

# SCHOLAR Day

Student Celebration Honoring  
Our Latest Academic Research

Tuesday, April 21, 2015

## Schedule At A Glance

9 – 9:45 a.m.

**Poster Session I and Continental Breakfast**  
Giese Center for the Performing Arts

10 – 11 a.m.

**Presentation Session I**  
Chapman Hall, Engineering and Business Building,  
Kolenbrander-Harter Information Center and  
Tolerton and Hood Hall

11:30 a.m. – 12:30 p.m.

**Senior Recognition and Honors Convocation**  
Timken Gymnasium, McPherson Academic and Athletic Complex

12:30 – 1:30 p.m.

**Participant Lunch**  
Tented area in the Academic Mall (*rain or shine*)

1:30 – 2:30 p.m.

**Presentation Session II**  
Bracy Hall

2:30 – 3:15 p.m.

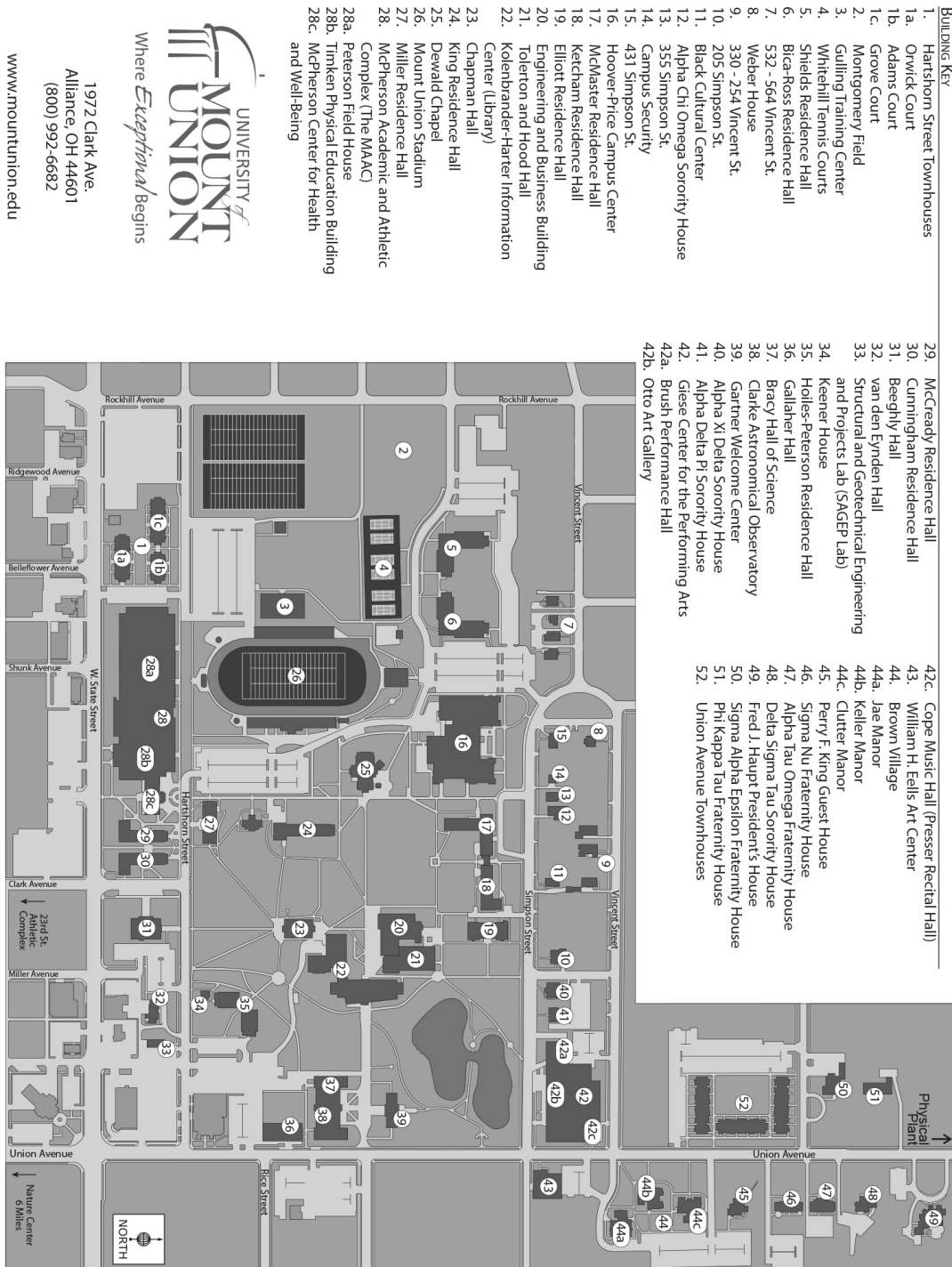
**Break and Refreshments**  
Bracy Hall

2:30 – 3:15 p.m.

**Poster Session II**  
Bracy Hall

3:30 – 4:30 p.m.

**Presentation Session III**  
Chapman Hall, Engineering and Business Building,  
Kolenbrander-Harter Information Center and  
Tolerton and Hood Hall



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# Poster Presentations

## Poster Session II | 2:30-3:15 p.m. | Bracy Hall

### Rachel Adolph (Exercise Science)

#### Luke Davies (Exercise Science)

Faculty Sponsor: Ronald Mendel,  
Department of Human Performance and  
Sport Business

*The Effects of High Velocity Resistance  
Training versus Slow Velocity Resistance  
Training on Muscular Strength, Power, and  
Body Composition in Men and Women*

### Carly Brown (Biology)

Faculty Sponsor: Lin Wu, Department of  
Biology

*Effects of Alcohol and Caffeine  
Consumption on the Anxiety-related  
Behavior of Mice*

### Amanda Dragan (Biochemistry)

Faculty Sponsor: Robert Woodward,  
Department of Chemistry and  
Biochemistry

*One-pot Dual Protection of Carbohydrates:  
Progress Towards the LpxC Natural  
Substrate*

### Eric Genshock (Environmental Science)

Faculty Sponsor: Charles McClagherty III,  
Department of Biology

*Effects of Hydraulic Fracturing Pipelines  
on Fragmentation of Northeast Ohio  
Ecosystems*

### Christopher Holmes

#### (Biochemistry and Neuroscience)

Faculty Sponsor: Robert Woodward,  
Department of Chemistry and  
Biochemistry

*"Cystic Fibrosis Transmembrane  
Conductance Regulator Protein  
Stabilization by ATP and an  
ATP Analogue."*

### Megan McMinn (Biology)

Faculty Sponsor: Jonathan Scott,  
Department of Biology

*Oxidative Stress Effects on the "Fountain of  
Youth" Gene in Saccharomyces Cerevisiae*

### Michael Medure (Environmental Science)

Faculty Sponsor: Charles McClagherty  
III, Department of Biology

*Photosynthetic Responses for Acer  
platanoides and Acer rubrum to a  
Simulated Sunfleck*

