switzerland has had a reputation for the size and secrecy of its offshore banking sector. Both nations are seeking to comply with the global anti-money laundering requirements and this paper examines the differences between them. This paper analyzes the effectiveness of the suspicious transaction reporting system in The Bahamas and Switzerland, through the use of qualitative and quantitative measures. Through the application of Forensic Accounting, which is a multi-disciplinary field, this paper utilizes both economics and statistics in its analysis.

CBT FOR COMORBID DEPRESSION AND ANXIETY: A REVIEW AND SYNTHESIS OF THE LITERATURE

Matthew Collin (Psychology)

Faculty Mentor: Kristalyn Salters-Pedneault

It is common for clinicians to treat anxiety or depression in their practice, however, there is debate within clinical psychology on how to effectively treat individuals when both depression and anxiety are present. Cognitive behavioral therapy (CBT) has been shown to be highly effective when treating anxiety and depression separately, but research is exploring ways CBT could be used to better assess and treat patients who show signs of both depression and anxiety. This presentation seeks to explain the ways in which CBT is applied to treat depression and anxiety separately, its effectiveness, and the literature concerning how to better assess and treat individuals who show comorbid symptoms of depression and anxiety. The latest research concerning this issue and other avenues for future research will also be presented.

ENVIRONMENTAL POLICY AND IDEOLOGY

Sierra Colon (Political Science, Philosophy & Geography)

Faculty Mentor: Nicole Krassas

Environmental policy and issues have been a tremendous concern to the science community and environmental activists after the overwhelming evidence of climate change, its effects on our planet, and human's role in it. Whether it has been caused by humans or a natural event sped up by humans, scientists say action needs to be taken to curb carbon emissions and put a halt to the many environmental concerns our planet is facing. The majority of Americans, about 70 percent, believe in the solid evidence of climate change, and 40 percent believe it is due to human activity, however, the partisan divide over this issue remains wide. The question posed is, how do Republicans, Democrats, and Independents conceptualize the need for environmental policy differently? There has been very little research done to study the direct effect that political ideology has on environment ideology, however, there are sufficient studies on how contextual factors play a role in how politicians and citizens view environmental policy. Through interviews and precedent literature, this presentation will demonstrate how contextual factors, such as region, internal factors within parties, beliefs of individuals, race, and scientific evidence affect how Republicans, Democrats, and Independents conceptualize the need or view environmental policy differently.

DYNAMITE, TERRORISM, AND THE LOS ANGELES LABOR MOVEMENT

Morgan Considine (History)

Faculty Mentor: Caitlin Carenen

This paper examines the dynamiting of the *Los Angeles Times* as act of terrorism that hampered the Los Angeles labor movement. The research utilizes government documents and newspaper articles from the time of the event in addition to analyzing definitions of terrorism for the purposes of the argument. Previous research on this event defines the bombing as an act of union violence or simply as an act of senseless terror. This paper argues that the violent methods employed by John and James McNamara, the union men who perpetrated the act, impeded the labor movement in Los Angeles because the unions deemed the use of violence too extreme of a means for achieving a political objective.

CREATIVE WRITING ABROAD: WORDS TO LIVE BY

Allie Coppola (English)

Faculty Mentor: Christopher Torockio

Creative writing is not only a catharsis but also a means to connect to the world and those who inhabit it. It is a mode of exploration through which both writer and reader are given the opportunity to redefine what they think they know about themselves and how they function in an ever-evolving society. I had the pleasure of venturing to Florence, Italy for Dr. Torockio's Creative Writing Abroad course and it was a positively transformative experience. Florence is the birthplace of the Renaissance and home to prolific artists including: Dante, Botticelli, Michelangelo, and Leonardo da Vinci. Being surrounded by such rich and colorful history provided great inspiration for aspiring writers. My classmates and I traveled to several breathtaking places such as Rome, Venice, Pisa, San Gimignano, and Cinque Terre, where we were exposed to a lifestyle that emphasized love, laughter, and vino. For five weeks we were immersed in the culture of Italy and filled our time church hopping, art viewing, and wine tasting in Tuscany. We were able to juxtapose the walking city of Florence with the hustle and bustle of Rome. We feasted upon Florentine steak and Roman Gorgonzola Gnocchi. We were entranced by the musical performers on the Ponte Vecchio and by the expansive sunset views from Piazzale Michelangelo. Throughout our blissful travels we were strongly encouraged to document our experiences and write of our revelations and that is what my story is about. While sitting under a tree in a Florentine park I was struck by the transcendence of the human spirit. My work, *Words to Live By*, is a short story about an American girl who travels to Florence only to find that she brings herself with her wherever she goes. In a moment of quiet clarity the protagonist is able to connect to nature and step out of the limiting confines of what she believed about herself, which allows her to access the truth and power of who she truly is. Dr. Torockio lives by the mantra, "we don't write the stories that don't change us." After participating in our Global Field Course I am irrevocably altered as both a writer and a person in the world.

STRAIGHTENING OUT THE RUSSIAN MOLD: HOW RUSSIAN NATIONALISM OSTRACIZES THE LGBT COMMUNITY

Alex Cross (Political Science, Philosophy & Geography)

Faculty Mentor: Martín Mendoza-Botelho

In light of the 2014 Olympics that casted a global eye on the Russian Federation and Orthodox Church, as well as the anti-LGBT policies that coincided, this research investigates and challenges the current ideals surrounding Russian nationalism and homophobia. Hyper-nationalistic tools, such as the Russian Orthodox Church, are currently being used to pit the heterosexual majority against the LGBT minority. This is an attempt to create a strong sense of social cohesion, state support, and nationalism throughout Russia's expansive land mass. The use of the LGBT community as a scapegoat is not unprecedented, either in global or Russian history, and this research argues that these anti-LGBT policies are an attempt to internally Russify the ethnically diverse population. This research will investigate, through the use of World Values Surveys (WVS) data and conversations with key informants, these ideas. In order to identify this as a phenomenon unique to Russia, comparative WVS data will also be collected from Georgia and the United States.

INFLUENCE AND INTERFERENCE: US FOREIGN POLICY TOWARDS SAUDI ARABIA 1956-1971

Sabreena Croteau (History)

Faculty Mentor: Caitlin Carenen

Despite a gradual increase in American involvement in the Middle East since the end of World War II, the region has not enjoyed any more stability than it did sixty years ago. Continued U.S. interest in the region is due in large part to huge oil deposits in the Persian Gulf. Despite the importance of oil, the alliance between the U.S. and oil-rich Saudi Arabia remains on the periphery of most examinations of U.S.-Middle East foreign policy. This paper examines the development of that alliance as the U.S. began to increase its presence in the region after the 1956 Suez Crisis until it became the premier Western power in the Gulf in 1971 when the British withdrew completely. The alliance between the U.S. and Saudi Arabia grew largely out of the U.S. need to protect Saudi oil and maintain Western access to it, despite disagreements and problems existing between the two governments. Government documents from the time reveal the tensions between pragmatism and idealism in U.S. policy towards Saudi Arabia. Meanwhile newspaper sources reveal an attempt to persuade the public to forgive the sacrifice of ideals under the guise that it is simply due to the exotic nature of that region. This paper argues that the need to maintain a strong alliance with Saudi Arabia due to its oil assets is ultimately detrimental to other U.S. foreign policy in the region and the ability of the U.S. to successfully uphold its image as champion of the free world and premier defender of human rights.

THE IMPACT OF HAZELWOOD V. KUHLMEIER ON SCHOOL SPONSORED SPEECH

Morgan Cunningham (Communication)

Faculty Mentor: Terri Toles-Patkin

The First Amendment of the Constitution is the foundation and protection of speech in the United States of America. But, what does 'free speech' mean? There have been countless court cases that test the limits of speech in America. *Hazelwood v. Kuhlmeier* (1988) is a groundbreaking Supreme Court case that reviews school sponsored speech and publication. Students involved in a Missouri public school journalism class wrote articles on teen pregnancy and divorce. Both articles were censored by the principal, and the students brought this act of school censorship to court. After years of legal scrutiny, the Supreme Court ruled that public school administrations could censor school sponsored speech. To what extent can the administration censor speech in a public school? What is acceptable speech in a school environment? This study looks at similar court cases and interpretations of *Hazelwood v. Kuhlmeier*. For a practical application, this study analyzes a few censored news videos as produced by a high school television class, which were intended for broadcast in Connecticut. For instance, one of these videos investigated internal fraud. Thus, *Hazelwood v. Kuhlmeier* allows school censorship, and the video examples prove that there is an administrative influence on the media which students, parents, and teachers consume.

THE ZOLA STORY: SEX WORK FROM THE FRONT LINE

Sabrina Davis (Women's and Gender Studies)

Faculty Mentor: Maureen McDonnell

Most people know about PostSecret, an “ongoing art project where people mail in their secrets anonymously on one side of a postcard.” This project is imagined as a way for unconventional narratives and stories, often taboo, to be shared. PostSecret has received mainstream success, whereas the Zola story has garnered concern. The common ground for both: the freedom to express unconventional, often silenced, narratives of people at the margins. The Zola story: a vivid, unfiltered account of stripping, sex work, violence, and human trafficking on a trip to Florida. The medium: Twitter. The author: self-identified 'full nude tyra bitch' Aziah King. The supposedly true story, shared by Mrs. King (referred to as Zola) on Twitter in October 2015 in 148 tweets, has become a viral sensation. The story (which has since been removed) chronicles King's three-day trip down to Florida originally intended for stripping but soon becoming a trip of sex work (prostitution and pimping) filled with violence, kidnap, murder, and human trafficking. The Zola story has taken social media, and as a consequence media outlets, by storm. Responses to King's story have been in two forms: praise and unabridged entertainment, and horror. For those who praise King's crafty storytelling, such as Ava DuVernay, director of *Selma* who tweeted in response to the story, “She can write! There's so much untapped talent in the hood”, the story has been consumed as entertainment and has been heralded as a contemporary narrative full of plot twists, suspense and intrigue. Memes, quotes and narrative videos have been created in response to the story. In contrast, sources such as *The Huffington Post*, have questioned if the story is empowering, disturbing or both for sex workers and in particular for those involved, without consent, in King's story. The Zola story is both entertainment and a horrifying tale of the dangers of sex work in the United States; however, it is a form of liberation. In a realm where narratives of sex work have predominantly been controlled by those uninvolved in sex work and those in positions of power, sharing narratives of sex work can be a source of empowerment, in particular for those who occupy intersectional positions (trans*, women of color, underage workers, for example) in society and are often silenced because of their social location. Sex work, as a field of employment, and sex worker's stories has been considered 'taboo' and narratives of sex work have been suppressed, categorized, and vilified. This presentation analyzes the implications of sharing narratives of sex work in

the United States. I argue sex work narration may serve as a tool for liberation and freedom from oppression.

WOMEN'S ROUTE TO ELECTIVE OFFICE IN THE UNITED STATES

Jessica DeFelice (Political Science, Philosophy & Geography)

Faculty Mentor: William Salka

In the last Census, the United States was comprised of roughly 49% males and 51% females. Yet, the Center for American Women and Politics reports female representatives make up only 19.4% of U.S. Congress. Some of this disproportion is due to the subliminal messages and unwarranted obstacles that stand in the way of elective office, though many female candidates have overcome these inequalities by being comparable fundraisers and vote share earners. This field of research has received much scholarly attention from a number of perspectives, including perhaps most importantly, a woman's decision to run. This project will present an analysis of women's route to elective office in the United States by exploring the similarities between men and women's campaign functions and contrasting the unique difficulties female candidates face while making their decision to run to those of their male counterparts.

SOCIAL MEDIA COMMUNICATION IN THE 2016 PRESIDENTIAL RACE

Anthony DeLuca (Communication)

Faculty Mentor: Terri Toles-Patkin

Coming into 2016 there has been a distinct change in the political climate in regards to communication. The traditional forms of political communication such as speeches, email distribution, and blogs, seem to have fallen to the wayside in favor of a new platform: Social media, and more specifically, Twitter. The purpose of this study is to explore and critically understand the arguments and persuasive social media tactics being used in the 2016 presidential race. The study aims to compile data from the Twitter accounts of the front runners from both main parties, evaluate the types of arguments and rhetoric used on social media platforms, and monitor account activity, as well as response data including retweets, replies, and likes. Tweets have been archived between 2/21/2016 and 3/1/2016 using the Twitter Archiver add-on to Google Sheets, compiling the data into a comprehensive spreadsheet that allows for easy interaction and understanding. From a theoretical standpoint, the main idea of using a social network is the uses and gratification framework, which has been utilized in recent years to understand behaviors of social network users and more specifically voters and political activists. Ultimately, the research should answer the question, "in what ways does the social media environment affect the arguments of the 2016 presidential candidates?"

GENETIC STRUCTURE AND CONSERVATION OF COMMON TERNS, STERNA HIRUNDO, IN MANITOBA, CANADA

Sarah Denihan (Biology)

Faculty Mentor: Patricia Szczys

The Common Tern, *Sterna hirundo*, is a sea bird that nests colonially across North America and Europe in freshwater and marine habitats. This study focuses on Common Terns from five inland breeding colonies on Lake Manitoba, Canada. Blood samples were taken from individuals from each colony and DNA was extracted. Using these DNA samples, the total 121 Common Terns were genotyped for six genetic markers (RBG27, RBG13, AAT27, AAT20, AAC20, and RBG28). With this information we were able to compare loci among the individuals and between colonies in order to determine if they had deviated from Hardy-Weinberg Equilibrium. The samples were also tested for significant differentiation using the fixation index in order to estimate gene flow among sites. Our data analysis concluded that the colonies were significantly different from one another despite their geographical closeness. We investigated the possible reasons behind this differentiation, including inbreeding, wintering, and site tenacity. This information will help aid conservation decisions for these colonies, as well as add to the lacking data on Common Tern populations in North America. Ultimately, if we can document the genetic structure of Common Tern populations across North America, we may be able to delineate migratory flyways in North America that serve as barriers to gene flow in this highly mobile species. Estimating population size, growth or decline, and connection allow us to identify management priorities that will offer further protection for this common but vulnerable species.

A QUALITATIVE STUDY ON HEALTHCARE CONSUMERS CONCERNS FOR PRIVACY AND SECURITY IN THE ADOPTION OF PERSONAL HEALTH RECORDS – EXPLORING CONTEXTUALIZED

Mame Fatou Diop (Business Administration)

Faculty Mentor: Kim Kunene

A Personal Health Record (PHR) is a private, secure application through which an individual healthcare consumer can access, manage and share his or her health information. Unlike the Electronic Health Records (EHR) which are controlled by the healthcare provider, the PHR is controlled by the consumer. The adoption and use of PHRs by consumers is positively viewed by many practitioners, researchers, and policy makers. Studies show PHR adoption has a positive effect on: patient engagement; ready access to patient information when needed by healthcare providers, the patient and his/her caregivers; the potential for a unified view of the patient's health information by all providers as well as research. The widespread adoption of PHRs is viewed in many countries as a significant potentiality in healthcare, with governments investing in efforts to promote their adoption. On the other hand, studies show consumers have privacy and security concerns regarding the unintended exposure of their personal information via the Internet and mobile devices when adopting PHRs. These concerns affect consumer willingness to adopt or use personal health records across demographic groups. The privacy of health information is a right, however, [1] the use of PHRs does not fall under HIPAA privacy legislation when not offered by covered-entities, and, [2] patients can consent to share this information with providers, marketers, researchers, family as well as the public. Little is understood about the contextualized nature of these concerns. One study showed these concerns vary by the type of information exchanged and the trust in the health provider with whom information is exchanged. However, on a platform where the consumer retains control over with whom information is shared, a more contextualized understanding of not only the sensitivity of different types of information, but how information sensitivity varies with different types of intended and unintended recipients is important. It would help inform and educate consumers about generalized concerns about information privacy as well as the specific concerns against their probabilities. It would also help inform the design of security features about these technologies. The

purpose of this study is to develop an in-depth understanding of PHR users' and potential users' concerns for information privacy, exploring the variability in information sensitivity types in the context of potential intended and unintended information recipients. This study is qualitative. Data is collected through semi-structured interviews of healthcare consumers.

DISPLAYING CULTURE AT THE NEW LONDON COUNTY HISTORICAL SOCIETY: REAL LIFE EXPERIENCE IN A MUSEUM.

Jennifer Disco (Sociology, Anthropology and Social Work)

Faculty Mentor: Ricardo Pérez

Over the course of the semester, I have been an intern at the New London County Historical Society. As an intern, my duties included coming up with ideas for display cases as well as creating a weekly hotspot that is shared on social media. In my presentation, I plan to share my research and experience from this internship. Some of the research that I completed was a display case about the history of whaling. My duties for this display case was to find artifacts that fit with the topic and the time period, research them, create labels, and write a brief summary about the topic. After completing these tasks, I was asked to translate the labels and summary into Spanish. Once I completed these tasks, I was asked to create the layout for the case, which included taking measurements of the artifacts and the case itself in order to make sure that everything fit inside. This display case is being placed in the SCIENT Federal Credit Union in Groton, CT. My next display case that I was tasked with was researching a man named Henry Burbeck. The display case will be placed in the museum. Once I finish both of these display cases, I have been tasked with revamping all of the display cases in the museum. My goal for the presentation is to share my experience from working at the center of a museum and creating exhibits. My hope is that I can use this experience to further my education in the field of Museum Studies so that one day I might have the opportunity to work at the Smithsonian Institute.

FROM BAKKE TO SCHUETTE: MEDIA COVERAGE OF AFFIRMATIVE ACTION IN HIGHER EDUCATION SUPREME COURT CASES, 1978 AND 2013

Erin Drouin (Political Science, Philosophy & Geography)

Faculty Mentor: Nicole Krassas

One of the most unusual media relationships belongs to that of the Supreme Court and the media. Unlike other political institutions, the Supreme Court does not necessarily need public support. They have legitimacy based upon their objectivity. The justices are not elected officials with hidden agendas, as portions of the public view the presidency and legislature. The Court makes important decisions that function as the final say on a slew of contentious public political issues. One such issue is that of affirmative action in higher education. Affirmative action policies allow underrepresented groups to have access to educational opportunities to create more diverse educational institutions. Ever since 1978 through the present day, there has been contention over whether or not institutions should be allowed to implement affirmative action policies in their decisions of who to admit to their universities. The debate is still continuing. How has the media covered these affirmative action Supreme Court cases across time? This research investigated how media coverage of two Supreme Court cases has changed over time. The first is the initial affirmative action admissions policy case from 1978, the Regents of the

University of California v. Bakke. The second is the most recent case that examined affirmative action policies and admission, 2014's Schuette v. the Coalition to Defend Affirmative Action. A content analysis was conducted to examine the ways the media has framed the two cases differently and see how coverage has changed in the thirty-six year difference. Although some frames were consistent, the frequencies at which those frames appeared were far different. Additionally, new frames focusing around the importance of diversity appeared in the most recent coverage. This research attempts to construct a narrative on how the frames differ across the cases.

FIVE FEET OF FEMININE ANARCHY: PRESS DEPICTIONS OF EMMA GOLDMAN 1892-1901

Talia Erris (History)

Faculty Mentor: Caitlin Carenen

What if we were to look back in history and reexamine violent acts inspired by politics? Would we find that some violent acts mirror modern day definitions of terrorism? My study analyzed press depictions of an late nineteenth/early twentieth century anarchist named Emma Goldman. Goldman was never referred to as a terrorist, but in my research I concluded that the press depicted her as a terrorist according to modern day definitions. My study suggests that the press plays a role in molding our beliefs regarding notorious and feared individuals in society, and sometimes, depicts an inaccurate version of these individuals.