### Sean Mohney (Exercise Science)

#### Stephanie Stepp (Exercise Science)

#### Grant Slack (Biochemistry)

#### Amanda Wise (Exercise Science)

#### David Richter (Exercise Science)

#### Michael Frank (Exercise Science)

#### Sarah Schleich (Exercise Science)

#### Andrew Dunn (Exercise Science)

Faculty Sponsor: Lonnie Lowery,  
Department of Human Performance and  
Sport Business

*The Effects of VIA® Instant Coffee on  
Bench Press Performance: The Effects of  
Habituation*

### Taylor Nervo (Biology)

Faculty Sponsor: Kim Risley, Department  
of Biology

*The Effects of Green Tea and Honey on  
Biofilm Growth of Streptococcus mutans*

### Rebecca Novotny (Physician Assistant Studies)

Faculty Sponsor: Vanessa Worley,  
Department of Physician Assistant Studies

*Neonatal Abstinence Syndrome: Improving  
Infant Health Outcomes*

### Allison Orf (Physician Assistant Studies)

Faculty Sponsor: Brook Gram,  
Department of Physician Assistant Studies

*The Utilization of Mesenchymal Stem Cell  
Injections in Repairing Heart Damage  
Related to Heart Attacks*

### Ashley Woodburn (Physician Assistant Studies)

Faculty Sponsor: Vanessa Worley,  
Department of Physician Assistant Studies

*Could Stem Cells Be the Treatment That  
Multiple Sclerosis Patients Have Been Waiting  
For?*

### Jacob Ward (Art and Education)

Faculty Sponsor: Robert Buganski,  
Department of Art

*POWERful Teaching: Using Graphic Novels in  
the Classroom*

# Formal Presentation Abstracts

## Kourtney Betler (MAEL)

Faculty Sponsor: Jennifer Martin, Department of Education

1:30 p.m., Chapman Hall, Room 111

### Core+More

This project examines the effectiveness of a behavior and academic intervention program, Core+More, which was implemented at a local high school during the 2014-2015 school year. The program is designed as an intervention for high school students who have displayed deficiency in three or more core content areas but do not display learning disabilities. Response to Intervention is a multi-tier approach to the early identification and support of students with learning and behavior needs. In Tier 1 (80% of students), students receive high quality instruction in the general classroom. In Tier 2 (10 - 15% of students), students not making adequate progress in the core curriculum are provided with increasingly intensive intervention matched to their needs, and in Tier 3 (1 - 5% of students), students receive individualized intensive interventions and typically have learning disabilities. The Core+More program is a Tier 2 intervention that was implemented for the 2014-2015 school year at a high school of approximately 700 students. Data were collected to examine the effectiveness of the intervention over a nine-month period. The data were collected every 4.5 weeks and was a triangulation of grades, test scores, and student surveys on their perceptions of the impact of their learning behaviors. The intervention was found to be mostly effective and will be used as a regular Tier 2 intervention in upcoming school years. This project is important because it helps to diagnose student needs and provide students the necessary support for school success.



## Gabriela Botzman (Early Childhood Educa- tion)

Paula Kyser (Middle Childhood Education)

Chloe Bortmas (French)

Alyssa Suffron (Intervention Specialist)

Alexis Parsons (Mathematics)

Zach Maenz (Middle Childhood Education)

Kayla Dunlap (Middle Childhood Education  
and Psychology)

Cassidy Ott (Spanish)

Faculty Sponsor: Jennifer Martin, Department of  
Education

3:50 p.m., Tolerton and Hood Hall, Room 100

*Who Are We? Finding Identity in a Society Bound by  
Stereotypes*

Where do you fit in? Do you see people like you accurately portrayed in the media? Or do you agree with the more than 76% of people who feel they do not, according to our research? Modern American culture often promotes false messages and damaging stereotypes through the media. The missing component in education is how to see beyond the flashy surface to the truth of these messages: a skill called media literacy. Our service-learning research sought to find ways to promote diversity through media literacy to create a healthier culture in an educational context. We conducted workshops with students in eighth grade, twelfth grade,





## Formal Presentation Abstracts

and college and collected qualitative and quantitative data. We specifically focused on self-recognition of race, gender, sexuality, and body image to better examine the effects of harmful media messages. Additionally, we studied the implications of service-learning on understanding adolescent's experience with media and identity. By encouraging students to view media messages through these lenses, we ourselves discovered how deep the cycle of stereotypes and self fulfilling prophecies are embedded into our own backgrounds and able to realize the challenges of implementing culturally responsive environments in our future classrooms. After analyzing the service component as well as student data, we have concluded that multicultural and media literacy education does help to promote individual identity development. So, who are we? This presentation will encourage you to defy the media's definition of self and go forward to carve out your own identity and join us in defying stereotypes.

### John Bruketa (Athletic Training)

**Faculty Sponsor: Morgan Bagley, Department of Human Performance and Sport Business**

10 a.m., Chapman Hall, Room 111

#### *Why do Athletes have Anxiety Issues*

This research based study discusses why athletes have anxiety issues when it comes to their sports. Its aim is to figure out the reasons why athletes perform acts such as pre-game rituals and why they are so afraid to come back from an injury that they will do things such as avoid participation as long as possible when they have been cleared to play. According to Barlow's concept of anxiety, it is a future oriented mood or state associated with preparation for possible upcoming events. Athletes have been shown to develop anxiety for several reasons. A segment of these stated by Patel and Omar, in the journal article titled Sport-related performance anxiety in young female athletes, are achievement goals, coaching behaviors and styles, coping skills, fear of failure, experience, level of competition, motivational climate, self-confidence, and social support. Anxiety disorders are very common in the general population so it is not uncommon for majority of athletes to have them since their jobs hold much more pressure over them than the majority of the general population's jobs. Anxiety disorders can be treated with a variety of medications but some have adverse side effects. There needs to be research in the development of a drug(s) that can reduce or eliminate anxiety signs and symptoms so athletes can participate and not be affected by anxiety.



### Hayley Buzulencia (Biology)

**Faculty Sponsor: Charles McClaugherty III, Department of Biology**

4:10 p.m., Chapman Hall, Room 111

#### *Building Risk Assessment Models for Hydraulic Fracturing: What's Going On Beneath and On the Surface in Ohio*

The increased demand for energy resources has caused a dynamic surge of natural gas exploration throughout the United States. In eastern Ohio, the current focus is on the extraction of natural gas from the underlying Marcellus and Utica shale formations. This shale basin is projected to have the potential to produce a promising 53 billion cubic meters of natural gas. When put to use, the gas extracted could fuel our homes, transportation, and liberate us from dependence on foreign oil. Through hydraulic fracturing (popularly dubbed "fracking"), successful extractions have been completed through horizontal directional drilling techniques. The area of interest for this research is not far from Mount Union, encompassing neighboring counties (Carroll, Jefferson, Harrison, and Columbiana). The 1169 square kilometer area of interest spans from Salem, Ohio to Scio, Ohio. Requiring an extensive network of infrastructure, the extent and scale of this infrastructure boasts 394 wells, 122 well pads and 12.6 kilometers of buried pipelines. The extractions are providing economic stimulus to our region, but at what cost to our wetlands, streams, and lakes? Using geographic information software (ArcGIS 10.2), these features have been analyzed from high resolution aerial photography to detect any potential risks to water resources. You will find out how fracking could be helping or hurting our environment.



## Poster Presentations

### Poster Session I | 9-9:45 a.m. | Giese Center for the Performing Arts

**Jessica Bennett (Public Health)**  
**Natalie Nickles (Public Health)**

**Katelyn Sees (Public Health)**  
**Jessica Switzer (Public Health)**  
Faculty Sponsor: Beth Canfield-Simbro,  
Department of Human Performance and  
Sport Business  
*A Community Needs Assessment: A  
Stepping Stone for The Health Department's  
Accreditation Process*

**Brandon Gano (Physician  
Assistant Studies)**

Faculty Sponsor: Vanessa Worley,  
Department of Physician Assistant Studies  
*Dance and Disease: The Benefits of Tango  
for Parkinson's Disease Patients*

**Courtney Gilmore (Human  
Development and Family Science)**

**Chelsea Black (Marketing and  
Psychology)**  
**Anna Brocker (Accounting)**  
**Carly Brown (Biology)**  
**Nikki Brown (Information Systems)**  
Faculty Sponsor: Sarah Torok-Gerard,  
Department of Psychology and  
Neuroscience  
*From Workplace Discrimination to Human  
Trafficking: An Address to Humanity*

**Samantha Giuliano (Media  
Computing)**

Faculty Sponsor: Robert Buganski,  
Department of Art  
*Graphic Design: The Visual Branding of a  
Business*

**Noah Kashiani (Art)**  
Faculty Sponsor: Robert Buganski,  
Department of Art  
*Abstract Art: To unlearn everything we know*

**Rebecca Mann (Biochemistry)**  
Faculty Sponsor: Keith Miller, Department  
of Chemistry and Biochemistry  
*Structural Analysis of Polymer Chemicals  
Used to make Plastics*

**Dan McGeary (Exercise Science)**

**Jana Sleutz (Exercise Science)**  
**Hannah Reed (Exercise Science)**  
Faculty Sponsor: Katherine Clark,  
Department of Human Performance and  
Sport Business  
*The Effects of Supplemental Melatonin on  
Sleep and Aerobic Performance*

**Katie Misencik (Art and  
Accounting)**  
Faculty Sponsor: Robert Buganski,  
Department of Art  
*Exploring My Mind: Portrayed Through the  
Elements of Color, Value, and Space*

**Miranda Reeder (Media  
Computing and Japanese)**

Faculty Sponsor: Robert Buganski,  
Department of Art  
*8 Days Under the Sun*

**Quinn Repp (Exercise Science)**  
**Tiffany Edwards (Exercise  
Science)**  
Faculty Sponsor: Ronald Mendel,  
Department of Human Performance and  
Sport Business  
*The Physical and Psychological Effects of  
Music on Aerobic Performance*

**Abigail Riffie (Psychology)**  
**Maria Favorite (Psychology)**  
**Elizabeth Milburn (Psychology)**  
**Stephanie Treubig (Psychology)**  
**Brittany Woodard (Psychology)**  
Faculty Sponsor: Tamara Daily,  
Department of Psychology and  
Neuroscience  
*The Effect of Gender and Group  
Composition on Food Choice*

**Jacob Ward (Art and Education)**  
Faculty Sponsor: Robert Buganski,  
Department of Art  
*The Masks We Wear*

**Jeffrey Yoza (Psychology)**  
Faculty Sponsor: Michael Knepp,  
Department of Psychology and  
Neuroscience  
*Facebook Emotional Investment as a  
Predictor for Negative Mental Health*

## Formal Presentation Abstracts

**Mandy Wise (Exercise Science)**

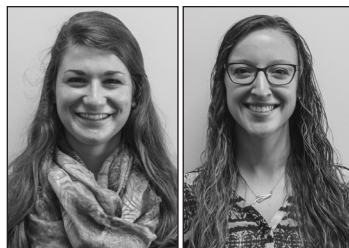
**Kara Opryzsko (Exercise Science)**

**Faculty Sponsor: Ron Mendel, Department of Human Performance and Sport Business**

3:30 p.m., Engineering and Business Building, Room 203

*The Acute Effects of Yoga and Aerobic Exercise on Executive Function*

Exercise has long been known to increase cognition, specifically, executive functioning. College students utilize executive function daily, as it houses organization, time management and working memory. Aerobic exercise has shown to increase cerebral blood flow, which therefore increases attention. More specifically, exercise induces greater hormone release in areas associated with executive functioning. However, little research has examined non-traditional exercise, such as yoga, on cognition. This study aimed to determine the acute cognition benefits after both yoga and cycling workouts. 21 (n= 21) recreationally active college aged students (18-35yrs) were randomly assigned to a yoga, cycling or resting (placebo) intervention. Both the yoga and cycling trials were considered moderate exercise intensities as determined by the subject's heart rate. They completed the Stroop test, Trail Making test and Tower test both pre and post intervention to determine if the exercise improved cognition. All the data has been collected and is currently being analyzed.



**Seokyeong Yee (Biology)**

**Faculty Sponsor: Charles McClaugherty III, Department of Biology**

1:30 p.m., Engineering and Business Building, Room 206

*Groundwater Pollution Potential from Oil-Field Wastewater in Carroll, Portage, and Stark Counties*

Dozens of trucks carrying hydraulic fracturing wastewater pass the Mount Union campus every day. This wastewater (brine) contains as many as 650 carcinogenic chemicals and sometimes radioactivity. Brine is delivered to specially designed injection wells (class II). There have been reports of trucks turning over, spilling brine onto the ground where it can infiltrate into shallow aquifers. At the injection well, spills and leaks are likely to happen even more often when brine is injected into class II wells. As the need for brine disposal increases, so will the need for using injection wells and the risk for water pollution may increase. Knowing the factors that influence the pollution risk at particular existing injection well sites can help to protect ground aquifers, an essential resource for humans. This study categorized the potential for groundwater resources to be contaminated by spills of brine around injection wells in Carroll, Portage, and Stark counties. Soil-water relations, well locations, and volumes of injections were considered when ranking the potential pollution. This research used a mapping program and data obtained from the Ohio Department of Natural Resources (ODNR).



## Formal Presentation Abstracts

**Megan Clevenger (History and Religious Studies)**

**Faculty Sponsor: John Recchiuti, Department of History**

1:30 p.m., Chapman Hall, Room 104

*Nazifying Christianity: Exploring Two Sects of Protestant Christianity in Hitler's Germany*

Christianity is often considered a peaceful, loving religion. Hitler's Nazi party stands in stark contrast to that image as one of the most disturbing, hateful regimes in modern history. It would seem, then, that these two ideologies have irreconcilable differences. This presentation asks: what role did Protestant Christianity play in mobilizing the German people behind the Nazi regime?