FACTORING IN RISING STUDENT DEBT IN CALCULATING RETURNS TO INVESTMENT IN COLLEGE EDUCATION

Emilio Estrella (Labor Relations and Human Resource Management)

Faculty Mentor: Niti Pandey

Labor economists have long touted the advantages of higher education as a critical factor determining lifelong earning potential. For decades the cost of a bachelor's degree was swiftly rewarded with increased earnings in comparison to those with high school or trades qualifications. However, rapidly rising education costs, driven by decreasing government spending in higher education, have led to a student debt crisis. With 40 million college graduates carrying a student loan debt, the returns to higher education seem to be rapidly diminishing. This effect is likely compounded by increasing numbers of workers returning to college during the economic recession. In fact, research has found that approximately 60% of all student debtors are over the age of 30 and student loan debt saw an 84% jump since the start of the last recession to \$1.2 trillion. This study seeks to examine the potential impact of debt obligations on the lifetime earnings of those with college degrees. Publicly available debt and earnings data are explored in order to begin formulating an understanding of the relationship between student debt and earnings potential. Labor market alternatives to a college degree, such as vocational or trade education, are discussed.

THE SOCIAL DEVALUATION OF LABOR: IS IT A CHOICE?

Emilio Estrella (Sociology, Anthropology and Social Work)

Faculty Mentor: Dennis Canterbury

Since the beginning of the Industrial Revolution in the mid-18th century, and more prominently in the automatization shift in the early 20th century, machine-based mass production has vastly overtaken traditional manual labor. The economic benefits derived from the cost-effectiveness and efficiency obtained from replacing humans with machines and compartmentalizing labor are undoubtedly better for the capitalists who run the corporations. However, it seems that the general populace is apathetic to this devaluation of labor. Trends indicate that people seem unaffected by the systematic replacement of employees by machines. Through historical research, current opinion, and compilation of recent studies this paper aims to answer the following question: Are people truly indifferent to this change, or do we simply have no choice, since this replacement of labor translates to undeniable economic benefit for the consumer?

THE FIRST GENERATION LATINO'S PURSUIT OF HIGHER EDUCATION

Raquel Estrella (Sociology, Anthropology and Social Work)

Faculty Mentor: Nicolas Simon

In *Winning the Future: Improving Education for the Latino Community*, the reader can find the following shocking statement: "Latinos are the largest and fastest growing minority group in the U.S. yet have the lowest education attainment levels." This document followed the State of the Union address made by President Barack Obama on October 19, 2010. The most affected by this educational gap are first-generation college students, or students who are the first in their family to attend college. Using an autoethnographic approach, this presentation will focus on the role played by the familial institution in limiting or promoting higher education. First, we will examine common barriers like "familismo", and how strong family values can hinder Latino students from going to college, and "family achievement guilt" on influencing first generation Latino college students to move back home. Then we will assess the support, help, and benefits provided by the familial social capital and how bonds and traditions are an asset in pursuing higher education.

IDENTIFYING GENE-CANCER ASSOCIATIONS THROUGH TEXT-MINING OF BIOMEDICAL LITERATURE

Michael Gargano (Mathematics & Computer Science)

Faculty Mentor: Garrett Dancik

We describe a text-mining tool capable of analyzing PubMed, an online database of research articles, for cancer-related genes. Cancer is a deadly genetic disease where gene mutations result in abnormal cell functions. Mutations may include substitutions of one base by another, insertions or deletions of varying sizes, or DNA rearrangements. Often, gene expression is drastically affected by these mutations which can drive abnormal cell activity. Here, we describe an application for finding potential associations between genes and tumor types via the analysis of a large number of article abstracts. Specifically, the application leverages both the functional scripting language Python and the statistical programming language R, as well as BASH scripting in order to collect, parse, and interpret data from bladder cancer, breast cancer, and prostate cancer. We report the most commonly studied genes across these tumor

types, and identify genes that have been studied in a tumor-specific way. Overall, this work will provide a useful summary of genes and their association with tumors based on cancer publications.

ANALYZING KEYBOARD VIBRATIONS RECORDED BY MOBILE DEVICES

John Harakas (Mathematics & Computer Science)

Faculty Mentor: Joel Rosiene

The explosion of affordable computing has packed mobile devices with sensors that observe our physical environment such as accelerometers, gyroscopes, temperature, humidity, orientation, and magnetometers, with each subsequent generation of devices becoming increasingly accurate. One field of computer security focuses on side-channels, in which information leaked from the physical surroundings can be used as an attack vector. Android devices do not require that a user explicitly grant an application permission to access its accelerometer. Prior research has demonstrated the possibility of identifying typed text on a keyboard using only vibrations recorded by an accelerometer. However, mobile device accelerometers have much lower sampling capability. This research explored methods of keystroke recovery using an Android device accelerometer with a sampling rate of 100Hz. The low sampling rate posed a tremendous challenge in determining if the recorded vibrations contained enough information to uniquely identify keystrokes.

HEALTH SERVICES FOR THE HOMELESS POPULATION OF WILLIMANTIC, CT.

**Matthew Harrington, Ashley Thomas, Megan O'Brien, Matthew George
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Mary Kenny

This ethnographic research examined availability and access to health care services for the homeless population in Willimantic, CT. For four months in 2015, our 5-member research team conducted observations and in-depth interviews with shelter administrators and residents, users of a soup kitchen, and health care service providers. Results show that access was often conditional; meaning that an array of physical, mental, and social barriers determine healthcare access for this population. Our talk will provide a brief overview of some of these challenges, and how they impact access, compliance and continuity of care.

'JUST CALL ME AIMEE': CONFRONTING STEREOTYPES OF PEOPLE WITH DISABILITIES

Ashlyn Hart (English)

Faculty Mentor: Maureen McDonnell

Disability is a factor of life that can affect any individual at any age regardless of that person's ethnicity, gender, sexual orientation, religion, and culture. Yet, despite its wide breadth, disability issues are not frequently addressed. This paper will explore the media's influence on how people with disabilities are viewed in society: as sexualized or glorified for "overcoming their disability". The images of models with disabilities, Aimee Mullins and Lauren Wasser, and images of models without disabilities, such as Kylie

Jenner, will be utilized in defending this claim. I discuss how we see and code images of people with disabilities and the reasoning behind these associations. In forming this argument, I use texts like Rosemarie Garland-Thompson's *Integrating Disability, Transforming Feminist Theory*, which delves into feminism and disability theory and the importance of their connection. My paper analyzes the disabled body and what it means to the feminist and disability theory. Through this research, the importance of having people with disabilities represented in the media will be shown.

THE ECONOMICS OF LIBERAL FIREFIGHTING

Colleen Hart (Economics)

Faculty Mentor: Jennifer Brown

Wildfires in the western United States are growing in number, intensity and duration. The buildup of biofuels—flammable forest materials such as bushes and certain types of trees—results in these frequent and threatening wildfires. This paper discusses the human behaviors that increase biofuels and the policy options available to alter these behaviors. This paper also builds on the information known about biofuel abatement policy options by explaining the economic concepts behind them. The solutions explained are: (a) administering permits to live in areas at high-risk for wildfires, so there will be a decrease in populations living there; (b) subsidizing biofuel mitigation practices in order to increase its positive externalities; and (c) lowering current subsidies for firefighting, which when overproduced can increase biofuels.

THE MATHEMATICS OF SECRET MESSAGING

Emily Hennessy, Amanda Burkhart (Mathematics & Computer Science)

Faculty Mentor: Bonsu Osei

Cryptography is the science of encrypting and decrypting data. This presentation uses Modular arithmetic, Rivest-Shamir-Adleman (RSA) algorithm and affine transformation to encode messages in order to secure them. This has implications on a lot of real life applications from credit card use to Internet safety. In particular, basic techniques such as Hill and Caesar Cipher and RSA are used to encode and decode secret messages. A more sophisticated technique involving affine transformations is also used for the encryption. We show that the more sophisticated the algorithm, the less likely a third party can decrypt the message.

AN INTRODUCTION TO KOREAN TRADITIONAL MUSIC: DANSO, JEONGGANBO AND ARIRANG

Tyler Hinde, Umberto Ocasio, Lynette Rojas (Performing Arts)

Faculty Mentor: Okon Hwang

Although some facets of Korean contemporary culture have been noticeably illuminated on the world stage in recent years (e.g., Korean TV dramas, Korean movies, K-pop), encountering Korean traditional culture in the U.S. is still a rarity unless you live in a few selected metropolises such as New York, Los Angeles, or Atlanta. This presentation hopes to provide a glimpse into the world of Korean traditional

music from three different entry points: 1) danso, 2) jeongganbo, and, 3) arirang. 1) Danso is a Korean traditional aerophone. Due to its compact size and beautiful sound, this instrument has been widely employed as the first step in the traditional music education in Korea. 2) Jeongganbo is a Korean traditional notational system. Considered the first mensural notation invented in Asia, it is also known as Korean square notation since symbols representing pitches are placed inside square boxes. 3) Arirang is the most well-known Korean folk song. It is often considered to be the unofficial anthem for Korean people. After presenting the research, the presentation will conclude with a performance of arirang on danso using jeongganbo notation.

REMIEDIATION AND ANNA KARENINA: THE LAYERS OF MAKING A THEATRICAL FILM

Delaney Jordan (Performing Arts)

Faculty Mentor: David Pellegrini

The vast expansion of ways to consume media means an inevitable uptick in remediation - the practice of translating a text into a different medium. Unlike adaptation, remediation encourages the reinvention of its sources and strikes a balance between the strengths of the old media and the new. One ideal example of modern remediation in cinema is Joe Wright's and Tom Stoppard's 2012 adaptation of Leo Tolstoy's novel *Anna Karenina*, a story about the repercussions of forbidden romance in Russian society. Capitalizing on the idea of the performativity of Russian high society, Wright constructs his film around the literally applied concept of the story playing out onstage - or in this case, almost entirely inside a decrepit theatre, including on and offstage, the seating areas, the connected rooms, and main entrance hall. In this way, the film remediates theatre to support its adaptation of the text as a commentary on the historical world of the story; by using common stage elements like tableau, choreography, matte backdrops, and stylized costuming, lighting, and movement, Wright draws out both the human core of the titular character's tragic romance and the artificiality of the system that frowns upon their actions. Anna Karenina's strength is its dependency on the mediums of the past it borrows so heavily from: the historical text and the theatrical conventions that the film envelopes.

EFFECTS OF HADRURUS ARIZONENSIS VENOM ON N2A NEUROBLASTOMA CELLS

Ronald Kaiser (Biology)

Faculty Mentor: Kurt Lucin

Toxic proteins in scorpion venom can have numerous effects on cells, mainly through ion channel manipulation, which vary depending on the species of scorpion and the type of cell being evaluated. Recent studies have shown that venom components from some medically significant (highly venomous) scorpions have the potential to treat certain human diseases, such as cancer. However, venom from non-medically significant species has yet to be studied in depth, and if shown to be effective, could be less harmful to the individual being treated. In this study, we evaluate the varying toxicity of venom from two non-medically significant scorpions, *Hadrurus arizonensis* and *Smeringurus mesaensis*, on N2a neuroblastoma cancer cells. Preliminary results suggest *S. mesaensis* venom promotes cell death, whereas venom from *H. arizonensis* reduces cellular proliferation, but does not induce cell death.

HUMANS OF EASTERN

Meg Kelly (English)

Faculty Mentor: Lisa Fraustino

In late 2010, Brandon Stanton began to post his photography on a personal blog he named *Humans of New York*. Since then, Stanton's work has evolved from just a photography focus and has been used as a means of storytelling to unite the large city, with his catchphrase, "New York City, one story at a time" ([facebook.com/humansofnewyork](https://www.facebook.com/humansofnewyork)). He has gained seventeen million followers on his Facebook page alone and his philanthropic and humanitarian efforts have been recognized worldwide. Since the publication of his page, cities, universities, and various other communities around the world have decided to integrate this type of project, as well. Created last April 2015, the *Humans of Eastern* page ([facebook.com/humansofeastern](https://www.facebook.com/humansofeastern)) was created with the similar intention to share the stories of students, staff, and faculty alike on campus. All of this was done in hopes of promoting a sense of communal bond among Eastern's student body. This page has a growing online presence with more than 530 Facebook followers and nearly 700 people following on Instagram. As the independent facilitator for this page, it was my goal to bring another dynamic to Eastern's already small student body. In my presentation, I plan to show how the story sharing that is depicted on the page benefits not only the person I am individually interacting with, but also how it works to affect the campus as a whole and the online community I have built.

ANATOMY OF VICTORIAN ARCHITECTURE: A STUDY OF WILLIMANTIC

Nicholas Khan (Art and Art History)

Faculty Mentor: Gail Gelburd

Victorian architecture has long been seen as an example of western industrialization. This presentation focuses on the appropriation of Victorian architectural styles and elements from Europe, and its incorporation into residential architecture of the United States. By analyzing a concentrated sample of 19th and early 20th century American houses in Willimantic Connecticut's hill section, an understanding of the spread of architectural taste is examined. This focuses on the popularity of mass-produced building elements and their demand within multiple social classes. The affluence of a homebuilder can also be understood as dictating elements of the building's construction. The desire for elaboration in architecture includes the degree of ornamentation borrowed from the latest sub style of Victorian architecture (i.e. Queen Anne, Italianate, Second Empire), as well as the scale of homes, and use of materials. The presentation will not only focus on the categorization of styles, as found in the Willimantic Victorian district, but will also analyze the significance of 19th century house architecture, both in establishing a connection with Europe and forming a social structure that stemmed from materialism.

THE RHETORIC OF REBELLION: A COMPARISON OF THE GREAT AWAKENING AND AMERICAN REVOLUTION, 1737-1783

Emily Komornik (History)

Faculty Mentor: Caitlin Carenen

In the summer of 1741, Calvinist minister Jonathan Edwards preached a sermon to a crowd of thousands at Enfield, Connecticut. Records show that he never finished the sermon due to fainting spells and screams of horror from the audience. Forty years later, patriot Thomas Paine's pamphlet *Common Sense* reached over one hundred thousand copies sold in its first year alone. Scholars claim it to be America's first best-seller, outshone only by The Bible itself. At first glance, these two phenomena may not seem to have any relevant connection. Jonathan Edwards was a minister of the Great Awakening, a social and religious movement which changed not only the way in which men connected with God, but the scope of colonial history. Power and influence resided with the people, and not in the hands of clergymen. Along with George Whitefield, Edwards spearheaded a short and radical religious movement which altered colonial interpretations of their relationship with the divine, drastically changing understandings of Calvinism in the American colonies. Thomas Paine, most well-known for his political pamphlet, represented colonial resistance to British rule in America. He and Benjamin Franklin led the resistance through rallies, propaganda, and newspaper articles urging colonists to take action against their British oppressors. Though the Great Awakening and American Revolution encompassed different goals, similarities lie in the fact that rhetorical strategies such as religious allusion, appeal to emotion, and graphic imagery were all utilized in order to inspire change in the masses. This paper illustrates and analyzes these similar rhetorical strategies, finally illuminating how effective the power of language is in persuasion, motivation, and ultimately, rebellion. Rhetoric, though employed for a multitude of different reasons, holds the power to spark significant change. Identifying which strategies are most successful is vital to understanding how and why rebellion begins.

DIVINE INTERVENTION: IMAGES OF THE CHRISTIAN GHOST IN SHAKESPEAREAN TRAGEDY

Emily Komornik (English)

Faculty Mentor: Maureen McDonnell

Residents of sixteenth and seventeenth century England faced social, political, and religious upheaval unparalleled by any other European country of the time. At the center of this conflict lay the controversial Anglican Reformation and the stirrings of Catholic resistance to such change. By the time the Catholic King James I took the throne in 1603 and power shifted back to Catholicism, tensions within Christianity were not only high, but also publicly visible. At this time, William Shakespeare penned dozens of his most famous tragedies, which displayed his own beliefs along with popular opinion regarding current events. Three of his most famous, however, illustrated the differences between conflicting factions of Christianity in ways never before presented. Within the pages of *Hamlet*, *Macbeth*, and *King Lear*, Shakespeare acknowledged and commented on Catholic-Protestant tensions. He used otherworldly apparitions and their interactions with main characters to illustrate these conflicts through a lens that a seventeenth-century audience would understand. Ghosts, angels, and witches in the three tragedies help to illuminate points of contention for Catholics, Protestants, and the undecided. Biblical allusions, as well as references to James' own *Daemonologie*, helped prove the existence of demonic, ill-intending characters, and Shakespeare utilized them in his tragedies in ways that served as warnings regarding the state of a fragmented, religiously divided England. In order to fully grasp why these tragedies were so popular, it is vital to understand them as an audience member would have four hundred years ago. As the ghostly characters in *Hamlet*, *Macbeth*, and *King Lear* are heavily symbolic of religious tensions in seventeenth century England, their historical context is of extreme importance.

BEHAVIORAL REGULATION IN EXERCISE PARTICIPATION AMONG COLLEGE STUDENTS

Melody Kramarz (Kinesiology & Physical Education)

Faculty Mentor: Anita Lee

Through the lens of the Self-Determination Theory (Ryan & Deci, 1985, 2000), this study examined the behavioral motives for exercise among college students. The hypotheses of this study were that: (a) the higher the physical activity participation during childhood and adolescence, the higher motivation to exercise during college ages; (b) the more hours per week in physical activity participation, the higher intrinsic motivation for physical activity. The findings of this study may aid fitness professionals in motivating young adults, children and adolescents to be more physically active; so that society can grow to prosper in good health and longevity. Methods: The participants, selected by convenience sampling on a university campus, were 58 college students, ages 18 and above. The mean age was 21 + 3 years old; mean height was 66.25 + 3.62 inches; mean weight was 146.69 + 30.35 pounds; BMI was 23.32 + 3.68 kg/m². The measuring instruments were Behavioral Regulation in Exercise Question-2 (BREQ-2; D'Abundo, Sidman, Milroy, Orsini, & Fiala, 2014), and the Physical Activity History Questionnaire (PAHQ; Marcus & Forsyth, 2009). After the IRB approved this study, college students were recruited across the campus and invited to complete informed consent forms, demographic information, BREQ-2, and PAHQ. Results: Significant positive relationships were found between the mean behavioral regulation for exercise score and physical activity enjoyment in child/adolescent ($r = .222, p = .048$); and the mean time spent in physical activity per week ($r = .591, p = .000$). Discussion: This study found that college students who had physical activity participation during their childhood or adolescence, have higher motivational levels in physical activity in college. The more time the college students spent in physical activity per week, the higher the motivational level in physical activity.

DRAWING PHOTOGRAPHS: EVIDENCE FOR THE REALITIES OF THE HOLOCAUST

Alexis Kurtz (Performing Arts)

Faculty Mentor: Kristen Morgan

Because of the unfathomable severity of the crimes that occurred during the historical period of the Holocaust, there are those who have not been able to accept that such an event could actually have occurred. Though the crimes that occurred are unimaginably horrific, and the natural defense to some people in such cases is to deny the existence of the horror entirely, this reaction is not at all acceptable. While it is true that barely any photographic evidence exists from the Holocaust due to the careful censoring by the Nazis and the limitations of earlier technology, there are myriad personal accounts from survivors, some who even witnessed the mass-killing operations in the camps first-hand. Still though, there are those who adamantly deny the Holocaust's existence, and for such adversaries, we must turn to a less-expected means of primary evidence: a child's drawings. As a critical piece of evidence for the realities of this event, we have the work of the young Helga Hošková-Weissová, a Holocaust survivor who used her artistic talents to capture the genocide as it unfolded around her in the Terezín ghetto. This information is to be taken as seriously as any other form of primary evidence.