**Colin Combs (Mechanical Engineering)**

**Matt Jones (Mechanical Engineering)**

**Lexi Scala (Mechanical Engineering)**

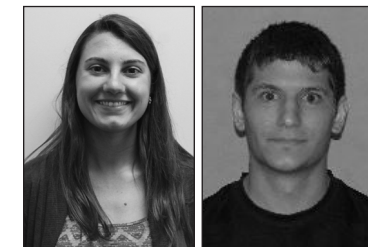
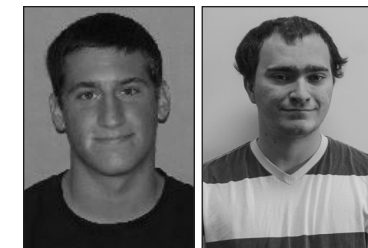
**Mark Amabeli (Mechanical Engineering)**

**Faculty Sponsor: Dhanunjay Boyalakuntla, Department of Engineering**

10 a.m., Engineering and Business Building, Room 203

*The Artificial Kidney*

The purpose of the Artificial Kidney Team Senior Design Project was to design improvements for the filtration unit of the Artificial Kidney. Computational fluid dynamics was utilized to study the blood flow through the device via the software ANSYS Fluent. The analysis results and design contributions were presented and added to the cumulative knowledge of artificial kidney technology. This design project was brought to the group by Dr. Shuvo Roy: an alumnus of Mount Union and the current leader of the project at the University of California-San Francisco.



**Alysun Daniel (Sport Business)**

**Faculty Sponsor: Lori Braa, Department of Human Performance and Sport Business**

4:10 p.m., Chapman Hall, Room 104

*Differences in Campus Recreation Departments with a Focus on Institutions with Less Than 5,000 Students*

The purpose of this study was to examine the strategies and techniques of campus recreation departments with a focus on private institutions with less than 5,000 students. Using the case study approach, directors of campus recreation in selected north east Ohio institutions, including the University of Mount Union were surveyed on their daily operations. Findings demonstrated that the majority of institutions surveyed share their recreation facilities with the athletic department and student workers are the primary demographic for recreation staff. Results also found that each institution has a detailed procedures manual, risk management and emergency action plan for their department. Through this study, more research needs to be conducted in examining the campus recreation department structure of private institutions with under 5,000 students.



## Formal Presentation Abstracts

**Sean Donnelly (Exercise Science)**

**Jason Paulovich (Exercise Science)**

**Brendan Graves (Exercise Science)**

**Faculty Sponsor: Ron Mendel, Department of Human Performance and Sport Business**

1:50 p.m., Chapman Hall, Room 111

*Load-vector training and sprint performance in track-and-field athletes*

Introduction: The use of strength and conditioning (S&C) programs to increase sports performance is becoming increasingly relevant. Sprint performance, crucial to many sports, is largely dependent upon horizontal force propulsion via the hip extensors and knee flexors. Current S&C programs place much emphasis on axial-loaded (vertically-loaded) exercises, while little emphasis is placed on anteroposterior-loaded exercises. It is theorized that anteroposterior-loaded exercises can increase sprint speed and acceleration. The purpose of this study is to determine the influence of force vector production of weight room exercises on sprint performance. Methods: 30 track-and-field athletes were assigned into one of three training groups. The three training groups are as follows: the vertical (axial) training group, the horizontal (anteroposterior) training group, or the mixed training group. Testing measures include vertical jump, broad jump, and 60-meter sprint. Subjects performed these speed and power tests before and after a six week training period. Results/Discussion: Data collection is ongoing. Conclusions have yet to be determined.

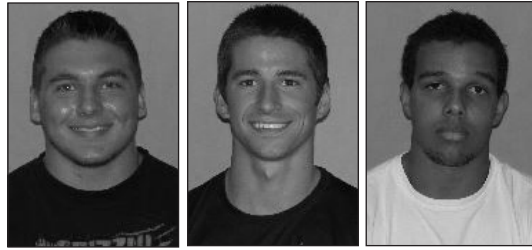
**Ashley Eckroate (Biology and Exercise Science)**

**Faculty Sponsor: Charles McClaugherty III, Department of Biology**

3:50 p.m., Engineering and Business Building, Room 203

*Effects of Light Intensity on Photosynthesis Rates in *Caulophyllum thalictroides**

*Caulophyllum thalictroides*, more commonly known as blue cohosh, is a member of the Berberidaceae family that grows in the eastern hardwood forests of the United States. The need for this plant first came to light with the Native American tribes who used blue cohosh as a medicinal herb for purposes of abortion as well as contraception. Though blue cohosh is not well known in America, perhaps the reason for this is the unknown mechanism of action. Therefore uncovering additional information about the function of photosynthetic rates can lead to significant data in correlation to the known medical effects. The primary aim of this research was to define the maximum photosynthetic rate at which this plant species thrived best under, during three different stages of growth when subjected to decreasing light intensities. A relation between the age of a plant and maximum photosynthetic rate was noted. This shows promising progress in discovering more about the mechanisms of action and the possibility of developing a safe herbal supplement from blue cohosh.



## Formal Presentation Abstracts

market. By looking at actions from the United States' government, the Federal Reserve, trends, financial ratios, and technical analysis of the companies, the decision of whether or not to invest in ExxonMobil and Chevron can be reached with a higher degree of understanding.

**Courtney Wachal (French and International Studies)**

**Faculty Sponsor: Michael Grossman, Department of Political Science and International Studies**

10:20 a.m., Engineering and Business Building, Room 203

*Why are Countries Willing to be Bound by International Law?*

Because our world is becoming increasingly more globalized, countries continue to work closely with one another. Cooperation is vital to the success of our world, individual countries, and people in order to get issues resolved. It is better for countries to cooperate because it is likely that both countries will benefit. However, it is only human nature that conflicts will arise among the various countries. It is through these conflicts that international law needs to be applied or adhered to. However, because the international system is anarchic, meaning that it lacks a central governing system, there are not a lot of ways to require countries to obey international law. Yet, it seems that most countries seem to be very willing to be bound by international law, even though there are more incentives for them not to obey. This research paper will examine whether countries are, in fact, willing to be bound by international law in an anarchic system.



**Jack Weber (Political Science)**

**Faculty Sponsor: Lori Kumler, Department of Political Science and International Studies**

4:10 p.m., Engineering and Business Building, Room 206

*A case of money in politics: The relationship between campaign donations and energy policy in the Ohio and Pennsylvania state senates*

Most previous research examining the effect of campaign donations on legislative behavior fails to reach a consensus as to the relevance of campaign donations on policy outcomes. Most studies also tend to focus on roll call voting at the Federal level. In an alternative approach to this, I explore whether there is a relationship between campaign donations from the oil and natural gas industry to state senators in Ohio and Pennsylvania (2008-2014) and policymaking that directly affects the industry. Using a multiple regression analysis with pro/anti industry votes on legislation as the dependent variable, and donations, party, and sponsorship of the legislation as the independent variables, I found that a relatively strong relationship exists between the variables. I only examined legislation that specifically affected the industry over this time period choosing a number of bills brought to the state legislature over this time. In looking at both the state level and at a specific industry, this study looks into specifics of the legislative process relative to an industry and the issues surrounding it while providing insights relevant to citizens, industry, and policymakers in Ohio and PA.





## Formal Presentation Abstracts

### Autumn Timko (Athletic Training)

**Faculty Sponsor: Morgan Bagley, Department of Human Performance and Sport Business**

10:40 a.m., Chapman Hall, Room 104

*Arch-Supportive Tape Jobs versus Foot Orthotics: Which is the Better Treatment for Plantar Fasciitis?*

Plantar Fasciitis is one of the most common musculoskeletal disorders of the foot and the common cause of inferior heel pain. It is a self-limiting condition that can have a dramatic impact on physical mobility. This condition can take months to years to resolve, which presents a challenge for clinicians when deciding to use an arch-supportive taping technique or a foot orthotic. Understanding the cause and effect of plantar fasciitis is thoroughly expressed throughout this presentation. Research on the pros and cons of specific treatment techniques will provide information on which is the better treatment for Plantar Fasciitis. The options of successful treatment are vital to patients dealing with plantar fasciitis, because sport performance and daily activities may be impaired due to pain and discomfort.



### Ben Todd (Political Science)

**Faculty Sponsor: Lori Kumler, Department of Political Science and International Studies**

10:40 a.m., Chapman Hall, Room 111

*From Learning the Law to Making the Law: Influence of Law School in Supreme Court Justices' Constitutional Rulings*

In this paper, I look into the possible relationship between the legal education of United States Supreme Court justices and how they rule in cases dealing with the interpretation of the U.S. Constitution. There is a considerable amount of previous research dealing with what factors influence Supreme Court decisions, but none of that research has ever proposed the possibility of the justice's law school as a relevant factor. I hypothesize that the law school a Supreme Court justice attended does in fact influence the way Supreme Court justices rule on Constitutional issues. I research this by defining each law school that a justice has attended over the past 40 years as either liberal or conservative, and then compare those definitions to whether they ruled in a liberal or conservative way in cases dealing with the interpretation of the United States Constitution. The results show that there is a positive correlation between justices attending a liberal school making liberal rulings, as well as justices attending a conservative school making conservative rulings. The research in this paper lays a basis for more investigation into how much the legal education of U.S. Supreme Court justices influences the decisions that they make.



### Tristin Tokos (Finance)

### Brian Ruhe (Finance)

**Faculty Sponsor: Pat Matthews, Department of Economics, Accounting and Business Administration**

1:30 p.m., Kolenbrander-Harter Information Center, Room 013

*Investing in the Oil and Gas Industry*

This presentation examines and brings together various aspects of the United States' economy and the oil and gas extraction industry in order to help people with their investing choices whether it is for retirement or simply for gains in the



## Formal Presentation Abstracts

### Dylan Garritano (Political Science)

**Faculty Sponsor: Lori Kumler, Department of Political Science and International Studies**

2:10 p.m., Engineering and Business Building, Room 206

*The Wheels on the Bus: Examining the Relationship between Bus and Light Rail Transit*

Can two modes of public transportation work to complement a city's overall public transportation network by not competing against each other? There is debate among scholars on whether inter-modal cooperation exists. It has been recommended that the addition of new modes of public transportation should only be done if it will not negatively interfere with existing modes of public transportation. The argument that I make is that inter-modal cooperation exists in three cities with both Bus and Light Rail transit. To make this argument I examine the three relationships among cities' public transportation networks: the number of vehicles operated, operational costs, and overall transit ridership. The study examines three pairs of cities, each of which compares a city with both bus and light rail transit to a city with only bus transit. The results suggest that inter-modal cooperation can exist and that light rail transit improves upon a city's public transportation network. While this study cannot make the argument for the development of light rail transit, this study does provide support that light rail transit can improve upon bus transit in the same city.



### Brandon German (Criminal Justice and Computer Science)

**Faculty Sponsor: Andy Bain, Department of Sociology and Criminal Justice**

10:40 a.m., Kolenbrander-Harter Information Center, Room 013

*Examining the crimes of the outlaw motorcycle gangs*

In 2009, Barker and Human published research on the Big Four motorcycle gangs which ranged from 1980-2005 (25 year period). In the research, they sought to further the understanding of the gangs and their criminal activities. However, this area is still under-researched and is need of more information. In this research, to maintain validity for the new data, similar methods to that of Barker and Human are being used to source articles. The articles will be found in the LexisNexis newspaper database from 2005-2014 (10 year period) to add to Barker and Human's findings and to create a 35-year span of information on the criminal activities of these outlaw motorcycle gangs. The results will further the area of knowledge as well as show areas where crime activity is most prevalent.



### Garrett Graber (Economics and English)

**Faculty Sponsor: David Thiele, Department of English**

2:10 p.m., Chapman Hall, Room 111

*Narrative and History in Beloved*

"There is no was." Four words by author William Faulkner could not better define the true nature of human history. Time was not a series of linear events for Faulkner, rather it was all intertwined: past, present, future ever rotating and affecting the moment. Toni Morrison's *Beloved* mirrors Faulkner's sentiment on time as her gripping, violent retelling of the Margaret Garner case employs a non-linear framework with the past and present interwoven and sometimes narrated simultaneously. I argue that Morrison didn't use a linear narrative because it would be limiting and prove inadequate in truly capturing the horrors and tragedies of slavery. Through a close reading of *Beloved's* prose, a reviewing of the Margaret Gardner case, and analysis of scholarship on narrative structure, I aim to show how *Beloved's* unconventional, non-linear narrative accurately portrays the misery of slavery, showing the treacheries of the past cannot be laid to rest; they will continue to haunt the present. *Beloved* is not a history of what was. It is a history of what is.



## Formal Presentation Abstracts

### Nichole Heaton (Biochemistry)

**Faculty Sponsor: Keith Miller, Department of Chemistry and Biochemistry**

4:10 p.m., Engineering and Business Building, Room 203

#### *Does Size Matter: Nanoparticle Immune Cell Activation for Cancer Treatment*

According to the American Cancer Society, in 2015 it is estimated that over 500,000 people will die from cancer. Cancer is a problem that society and scientists have yet to solve. Cancer is when a cell mutates in the body and begins to rapidly divide. Even with current cancer treatments, radiology and chemotherapy, the cases of cancer and the mortality rate are still high. One of the major problems with the current cancer treatments is that they do not specifically target cancer cells. Both radiology and chemotherapy kill rapidly dividing cancerous and healthy cells. Often times, the patient is already extremely ill from cancer and the treatment is harmful to the body. A new cancer treatment, immunotherapy, utilizes the body's own immune system. Cells within the immune system known as macrophages destroy any debris or foreign substances within the body. Macrophage activation to recognize cancer cells as foreign substances can lead to an effective immune response that will kill the cancer cells. In this research, nanoparticles, tiny particles that can carry a compound within it, have been used to activate macrophages. This allows the delivery of a compound that will activate the macrophage which will release chemicals to activate an immune response. The purpose of this research was to find how much activating cargo was necessary, as well as, what size of the liposome causes increased macrophage activation. It trended that smaller concentrations were better at macrophage activation than larger. Current studies are focusing on defining improved size limits.