MODULES TO ASSIST NUTMEGGERS IN PERFORMING SIX MAJOR AMERICAN ENGLISH DIALECTS FOR THE STAGE AND SCREEN

Alexis Kurtz (English)

Faculty Mentor: Elena Tapia

As a native of Connecticut, USA, I know that I was not aware that I had a dialect until quite recently. In fact, I've never heard anyone speak of a "Connecticut dialect." If we, the people of Connecticut do not even know how we speak, how much literature can even be out there to help actors from our dialect region in taking on other accents? As I discovered, there is not much literature at all. As actors, we need to be wholly aware of ourselves and conscious of how we look and sound at all times. Thus, before taking on other styles, visual or vocal, we must first understand our own natural style. But then, in terms of dialect, aren't actors from traditionally underrepresented dialect regions at a disadvantage? What are our options for resources? In answer of these questions, I have developed a set of electronic modules that offer resources and techniques to enable actors who are specifically Connecticut natives to take on dialects from other parts of the United States for performance purposes. Although there are endless common dialects of the English language that can be studied, I have chosen to narrow my research to American English dialects, and then from those I have decided to create modules on the following six common stage dialects: American Deep South, American Southern, Downeast New England, General American, South Boston, and New York. After utilizing these modules, actors will have a clearer understanding of what their own American English dialect is comprised of, how the individual characteristics of this dialect transfer and meld into other American English dialects, and how all of this may or may not change when taking on various characters in a theatrical piece.

MICROFINANCE AND ITS IMPACT ON WOMEN

Thomas Loura (Economics)

Faculty Mentor: Nataliya Plesha

Microfinance has brought a part of the third world out of poverty. The people that it has helped the most are the women of these countries. For these women it is hard to get out of the shadow that is cast by men in the industry. Often times women are overlooked and have no part in dealing with financial situations in their family. And even in first world nations there is still discrimination that occurs against women. There were even times when men could obtain loans, but women could not. And now within the microfinance sector women are becoming the biggest recipients of this type of loan. It is having profound effects throughout these countries. In 2006, 85 percent of women in poor countries were recipients of microfinance loans. This shows that women are stepping forward into their communities and want to make an economic impact. They make life better for themselves and their families. This will help the third world nations grow and develop as a whole.

WEB APPLICATION DEVELOPMENT IN THE MEAN STACK

Sarah Maroon (Mathematics & Computer Science)

Faculty Mentor: Sarah Tasneem

In the internet savvy era, web applications are a must for businesses to succeed. This project will develop a user friendly, single page web application for a family business utilizing the MEAN stack which can be accessed using any major web browser, including those on mobile devices. MEAN is an acronym; MongoDB, a document oriented, easily scalable no-SQL database, ExpressJS, a NodeJS server framework, AngularJS, a client side development framework and NodeJS, a server side platform for building event driven applications. The MEAN stack will be explored to create a scalable Representational State Transfer (RESTful) API, a client interface, and importantly to access a cloud database. In this approach client and server development is simplified by using a single language and single thread. MEAN is a relatively new web development platform which gives developers greater ease and productivity.

CHOICES PRESCHOOL CHILDREN MAKE DURING FREE PLAY TIME: EFFECTS OF AGE, GENDER, SOCIOECONOMIC STATUS, AND ETHNICITY

Samantha Marsh (Education)

Faculty Mentor: Jeffrey Trawick-Smith

Play has been found to contribute to preschool children's development and learning. However, little research has been done on where children spend most of their time during free play periods in classrooms. Although so much social interaction and learning occurs in play centers in preschool classrooms, a systematic study of how frequently children of both genders, of diverse cultural and socioeconomic backgrounds, and of different ages use specific learning centers during the day. The present investigation will examine how child demographic characteristics affect different learning center choices during free play time. All children in two preschool classrooms were observed in naturalistic play activities during center times, over a five week period. The principal investigator tallied each child's visit to each learning center during the period of the study. Frequencies of visits to each center by boys and girls, those of different cultural and SES backgrounds, and different ages were entered into both a full factorial ANOVA and a single step loglinear analysis to determine whether there are significant differences in where children choose to play across demographic variables studied. Significant differences in children's choices were found for age, gender, ethnicity, and SES. Being able to identify which children, of which backgrounds and characteristics, choose which play areas will provide insight into our understanding of children's play. More practically, it will inform teachers' choices in the kinds of centers they will create in the classrooms, based on the characteristics of their students.

EFFECTS OF BLOCK PLAY ON MATHEMATICS LEARNING IN PRESCHOOL

Samantha Marsh, Brooke Baton, Courtney Danieluk, Monika Szarwacki (Education)

Faculty Mentor: Jeffrey Trawick-Smith

Although block play has been included in early childhood classrooms for over a century, few studies have examined its effects on learning in preschool classrooms. Several investigations have indicated that the complexity of children's block structures in preschool is associated with math ability. This previous work has been conducted in adult-guided or laboratory settings in which individuals or pairs of children are assigned building tasks. In the present investigation, we examined elements of block play within naturalistic free play periods in preschool classrooms over a six month period. We studied the effects of

peer and teacher interactions and the availability of replica play toys on the building complexity and math learning of 41 three and four year olds. Findings indicated that the level of social participation in block play and the percentage of structures built without toys predicted the complexity of children's buildings. This complexity, in turn, predicted growth in math learning, as measured by pretest and posttest scores on Tools for Early Assessment of Math. Based on findings, we propose a path model in which peer collaboration and blocks-only building contribute to block play complexity, and the building of such complex structures enhances math learning over time.

GOT A DONKEY IN THE CROSSHAIRS: THE PARTISAN ANTICOMMUNISM OF SENATOR JOSEPH MCCARTHY

Christopher Morris (History)

Faculty Mentor: Anna Kirchmann

While he promoted himself as a vanguard of national security in a time of international crisis, Senator Joseph R. McCarthy's leadership of the anticommunist crusade, from his rise to national prominence in 1950 until the Republicans won the presidency in November 1952, was decidedly partisan. Historians such as Ellen Schrecker, Stephen J. Whitfield, and Thomas Doherty have already built up a substantial literature on McCarthyism, and Senator McCarthy's monumental speech in Wheeling, West Virginia has been studied extensively. New conclusions can, however, be drawn from an analysis of his largely underappreciated Palmer House address in October 1952. This speech further illuminates McCarthy's dangerous rhetorical genius as well as the intensely paranoid anticommunist fanaticism which had gripped much of the American public by the time of the presidential elections of 1952. Based around McCarthy's condemnation of Democratic presidential nominee and Illinois Governor Adlai Stevenson, this paper argues that McCarthy saw his campaign as pivotal in the war between, not only liberty and communism, but between liberalism and conservatism. As such, McCarthy recreated the international dichotomy between Americanism and Stalinism in the candidates; he built his speech around popular stereotypes of communists as violent revolutionaries, Stevenson's known associations with various alleged Stalinists like Alger Hiss, and an ardent championing of Eisenhower's heroic Americanism. Delivered only days before the general election, this speech represented the culmination of McCarthy's partisan efforts of the previous two years and was a significant blow to the Democratic campaign for the presidency that eventually went to Eisenhower.

BREAKING UP THE BANKS: A LOOK AT GLASS-STEAGALL IN THE PAST AND IN THE FUTURE

Shannon Pajer (Economics)

Faculty Mentor: Nataliya Plesha

The controversial Glass-Steagall Act was signed into law by President Theodore Roosevelt in 1933, in response to the most devastating financial crisis in United States history, the Great Depression. The legislation, among other things, called for the separation of commercial and investment banks, with the intention of creating a healthier, more stable financial system. Sixty-six years later, in 1999, Glass-Steagall was repealed by Congress under President Bill Clinton. Just eight years later, in December 2007, the United States would find itself, once again, facing a major financial crisis. This has led some to believe that the repeal of Glass-Steagall paved the way for the Great Recession, and so have called for

the bill to be reinstated. The purpose of this research is to provide an overview of the controversy surrounding the bill, to investigate the relationship between the Glass-Steagall Act and the recent financial crisis, and to examine whether regulation is needed in order to help avoid future crises.

STEPPING OUT: CREATING A SAFE SPACE FOR MINORITY IDENTITIES IN WRITING CENTERS

Laura Pérez-Handler, Alex Cross (Academic Services Center: Writing Center)

Faculty Mentor: Susan DeRosa

Through the lens of LGBTQ+ and cultural-racial theories, we will examine how minority identities do not fit conventional master narratives of both the stereotypical university and Writing Center, and how Writing Centers must break out of an oppressive state of neutrality to become a safe space for all identities. We will address real-life applications of safe spaces for minority identities in Writing Centers. This presentation will include interactive sections that help the audience understand how they can work with the Writing Center on campus and how they can queer or deracialize their own interactions and spaces.

HEROIN IN THE THREAD CITY

Chelsea Reel, Precious Baker (Sociology, Anthropology and Social Work)

Faculty Mentor: Mary Kenny

This ethnographic study explored the topic of heroin use, health and safety, in Willimantic, CT. We focused on five different areas: law enforcement, healthcare, needle and syringe exchange, addiction treatment and services, and community views. Over the course of 4 months, our 5-member research team conducted observations, ride-alongs, and in-depth interviews with those who could provide first-hand information on the conditions, challenges, and recommendations in providing services for heroin-addicted persons. Our talk will include recent patterns associated with IVU, including some reasons for its decline in the area, the increase in morbidity associated with alcohol abuse, and a discussion of the extensive, varied options for treatment and counseling.

DNA: KNOT WHAT YOU WOULD EXPECT

Danielle Robillard, Anna Shannon (Mathematics & Computer Science)

Faculty Mentor: Mehdi Sarikhani-Khorami

A mathematical knot is a tangled piece of string with its ends attached. A given knot can be quite complex. The understanding and classification of knots is an important area of study in mathematics. Knot theory can be applied to DNA analysis by observing its double-helixed structure as a ribbon. A ribbon can be thought of as a generalization of a knot. In this talk, we show how studying ribbons can give us insight into DNA structure.

A POETRY COLLECTION

Rebecca Rubin (English)

Faculty Mentor: Daniel Donaghy

Maria Mazziotti Gillan in her book *Writing Poetry to Save Your Life*, states, "In order to overcome our own fear about writing, our own lack of self confidence in facing the blank page, we need to learn to let go." With Maria's advice in mind and with her book to guide me, I have accumulated a small collection of my own works throughout the past two years. I am continuing this project, to write poetry and study a number of different poets, as my senior seminar. Some of the authors that I have read for my seminar include Mark Doty, Sharon Olds, Denise Duhamel, and Sylvia Plath. My poems are all based on experience, and all in some way represent who I am as a person. They range from a variety of topics, including family and experiences that have changed my life in some way. My poems have been greatly inspired by the works of poets such as Kim Addonizio and Mark Doty.

CONTEXT: AN INQUIRY INTO PERCEIVED VALUE OF CONTEXT OVER DIFFERENT COMMUNICATION MEDIUMS

Kenneth Sain tonge (Sociology, Anthropology and Social Work)

Faculty Mentor: Mary Kenny

This research explores the myriad ways in which people use technology to communicate. Research shows that being 'absently present' detracts from the development of deep social bonds. I explore this topic through conversation diaries, which research subjects have been asked to keep for a twenty-four-hour period. Preliminary results show that context (professional, intimate, gossip, friendly, organizational, etc.) impacts the type of technology used as well as expectations concerning notions of isolation, meaning, and personal satisfaction.

EXPLORING DANCE THROUGH KNOT THEORY

Leigh Savoie (Mathematics & Computer Science)

Faculty Mentor: Bonsu Osei

Waltz became a famous style of dance in the 13th century and has continued to grow over time recreating new styles within it. The style of Waltz known as the three-step pattern, which is closely related to knots in Knot Theory, will be the main focus of this presentation. The Dowker Notation in Knot Theory is used to transform Waltz steps into matrices. This technique of conversion into matrices is new and is described in the presentation. The question that this technique brings up is, can we recreate new Waltz step patterns by the choice of arbitrary matrices? An arbitrary matrix is chosen as an example to show that the reverse Dowker Notation works well.

APPLICATION OF SURVIVAL MODELS TO UNITED STATES AND IRELAND LIFE TABLE DATA

Lindsey Schaffrick (Mathematics & Computer Science)

Faculty Mentor: Peter Johnson

This thesis studies several survival models in order to observe the probability of human survival, and conversely human mortality, for any age. Two models studied closely were the Gompertz Distribution [$q(x)=Bc^x$] and the Makeham Distribution [$q(x)=A+Bc^x$]. These models were applied to the 2005 United States Male and Female and the 2006 Ireland Male and Female life table data provided by the Human Life-Table Database. This thesis was interested in exploring the trends in survival across different nationalities and genders. Another goal was to test whether or not the presence of an unusually high increase in young adult mortality was a trend that proved to be significant enough to justify omitting the first thirty years when studying human survival over a lifetime. In order to apply these models to the dataset of interest, the statistical software program Minitab17 was utilized and functions were created by using nonlinear regression. The “best fit” function for each of the four datasets was determined by the level of error yielded. The results indicated that the Gompertz Distribution was a sufficient model to use for all datasets. Also, there was not a substantial difference in the error produced by functions that analyzed survival from ages 5 to 99 as opposed to the functions that analyzed ages 30 to 99. The work of this thesis could be applied to situations such as the creation of life insurance policies. By using functions such as these, actuaries and insurance companies could estimate the probability of survival (or mortality) for an insurance holder.

VACATIONING WITH GRAPH THEORY

Anna Shannon (Mathematics & Computer Science)

Faculty Mentor: Megan Heenehan

Imagine going on vacation with all of your friends and you have a set of destinations you want to visit. For each pair of destinations you will need to find a way to get from one to the other. Since you and your friends like adventure, you set a challenge to never use the same road or trail more than once. However, it can get difficult traveling with this large group of people, so you allow yourselves to reuse any sort of rest stop throughout the course of your vacation. Is it possible to find a way between each pair of destinations and never reuse a road or trail you have already traveled? This question can be explored using graph theory. We can think of each destination or pit stop as a vertex. If there is a road or trail between two of the destinations, we say there is an edge between the vertices representing the locations. In terms of graph theory the question is, if we have n vertices (destinations) that we want to visit, is there a way to get between each pair such that we never reuse an edge (road/trail)? We will answer this question for specific families of graphs. No knowledge of graph theory will be assumed.

CRITICAL THINKING AND COMPLEX REASONING

Liah Sinuefield (Political Science, Philosophy & Geography)

Faculty Mentor: Hope Fitz

As a student or young adult, one is constantly encouraged to take in everything in one’s experience, including the persons around one. These different experiences hold the “keys” to one’s intellectual growth. However, different people have different experiences. Thus, they have different world views. Also, it can be very difficult not to let one’s own biases hold her or him back when hearing or seeing

something that doesn't fit her or his "mold" of reality or right or wrong. Through examining many of the major philosophers' theories regarding our "default view" of the world, I have been able to reflect, adjust, and drop many biases that had been holding me back in my way of seeing and experiencing life as a student and a young adult. In presenting my essay, I will reflect on why suspending one's "mindset" is a necessary tool when trying to understand and see the world in a completely new and balanced light.

EFFECTS OF TOYS ON THE PLAY QUALITY OF PRESCHOOL CHILDREN: INFLUENCE OF GENDER, AGE, ETHNICITY, AND SOCIOECONOMIC STATUS

Leah Slawinowski, Rachel Borden (Education)

Faculty Mentor: Jeffrey Trawick-Smith

This study examined the effects of ten toys on the play of 43 three- and four-year-old children in culturally diverse preschool classrooms. The toys, which varied in their features and intended uses, were selected from a list of those that were nominated by teachers and parents as being developmentally beneficial. Each toy was video recorded for four hours total during free play time spread out in four different classrooms. Researchers coded 4,000 five-minute segments of children's play with these toys using a Play Quality with Toys (PQT) rating instrument developed in a previous investigation. Toys were found to vary significantly in their impact on play quality. PQT scores were also found to vary for each toy depending on the gender, socioeconomic status, and ethnicity of the child playing with it, and the length of time it was available in the classroom. Implications for selecting toys for classrooms and observing children's play with them are presented.

BRINGING WOMEN'S STUDIES INTO THE SECONDARY CLASSROOM

Allison Smith (Women's and Gender Studies)

Faculty Mentor: Allison Speicher

The purpose of this presentation is to introduce listeners to a women's and gender studies curriculum I have created for a secondary classroom. The curriculum is intended for juniors and seniors as an elective that aligns with the AP English Language and Composition course, supplements the Social Studies curriculum, and enables students to practice the skills necessary for college success. Through immersing myself in scholarship regarding feminist pedagogy I have created a course that is responsive to the best practices of feminist educators today. Through researching secondary classrooms and growing conversant in the Common Core State Standards, I have designed a course that is responsive to the exigencies of secondary education while meeting my goals as a feminist educator. Though the final project includes a semester-long syllabus for a high school classroom, including unit plans, lesson plans, and classroom materials, which will be available online, I will focus on one particular lesson that exemplifies the course as a whole. I will offer suggestions for how educators can incorporate these lessons into their classroom, even if it is just choosing a more diverse text to read so that students can make deeper connections.

CREATIVE WRITING ABROAD

Lauren Teta, Allie Coppola (English)

Faculty Mentor: Christopher Torockio

Creative writing is a lot like traveling. You can be whoever you want, explore different cultures, and go on an endless journey. I experienced this first hand on the Global Field Course, *Creative Writing Abroad* with Dr. Torockio this past summer. As a class we stayed in Florence, Italy the birthplace of the Renaissance, and home of some of the greatest artists and creators. Artwork and the smells of fresh baked pastries filled side streets, but what struck me was not the immediate culture of Florence. Instead, it was a subculture that made up the Central Market. Present on these streets were different languages, colors, and textures. Vibrant purple and green pashminas contrasted against neutral leathers that hung from mobile vending carts. It was as if I was stepping into India, immediately transported to a new place. This experience is similar to creative writing where you can enter a world within a world, much like I entered a country within a country. It was here that a particular vendor sparked my curiosity about his lifestyle. How did he end up in Florence? Where is his family? Where is his life going? It was these questions that I explored in my short story, *Red Leather*. My protagonist, Rohit, a Indian street vender living in Florence spends his nights learning English to break out of the vending culture in hopes of creating a more fulfilling future. On my journey to understand the vendor, I noticed things about my writing and myself that made me want to continue to explore and create.

SWIPE RIGHT: GETTING AND MAINTAINING AN ONLINE RELATIONSHIP

Madeline Thumma, Chloe Walter (Communication)

Faculty Mentor: Terri Toles-Patkin

Online dating is a prevalent and growing phenomenon for budding relationships. We are at a point in our society where technology is replacing some elementary forms of communication, especially in romantic relationships. How do you get into a successful online relationship? What do you do once you are there? How do you help it grow into a companionate love? We will explore these questions in this project. This project looks at how people get into and maintain their online relationships. This will be done through surveys of college students and analysis of secondary data that focuses on online relationships. This fascinating topic is relevant to all who use or hope to use unconventional methods for finding and sustaining romance.

USING LITERACY TO INCREASE MATHEMATICAL INTEREST IN PRESCHOOL

Sarah Beth Tonzi (Education)

Faculty Mentor: Jeffrey Trawick-Smith

One of the best predictors of later school success is mathematics knowledge in preschool (Duncan et al., 2007). In fact, early math competence is a better predictor of long term school achievement than literacy abilities. One factor that influences early math learning is a positive disposition toward this subject (Geist, 2010). Math anxiety appears far earlier in childhood than was previously thought (Maloney & Beilock, 2012). Math anxiety can be passed along from parents and teachers to very young

children (Sloan, 2010). In contrast, interest in mathematics can be inspired by enthusiastic adults (Arnold, D. H., Fisher, P. H., Doctoroff, G. L., & Dobbs, J. (2002). This suggests that classroom strategies should be implemented as early as preschool to reduce math anxiety and promote math interest. This is particularly important for children who live in poverty who are already far behind their middle class peers in math learning (Crane, 1996; Kao & Thompson, 2003; Lee, Autry, Fox, & Williams, 2008; Lee, & Moon, 2007). The purpose of this study was to examine whether the use of math-related children's literature would affect interest in mathematics learning. Teachers in two preschool classrooms read high quality children's books during group time. During subsequent free play periods, these books were provided for children to look at—one book on each day of observation. In addition, an accompanying game was offered that relates to each book. Children were observed before, during, and after this literature strategy. The frequency and length of visits to the math center and the mathematical play activities children engaged in were tallied. The literature intervention was found to lead to a significant increase in the use of the math center and more frequent mathematical play activities there.

CHILD MUST HAVE A TICKET: AN ANALYSIS OF BOOK-TO-STAGE ADAPTATIONS OF ALICE IN WONDERLAND AND MATILDA

Megan Velasquez (English)

Faculty Mentor: Miriam Chirico

Story adaptations are very popular in our culture, with the most well known books into big Hollywood movies and even well-known television shows. Adaptations are everywhere, and while many people believe that adaptations are inferior to the original story, either because they are “just copies” or “the adaptation can't get the story right”, my research shows what adaptations are really about. While I analyzed the two children's novels *Alice's Adventures in Wonderland* by Lewis Carroll and *Matilda* by Roald Dahl and their respective adapted stage productions, I have found that simply copying elements directly from a book during an adaptation process undermines the story itself, and that adaptation is about a whole reconstructive process involving literary analysis in order to successfully translate a story from one medium to another. By doing this research, I was able to determine what is required in adapting children's novels to a dramatic setting, while also figuring out what constitutes success in an adapted stage production.

IMPLICIT RELIGION AND ITS PLACE IN SOCIETY: HOW STEPHEN ADLEY GUIRGIS USES RELIGION TO INCITE SOCIAL PROGRESSION

Matthew Vitello (Performing Arts)

Faculty Mentor: David Pellegrini

This paper seeks to bridge a gap between faith and fact by examining their relationship within the context of contemporary Western drama. Theorists such as director Peter Brook and playwrights such as Stephen Adley Guirgis believe that Christian sacraments and symbology can create a Mass-like experience within drama by employing a technique called implicit religion. Stephen Adley Guirgis deals with the relationship between religion and community, morality and sin, and how these themes interplay within contemporary life in his plays. Guirgis juxtaposes themes of sanctity with those of regression and obscenity. The crux of plays such as *Our Lady of 121st Street*, *Jesus Hopped the A Train*,

and *The Last Days of Judas Iscariot* is the sacramental interactions between characters. I will show how Guirgis uses the symbols to illustrate, or even mirror, the structure of a traditional Christian Mass. I will explore how these symbols create spiritual experiences and connections both for the characters and for the audience, and how these serve as a launching pad from which society can grow, heal, destroy, or rebuild.

REMEDIOS VARO'S BORDANDO EL MANTO TERRESTRE : THE CONFLICT BETWEEN WOMEN ARTISTS AND SURREALISM

Brennan Yau (Art and Art History)

Faculty Mentor: Maline Werness-Rude

Remedios Varo completed many compelling autobiographical pieces during her lifetime, all of which took place in an introspective, imaginative world that the artist invented for herself. These pieces provide great insight into the artist's life, often through small, humorous vignettes that create a sense of insider knowledge between the insightful viewer and the artist. *Bordando El Manto Terrestre (Embroidering the Earth's Mantle, 1961)* is one such piece, created during the latter half of her career after her immigration to Mexico. It appears as part of a triptych whose subject matter recalls her life story. Varo presents a narrative of constraint and confinement, first as imposed by her parents, then by her Catholic schooling, and finally by the Surrealist movement. *Bordando el Manto Terrestre* exposes Varo's struggle with Surrealism as a construct dominated mostly by men and frequently known for its objectification of the female form. I interpret *Bordando el Manto Terrestre* by applying a psychoanalytic approach, viewed through the lens of feminism. I also particularly focus on the identification and interpretation of small details that often go overlooked upon first viewing, but which prove essential to understanding the message that the work conveys. I believe that Varo's work, especially *Bordando el Manto Terrestre*, provides a pointed critique on Surrealism that emphasizes female creativity as a successful counterpoint to the male-centered interpretation of the subconscious.

PANEL DISCUSSIONS – ABSTRACTS

See *Detailed Schedule of Events* (pg. 5 of this booklet) for times and locations of panel discussions.

WOMEN'S RIGHTS AS HUMAN RIGHTS: A CONTEMPORARY ANALYSIS

James Doucette III, Emily Bruggeman, Amanda Goode (Political Science, Philosophy & Geography)

Faculty Mentor: Hope Fitz

In the 1990 article, *Women's Rights as Human Rights: Toward a Revision of Human Rights*, Charlotte Bunch presented many ways in which the contemporary perspective on Human Rights neglected the struggles and needs of women globally. She also presented several ways in which that perspective could be revised in order to better incorporate the needs of women—and therefore a more comprehensive understanding of the needs of humans. Through our panel, we plan to discuss the progress that has been made towards a more equal treatment of women in many segments of society. This presentation will focus on the experiences of women in three areas. The first being the labor force, and how the status quo for women in the workplace can be greatly improved for the benefit of the workers, and for the economy. The second area will be the status of women in other countries, showing the stark contrast between the standard that women's rights are held to in the western world and developing countries. This segment will illustrate systemic cultural oppression, how the traditional aspects of discrimination are manifested in conflict and violence, and how warfare in these countries disproportionately affects women. The third area will focus on sports and media, where female athletes are underrepresented in media coverage of sports. They are most often described in terms of their femininity and their relations with men. Further, females are typically depicted in ways which sexualize, objectify, and trivialize them. As a result, women are kept in a state of social limbo, unable to advance themselves and in some cases losing ground. However, recent anecdotes offer hope that change is possible. Our goal is to depict women's rights in many different settings, and to show the progress that has been made as well as the work that still remains to be done.

WRITING FOR YOUNG ADULTS PANEL

Seth McCulloch, Mikayla Zagata, Meaghan McFall-Gorman (English)

Faculty Mentor: Lisa Fraustino

Books like *The Divergent* series, *The Outsiders*, the *Harry Potter* series, and *The Chocolate War* have touched the lives of many young adults and teenagers through school or by looking at the New Books section in their local library. These authors become well-known and continue to be read because their topics relate to the youth in spite of fantastical settings or extraordinary circumstances and also because of their caliber of writing. Writing for young adults is different from writing normal fiction or writing for

children, as the genre possesses unique opportunities and difficulties. This panel is meant to elaborate on the experience and the type of processes that involve writing for young adults. Questions about the components of the genre and subgenres, challenges that the genre poses to writers overall, and the importance of peer review in terms of writing will be addressed. The panelists will speak about their independent work and will reflect on the challenges of the writing process: research conducted in order to complete their respective stories, the development of their writing styles through revision, and maintaining a youthful narrator while also encompassing adult themes that make their stories enjoyable for different age groups.

DIVERGENT NARRATION: SUBVERTING THE POWER DYNAMICS OF THE FIX-IT SHOP

Christopher Morris, Nicole Green, Hannah Bythrow (English)

Faculty Mentor: Susan DeRosa

Inherent in persisting writing center narratives are power dynamics which privilege the ideologies of faculty and, by extension, tutors. Such dynamics encourage students to reproduce what they believe their teachers want to see. We will engage the audience in an interactive demonstration of how to break from the tutoring practices inherent in these narratives; it is the tutor's job, provided the student's reasoning is sound, to encourage only further exploration of the student's divergent thought.

PERFORMANCES – ABSTRACTS

See *Detailed Schedule of Events* (pg. 6 of this booklet) for times and locations of these performances. For information on other performances, see pg. 81.

THE JOURNEY OF THEATRE COMPETITIONS: PERFORMING SCENES FROM THE IRENE RYAN ACTING COMPETITION

Stephanie Madden, Hanna Madler (Performing Arts)

Faculty Mentor: J.J. Cobb

My partner Hanna Madler and I will be performing scenes we prepared for The Irene Ryan acting scholarship competition at the Kennedy Center American College Theatre Festival(KCACTF). I was chosen as an Irene Ryan candidate in the Fall 2015 semester for my performance in *Doubt: A Parable*. In order to prepare for the competition, Hanna and I met together during November and December, during which we researched scenes and characters based on our types and dynamic. Later, we met with our mentor, J.J. Cobb, for extensive coaching; we spent time on blocking, character choices, and rehearsing the performance order. Through our experience at KCACTF, Hanna and I received feedback that has expanded our perspectives for the scenes as well as acting choices we can use in the future. We will be performing two scenes; the first from *Crimes of the Heart* by Beth Henley, the second from *The Importance of Being Earnest* by Oscar Wilde, and then I will be performing a monologue from *Romeo and Juliet* by William Shakespeare.

NEO-MELODRAMA - REVIVING AND RENOVATING OLD THEATRE FOR NEW TIMES

Anthony J. Piccione, Sinque Tavares (Performing Arts)

Faculty Mentor: Edmond Chibeau

In the past, melodrama was a fairly popular genre in theatre. Yet as time has passed, the sort of old melodramas that have come to define the genre in the eyes of theatre critics and historians have fallen out of vogue, as other forms of theatre have become more popular among producers and directors alike. Considering the fact that we live in a time when arts funding is low and continuously at risk of being cut, and that money to put on high-tech productions can be hard to come by, the performance and storytelling aspects of theatre are more important than at any other time over the past two centuries in the history of theatre. I believe the theatricality and emotion-driven performances associated with melodrama should be reconsidered and revamped for new times, as we seek to ensure that theatre remains an engaging and popular art form. I believe that these four short, original plays – *The End of the Line at the End*, *What I Left Behind*, *Two Cousins and a Pizza*, and *Halftime from Outer*

Space – are examples of how melodramatic performances can still be successfully applied to theatre in modern times. Actors: Rhyder Dulin, Jack Kayan, Julia Leitao, Stephanie Madden, Jose Marino, Sam Nicefaro, and Onyae Ransall.

PHOTOGRAPHY – ABSTRACTS

Photographs can be viewed in the Betty Tipton Room throughout the day. For more information about the Photography Exhibit, see pg. 82.

ACTOR HEADSHOT PROJECT

Jamie Belden (Communication)

Faculty Mentor: Martin Seymour

Digital ink pigment prints, 8 in. x 10 in.

For this project I have researched digital photography to become proficient with manual operation of the digital camera by experimenting with manual use of shutter speed and f-stops as well as the best focal length lens to use for portraits. I have also researched portrait lighting and beauty lighting as well as beauty retouching with Photoshop and how to match color profiles to print from Photoshop. I have experimented with window light portraiture, single source studio portrait lighting and for the final aspect of the project learned beauty lighting to produce head-shots for 27 actors in Eastern's theater program. This has involved multiple sittings of three to four actors each time. While photographing the actors I have started to learn directing techniques to elicit the desired facial expressions. I have also learned lighting techniques to make a portrait dramatic with deep, rich shadows and by using a reflector to fill in the shadows to create a much softer affect. I have also learned post production retouching techniques and how to match color profiles to achieve accurate color reproduction as Photoshop interprets the RGB work color space to the CMYK ink pigment color profile.

EXHIBITION QUALITY ARCHIVAL PRINTING

Aydan Crumrine (Communication)

Faculty Mentor: Martin Seymour

Silver gelatin fiber based paper, 8 in. x 10 in.

My objective was to learn how to produce and become proficient at silver gelatin archival printing. To do this I researched archival printing and determined to use fiber-based paper. Previous to this I have only used Resin Coated (RC) paper. In addition I decided to use graded paper instead of variable contrast as I had used in the past. This allowed for sharper images by eliminating the use of contrast filters. From the research I determined that an archival chemistry line required double fixing baths and for the fiber based paper longer development times. The longer development times produced a greater tonal

range. Archival printing also required longer wash times of five minutes for each of the three wash baths as compared to one minute each with RC paper. I also experimented with different types of fiber papers including neutral tone and warm tone papers. After some trials I decided to use the neutral tone due to the intensity of not only the black tones but also the white. My end goal for the project was to produce ten exhibition quality prints that meet archival standards from negatives that I planed to capture for this project. At the end of the semester I ended up with roughly forty prints with at least fifteen of them meeting archival standards. I plan to show ten framed prints from the project.

BLACK AND WHITE EXHIBIT QUALITY ARCHIVAL PRINTING.

Stephen Horvath (Communication)

Faculty Mentor: Martin Seymour

Silver gelatin fiber based prints, 8 in. x 10 in.

So much of this world has gone digital, but sometimes it's nice to take a step back and see what we did in the past. 35mm film cameras were the standard for many years and now have been replaced with the digital camera and digital printing, or simply online display. I step back to the black and white 35mm camera and traditional silver gelatin printing, doing the entire process of shooting, developing, printing, and enlarging by myself in the dark room. Previous to this I have only used resin coated (RC) paper for enlarging. For exhibition quality, I wanted to use fiber based paper and learn the archival chemistry process. In addition, I wanted to experiment with cool tone, neutral tone, and warm tone paper. I plan to choose the tone of the paper to suit the image. My final work will be five framed 8x10 photographs with a binder of prints to show my works in progress and examples of the steps required to make the final product. This will show people that are only familiar with the process of making a photograph with the help of a computer or automated functions see the way it was done before we had digital photography.

POSTER PRESENTATIONS – ABSTRACTS

Posters will be on display in the Betty Tipton Room and in the gallery between the Café and Theater throughout the day. The formal poster session is scheduled in these locations from 3:30-4:20.

FOSTERCARE AND HOMELESSNESS

Cindy Archibald, Samuel Martin (Sociology, Anthropology and Social Work)

Faculty Mentor: Pamela Chiang

Foster care youth that have aged out of the child welfare system are vulnerable to becoming homeless when the state no longer provides support and housing, yet little is known about the individual and institutional factors that contribute to their homelessness. This study aims to examine the risk and protective factors of young adults who either become homeless or have a successful transition to independent living after they turn 21 years old. Using snowball sampling, we administered an online survey to understand the perspectives and experiences of the public and private social workers that work with transitioning foster care youth to independence in Connecticut. The results of this study will shed light on policy and practice of child welfare regarding effectively promoting protective factors and reducing risk factors that prevent foster care adults from becoming homeless in their adulthood.

ISOLATING ANTIBIOTIC COMPOUNDS PRODUCED BY SOIL MICROBES

Lauren Atkinson (Biology)

Faculty Mentor: Barbara Murdoch

The discovery of antibiotics revolutionized medicine. Inexpensive and widely-available, these compounds could stop bacterial infections and diseases that previously had no cure. Today due to the widespread and frequently unnecessary use of antibiotics, antibiotic resistance is rapidly evolving among these pathogens that were once easily controlled, especially among Gram-negative pathogens. The decreased efficacy of the antibiotics currently available hinders our ability to stop infectious diseases as well as address complications among patients undergoing chemotherapy or recovering from surgery. Furthermore, during the past decade, pharmaceutical companies have limited their efforts to find new antibiotics, fueling the need for discovery elsewhere. The Small World Initiative is a novel global project that uses crowdsourcing to discover new antibiotics from soil bacteria. This study is part of the Small World Initiative. The purpose of this study is to isolate antibiotic compounds that may be used to create new antibiotics against which these bacterial pathogens have no resistance. To do this, we isolated and cultured on various media, the bacteria in two soil samples taken from Church Farm.

Bacterial isolates were then characterized by morphology as well as biochemical and genetic testing. Safe non-pathogenic bacteria were used to test the bacterial isolates for antibiotic activity. We hope to improve our understanding of the diversity of soil bacteria and to discover new antibiotic compounds.

FINANCIAL LITERACY AMONGST HIGH SCHOOL STUDENTS

**Frank Ball, Naja Barrows, Kayla Enwerem, Meghan Eichelberg
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Pamela Chiang

Whether high school aged children are transitioning into the workforce or college, the high cost of college tuition or independent living presents challenges to the career plans of persons in this age group. Financial knowledge, such as how money is managed, earned, spent and invested, is one of the foundational skills that prepare early adults to better function within the economy. Little is known about how financially knowledgeable our high school aged children are. The purpose of this study is to assess the financial knowledge among high school students and factors that are associated with their literacy. Through the use of self-administered survey questionnaires, this study will gauge awareness of four major aspects of financial literacy, which include credit and spending, savings and investments, income and money management, among high school students in the northeast region of Connecticut. The results of the study will contribute to the understanding of financial capability and future prospects of current high school students in Connecticut, as well as how different systems, such as families and schools, could work together in order to enhance their financial knowledge.

BROWSING AND FEEDING BEHAVIOR OF CORAL REEF HERBIVOROUS FISH DOES NOT DIFFER BETWEEN EXPERIMENTAL DENSE AND SPARSE ALGAL PLOTS

Megan Barnes (Biology)

Faculty Mentor: Joshua Idjadi

When reef-building coral's health is compromised by local and global scale stressors, mortality can leave gaps in the reef structure allowing open space for macroalgal settlement. When herbivore communities are intact, algae is removed, preventing space preemption by algae, and promoting a return to coral dominance. Unfortunately, Hoey and Bellwood (2011) demonstrated that herbivorous fish forage less intensely on macroalgae where it is dense, potentially leading to a positive feedback loop toward algal dominance. Previously, in consumption experiments, we have found that fish do not forage effectively against algae-like backgrounds and fish prefer algae that have been collected from sparse areas versus dense patches. The avoidance of dense patches does not appear to be due to the presence of poisonous species mixed stands (associational defense). In the present study, we test the hypothesis that herbivores are less likely to visit and sample algae from plots that mimic dense areas compared to sparse areas. We presented algae against contrasting (sparse mimic) and disruptive (dense mimic) backgrounds, and video of the plots was recorded over 4 hours in the absence of divers. We did not find any evidence of different behavior in the plot-types. Visits were rare and similar between plots. In future work, we will look for differences in the presence of unpalatable chemicals and epiphytes on algae growing in sparse and dense plots, and potential nutritional differences between algae from each of the

plots. Overall, this work may help explain why dense algal stands are persistent and growing on coral reefs in the Caribbean.

THE ROLE OF ASTROCYTE BECLIN 1 IN ALZHEIMER'S PATHOGENESIS

Megan Barnes, Yuberki Delgadillo (Biology)

Faculty Mentor: Kurt Lucin

Neurodegeneration seen in Alzheimer's disease (AD) patients is accompanied by amyloid plaques and neuronal loss. AD is also accompanied by reduced beclin 1 protein levels within diseased regions of the brain. Beclin 1 is involved in numerous processes, including autophagy and receptor trafficking. Because reduced beclin 1 levels were observed in whole AD brain lysates, it is unclear which cells experience a reduction and how this might affect disease progression. Astrocytes are the most numerous cell in the brain and provide neuronal support, potentially being a key player in this process. Currently we are working towards reducing beclin 1 within C6 astrocytes, by transfecting them with shRNA plasmids that co-express green fluorescent protein (GFP). Transfected cells, confirmed by the presence of GFP, were analyzed by western blot. This technique allows for the quantification of specific protein amounts in the cells, including beclin 1. We are currently working on obtaining higher transfection rates, potentially using a viral vector, to allow us to achieve quantifiable difference in beclin 1 within transfected astrocytes, compared to control transfected astrocytes.

THE BENTHIC GEOLOGIC HABITATS OF LONG ISLAND SOUND IN THE VICINITY OF THE THIMBLE ISLANDS AND BRANFORD RIVER, CONNECTICUT, USA

Joshua Bartosiewicz (Environmental Earth Science)

Faculty Mentor: Bryan Oakley

Using side-scan sonar, surface sediment grab samples, underwater video imagery and digital orthophotographs, 4 km² of benthic geologic habitats were mapped in north-central Long Island Sound offshore of Branford, Connecticut, U.S.A. Units were classified using a naming convention that is based on the geologic processes, morphologic form (separated into two different environment groups (bayfloor versus marginal habitats)), particle size, biota and anthropogenic impacts. This naming scheme is flexible and can be adapted to other areas, and allows scientists, managers and the general public to understand the classification method used. The distribution of geologic habitats in the study site are complex but generally, coarser units (sand, limited amounts of gravel and abundant gravel sized shell fragments) are found near bedrock outcrops, forming an erosional terrace as fine-grained material (silt and clay) is removed by wave action. Aerially the largest units are low-energy depositional habitats, which range in water-depth from subtidal flats <1.5 to >10 m in incised channels and are significant sinks for fine-grained sediment (sandy silt, silt and clayey silt). The fine-grained sediments currently present in the Long Island Sound basin are likely from several key sources: 1. Erosion and transport of silt and clay glacial lakefloor deposits (varves) deposited during the Late Wisconsinan. 2. Sediment transported down the major rivers draining into the Long Island Sound basin during large storm events. 3. Fine-grained organic sediment, which accounted for <4 % of the fine-grained sediment, and is largely a product of the decay of macroalgae, particularly in the northern coves.