### Rachel Horseman (Neuroscience, Biology and French)

**Heather Lee (Psychology and Biology)**

**Clarice Nock (Psychology)**

**Nicole Simons (Psychology)**

**Faculty Sponsor: Kristine Turko, Department of Psychology and Neuroscience**

1:30 p.m., Tolerton and Hood Hall, Room 100

#### *Gender Differences in Self-Reported and Actual Physiological Responses to Emotional Stimuli*

Gender-specific norms guide the roles that men and women act in everyday life. Due to these assumed roles, people may act appropriately in public, but may feel different internally. Emotional responses are explored in previous literature through violent text, films, and pure imagination. The purpose of the current study is to find the differences between actual and self-reported physiological responses to emotion in men and women. Participants were undergraduate students at the University of Mount Union (aged 18-23). The participants viewed four clips pertaining to specific emotions: neutral, happiness, fear, and sadness. Throughout the film clips, the participants were tested for their actual physiological responses through respiratory rate, heart rate, and sweat levels. After the conclusion of each emotion-eliciting clip, the students completed a questionnaire on self-reported physiological responses. The participants rated adjectives that are similar to emotions to compare to the emotions experienced in each film clip. It was thought that fear would contribute to higher actual physiological responses by increasing heart rate, sweat levels, and respiratory rate. Women will most likely self-report emotions more strongly than males will. Males will not self-report their emotions the same as their actual physiological responses.



## Formal Presentation Abstracts

### Dekota Toot (Psychology and Philosophy)

**Anthony Heider (Human Development and Family Sciences and Theatre)**

**Ty Gamble (Psychology and Theatre)**

**Mandy Mohn (Psychology and French)**

**Faculty Sponsor: Kristine Turko, Department of Psychology and Neuroscience**

1:50 p.m., Engineering and Business Building, Room 206

#### *Value and Disorder in the Psychological Sciences*

The discipline of psychology acts primarily as a descriptive science, as psychologists use empirical methods to theorize about what human nature is like. When making medical diagnoses and treating the mentally ill, however, psychologists and psychiatrists must not only rely on knowledge of what human nature is like, but they must also make judgments about what human nature should not be like. Without these value judgments these professionals would not be able to discriminate between disordered and merely unusual behavior. A variety of factors at differing points in history have affected psychologists' and psychiatrists' views on what qualifies as a disorder, and as a result many classifications have varied over time. In my research, I examined the Diagnostic and Statistical Manual of Mental Disorders, historical books, articles, and other documents that shed light on these extraneous influences that have shaped the what counts as a mental disorder.



### Dekota Toot (Psychology and Philosophy)

**Faculty Sponsor: Sarah Torok-Gerard, Department of Psychology and Neuroscience**

10 a.m., Engineering and Business Building, Room 206

#### *The Effect of Facial Manipulation on General Cognitive Ability*

The discipline of psychology acts primarily as a descriptive science, as psychologists use empirical methods to theorize about what human nature is like. When making medical diagnoses and treating the mentally ill, however, psychologists and psychiatrists must not only rely on knowledge of what human nature is like, but they must also make judgments about what human nature should not be like. Without these value judgments these professionals would not be able to discriminate between disordered and merely unusual behavior. A variety of factors at differing points in history have affected psychologists' and psychiatrists' views on what qualifies as a disorder, and as a result many classifications have varied over time. In my research, I examined the Diagnostic and Statistical Manual of Mental Disorders, historical books, articles, and other documents that shed light on these extraneous influences that have shaped what counts as a mental disorder.





## Formal Presentation Abstracts

**Michelle Stiltner** (Neuroscience and Biology)

**Sam Clarke** (Psychology)

**Erika Druzina** (Neuroscience)

**Chris Holmes** (Neuroscience and Biology)

**Ben Swope** (Neuroscience)

**Faculty Sponsor:** Kristine Turko, Department of Psychology and Neuroscience

10:40 a.m., Engineering and Business Building, Room 203

*Netflix: Binge Watching and the Threat of Addiction in College Students*

As live-streaming media is becoming more commonplace, so is the opportunity for misuse. This research will investigate the connections between binge-watching and live-streaming of Netflix videos and addiction. Binge-watching is a behavior in which at least two episodes of a live-streamed series are watched in succession during a single sitting. Is the sedentary lifestyle of watching hours and hours of streamed episodes, although socially acceptable, as benign as we think it to be? As the first investigation of this new sensation, this study aims to examine binge watching and the addictive properties with three measures: three surveys and two biological measures of heart rate and electrodermal activity (EDA). Electrodermal activity measures skin conductance as the difference in electrical potential between two different finger tips. Results will be compared to behavioral addiction measures of pathological gambling addiction, which was recently added to the Diagnostic Statistical Manual V (DSM-5) as the first behavioral addiction. If our results are comparative to measures of pathological gambling addiction, it may indicate if binge watching could be classified as the next classified behavioral addiction in the future.

**Kelsey Tasker** (Physician Assistant Studies)

**Faculty Sponsor:** Vanessa Worley, Department of Physician Assistant Studies

3:30 p.m., Chapman Hall, Room 111

*A Tune to "Beat" the Pain: Music Therapy and Its Pain-Relieving Effects for Fibromyalgia Patients*

Do you or does someone you know suffer from a form of severe chronic pain and hope to find an alternative therapy to relieve that pain? The use of music therapy is becoming an accepted method of treatment as an alternative to or in combination with medication. Music therapy has been studied in conditions including fibromyalgia (FM)- a poorly understood, chronic pain disorder that often leaves its patients with debilitating pain. An estimated 2-7% of the world's population carry the diagnosis of FM, with 31-49% of patients experiencing low back pain, and 10-15% of patients suffering from sleep disturbances. A systematic literature review was conducted using the most recent, peer-reviewed articles found through database searches of the Cochrane Library, Google Scholar, and MEDLINE through PubMed, to determine the effects of music therapy on pain experienced by FM patients. This information was analyzed and compared to the pain-relieving effects of standard drug therapies used in FM treatment. Results show that music therapy is an excellent adjuvant therapy and even a viable alternative to pharmacologic treatments.



## Formal Presentation Abstracts

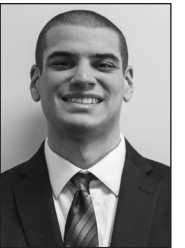
**Christopher M. Ifantiedes** (Athletic Training)

**Faculty Sponsor:** Morgan Bagley, Department of Human Performance and Sport Business

2:10 p.m., Kolenbrander-Harter Information Center, Room 013

*Done for the Season: A Case Study on a Preventable Season Ending Injury*

Training surfaces (i.e. artificial turf, rubber track, natural grass) play a key role in an athlete's success and ability to play in competition. In "Why are stress injuries so common in the soccer player?", Knapp states that in 1994 about half of the U.S. women's soccer team was not able to perform at their maximum level because they were dealing with stress fracture in their lower legs. This is a problem seen in athletics continuously, but often not to the extent of half of a team. With the increase in athletic participation stress fractures are not going away. A case study approach was used with a soccer athlete who could have potentially had a career ending injury because of the training environment. It is hypothesized that research will show that training and playing on different surfaces plays a role in this. Whether you are physically active yourself or just a dedicated sports fan, these types of injuries can greatly affect your career or the season outcome of your favorite team.