A DESCRIPTIVE STUDY ON UNDERGRADUATE STUDENTS' SLEEP PROBLEMS

Jesse Bober (Psychology)

Faculty Mentor: Chunying Sandy Jin

College students regularly experience sleep difficulties during their academic year. These problems not only impact their academic performance but also pose a serious health risk. Studies evaluating the prevalence of sleep problems in college students do exist; however, the nature of those problems and the conditions under which those problems occur remain unclear. The present study is a qualitative and quantitative descriptive analysis of undergraduate students' sleep patterns. Participants were recruited at a local university and offered extra credit in class contingent on participation. Data were obtained via both objective (i.e., sound and activity monitoring) and subjective methods (i.e., closed- and open-ended questionnaires). The types of problems assessed included sleep onset delay, night and early waking, excessive day sleep at inappropriate times, short and inconsistent sleep duration, inappropriate sleep dependency, inconsistent sleep schedule, or automatically and socially-mediated problem behavior that interfere with behavioral quietude. The nature of the sleep problems, the conditions under which they occur, and the implications for function-based treatments are discussed.

THE EFFECT OF SIMULATED MICROGRAVITY ON THE FUNCTIONS OF OLFACTORY NEURONS IN THE NEMATODE, CAENORHABDITIS ELEGANS

Katherine Burgos (Biology)

Faculty Mentor: Amy Groth

Understanding the effects of microgravity can assist in the development of strategies to help avoid the limitations of sending humans to space and safely returning them to earth. Astronauts returning from spaceflight experience poor neurocognitive performance and motor system disturbances. Understanding the effects of microgravity is critical for overcoming the issue of how humans can better survive and work in space during long-term space travel. This experiment aims to better understand how microgravity affects the nervous and motor systems of a living organism. Understanding whether simulated microgravity affects the worm, *Caenorhabditis elegans* (*C. elegans*), can potentially help uncover the specific ways that human neurons are impaired during spaceflight. Information gathered in this study can be used to address the limitations of sending humans to space for extended periods of time and having them return to earth without experiencing any post-flight mental and motor deficiencies. We are studying the effect of simulated microgravity on: 1) the function of olfactory neurons, 2) the morphology of olfactory neurons, 3) development, and 4) the expression of genes involved in the signaling pathway of olfaction to behavior. Adult worms are exposed to microgravity by vertical rotation in a Rotatory Cell Culture System (RCCS) developed by NASA. Control worms are grown in a RCCS chamber with horizontal rotation for the same period of time. At the end of exposure to simulated microgravity and normal gravity (control), the worms are collected and analyzed for their ability to properly chemotax (move) towards or away from volatile chemicals. Additionally, microgravity-exposed worms and normal gravity worms will be analyzed to determine if microgravity results in a change in neuron morphology, a change in gene expression or the ability to fully develop from an embryonic stage to an adult stage. Our study will help understand the effects of space travel on living

organisms, including humans, as we will determine whether microgravity represents a risk to normal neuronal function and morphology, development, and gene expression of *C. elegans*.

THE EFFECT OF MELATONIN ON THE SLEEP PROBLEMS OF YOUNG CHILDREN DIAGNOSED WITH AUTISM

Melanie Byrne, Royce Manifold (Psychology)

Faculty Mentor: Chunying Sandy Jin

Melatonin is an endogenous hormone secreted by the pineal gland. The secretion of melatonin is moderated by the amount of light and its release typically peaks at bedtime, making it a powerful synchronizer of circadian rhythm. Recently, there has been an increasing trend of prescribing melatonin for the treatment pediatric sleep problems. Sleep problems are prevalent and persistent in children of both typical and atypical development. A number of studies evaluating the efficacy of melatonin suggest that its administration at bedtime is associated with a statistically significant reduction in sleep latency. The purpose of our study is to review and evaluate the efficacy and social acceptability of melatonin for treating sleep problems in children diagnosed with autism spectrum disorder. Results of the study will be discussed in terms of its short-term and long-term efficacy, the specific types of sleep problems that are effectively addressed with its administration, measurement systems that are used in the published studies, social acceptability, possible negative side effects, and questions that remain unanswered.

THE RISE AND FALL OF SOUTH KOREAN CHAEBOLS: SAMSUNG'S ENDURING LEGACY

Victoria Cerwinski, Michael Branch (Business Administration)

Faculty Mentor: Niti Pandey

Chaebols, large family owned business conglomerates, have been financially and culturally significant in the history of South Korea. Instrumental in once pulling South Korea out of poverty after the Korean War, they were decimated by the Asian financial crisis of 1997. Those chaebols that subsequently overtook the market are now a major influence on the South Korean economy. This study examines the history of South Korean chaebols in order to understand and explain their current status in South Korean society. We do this by specifically examining Samsung's dominance of the Korean economy in the 21st century.

SIMILARITIES AND DIFFERENCES IN MATE PREFERENCES AMONG WOMEN AND THEIR PARENTS

Caitlynn Chabot, Kaitlyn Doucette (Psychology)

Faculty Mentor: Madeleine Fugere

Prior research indicates that offspring value mate characteristics connoting genetic quality while parents value potential investment in future children. However, prior research assesses only offspring or parents. We assessed mate preferences among women and their parents. We hypothesized that women and their parents would agree about the most important traits for a potential mate for the

offspring. Participants and their parents agreed about the most important traits in a prospective mate as well as traits that would end a relationship. Traits connoting genetic quality were valued more strongly by female offspring than their parents, however, many traits considered most important by the samples and many traits that evidenced disagreement in previous research were rated similarly by women and their parents.

HOW EFFECTIVE ARE GUN CONTROL LAWS?

Austin Cirella, Mark Smolak, Ashley Cholewa, Kara Noble (Education)

Faculty Mentor: Mark Fabrizi

Are the gun control laws in America effective at protection for people and protection from people? How can we reconcile the two sides? How do America's gun control laws compare to the rest of the world? During this election year, now more than ever, gun control laws are a significant controversy in our society. People sometimes take a stance on this issue without really examining both sides and learning about the subject. Students need to research the issue to decide if anything needs to change and if the laws protect the citizens. Our cross-curricular project consists of roughly twenty separate lessons that revolve around gun control for grades 10, 11 and 12, throughout the disciplines. The content areas of mathematics, global history, United States history, and literature all contain important information that students can use to support a particular side, even if that side does not necessarily coincide with the students' actual feelings about gun control. In mathematics, statistics and trends which examine gun violence and prevalence in our society will be discussed. For global history, we focus on the rate at which various other countries normalize gun control. In U.S. history, we study the use of gun control within America, as well as historic and current laws on gun control that surround our society. As for English, a focus on youth literature that touches on themes of gun violence and how this affects students today will be explored. A debate at the end of the mini-unit will strengthen students' argumentative and public speaking skills, and enhance their ability to synthesize well-supported arguments. Combining our knowledge through interdisciplinary instruction will further emphasize the significance of gun control laws in our society and will allow students to choose their own side on the gun control debate, using evidence and information gathered from multiple perspectives.

THE REFUGEE CRISIS: AN INTERDISCIPLINARY APPROACH

Jacqueline Damaschi, Rebecca Husovsky, Jonas Pierre, Dustin Munson (Education)

Faculty Mentor: Mark Fabrizi

Our team would like to present an interdisciplinary unit with a unifying theme of "The Syrian Refugee Crisis". This is ideally a high-school unit, but is adaptable for students of all ages when appropriate leveled readings are selected. Specifically, grades 11 or 12 have the maturity to handle a topic with more substance and one as graphic and important as this. The relevance of this topic to U.S students is apparent with the debate about what the U.S should do with undocumented immigrants that are in the U.S. Americans will be affected by the decision made by the leadership. Students in English class will examine media coverage, propaganda and different cultural attitudes relevant to this issue. Students will read non-fiction texts from the U.S and other countries. Students then pick a country they want to represent and create a poster based on articles they find pertaining to the topic. Students exploring

scientific contributions will uncover connections to the crisis based on these aspects: environmental (waste, recycling, sanitation), biological (transmission of diseases), or botanical (growing plants in areas with minimal access to resources). In a math class, students will analyze statistics surrounding populations of refugees. Students will research patterns and trends to make comparisons between how long refugees have been impacted and how long the crisis has been in effect. Students will make predictions for future actions/population numbers when they see data from the past and present. In social studies class, students will examine historically unresolved problems and how these effect the political, economic, and social fabric of any given country and the future of its people. Overall, this unit will raise awareness of social justice. Not only does this influence those involved, but the lesson will have an impact on the students and their opinions while they are performing in depth research on this topic.

HIGH-ENERGY DIETS, STRESS MINDSET, AND MEMORY FUNCTION

Katherine Daneault (Psychology)

Faculty Mentor: Margaret Letterman

Alzheimer's disease is the sixth primary cause of mortality in America according to the Alzheimer's Association. Prioritizing a physically and mentally healthy lifestyle has been the focus of possible prevention tips. This study includes a correlational design observing the relationship between high-energy diets, stress mindset, and memory function. Participants consisted of a sample size (N=50) of college students from Eastern Connecticut State University at least 18 years or older. Students have been given three surveys to measure memory, stress, and diet and exercise. The Energy Balance-Related Behaviour Questionnaire was given to participating college students to measure energy consumption and physical activity. The Everyday Memory Scale (EMS) was provided to measure abilities and errors of memory functioning in college students. Finally, the Stress Mindset Measure-General (SMM-G) has been provided to participants to measure amount, coping, and outcome of stress. It was predicted that a low exercise lifestyle, high-energy diet, and poor stress mindset will correlate with memory function. The purpose of this study is to explore the relationship between diet and exercise, stress mindset, and memory function. This study is anticipated to promote further research on exercise, dieting, and stress and how it relates to brain function.

HARD ROCK VS HEAVY METAL

Sydney Day, Joel Hara (Environmental Earth Science)

Faculty Mentor: Meredith Metcalf

Manganese is an abundant, naturally occurring metal found in soils and rocks across Connecticut. Given the abundance, manganese is often found in groundwater. Concentrations may increase in the groundwater due to unnatural causes which include activities associated with municipal wastewater, pesticides, or mining. Although manganese is essential for all animals, prolonged exposure to concentrations exceeding 0.05 mg/L in drinking water may lead to health complications and, additionally, may cause accelerated deterioration of pipes, hot water heaters, and home heating systems. More than 1,800 water quality reports from domestic wells from 1970 to present were used to conduct a spatial and temporal analysis of manganese concentrations for Lebanon, Connecticut.

Manganese concentrations were analyzed with respect to rock type, additional groundwater parameters, and groundwater flow conditions. Rock types were grouped into three litho-geochemical units and manganese concentrations were analyzed per unit per decade. Drinking water wells that exceeded the EPA drinking water standard for manganese concentrations most often occur in felsic-igneous and plutonic rocks; however, average decadal manganese concentrations show that metamorphosed sedimentary rock had significantly higher concentrations. The variability in the temporal distribution of manganese suggests anthropogenic sources have altered the groundwater quality conditions.

ASSESSING GENETIC DIVERSITY AND STRUCTURE OF WHISKERED TERN (CHLIDONIAS HYBRIDA) COLONIES IN FRANCE, UKRAINE, AND POLAND TO QUANTIFY SITE CONNECTIVITY

Jacob Dayton (Biology)

Faculty Mentor: Patricia Szczys

The Whiskered Tern (*Chlidonias hybrida*) is a little studied socially monogamous marsh-nesting tern that is extensively distributed across Europe. Specifically, the largest breeding populations of Whiskered Terns are located in Eastern Europe (Russia, Romania, Poland), and in Southwestern Europe (France, Iberian Peninsula). A 2013 study by our collaborator, Mateusz Ledwon, reported that the recent exponential increase in the Whiskered Tern populations in Poland and the Upper Vistula River Valley cannot be accounted for by intrinsic population dynamics, but instead is due to a large increase in the rate of immigration, the hypothesized source being the current stable Ukraine population. In our research, we analyzed six microsatellite loci of 78 individuals sampled from colonies in Poland, France, and Ukraine. Early analysis of genetic diversity indices, of the mean heterozygosity and mean number of alleles present at each colony, show significant trends of highest genetic diversity within the Poland colony and moderate diversity in the Ukraine colonies. Other indices calculated in our study continued to describe the population genetic diversity and genetic structure within and between these sites in order to quantify the level of current and historical inter-population connectivity.

AN INVESTIGATION OF CLEFT PALATE RELATED FACTORS IN *C. ELEGANS*

Elizabeth Del Buono, Elizabeth Schoell (Biology)

Faculty Mentor: Amy Groth

Odd-skipped genes and *pax* genes are both highly evolutionarily conserved genes with special functions in development. Their functions and interactions are not entirely elucidated, but evidence suggests that their mouse homologs are both significant to proper patterning of the secondary palate. Specifically, it has been shown that *Pax9* and *Odd-skipped Related 2* deficient mice have cleft palate. Cleft palate is one of the most common birth defects in human newborns, and may lead to death. We seek to uncover the mechanisms and interactions among *odd-skipped* and *pax* genes in the model nematode *C. elegans* to further reveal their important roles in the development of organisms. More specifically, we plan to observe changes in *odd-skipped* gene expression in *odd-skipped* fluorescent reporters upon knockdown of *pax* genes. We ultimately aim to broaden research on the mechanisms that drive developmental disorders like cleft palate. We have conducted preliminary experiments in which we have knocked down the functions of *pax* genes in *C. elegans*, and plan to continue this work by knocking down the functions

of both *pax* and *odd-skipped* genes. We have prepared the necessary tools to complete these experiments, and plan to look for phenotypes resembling or related to cleft palate in these worms.

THE IMPACT OF CEO LEADERSHIP STYLE ON THE DEVELOPMENT OF HUMAN RESOURCE PRACTICES IN INDIAN FIRMS

Derrick DiVita, Timmie Jackson (Business Administration)

Faculty Mentor: Niti Pandey

Management scholars have been studying the unique leadership of Indian business leaders for the past few decades. As the Indian economy has rapidly grown in the 21st century several Indian firms have become global in scope and leaders in their industries. Research has attributed this success to the unique leadership style of Indian CEOs. This research examines how the leadership approach of CEOs has influenced the development of human resource practices in Indian companies. This is especially relevant in order to understand the unprecedented growth of corporations like the Tata Group. By identifying the links between leadership style, human resource practices, innovation and growth this study presents a framework for analyzing the unique set of conditions that exist in the Indian business sector.

CRISIS AT THE CROSSROADS: SPORT, GENDER DISCRIMINATION, AND THE MORAL LAW

James Doucette III (Kinesiology & Physical Education)

Faculty Mentor: Ari de Wilde

This paper examines the many issues surrounding gender discrimination as experienced by female college and professional athletes in Western Sports, demonstrating the nature, severity and extent of the problem. The types and sources of discrimination that sportswomen endure are explained, with a particular focus on the role of media in propagating gender stereotypes and roles which are a major contributor to discrimination. The negative impacts of these social phenomena on the athletes themselves are described. Key characteristics of discrimination illustrated by the research are also discussed. Comprehensive ethical solutions are then proposed using the theories of Immanuel Kant, specifically applying the Moral Law, the Autonomy principle, Duties of Justice, and the inherent dignity of every human being.

'WHO IS THE GREATEST': QUANTIFIABLY ANALYZING TWO BASKETBALL TEAM DYNASTIES

Nicholas Dube, Melody Kramarz, Kenechi Neziyana (Kinesiology & Physical Education)

Faculty Mentor: Ari de Wilde

In this project, our group attempts to analyze and compare two basketball teams from two different eras. Comparing eras is no easy task, especially when it comes to historically great dynasties in sport. With so many differing components and styles of play between now and in the past, some may see this task as unfair, or even impossible. But when you think of the greatest sport dynasty of all time, comparisons have to be made to highlight how great one individual dynasty has been. In November of

2015, four Eastern students entered a case-study competition at Nichols College, with the task to compare two historically great sport dynasties; one before ESPN began operation in 1979, to another dated after '79, and make an argument for which deserves the title of 'greatest of all time.' To accomplish this, the team was tasked in focusing solely on quantitative data, and to use common statistics to reach the goal of successfully comparing dynasties from two different time periods. Ultimately, our team decided to compare John Wooden's UCLA Bruins Men's Basketball team from 1964-1979, to Geno Auriemma's UConn Huskies Women's Basketball team dated from 1995-2015. Upon conducting the research and reviewing the statistics, we came to the conclusion that UConn's dominance in the past twenty years can be considered the more dominant, and perhaps, one of the more dominating periods of time for a single program in the history of sport. In this poster, we present our findings.

CELL CULTURE IN MICROGRAVITY

Jessica Durkin (Biology)

Faculty Mentor: Kurt Lucin

The National Aeronautics and Space Administration (NASA) was established with the goal of civilian space exploration. Over the years they have come closer to this strategic goal of Human Exploration and Development of Space. Other agencies, such as SpaceX and Virgin Galactic, share this goal of space commercialization and accessibility. However, even with the many advances made, the consequences of space flight on the human brain remain unclear. Evidence indicates that crewmembers returning from spaceflight experience a decline in cognitive functions such as attention, accuracy, and motor skills. Currently it is unclear what causes this cognitive decline. One possibility is that exposure to microgravity has an effect on neurons, the cells in the central nervous system responsible for sending and receiving information. Here, we describe the establishment of cell culture conditions within simulated microgravity using a rotary cell culture system. These studies demonstrate our ability to culture neurons in simulated microgravity and lay the foundation for investigating the effects of microgravity on neurons. Understanding this may be crucial for developing strategies to prevent cognitive decline and facilitate the exploration of space.

EFFECT OF INSECTICIDE TREATMENT ON RESISTANCE MECHANISMS IN PACHYSANDRA

Holly Dutko, Caitlyn Longwell (Biology)

Faculty Mentor: Elizabeth Cowles

The use of neonicotinoid insecticides, such as imidacloprid, often result in secondary pest outbreaks on plants. It is possible that these insecticides suppress the induced systemic resistance mechanisms (SR), leaving plants more vulnerable to pest damage. We treated pachysandra with several insecticides and measured the activity of two SR enzymes, polyphenoloxidase and peroxidase. Mock pest damage induced SR enzymes; some insecticide treatments reduced overall SR activity.

UNDERAGE DRINKING AMONG RESIDENTIAL UNDERGRADUATES

**Nick Fernandes, Emily Cordy, Abigail Granigan, Abigail D'Onofrio, Cory Anderson
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Pamela Chiang

The purpose of this study is to understand the prevalence of underage binge drinking among residential students. Data will be collected through self-administered questionnaires in residential halls with available sampling. The survey questions include previous use of alcohol, the access to alcohol, influx of use after introduction to college life, peer pressure, stressors, the knowledge of risky situations, and perceived use of alcohol after college. Implications for assessment, prevention and intervention are discussed.

GENETICALLY MODIFIED ORGANISMS: A BLESSING OR A CURSE?

Madison Forsander, Michael Griffiths, Rachel Mackewicz, Abbie Beckoff (Education)

Faculty Mentor: Mark Fabrizi

Whether you realize it or not, you consume genetically modified organisms or GMOs almost daily. One would wonder, are these healthy for me? How do these GMOs effect the environment? How do they change the agricultural industry as a whole? GMOs are altering our lives, and it is time for us to attempt to determine if this is a change for the better or worse. Our students will participate in an interdisciplinary journey to form their own opinions about the physiological, environmental and economic effects of GMOs. Students will form their opinions through rigorous research in the history and social dynamics of GMOs and their effects on society as a whole. Scientific differences between organic and genetically modified foods through appearances, which will pique interest in the molecular makeup of these modified organisms. After synthesized, these findings can be used to produce statistics, graphs, and charts leading to student's predictions. This inquisition will culminate in the writing of a newspaper issue consisting of both academic findings in their subject areas and an original piece concerning one's opinions of GMOs overall after extensive research. We hope to create a complete use of research tools through independent inquiry in all subjects. Our pedagogical outlook will facilitate collaboration, independent work and interviews as opposed to a traditional lecture on GMOs. This is an extremely relevant topic that students need to have knowledge in so that they can be lifelong educated consumers.

BULLYING IN MIDDLE SCHOOL: DO BOYS AND GIRLS HAVE DIFFERENT EXPERIENCES?

Amber Gaffney, Paula Berson, Alyssa Feldman (Sociology, Anthropology and Social Work)

Faculty Mentor: Pamela Chiang

Prior studies show that bullying incidents among students in the United States reach their peak during middle school (Berthold & Hoover, 2000), however, very little research looks into how the experience, type, and frequency of bullying experienced by kids of this age group vary by gender. Our study is aimed to explore gender differences among middle school students about their personal experiences. Using self-administered survey questionnaires, we collected our data in local middle schools in the northeast

region of Connecticut. The results of study will inform of specific preventions and interventions for serving victims of different genders.

FAMILY FUNCTIONING AND EATING ATTITUDES IN EMERGING ADULTHOOD

Sonja Gagnon (Psychology)

Faculty Mentor: Melanie Keyes

For several decades research has been conducted about whether family functioning is characteristically different for families of eating disordered patients. There have been mixed results in past research. In the present study, 174 participants from Eastern Connecticut State University and Hanover Psychological Research on the Net completed the FAD, EAT-26, and a demographics form online. Results indicated that family functioning was significantly different for women who have unhealthy eating attitudes compared to healthy women. Results were approaching significant for both men and women. Affective responsiveness, communication and behavior control were the subscales of the FAD found to be significantly different for women with unhealthy eating attitudes compared to healthy women. Subscales of the FAD and EAT-26 were found to be correlated. Results will be useful for helping understand the role families play in eating attitudes and eating disorders. Implications for eating disorder prevention and education programs as well as treatment programs are discussed.

INTERDISCIPLINARY POST-APOCALYPTIC LEARNING

Christianne Glenn-Long, Stephen Cowell, Kendra Anderson, Sabrina Couceiro (Education)

Faculty Mentor: Mark Fabrizi

Our team will be creating a week-long interdisciplinary unit for 11th grade students which asks the question, "How can you survive in a post-apocalyptic world?" Students will explore the question across the core subjects of English, history, science, and Algebra II to determine how they could survive in a world where society has been drastically changed due to warfare, disease, or other life-changing circumstances. This topic is particularly important not only because it has real-world values of survival, societal connection, and cross-curricular applications of data, topics, and themes, but also because the high-stakes question engages students on a practical and emotional level. In history, students will learn about world-affecting warfare such as World War I and World War II. They will also study previous epidemics of infectious diseases. Students will be asked to work on a plan of how they would proceed in such catastrophic circumstances. In mathematics, students will model the spread of infectious diseases in their classes by analyzing data of a real-life scenario. They will also use functions to see how long a community could survive with limited food. Students would work in groups with a given disease and population size to determine rate and probability of survival. In science, biology students would study evolution and genetics and their impact on a global scale. They will learn about traits and environmental factors that have an impact on survival. They will learn how these factors affect genetics and evolution. They will then explore the way these factors would function in a post-apocalyptic world. In English classes, students would read the text *Pride and Prejudice and Zombies* by Seth Grahame-Smith, which is an adaptation of the Jane Austen novel *Pride and Prejudice*. Students would read and reflect on the themes and ideas of love, war, societal duty, classicism, and survival through class discussions and a hands-on project. Through this project, students would learn how to survive in a society undergoing the

catastrophic changes that disease epidemics, warfare, and other circumstances could have. Connecting their lessons in their four core subjects, they will learn how to survive.

REDEFINING THE ROLE OF THE SIBLING: LOOKING INTO THE LIVES OF SIBLINGS OF INDIVIDUALS WITH DISABILITIES

Nicole Green, Mikayla Zagata (Education)

Faculty Mentor: Tanya Moorehead

Autism spectrum disorder (ASD) and other physical and intellectual disabilities have been on the rise in recent years. As these diagnoses increase, unfortunately, they are not being met with the proper amount of resources. Though many resources have grown out of research, they benefit the child and their parents, but not the sibling of this child with a disability. There are social groups, programs in schools, colleges, and universities, local community organizations, and federal laws; these help children with disabilities and their parents as the children go through school and into further academics and the working world. However, where are these resources for their siblings? How do the siblings factor into the life of a child with a disability? How does this impact the future, and how much responsibility will the sibling have when the parents are no longer able to make decisions for the child with a disability? The goal of this research to bring awareness and shed light on the concerns that siblings of children with disabilities have and how their role transforms and transitions over time.

DEVELOPING DIVERSITY MANAGEMENT PRACTICES THAT RECOGNIZE THE IMPORTANCE OF NATIONAL CULTURE: THE CASE OF PFIZER

Allison Greenberg, Kehlsi Haynes (Business Administration)

Faculty Mentor: Niti Pandey

One of the challenges faced by multinational corporations is the development and implementation of standardized human resource practices that are culturally sensitive and responsive to local needs. The purpose of this research is to examine how successful multinational corporations standardize and enforce cultural and diversity practices across geographic locations. Pfizer, a global pharmaceutical company headquartered in New York has subsidiaries in 45 countries. Achieving a global perspective is one of the goals of Pfizer's diversity program. The research will apply Hofstede's model to develop a conceptual foundation of the cultural differences in the Pfizer subsidiaries. This in-depth case study on Pfizer will help us understand how multinational corporations can create a diverse workforce, enforce cross-cultural diversity management and develop sensitivity to local differences while maintaining a strong internal culture.

THE CONSEQUENCE OF U

Joel Hara (Environmental Earth Science)

Faculty Mentor: Meredith Metcalf

Uranium has been a topic of discussion in the quiet town of Lebanon, Connecticut. The source of uranium is known but the reason why it is in the groundwater at unsafe levels is not. Using water test data collected by the Town of Lebanon and students at Eastern Connecticut State University this study aims to find out the conditions necessary for uranium to occur at high levels. Water quality test results for uranium and other properties of the water that may occur in concurrence with the uranium will be applied to past and present conditions to see if things have changed and the likelihood of where this may occur in the town of Lebanon. It will also pinpoint where uranium levels are currently in excess and the data associated with those locations to give validation for indicators of high uranium levels. This will be used to notify individuals who may be at risk to get their water tested more frequently or consider a filtration device.

EASTERN STUDENTS' PERCEPTION OF CAMPUS SAFETY AGAINST SHOOTING

Taylor Hemphill, Devon Hall, Katrina Marshall, Marley Robert
(Sociology, Anthropology and Social Work)

Faculty Mentor: Pamela Chiang

The shooting incidents that occur on college campuses continue to raise concerns regarding safety and legislation. These recent events have led to discussion regarding moral panic, threat assessment teams, gun control, and counselling/psychological services provided through the University. By utilizing a questionnaire survey, the purpose of this exploratory study is to gain an understanding of the views of Eastern Connecticut State University's students. The findings will provide insight into students' perception and feelings of campus safety, and how liberal arts colleges in the Northeast region of the country should address the issue.

LITERATURE REVIEW OF THE INFLUENCES OF MARITAL CONFLICT ON CHILDREN'S BEHAVIORS

Patricia Hennessy (Psychology)

Faculty Mentor: Jeffrey Danforth

The purpose of this study was to conduct a literature review of research on the effects of marital conflict on internalizing and externalizing behaviors of children. Marital conflict occurs when married couples use destructive, instead of constructive, ways to solve a problem. The main difference between internalizing and externalizing behaviors is that with internalizing behaviors, the child is more reserved and kept to themselves, whereas externalizing behaviors are more visible to the people around them. Results indicated that the more married couples fight the greater the risk for children's internalizing and externalizing problems. The results were consistent across families of different ethnicities. Marital conflict also influences parental stress, which in turn negatively influences children's internalizing and externalizing behaviors, which cycles back to influence the amount of conflict between the couple.

RESEARCHING FEMALE GAMERS: HOW AND WHY

Joshua Henton (Sociology, Anthropology and Social Work)

Faculty Mentor: Nicolas Simon

Video game culture is dominated by white, straight males and this domination is a symptom of many sociological factors. Video game culture, being a relatively young subculture, is important to analyze and question because it's reflective of our society's viewpoints and values when it comes to inclusion and to deciding what should interest males and females. Being a gamer is also an important form of identification, requiring certain critical pieces of criteria for inward and outward identification. This presentation will explain how I am going to conduct a study in gamer culture to determine the acceptance of females within the subculture as a whole. Scholarly research will be presented in an organized fashion, showcasing the many recent studies and the gaps that are still present within this field of research. I will outline the difficulties I anticipate with the study, including how my gender and history with gamer culture may influence the study.

A PILOT STUDY FOR LONG-TERM AND SHORT-TERM ENERGY SAVING OPPORTUNITIES FOR EASTFORD ELEMENTARY SCHOOL

Ashley Houle (Environmental Earth Science)

Faculty Mentor: Paul Torcellini

The town of Eastford, CT has signed on to the Clean Energy Communities Municipal Pledge sponsored by EnergizeCT and Eversource, the local power provider. The Elementary School accounts for 80% of the energy consumed by the town and saving energy is important to achieving the 20% savings goal by 2018. An energy study was performed by using a series of methods and instruments to address both long-term and short-term energy saving measures with primary focus on boiler and lighting energy consumption. Temperature data loggers were placed in fourteen classrooms to assess classroom thermal comfort and radiator effectiveness. In addition, data loggers were attached to a hot water and a steam boiler to record run-times for further analysis. The lighting of each classroom was also addressed where lighting power density and occupancy were measured to investigate appropriate lighting levels and to determine energy savings opportunities. Through analysis of the collected data, energy savings opportunities are suggested to reduce energy consumption to help achieve the town's energy goals.

MOLECULAR EVIDENCE FOR EXTRA-PAIR PATERNITY IN WHISKERED TERNS

Lillian Hyde (Biology)

Faculty Mentor: Patricia Szczys

The Whiskered Tern (*Chlidonias hybrid*) is a colonial, long-lived seabird and member of the Sternidae family. They nest in freshwater wetlands distributed throughout southern and central Europe, and across Asia into Australia. The European population has recently experienced a population expansion. Mating pairs require biparental care of offspring, and exhibit social monogamy, however extra-pair copulation has been observed, which suggests extra-pair paternity is possible. The frequency of extra-pair paternity was measured using molecular methods in well-studied colonies in southern Poland. Thus far, 46 families have been genotyped at six microsatellite loci to assess genetic relationships within social families. We use the probability of resemblance method of Ibaruchi, et al. (2004) to determine paternity and then compare the genetic mating system of Whiskered Terns to related species.

EFFECTIVENESS AND ACCESSIBILITY OF ON CAMPUS MENTAL HEALTH RESOURCES

**Nora Ingle, Ryan Schaffer, Courtney Littlewood, Taylor Maranda, Megan Jones
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Yvonne Patterson

On college campuses across the country, there's an increase in cases of depression and anxiety amongst student populations. With on-campus mental health resources such as counseling centers, it raises the question of why this is happening. This study seeks to explore the research question, "How effective and accessible are the Eastern Connecticut State University's campus mental health resources for students with symptoms of depression and anxiety?" A qualitative research design will be utilized. Researchers will conduct semi-structured interviews with six students to learn more about their perceptions of the accessibility and the effectiveness of the on-campus mental health services. Researchers will start by conducting a screening. If qualified for the study, researchers will set up a time to conduct in-depth interviews. The interview will be recorded and then transcribed. Themes will be identified and discussed in relation to this topic. The study will hopefully lead to a greater understanding of student's lived experiences around the effectiveness and accessibility of these health services on campus, which ultimately can inform best practices.

ARE HUMAN BEINGS RESPONSIBLE FOR GLOBAL CLIMATE CHANGE?

Kaitlyn Kakadeles, Ronald Parlante, Gina Georgetti, Nicholas Presbie (Education)

Faculty Mentor: Mark Fabrizi

How do tenth grade students conceptualize global climate change and the extent to which human beings are responsible for the continuous warming of the planet? As a group, we have created 20 individual lesson plans that will adhere to the subject of human relation to global climate change in order to inform the students of this generation just how much climate change affects them. Our cross curriculum connections will provide a more general overview for the students, as they will be learning about, and soon able to defend, their own opinion on global climate change. Beginning with our science instruction, the Greenhouse Effect will be explained in detail and will begin progress of our interdisciplinary lessons. Next, our group will focus on how, in Social Sciences, the significance of the Industrial Revolution has created a vast amount of technologies that relate heavily to the ever present global climate change. Furthermore, a graph of CO₂ emissions will be presented in order to show the continuous presence of greenhouse gases in our world. Third, mathematics instruction affords several formulas and concepts, such as exponential functions and the Keeling Curve, that can help narrate how dispersed and active global climate change really is. Lastly, there will be a focus on how popular articles and literature of today convey the multiple positive and negative arguments surrounding global warming. Collaboratively, our team will successfully provide students with the necessary means for concluding their own perspective on global climate change and if human beings are responsible for this phenomenon. Through our interdisciplinary instruction, tenth grade students will be able to describe and comprehend the Greenhouse Effect thoroughly, understand the influence of the Industrial Revolution on CO₂ emissions, conceptualize and relate exponential functions and the Keeling Curve to global climate change, and have, as well as retain, popular articles that provide several arguments for and against global warming, respectively.

BANNED BOOKS- THE POWER OF CENSORSHIP

Lisa Lavoie (Communication)

Faculty Mentor: Terri Toles-Patkin

Censorship in America is a powerful tool used by the government, schools, and other institutions in order to suppress the public from something seen as unacceptable. Banned Books Week is a group that fights back against the controversy and aim to protect their rights entitled by the First Amendment. Banned Books Week members gather together to expose the harms of censorship as well as embrace their freedom to enjoy reading. Since the creation of their group in 1982, a shocking 11,300 books have been challenged all over the country, each with their own unique reason as to why. Common reasons for banning books include racial issues, encouragement of violence, blasphemous dialogue, and more. Censorship on books has been at the center of many court cases in America and several of those cases resulted in favor of those who want to keep certain books available to the public. I'll examine three court cases, Board vs. Pico in 1982, Case vs. Unified School District in 1995, and Counts vs. Cedarville School District in 2003. Each case involved schools and institutions stripping students of their access to specific books, such as *Harry Potter*, *Slaughterhouse Five*, *Annie on My Mind*, and others. My study will focus on both sides of each case, those that believe in suppressing availability of certain books as well as those who want all books to be accessible to students across America.

BIOPHYSICAL STUDIES OF CALCIUM DEPENDENT FLUORESCENT PROTEINS

Zane Lombardo (Physical Sciences)

Faculty Mentor: Robert Collins

Cooperative binding and allostery are two fundamental concepts in the study of protein structure and function. Cooperative binding is when a ligand binds to a molecule with multiple binding sites, and increases the affinity for the next ligand to bind. For example, cooperative binding of hemoglobin with oxygen increases the efficiency in which red blood cells can distribute oxygen from your lungs to the rest of your body. Allostery is when binding at one site of a protein effects another site of the protein, which allows for regulation of cell behavior like signaling and metabolism. This project set out to develop a hands-on laboratory module for students to investigate the effects of cooperative binding and allostery. Three different calcium dependent fluorescent proteins, Twitch-1, Geco1, and RCaMP1h were used as models. These proteins consisted of two subunits. The calcium sensor Calmodulin is bound to one of three different fluorescent proteins making three unique protein complexes. These proteins were individually expressed in and purified from E. coli. Once purified these proteins were then studied in binding assays using calcium buffers where the amount of fluorescence they emitted was influenced by the varying amounts of calcium they bound. Changing the concentration of calcium present in a buffer could alter the amount of binding taking place. Although these proteins were of similar design they behaved differently and exhibited different qualities. Their behavior can be quantitatively defined using a few different mathematical models such as the Hill equation, which quantifies cooperative binding.

NUCLEAR POWER: GOOD OR BAD?

Emily Lorenzet, Danielle Robillard, David Carter, Katrina Beals (Education)

Faculty Mentor: Mark Fabrizi

How safe is nuclear power? How likely is it that other countries are creating nuclear weapons? How have nuclear weapons affected people and the environment in the past? How much energy that the United States generates is from nuclear power? As a group of teaching candidates bringing our future content areas together, we created an interdisciplinary teaching unit that can incorporate mathematics, science, and English when discussing nuclear power. Each of the content areas would look at varying subtopics of nuclear power. In social studies, the students would look into the pros and cons of nuclear weapons and the effect they have had. In math the students will learn conversions to understand kilotons and pounds per square inch, which are used frequently when discussing and understanding nuclear power. They will also compare nuclear energy consumption in various countries. In English class, students will write an argumentative paper about whether they believe nuclear power is beneficial. The mini-unit is designed to address a student population of eleventh graders. This topic is a good choice for our students because relating one topic to multiple different subject areas can keep them motivated and engaged from class to class. It will keep them engaged and interested in the ongoing lessons. The current and relevant issues involved with nuclear power would also grab the students' attention, as it is something they should have an opinion on in today's world. This could help us, as teachers, to eliminate the constant question of, "why am I learning this?" Since it is already an existing concern that other countries may be developing and/or planning to use nuclear weapons against us in war, it would be an interesting topic to discuss in class. Students should be exposed to multiple views on how nuclear power affects their lives, letting them take important and pertinent information out of the classroom.

ECSU DOMESTIC VIOLENCE AWARENESS STUDY

**Shyler Losty, Erin Wasicki, Danielle Hubley, Arianna Mora, Melissa Ladd
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Yvonne Patterson

Domestic violence is a prevalent problem for students on college campuses nationwide. More than half (57%) of college students who report experiencing dating violence and abuse said it occurred in college. This study will explore Eastern Connecticut State University (ECSU) student's awareness of domestic violence. A quantitative, self-administered survey design will be utilized. The survey includes five scenarios regarding domestic violence with five to six questions related to each scenario. The scenarios cover various forms of domestic violence as highlighted by the literature. Thirty students who live on campus will be recruited for the study - 15 who have taken a domestic violence training course on campus and 15 who have received the on-campus training. These students will be recruited from various sites on campus. The expected finding is that ECSU students who have taken the training will be more aware than the group of students who have not received training. Anticipated results from this study could help support the necessity for more trainings and events related to the prevention of domestic violence on Eastern's campus.

MY WASTE WATCHER: DESIGNING MOBILE APPLICATION INTERFACES TO REDUCE FOOD WASTE

Fred Lucci, Alex Cordero, Kevin Bailey (Business Administration)

Faculty Mentor: Sukeshini Grandhi

According to the United Nations Environment Programme, Regional Office of North America (UNEP) and the World Resources Institute (WRI), about one-third of all food produced worldwide, worth around \$1 trillion (USD), gets lost or wasted in food production and consumption systems. In this research project we explored how we can design technology to make sustainable and responsible decisions to reduce food waste. Specifically, we aimed to identify areas in people's lives that lead to the waste of food and design a mobile application interface prototype to help people reduce food waste. Employing user-centric design methods for Human Computer Interaction design, we conducted this project in 5 phases: needfinding, storyboarding, prototyping and user evaluation. In the need finding phase we conducted a qualitative study by observing 6 people to obtain their current shopping and food storage practices. We isolated activities that led to the waste of food and reflected on ways our study participants could reduce these activities. For example, people would go grocery shopping without lists or any idea what they had at home. This led to buying more food than needed, allowing perishable items to go past the expiration date. After finding this problem, we came up with two storyboards to illustrate use cases of a mobile app that could address specific problem of buying less food based on pantry inventory. In the prototyping phase we designed a mobile app interface to keep track of a user's pantry with an emphasis on expiration dates and allowed users interactivity with items in the grocery store to check if they had that item at home. In the user evaluation phase, we tested the interaction design of the mobile app with 6 potential users. Based on analysis of the user studies, we identified design elements that needed to be improved to enhance user experience. Implementation of these changes made the interaction with our prototype easier to understand and more efficient to use.