**Eva Laino** (Biochemistry)

**Christine Culver** (Biochemistry)

**Clay Densmore** (Biochemistry)

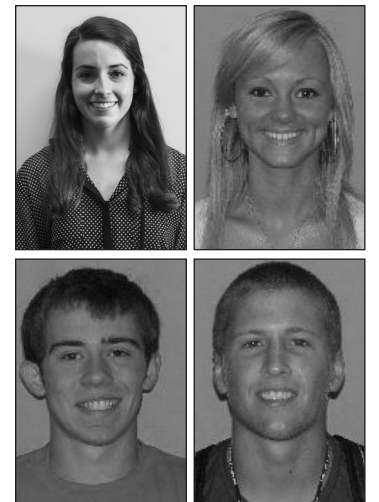
**Noah Kainrad** (Biochemistry)

**Faculty Sponsor:** Debra Boyd-Kimball, Department of Chemistry and Biochemistry

1:50 p.m., Engineering and Business Building, Room 203

*Effect of Lifestyle Choices on Oxidative Stress in Mice: Implications for Alzheimer's Disease and Heart Disease*

Oxidative stress has been shown to play a role in a number of health conditions including Alzheimer's disease and heart disease. It is becoming more evident that lifestyle choices may play a role in lowering our risk of developing these diseases. The purpose of this study was to determine the effects of exercise, environmental enrichment, and high carbohydrate and high fat diets on oxidative stress in a mouse model. The results of biochemical tests completed to determine the level of oxidative stress in the brain and heart will be presented.



**Jamie Laubacher** (English)

**Faculty Sponsor:** Michael Olin-Hitt, Department of English

3:50 p.m., Chapman Hall, Room 104

*Lights to See By: Defining the Heroic Journey Through the Writing of Madeleine L'Engle*

What does it mean to be a hero? We have always looked to stories for the answer to this question, but as cultural values change over time, so must the narratives we use to express them. After looking at Joseph Campbell's "Hero's Journey," and Maureen Murdock's "Heroine's Journey," I've applied their study of the hero's quest narrative to the writing of modern author Madeleine L'Engle. By analyzing L'Engle's novels *A Wrinkle in Time*, *A Wind in the Door*, and *A Swiftly Tilting Planet*, I have found that her version



## Formal Presentation Abstracts

of the "Heroic Journey" combines the best of Campbell's and Murdock's, while introducing some new elements, including the need for the heroic lead to become both a scientist and an artist. L'Engle's writing offers us a new narrative, an inclusive, accessible way for contemporary audiences to redefine heroism, and a guide to being heroic in our own lives.

**Tyler Lowe (Psychology and Religious Studies)**

**Kristen Green (Psychology)**

**Lydia Gonzalez (Psychology)**

**Faculty Sponsor: Kristine Turko, Department of Psychology and Neuroscience**

3:30 p.m., Chapman Hall, Room 104

*Why So Serious?: Advertising and Mood*

Participants will first complete a pre-test questionnaire about mood on SurveyMonkey. The purpose of the pre-test questionnaire is to determine a starting point in terms of the participants' mood. Having this, we can use these results as a control to see if they have a shift in their mood. After completing the survey, they will participate in all levels of the facial manipulation experiment. The levels are emotion (high-spirited and low-spirited) and expression (happy and neutral). Participants will watch a high-spirited and then a low-spirited dog adoption video, respectively, with either a happy or neutral facial manipulation via holding chopsticks in their mouths. Following the video, they will respond to a short Likert scale survey regarding their emotional state and their opinion on the persuasiveness of the advertisement. The purpose of this survey is to determine the persuasiveness of the video advertisement. Participants will be debriefed after completing the experiment.



**Cassie McIntosh (French)**

**Faculty Sponsor: Bertrand Landry, Department of Foreign Languages and Cultures**

1:50 p.m., Tolerton and Hood Hall, Room 100

*Separation of Church and State: The Veil Between The United States of America and France*

Is the United States of America the role-model for religious freedom? Or is it a Christian nation? This research examined ways in which western nations differ in ideology and implementation of law concerning religion and religious freedom in an effort to further explore religious tolerance in western government. Countries studied and compared were the United States of America and France. Although similarities between the US and France, in regards to basic human rights, are parallel, their difference in political implementation of law pertaining to religion is strikingly polar. A historical approach reviewing Constitutional Law, the United States Supreme Court decisions *Burwell*, *Secretary of Health and Human Services, et al. v. Hobby Lobby Stores Inc.* and *Citizens United v. Federal Election Commission*, *Laïcité*, the Stasi Commission, and *Shari'a Law* were the basis for findings.



## Formal Presentation Abstracts

**Eric Spencer (Mechanical Engineering)**

**Jarrold Dawson (Mechanical Engineering)**

**Dustin Matak (Mechanical Engineering)**

**Johnathan Hartong (Mechanical Engineering)**

**Taylor Bishop (Mechanical Engineering)**

**Alex Reid (Mechanical Engineering)**

**Faculty Sponsor: Jay Boyalakuntla, Department of Engineering**

10:20 a.m., Engineering and Business Building, Room 206

*UMU Baja Racing Raiders*

UMU Baja Racing Raiders studied the 2015 Collegiate Design Series Baja SAE® Rules. Considering this rulebook, existing designs, and the 2014 senior mechanical engineering capstone Baja project, conceptual designs were developed. Each design altered the previous year's Baja by focusing on weight reduction. A technical analysis plan, using Finite Element Analysis, was developed to simulate loads the vehicle will experience.

Preliminary conceptual frame design selection, finite element analysis (FEA) on the frame, material selection, drive-train and suspension research was performed. The frame was selected using a screening and scoring matrix. This allowed designs, and other aspects to be included into the final frame. Finite Element Analysis simulated the frame's structural integrity due to forces applied to the Baja. The material was optimized by performing bending strength and stiffness calculations. This aided in the selection of the tube dimensions that were the strongest, but weighed the least per unit length. This will reduce the overall weight of the frame.

The team fabricated the frame and assembled the parts that were ordered. Along with fabricating the frame, the team modeled up bracket mounts for the front and rear suspension to attach to the frame. These brackets were modeled on SolidWorks® and FEA were performed on them.

Once the Baja was completely assembled the team began testing and refinement in preparation for the competition in Auburn, Alabama on April 9th-12th.