NUMBER THEORY: THE STUDY OF SPECIAL CASES IN PRIME NUMBERS

Thomas Luckner, Amanda Burkhart (Mathematics & Computer Science)

Faculty Mentor: Mizan Khan

This is a preliminary report on our computational work to find triples of consecutive integers of the form $p-1$, p and $p+1$ where p is a prime in which each number is a sum of two squares. Within this research, we searched for patterns among the prime triples. Two specific patterns emerged to describe sets of these prime triples with the purpose of proving that the set of all prime triples is an infinite set.

IMPACT CONCUSSIONS HAVE ON FOOTBALL ATHLETES

Alexandra Maciolek, Melanie Barney, Cherie Green, Geoffrey Lussier (Education)

Faculty Mentor: Mark Fabrizi

Several football players experience concussions frequently when they step foot onto the field. There is still so much we have not learned about concussions and their detrimental effect on our body and brain after repeated hard hits to the head. Chronic Traumatic Encephalopathy is a disease that develops over

time when a person has experienced several concussions while playing a contact sport. CTE can develop in athletes involved in hard contact sports such as boxing or football. Our poster presentation will outline a unit of study, designed for secondary students, that explores the issue of CTE using an interdisciplinary, problem-based learning pedagogy. This topic is interesting and relevant to high school ninth or tenth graders because at this age students are able to comprehend the content and are becoming increasingly involved in sports, or they may know other students or family members who are involved in football. The interdisciplinary approach being used is unusual in secondary schools and requires students to synthesize ideas from various subject areas and explore connections among them to address a contemporary problem in sports. Students undertaking this unit of study learn about the background of concussions and the history of the equipment used in football. Students in math class could construct statistics of concussions and create graphs and figures to express the data. In English class, students read a piece of literature that describes the incident of a young athlete undergoing a concussion. Students will also learn different vocabulary terms and do research. In science class, the students conduct research about what happens to the brain when a concussion occurs. Students also learn about the neurological damage to the brain and the symptoms that athletes develop. This topic is relevant to high school students because it creates an awareness of possible harmful effects that contact sports can have and how they can affect people for the rest of their lives.

A STRUCTURAL AND PETROGRAPHIC STUDY OF THE LEBANON GABBRO AND SURROUNDING GNEISSES, EASTERN CONNECTICUT

Rachel Mackewicz (Environmental Earth Science)

Faculty Mentor: Dickson Cunningham

The Lebanon Gabbro is one of the largest mafic intrusions in southern New England, but its geological history has scarcely been studied. The gabbro covers an area of approximately 90 km² and is exposed 5 miles south of ECSU in widely scattered outcrops largely in Lebanon township. Since 1942, the intrusion has been the subject of only one geochemical study and there is almost nothing known about its petrological variations and structural evolution. Therefore, to better understand the geological significance of the Lebanon Gabbro, we undertook a field and petrographic study during summer, 2015 and winter, 2016. More than 40 outcrops of the gabbro and surrounding lithologies were studied along roads, powerlines and in forested areas. Many remote outcrops were discovered on virtually deforested 1m-resolution LiDAR images and were subsequently field checked. Twenty-five thin-sections of the gabbro and surrounding rock types were analyzed for mineralogical, textural and structural information. An important discovery is that the undeformed intrusive core of the gabbro comprises the high NE-SW trending ridge that crosses the township, whereas deformed and foliated gabbro defines the intrusion's southern margin suggesting a sheared tectonic contact. In addition, outcrops of the Monson Gneiss west of the Lebanon Gabbro and Hebron Gneiss outcrops south of the gabbro contain impressive NE-vergent overturned folds and low-angle mylonitic zones with S-C fabrics and asymmetric tails on garnet porphyroblasts all indicating NE-directed thrust transport. The field and thin-section data indicate that the Lebanon gabbro and surrounding lithologies experienced an important phase of post-intrusive, NE-directed contractional deformation synchronous with upper amphibolite-grade metamorphism, most likely due to the Late Paleozoic Alleghenian orogeny.

STRESS IN PARENTS OF CHILDREN WITH CEREBRAL PALSY

Solveig Millett (Psychology)

Faculty Mentor: Jeffrey Danforth

Cerebral Palsy (CP) is a prevalent condition that impairs motor functioning and is often accompanied by other disabilities. Past research suggests that parents of children with CP experience high levels of stress. There is limited research comparing parents of children with CP and to parents of children with no diagnosis (e.g. Britner, et al., Bella, Garcia, & Spadari-Bratfisch, 2011). This research examined the difference in stress between parents of children with CP and parents of typically developing children. Twelve parents of children with CP were recruited through a CT branch of United Cerebral Palsy and convenience sampling, and 11 parents of typically developing children were recruited through convenience sampling. Participants completed the Parenting Stress Index Short-Form, 4th Edition and demographic questions. An ANOVA revealed that stress scores were significantly higher in the CP group than the control group, particularly on the Parent Distress subscale ($p=.007$), but not on the Parent-Child Dysfunctional Interaction subscale. These results support existing research that parents of children with CP experience more stress than parents of typical children. Some of these parents may have insufficient support to care for their children's many needs. These results should help to inform what resources are allocated to these families, as well as how therapists and clinicians approach parents and families of children with CP.

HPLC ANALYSIS OF CAFFEINE CONTENT IN DIFFERENT COLD-BREW COFFEES

Christopher Morris (Physical Sciences)

Faculty Mentor: Robert Collins

Most people are familiar with the effects of caffeine on the human body. In fact, high caffeine content is often sought out for various beverages. One of the reasons boiling water is run over coffee is to help facilitate the dissolving of caffeine into that water. The solubility for caffeine at room temperature (24° C) is 20 mg/mL compared to that of boiling water (100° C) which is 660 mg/mL, nearly 33 times higher. This led us to question the caffeine content of cold-brewed coffee blends due to the lack of heat involved. Various cold-brew brands were tested using HPLC analysis and compared to a standard curve created using caffeine standards to determine their caffeine content and allow us to compare cold brewing to traditional hot brewing. Caffeine concentration was easy to determine using our method because the caffeine would leave our C-18 column at almost exactly five minutes, was well resolved from other compounds, and produced a very characteristic and easily identifiable absorbance spectrum. Our analysis found that there were significant differences in caffeine content between hot-brew and cold-brew coffees that depend on the amount of coffee used and seeping time.

PHYLOGEOGRAPHY OF THE APPALACHIAN BLUE RIDGE: THE EFFECTS OF CLIMATIC FLUCTUATIONS ON TEMPERATE MONTANE ENDEMIC

Connor Moylan (Biology)

Faculty Mentor: Matthew Graham

The Blue Ridge province is an ecoregion in the southern Appalachian Mountains, and is characterized by a diverse array of flora, many of which have tropical and boreal affinities, as well as high levels of biodiversity and endemism among regional fauna. This is thought to be the result of Pleistocene fluctuations that caused repeated population expansions and bottlenecks as the natural range of species habitats were altered by changes in climate. To assess the extent of the effects of these Pleistocene climatic fluctuations, we gathered locality and genetic data for over 25 terrestrial vertebrate and invertebrate taxa endemic to the southern Blue Ridge. We used Bayesian Skyline Plots and landscape interpolation plots to characterize historic demographics and identify diversity hotspots as well as barriers to gene flow within the region. Our results showed demographic fluctuations in 11 taxa, with 5 taxa showing only recent population declines and 6 showing recent population expansions and declines. Species responses to Pleistocene climatic fluctuations appear to be related to habitat preferences and the degree of habitat specialization. In addition, low elevation areas such as the Asheville Basin probably acted as barriers to gene flow for a variety of taxa. Finally, we identified a number of diversity hotspots within the region, several of which applied to both vertebrate and invertebrate taxa. Overall, it appears that ecology, rather than taxonomy, is a better predictor of species historical responses to climate change.

STRESS AND STIMULANTS ON ECSU'S CAMPUS

**Shannon Murphy, Maria Perez, Craig Williams, Josue Quiles, Ethan Shukis
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Yvonne Patterson

The amount of individuals ranging from 18-29 who have sought emergency care because of prescription stimulant abuse rose from 3,758 in 2004 to 20,531 in 2011. There is a high prevalence of substance and stimulant abuse on college campuses. There is a need for more information about the nature of this abuse in developing effective interventions. This study will explore whether there is a connection between rates of academic stress and stimulant use on Eastern Connecticut State University's campus. This question will be explored through a quantitative self-administered survey design. Students will be selected through an availability sampling technique from various sites on the campus. In order to qualify, respondents must be at least 18 years of age, enrolled at Eastern Connecticut State University as a part-time or full-time student and report experiencing academic stress. The expected finding of this study is that there is strong connection between academic stress and stimulant use. There is a gap in the current literature in relation to energy drinks, prescription stimulants and academic stress among college students. This study will hopefully help fill this gap. It is hoped that this research will also help lay the groundwork for future inquiry in this area.

GOOGLE VS. WAL-MART: DIFFERENCES IN ETHICAL STANDARDS

Kasara Newton (Communication)

Faculty Mentor: Terri Toles-Patkin

Google is not only one of the largest technological companies in the world, but it is also known for its impeccable ethics both inside and outside of the company. A few of the ethical standards that Google abides by are surprisingly desirable working conditions, employee benefits, environmental awareness,

and their advocacy for free speech and gay rights. Wal-Mart, on the other hand, can be described as the poster child for poor ethics. For example, their employees have absolutely zero benefits and low salaries, they use foreign labor, their managers and supervisors discriminate against specific groups of employees, and they have been accused of wage theft. Both of these companies have been in difficult positions where they were forced to make an ethical, or unethical, decision. These situations have the ability to build or destroy a public's opinion about a company. This study will describe the effects that both positive and negative ethical choices have had on Google and Wal-Mart. The specific effects that will be discussed include the company's public image, their overall sales, and employee satisfaction.

CONNECTICUT WINE INDUSTRY STRUCTURAL DIMENSIONS AND ITS WINE TOURISM PRODUCT

Clarissa Paquette (Business Administration)

Faculty Mentor: Emiliano Villanueva

Wine is a growing industry in Connecticut, and wine tourism is a fundamental explanation of this growth. This poster presentation examines all aspects of the wine industry and tourism in the state. Last semester, interviews were conducted with individuals at all 36 state wineries, and survey questions were asked in order to gain first-hand knowledge regarding all aspects of the winery, property, and wine tourism strategies. This information is useful in better understanding a relatively new wine region and the definition of its wine tourism product. The information gathered will be used in order to compare the different wineries in the state, focusing on their wine tourism strategies.

EARLY INTERVENTION SERVICES: DO THEY WORK AND WHAT ARE THE LONG TERM EFFECTS?

Victoria Pisano (Psychology)

Faculty Mentor: Jeffrey Danforth

Early Intervention Services are a common treatment for many children with autism. These services allow children to be taught to manage their symptoms by implementing the theory of applied behavior analysis and creating individualized plans for each child. One question is how effective these services are in the long-term; do they make any significant improvements in the lives of these children after the services are finished? This paper reviews empirical research that examined the long-term efficacy of early intervention for autism. Overall, the data show that as the children get older they are more likely to improve their skills at a faster rate if they had early intervention services compared with those children who started services later.

CAN MICROGRAVITY ALTER THE ABILITY OF THE BRAIN TO SELF-REPAIR?

Kailey Pisko, Lexie White (Biology)

Faculty Mentor: Barbara Murdoch

The effects of spaceflight on the human body are largely unknown. Research suggests that some of the side effects of spaceflight include a decline in cognitive ability. The reasons behind this cognitive decline

are not known. The purpose of our study was to test the hypothesis that simulated microgravity would impair the function of neural stem cells. Neural stem cells function to produce the different cell types in the brain, in addition to more stem cells. To test our hypothesis, we isolated and cultured cells in vitro from embryonic chicken brains in neurosphere assays with growth factors. Neurosphere assays test for stem cells via their function –the ability to produce more stem cells (to self-renew) and the different cell types in the brain. We assessed the number of neurospheres and, using antibodies specific to each cell type, their ability to produce the three main types of neural cells in the brain, neurons, astrocytes and oligodendrocytes. Confocal laser-scanning microscopy was used to visualize the fluorescent labels attached to each cell type and to capture their images digitally. Our initial experiments were performed under normal gravity, whereas our future experiments will test the conditions of simulated microgravity compared to normal gravity. We hope to discover whether or not simulated microgravity has an effect on the function of neural stem cells.

LEGENDS OF NINTENDO

Kelvin Powell (Business Administration)

Faculty Mentor: Niti Pandey

Nintendo was founded in 1889 in Japan by Fusajiro Yamauchi with the intent to sell Hanafuda playing cards. One hundred and twenty five years later we recognize Nintendo as the industry leader in video games. Over the past 20 years, Nintendo has propelled itself far ahead of two of its biggest competitors in the video games and consoles industry. This includes Sony with their PlayStation series and Microsoft with their Xbox series. This research study examines the human resource management practices and policies that have allowed Nintendo to continue to strive through its unique approach of product innovation. The goal is to identify core human resource values critical to the success of innovation in the context of Nintendo's Japanese culture.

TELEVISION ADVERTISEMENTS AND CHILDREN'S FOOD PREFERENCES

Melanie Ravo (Psychology)

Faculty Mentor: Joseph Dracobly

Everybody encounters media hundreds of times a day, either subconsciously or consciously. Advertisements can be persuasive in their nature, having an effect on the viewer; this is particularly true for younger generations who do not fully understand the goal of advertisements. Because children influence a large portion of the household purchases, marketers have great interest in the influence of advertisements on children, and in particular, food advertisements. The majority of food advertisements are for sugary breakfast foods, snacks, and restaurants whereas healthy food options are rarely broadcasted. Researchers have previously noted that children who watched unhealthy food advertisements preferred unhealthy foods; however, there has been limited research on the direct effects of healthy food advertisements and if and how easily a child's food preference can be influenced when shown advertisements. The purpose of the study was to determine if a child's initial food preference could be altered after showing an advertisement for a food option he or she would normally not prefer. Thirty-second commercials, and repeated preference assessments, of healthy and non-healthy foods were used to assess the immediate and subsequent effects of food advertisements on

children's preferences for healthy and unhealthy food. Findings from this study could be used for healthcare educators, expanding their understanding of protective and risk factors for obesity in children. It also gives implications for more regulations to be put on marketing towards children to protect them from the negative outcomes of its persuasive content. Lastly, it could educate parents about advertising's effects on their children in order to filter what their children watch on television and encourage their child to eat healthier through explaining the health benefits of vegetables and fruits.

THE FATE OF PLUTO: WHAT WILL IT BECOME?

Emily Reguin, Amanda Glaude, Elise Petersen, Keaton Sanborn (Education)

Faculty Mentor: Mark Fabrizi

Learning about our solar system is crucial when learning about where we came from and how Earth was created. Within the last decade, astronomers have declared Pluto as a dwarf planet due to its size and force of gravity. Taking this idea, "Should Pluto become a planet or stay as a dwarf planet?" is a great problem-based question for 9th-10th grade students, as it brings together and shows to students the myriad connections among four contents areas (math, science, history, and English). In math, students can examine and compare diameters, volume, and differences between Pluto and the other planets. In science, students can examine the different environment Pluto has compared to other planets such as our own. In history, students can read current events and create diagrams of contrasting opinions on Pluto's status as a dwarf planet. As for English, students will use the "close reading" method demonstrated by their teacher on an article concerning Pluto and then write a persuasive article arguing whether Pluto should become a planet. With this topic, students will be able to learn more about our planets while also making connections to other subject areas beyond science.

PROJECTION DESIGN OF SIMON STEPHEN'S *PORNOGRAPHY*

Danielle Robillard (Performing Arts)

Faculty Mentor: Kristen Morgan

In the Fall of 2015, I designed the projections for the Theatre main stage production of Simon Stephen's *Pornography*. The play is set in 2005 in London, before, during, and after the devastating terrorist bombings of public transportation. The play follows several different characters, based on real people, who all have their own subplots throughout the story. As the projections designer, part of my job was to use images to reinforce the non-traditional narrative of the play. The images also needed to carry the audience through a drastic mood change. Before the bombings, things were static, so I represented this mood by projecting still images onto the set to establish the scene for the audience. Inching closer to the time when the bombing occurred, the characters were becoming extremely uncomfortable; I underscored those moments with jerky video of the same still images. Following the bombing, all of the images were extremely chaotic; the movement was meant to make the audience feel panicked and unsure of the stability of the characters. To create media, I used sources such as Google Earth of the real bomb sites in London, and a real-time interactive map of the London Underground, in order to emphasize the director's wish to portray the fear of a period of time in which the people of London felt as if they were under constant surveillance.

HIGH RATE MOBILE PHONE USE AND DEPRESSION AMONG CHILDREN AND YOUNG ADULTS.

Meaghan Rodgers (Psychology)

Faculty Mentor: Jeffrey Danforth

Depression is marked by a lasting loss of interest or pleasure in usual daily activities, feelings of sadness, emptiness, worthlessness, and impairments in social, occupational and/or educational functioning. Along with these symptoms, someone suffering from depression can experience difficulty in sleep, weight, concentration, suicidality. Past empirical research has found positive associations between high-rate mobile phone use at baseline and scores/reports of depressive symptoms one year later. With the invention of the cell-phone, followed by the smart phone, an increasing number of children and adolescents own mobile devices at even younger ages than before. The purpose of this research is to examine the empirical literature analyzing the relation between high rate cell-phone use and depression among children and young adults. This poster also examines sleep difficulties and disturbances as variables mediating high-rate cell phone use and depression.

SOCIAL SUPPORT AND SELF ESTEEM AMONG COLLEGE STUDENTS

**Emily Romeo, Justine Jarvis, Amanda Hartman, Patrick DuVerger
(Sociology, Anthropology and Social Work)**

Faculty Mentor: Pamela Chiang

Despite some extensive research on social support and self-esteem, little is known about the various types of social support for college students and how they correlate with levels of self-esteem. This study aims to address the gaps in existing literature and discover how having and utilizing social support networks (such as family, peers, and campus resources) for emotional and academic assistance influences an individual's self-esteem. This research study utilized a survey questionnaire distributed on campus to college aged students in a liberal art college in the northeast region of the country. The survey includes questions revolving around family, peer, and campus support, and utilizes the Rosenberg Self-Esteem scale to measure the student's self-esteem.

LETS BE FRIENDS: CHILDREN WITH AUTISM AND THEIR SOCIAL INTERACTIONS

Julia Sanzo (Psychology)

Faculty Mentor: Jeffrey Danforth

Autism spectrum disorder (ASD) is categorized as a deficit in social communication and interactions, along with repetitive behaviors and interests. Individuals with autism usually have a difficult time interpreting figurative language and sarcasm, which contributes to their lack of social interactions. The severity of symptoms vary across individuals with autism. Therefore, the severity of autism is on a spectrum. Currently, the prevalence of autism is 1 in every 110 children. Many of these children and adolescents will suffer from an inability to form relationships with their peers. The purpose of this paper is to review the most current research on the relationship between young children and adolescents who have autism and a lack of friendships and social interactions. The paper also examines possible

interventions to increase social interactions and friendships among children and adolescents with autism.

STUDYING DEVELOPMENT IN CAENORHABDITIS ELEGANS THROUGH RNAI-MEDIATED KNOCKDOWNS OF PAX FAMILY GENES.

Elizabeth Schoell, Elizabeth Del Buono (Biology)

Faculty Mentor: Amy Groth

Caenorhabditis elegans (*C. elegans*) are microscopic worms that have about 40% gene sequence similarity (homology) with humans. *C. elegans* are commonly used as a model organism because they are cheap, small, have a short life-span, and are transparent. We can make use of these traits by studying the genes in *C. elegans* that have related functions in humans. RNA interference (RNAi) in *C. elegans* is used to study the phenotypic changes of temporarily decreasing the function of a gene. RNAi is a useful tool for studying the function of genes because decreasing the function of a gene tells us what the gene is important for in development. The human paired box (pax) family of genes are known to be involved in embryonic development in humans, especially with the formation of tissues and organs. Pax genes in humans play a role in embryogenesis (the formation of an embryo), ovarian and cervical cancers, and more. We are studying the effects of RNAi-mediated knockdowns of various pax genes, including pax-1, pax-2, pax-3, vab-3, and egl-38, in *C. elegans*. Studying these genes may help uncover the function of and relationship between these genes in early development of *C. elegans*.

EFFECTS OF ODD-1 LOSS-OF-FUNCTION IN C. ELEGANS DEVELOPMENT

Gabriella Scoca (Biology)

Faculty Mentor: Amy Groth

The nematode, *Caenorhabditis elegans*, is an excellent tool for experimentally testing and identifying gene regulation pathways. Due to their fast reproductive rate, small size, relatively cheap upkeep, and a genome that is relatively similar to humans, these microscopic worms have provided us with an extensive amount of knowledge about gene function. We are studying the transcription factor odd-1, which previous research has indicated is essential for larval development. However, in our laboratory a strain of worms that has most of the odd-1 gene deleted has not shown high levels of lethality. We are currently verifying the genotype and phenotype of the odd-1 mutant to show that it is not needed for survival. In the lab we have successfully used PCR to test our hypothesis and the preliminary results indicate the presence of the deletion. We will conduct multiple outcrosses of the odd-1 mutant, to further verify the effects of the deletion. We will also use feeding RNAi to reduce odd-1 gene activity and to compare the odd-1 gene to other essential genes needed for survival. Preliminary results indicate that RNAi against odd-1 does not cause large amounts of lethality. We plan to conduct a more detailed study to see if odd-1 RNAi or deletion result in low level lethality or enhance the lethality seen with the related gene, odd-2. We hope that our study will help elucidate the role of the odd-1 gene and the effects it has on development.

A COMPARATIVE CHART FOR ALGEBRAIC STRUCTURES

Daniel Shenkle (Mathematics & Computer Science)

Faculty Mentor: Mehdi Sarikhani-Khorami

This poster will summarize the relationships between some of the various algebraic structures that arise in mathematics. These algebraic structures consist of monoids, groups, rings, domains and fields.

CREATING VALUE FOR SMALL BUSINESSES THROUGH THE DEVELOPMENT OF HUMAN RESOURCE BEST PRACTICES

Katherine Stapleton, Shawna Skwarek, Sherry Glironan (Business Administration)

Faculty Mentor: Niti Pandey

Human resource management tends to be widely ignored by small businesses due to a lack of resources for developing and implementing formal practices. However, the introduction of formal practices can be beneficial for adequate human resource planning, managing employee motivation and performance, and integrating best practices with the strategy of the business. This study explored the human resource needs of small business enterprises (less than 50 employees) in Connecticut. Based on our interviews with owners of small businesses we identified three critical human resources areas – legal employment practices, employee code of conduct/handbook, and training programs. We designed generic documents covering these three areas in order to provide tools to local small businesses interested in implementing formalized human resource practices.

TALC- AND SERPENTINE-BEARING METAMORPHIC ROCKS FROM THE HARWINTON-NEW HARTFORD SLASHERS LEDGES FORMATION: AN OPHIOLITIC SUTURE IN WESTERN CT?

Trent Stevens (Environmental Earth Science)

Faculty Mentor: Dickson Cunningham

This project concerns an unusual suite of talc-, tremolite- serpentine- and kyanite-rich schists from the New Hartford-Harwinton region of western CT. The rocks occur as highly deformed isolated lenses at the southern end of a belt of altered mafic and ultramafic rocks that continues through the northern Appalachians into Quebec, where they comprise the famous Thetford Mines ophiolitic suture. Thus, we suspect that the suite in western Connecticut may also represent a highly deformed cryptic suture that previously has not been recognized. Accordingly, samples were collected from previously mapped serpentinite localities to test the hypothesis that the talc-tremolite-serpentine-rich rocks represent highly altered and deformed scraps of oceanic lithosphere. Thin section analysis has yielded important insights into the petrological evolution of the talc and serpentine-rich rocks. Highly serpentinized relict olivine is present in 2 of the lenses strongly suggesting a peridotitic protolith. Up to 100% talc-tremolite and serpentine alteration of the original lithology is indicated in some samples and impressive 1-5 cm stellate clusters of secondary tremolite locally overprint all primary minerals and mineral textures. Bordering the talc-tremolite-serpentinite bodies are kyanite-phengite-rich rocks with blue-grey kyanite blades up to 10 cms-long locally comprising at least 50% of the rock mass. These bordering kyanite-rich schists suggest high pressure metamorphic conditions adjacent to the serpentinized ophiolitic rocks

consistent with a paleo-subduction environment. Collectively, the field and petrographic data suggest that the cryptic Taconic suture identified in the northern Appalachians can now be traced southwards into western Connecticut.

PRELIMINARY RESULTS FROM TWO LATE WOODLAND TRASH PITS FROM BLOCK ISLAND, RHODE ISLAND

Erin Strickland (Sociology, Anthropology and Social Work)

Faculty Mentor: Sarah Baires

In the summer of 2015 an archaeological dig was conducted, as part of a salvage project due to new construction, at RI-2451 on Block Island, Rhode Island. A pre-Columbian Native American habitation area was identified near the shoreline of the Great Salt Pond, a large and almost enclosed body of water separating the north and south regions of Block Island. The pond has a small channel, artificially dug in the late 1800s, on its northwest shore to connect it with the Block Island Sound. The shores of the pond have a long history of human use and occupation evidenced by Native American habitation sites prior to and after contact with European settlers. RI-2451 adds to this occupation, dating to the Late Woodland period. This poster presents data recovered from two middens excavated at this habitation site. Marine shells, clam and oyster, were collected and analyzed to determine midden depositional practice. Through an examination of food trash, I will discuss food consumption practices of Late Woodland Native American communities on Block Island, Rhode Island.

A CRITIQUE OF US LABOR LAWS THROUGH THE LENS OF CONTINGENT AND MIGRANT FARM LABOR

Timothy Taylor, Stephen Tartsinis (Business Administration)

Faculty Mentor: Niti Pandey

Critics of US labor laws have long believed them to be outdated and ineffective at addressing issues of workers' rights and workplace safety. Labor laws have also failed to keep pace with the changing nature of work such as a rise in contractual work, part-time employment, and a growing contingent workforce. These shortcomings are likely to be compounded in industries and occupations that are hazardous, prone to seasonal vagaries, or rely on contingent labor. This research project examines the challenges faced by a group of workers that labor laws fail to protect adequately – contingent and migrant farm workers. By outlining the unique conditions in this specific labor market, including seasonal employment, migrant labor, child labor, and undocumented workers, this study hopes to identify areas that potential new legislation could address. We critique existing labor laws and explore ongoing legislative efforts at addressing the critical issues in this field.

STUDENTS DECIDE: SHOULD PEOPLE BE REQUIRED TO GET VACCINATIONS?

Alaina Torromeo, Chris Otero, Jaylin Greene, Mackenzie Robert (Education)

Faculty Mentor: Mark Fabrizi

Are you vaccinated? Have you ever suffered from a serious disease? Do vaccinations lead to autism? In this project we have gathered together four different secondary school subjects—English, math, social studies, and science—to create an interdisciplinary unit on vaccinations. We are asking high school students the question, “Should people be required to get vaccinations?” This question should be of importance to the students because vaccinations are required by many public school systems and universities. In the math portion of the project students will be able to identify trends, create a scatter plot, evaluate means, produce a line of best fit, and most importantly interpret different graphs. In the English portion students will be shown an episode of NOVA and examine popular articles that discuss vaccines. At the end of the unit students will demonstrate their learning by writing a persuasive/argumentative essay on whether or not vaccines should be mandatory. They will pull evidence from the text read in class as well as information learned in the other classes to support their claim. In the social studies portion students will learn about FDR and his battle with polio. They will also learn about all people's difficulties with polio through webpages and a Ken Burns documentary. Students will also be presented with histories against vaccinations. At the end of the unit students will be able to demonstrate their knowledge through an in-class debate. They will also pull evidence from their other classes. In the science portion of the lesson students will examine the process of developing a vaccine.

USING VIBRACORING TO CONTROL INTERPRETATIONS OF GROUND PENETRATING RADAR RECORDS FROM CHURCH FARM POND, ASHFORD, CT.

Kevin Veilleux (Environmental Earth Science)

Faculty Mentor: James (Drew) Hyatt

Field research in July 2015 and follow-up laboratory work has utilized ground penetrating radar (GPR) and sediment vibracoring techniques to investigate geological records beneath the Church Farm pond in Ashford CT. GPR is a powerful near-surface geophysical technology that images materials to depths of ≈ 10 m. The Church Farm pond was formed in \approx ca. 1913 by damming a small stream that flowed through. Radar data were collected along 15 transects across the pond, totaling ≈ 1.7 km, while 2 sediment cores, 1.5 – 4 m long, were collected to constrain radar interpretations. We used a Pulse Ekko Pro GPR and Norvell global positioning system for radar data collection and 3 inch aluminum pipes and a cement-vibrator for coring. Radar data were processed using Ekko Project software, while sediment cores were split, described, and subsampled to define change in dry bulk density, moisture content, visible texture, and organic/inorganic carbon with depth. These cores, and others collected previously reveal 4 sediment units beneath the pond. From the top down this includes organic pond mud (gyttja), silty-sand soils that pre-date the pond, finely bedded sandy river sediments, and coarse sand and gravel, perhaps deposited by glacial meltwater. GPR records penetrate ≈ 7.5 m beneath the pond bed revealing at least 4 strong radar reflectors that can be traced continuously beneath the pond and relate to sedimentary changes in the cores. Radar reflector 1 (R1) corresponds to the bottom of the pond, while R2 identifies the boundary between pond gyttja and underlying silty-sandy soils that pre-date the pond. R3 seems to identify the top of stratified silty-sands that are interpreted as floodplain deposits. Finally, the deepest reflector corresponds to a transition to coarse sand and gravel unit at the bottom of our cores. Interestingly, the geometry of the reflectors beneath the pond seems to identify previous land surfaces that are now buried by ≈ 7.5 m of sediment. As such radar data together with sediment cores are helpful for reconstructing landscape change at this site.

HOW CAN WE COAX THE BRAIN TO SELF-REPAIR?

Christina Welch (Biology)

Faculty Mentor: Barbara Murdoch

When someone experiences a stroke, their brain performance is affected as critical blood supply is cut off, thus resulting in loss of function as the neurons die. It was once believed that if you damaged or injured your brain it could not self-repair. However, as the field of science advances this theory is being challenged. We now know there are discrete regions of the nervous system that can replace cells that are lost or damaged. One example is the tissue that is responsible for our sense of smell, called the olfactory epithelium. When the olfactory epithelium repairs itself through cell replacement, its function is likewise restored. This is how we are able to maintain a memory of the smells we have encountered over our lifetime. By applying regenerative mechanisms from the olfactory epithelium to the brain, functional recovery following a stroke may allow people to regain partial brain function and cognition. By studying the olfactory epithelium in chicken embryos, our goal is to identify the cells that are capable of cell replacement, termed regeneration. We use antibodies, like those found in your immune system, to apply fluorescent tags specifically to the cells thought to regenerate. A laser confocal microscope is used to visualize the cells labeled with fluorescent tags and produces a digital image that allows one to determine the location and abundance of the labeled cells. This research will contribute to the overall understanding of embryonic development in the olfactory epithelium and the long-term goal of identifying how neural tissue can regenerate to replace lost neurons.

PREVALENCE AND MOTIVES OF NON-PRESCRIPTION STIMULANT USE AMONG UNDERGRADUATES

Leah Wessels, Chris Nunno, Adam Sabatella, Brittne Stoy (Sociology, Anthropology and Social Work)

Faculty Mentor: Pamela Chiang

Non-medical use of prescription stimulants is becoming a growing phenomenon amongst colleges and universities across the United States for both academic and recreational purposes (Gomes et al., 2011). Because prescription stimulants are classified as a Schedule II substance, psychological and physical dependency and abuse are likely to happen, which makes it a serious problem that needs to be addressed in colleges throughout the nation (DeSantis & Hane, 2010). Furthermore, the abuse of prescription stimulants has been correlated with alcohol and other drug use, as well as with risky behaviors such as drunk driving (McCabe et al., 2005). Given the high prevalence of drug use among college students in the East Coast of the United States, the purpose of our research study is to explore the prevalence and motives of the non-medical use of prescription stimulants among undergraduate students. Using self-administered survey questionnaires, we collected our data in a liberal arts college in the Northeast Region in the United States. The results of this study will inform our knowledge of the current student body who are susceptible to drug use, as well as the best intervention strategies to work with students that use these drugs for different reasons.

POPULATION ECOLOGY, INSTITUTIONAL ISOMORPHISM, AND RESOURCE DEPENDENCE AS EXPLANATORY MODELS FOR THE EVOLUTION OF THE AMERICAN GRAPHIC DESIGN INDUSTRY

Mackenzie Williams (Business Administration)

Faculty Mentor: Niti Pandey

Graphic design, although omnipotent in our society, is a youthful and rapidly changing industry with a relatively limited body of research. In her essay entitled *Legacy Considered*, Katherine McCoy posed the question, "Is this fluidity [of the graphic design industry] an indicator of the field's persistent immaturity, or a confirmation of its relevance to a rapidly changing world?" Inspired to answer this question, this research applies population ecology, institutional isomorphism, and resource dependence theories of business to the history of the graphic design industry, including specific case studies. With the application of well-established organizational theories to this particular industry, this study uniquely juxtaposes the worlds of business and art.

AN INTEGRATED TEACHING METHOD FOR PRESIDENTIAL ELECTIONS

Mikayla Zagata, Alexandra Tynan, Zachary Johnson, Reem Aljohani (Education)

Faculty Mentor: Mark Fabrizi

Students want to be able to apply the knowledge and skills they learn in the classroom to real world problems and events in life outside the classroom. They want their school subjects (e.g. Math, History, English Language Arts and Educational Technology) to be applicable to events and phenomena going on in their lives. In this endeavor, this interdisciplinary team project focuses on the presidential election to showcase and explicate how the aforementioned school subjects can teach students to explore this topic and others using an integrated approach. For secondary level educators, this project allows students to examine the intricate and varying issues within a prevalent topic that directly impacts their students and that their students can directly impact. For Math, subject matter includes voting methods and data collection, demonstrating how to predict a candidate's likelihood of winning the election. History focuses on aspects of the election that explain the voting process, Electoral College and their impact, and looking back through history at different presidential elections. English Language Arts examines rhetoric and logic of speeches, addressing public speaking skills, logical thinking and research strategies. Finally, Educational Technology will take into account how technology has impacted and improved the polling, voting, and election processes. This project is meant to serve as a model for other secondary level educators to not only engage their students in a more meaningful way, but also to improve their students' abilities to work together.

SPACE TRAVEL AND INTERDISCIPLINARY STRATEGIES

Robert Zielinski, Jackie Benso, Matthew Bouthillier, Erin Selavka (Education)

Faculty Mentor: Mark Fabrizi

Is commercial space travel possible in the future? Over the past century, technology has advanced incredibly, most notably in the world's space programs. New advancements and discoveries are being documented daily and new options are becoming possible. However, how many people actually

Poster Presentations

understand the factors that need to be considered in order to make these space advancements happen? How does our understanding of space influence our lives today? Will it soon be possible to colonize Mars? Our presentation outlines interdisciplinary mini-units exploring questions of space travel. Collaboration among school teachers is important to make content meaningful, and it's vital to focus on all content areas in order to provide a cohesive educational experience. As future educators, we chose the topic of space travel in hopes that it would not only benefit high school students, but would also help shed light on the importance of interdisciplinary, problem-based learning. Over the course of this unit, students will examine the evolution of spacecraft and space programs, the dangers of space travel, and the costs of space travel in order to determine and argue whether they believe if future commercial space travel will be an option in society. Using Space X as a contemporary example, students will begin unraveling the answers to this unit's overarching questions. Through the content areas of English, mathematics and history, students will also learn of the effects and impact space travel had and will have on the world, especially in our constantly advancing society. At the end of our mini-units, students will be able to formulate their own opinions of commercial space travel and whether it's possible, efficient, or ethical.

LIVE PERFORMANCES

WUMALA: WEST AFRICAN DANCE ENSEMBLE

Tianna Edwards, Talia Erris, Emily Kohn, Alexis Kurtz, Moriah Perret, Alexis Tribble-Bryant.

Musical accompaniment by James Holland & Alycia Bright-Holland.

Faculty Mentor: Alycia Bright-Holland

The performance will take place during registration (11:30-12:30) in Student Center Café.

EASTERN CHAMBER SINGERS

Soprano: Hannah Bythrow, Mindy DeDominicis, Tiara Lussier, Halie Poirier, Emily Riggs.

Alto: Emily Hogue, Abby Perreira, Moriah Perret, Samantha Price, Judy Reid.

Tenor: Scott Butler, Tyler Hinde, Andrew Hofmann, Tommy Kenny, Jordan Pollard.

Baritone/Bass: Michael Beckstein, Anthony Castagnaro, Corey Lorraine, Ryan Michaud, Zach Rice, Paul Stenko.

Faculty Mentor: David Belles

OPERA WORKSHOP

“Ah, perdona al primo affetto” from *La clemenza di Tito*, W.A Mozart

Servilia: **Hannah Bythrow**, soprano

Annio: **Moriah Perrett**, mezzo-soprano

“Agony” from *Into the Woods*, Stephen Sondheim

Cinderella’s Princes: **Scott Butler**, tenor

Rapunzel’s Prince: **Tommy Kenny**, tenor

“It Takes Two” from *Into the Woods*, Stephen Sondheim

Baker’s Wife: **Moriah Perrett**, mezzo-soprano

Baker: **Tyler Hinde**, tenore

Faculty Mentor: Emily Riggs

The Eastern Chamber Singers and Opera Workshop will perform from 3:00-3:30 pm in the Student Center Café.

COMMUNICATION DEPARTMENT STUDENT PHOTOGRAPHY EXHIBIT

Instructor and Mentor: Martin Seymour

Photographs will be on display throughout the day in the Betty Tipton Room.

Com 210 Photography 1

Students from Fall 2015 and Spring 2016 semesters

Each contributed a Framed print and a digital slide show to the Exhibit

The Framed Print Exhibit

Visual Communication assignment: students capture digital images; perform Photoshop post-production techniques learned during labs throughout the semester, and print images using the Communication Department Photo inkjet printer. Students frame their favorite prints with frames of their choice to complement the work.

The Digital Slide Show Photography Exhibit

Visual Communication assignment: students illustrate various concepts, each with a single image. Students capture digital images, perform minimal Photoshop enhancements and create PowerPoint slide shows. These are all compiled into a looping show.

Fall 2015

Caitlynn R. Ahern
Sarah M. Andrychowski
Frankie A. Caruso
Bridgett N. Furlong
Stephanie M. Hartnett
Bridgette C. Hearn
Andrew S. Higgins III
William S. Higgins
Maggie Karstetter
Kassara Newton
Zhanell V. Priester
Jacob Prochnicki-Fitzgerald
Catherine A. Ranaudo
Bobby J. Read
Chelsea L. Santos
Julia M. Taylor
Cassandra A. White

Spring 2016

Alexis Agnew
Joshua A. Beltre
Alison L. Bores
Allison L. Butler
Phillip M. Couto
Taylor K. Day
Thomas A. DeFilippo
Malaysia M. Douglas
Andrew W. Falce
Eli E. Hernandez
Sadie E. Hewes
Emma E. Lawton
Tiara S. Lussier
Crystal L. Mayo
Robin N. Morris
David J. Pouliot
Jordan A. Resnisky
Elizabeth Riordan
Rebecca K. Rudewicz
Michelle A. Ruocco
Paige K. Russo
Jessica T. Simpson
Anh M. Ta
Benjamin L. Tetreault

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