## Formal Presentation Abstracts

**Sarah Schleich** (Exercise Science)

**Sean Mohney** (Exercise Science)

**Faculty Sponsor: Lonnie Lowery, Department of Human Performance and Sport Business**

3:50 p.m., Chapman Hall, Room 111

*Effects of Caffeine Ingestion on Rotational Shoulder Velocity and the Accuracy of a Throw*

Throughout vast amounts of previous literature, caffeine has been studied to examine its effects as an ergogenic aid. The majority of this research has focused on the broad aerobic effects of caffeine within endurance athletes. Because of the absence in the literature of the effects of caffeine on the muscle groups responsible for sports specific movements, our research will focus on these precise movements in regards to the rotational velocity of the shoulder. Twenty college aged men and women (18-25) participated in a randomized, double-blind crossover study. Subjects were experienced throwers and consisted of athletes ranging from baseball, softball, and volleyball. Subjects reported to the testing facility and ingested either Via Instant Coffee or Via Instant Decaf Coffee 60 minutes prior to testing. Each participant completed a general 15 minute warm up. Subjects threw 10 maximal throws at a 2x2 ft square target, placed 60 feet away, using a standard collegiate baseball. Data was analyzed using a radar gun and video recordings. Subjects returned a week later and completed the alternate intervention. Data collection had not been finalized at the time of submission, but the results and conclusions will be presented during our formal presentation.



**Caitie Shimp** (Psychology)

**Jacob Ward** (Art and Education)

**Kelly McMahon** (Early Childhood Education)

**Joshua Scott** (Physical Education Pedagogy)

**Maya Brown** (Music)

**Faculty Sponsor: Jennifer Martin, Department of Education**

1:50.m., Chapman Hall, Room 104

*Bafa Bafa: A Cross-Cultural Simulation*

What happens when cultures clash? It's the "Alpha" vs. "Beta" way of life pitted against each other in BaFa BaFa: A Cross Cultural Simulation. Friendships were tested, feelings were hurt, and tongues were tied. In this study, qualitative and quantitative results from multiple trails of the BaFa BaFa simulation with two different demographics (adults on a doctoral program track and undergraduate students) are combined to exhibit the importance of a simulation like this in today's global society.



## Formal Presentation Abstracts

**Kelsey Meyer** (Physician Assistant Studies)

**Faculty Sponsor: Vanessa Worley, Department of Physician Assistant Studies**

10:20 a.m., Chapman Hall, Room 111

*Sex and the Psyche: The Correlation Between Child Sexual Abuse and Substance Abuse and Promising Therapies Being Utilized to Break the Link*

In the United States, 1 in 10 children will experience sexual abuse before their 18th birthday; abuse defined as any sexual activity perpetrated against a minor by threat, force, intimidation, or manipulation. These children, compared to their non-abused counterparts, are 3 to 4 times more likely to abuse drugs and alcohol later in life. The psychological consequences of child sexual abuse (CSA) have been found to instigate the subsequent substance abuse behavior. Specific interventions including family, animal-assisted, and game-based therapies are currently being researched with the aim to prevent this association from manifesting. By understanding the cause and effect relationship of CSA and substance abuse, along with promising treatment options that facilitate well-being in adulthood, the goal to provide hope for a healthy future in affected children and their families is attainable.



**Amanda Myhal** (Biochemistry)

**Faculty Sponsor: Keith Miller, Department of Chemistry and Biochemistry**

3:50 p.m., Kolenbrander-Harter Information Center, Room 013

*The Targeting and Activation of Macrophages for Cancer Immunotherapy via a Novel Tuftsin-Tuftsin-Grafted Lecithin Liposome Carrier*

While the number of cancer cases seems to become more numerous with each passing year, the treatment options still remain limited. These treatments, including chemotherapy and radiation, are nonspecific and can kill both healthy and cancerous cells. Because of this issue, the search for a more effective and specific treatment has become increasingly popular. One of the fields currently being studied is immunotherapy, which is a more specific course of treatment that activates the immune system and allows the body to better utilize its own defensive mechanisms. This stimulation of the immune system can be achieved by activating particular immune cells with pharmaceuticals, bacterial components, or other chemical substances. Unfortunately, these components alone may be subject to degradation if they are free-floating in the body. One way to effectively deliver these substances to the desired cells without degradation is by the use of liposomes – small nanoparticles made of fatty components called lipids. While liposomes assist in the delivery of substances to particular cells in the body, these nanoparticles become even more effective in their delivery when targeted to specific receptors on the appropriate cells. In the presented research, the targeting of macrophages – immune cells that exist in cancerous tumor environments – by means of a tuftsin-tuftsin-grafted liposome will be examined for its effectiveness.



**Gabriella Pishotti** (Writing and English)

**Faculty Sponsor: Rodney Dick, Department of English**

10 a.m., Chapman Hall, Room 104

*He? He or She? They?: The Struggle for an "Us" in Man's Language*

Approximately 15 words are created every day, demonstrating the ever-growing nature of the English language. However, when the way in which these words are used, their content, and their meaning are analyzed, it begs the question: is this growth in language occurring solely in quantity alone, the quality of our language stagnating with the same sexism that has colored speech and writing for centuries? My presentation will attempt to gauge the prevalence of sexism within grammar and language, a concerning issue considering the fact that language is the tool by which we perceive the world around us. Through the examination of scholarly articles and texts focusing on this topic, I have narrowed down





## Formal Presentation Abstracts

several of the main ways in which language and grammar perpetuate sexism. By comparing these to my own textual analysis of modern-day, mainstream publications, I intend to analyze whether or not sexism continues to thrive in grammar and language use and discuss the influence this could have on society.

### **Gabriella Pishotti (Writing and English)**

**Faculty Sponsor: David Thiele, Department of English**

3:30 p.m., Tolerton and Hood Hall, Room 100

*Grammar and Allow Me to Enlighten You: A Quest for Enlightenment through Wordsworth and Human Connection*

Enlightenment refers to a higher state of intellectual and emotional thought that elicits understanding and peace with the world. For many, it is a state of mind attainable only with a loose grip that tends to disappear within moments. However, men and women throughout centuries have strived to strengthen their hold on this form of realization through the means of books, religion, art, and countless other channels. For my presentation I will analyze the Romantic poetry of William Wordsworth, examining his influential idea of enlightenment through nature and the way in which he believes it is obtainable for all. I will then compare Wordsworth's definition of enlightenment with my own, utilizing research on the subject of altruism as well as my own personal experiences with storytelling, religion, and volunteering to argue that enlightenment is the realization and embracement of human interconnectedness, not an unattainable state of mind reserved for a deeply meditative few.



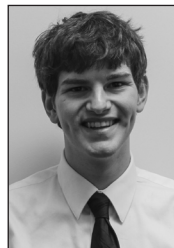
### **Kevin Princic (International Studies and Japanese)**

**Faculty Sponsor: Hamako Furuhashi-Turner, Department of Foreign Languages and Cultures**

2:10 p.m., Tolerton and Hood Hall, Room 100

*The Effects of Experiential Learning on Foreign Language Education: A Literature Review and Case Study of an Internship at a Japanese Company*

Experiential learning has always been an important tool for foreign language learners; as the years have progressed students have been taking advantage of new opportunities in the form of internships. In current day society, studying abroad has become a common if not required practice for those who are pursuing a degree in a foreign language. The internship has also been steadily gaining popularity across a variety of different fields thanks to its flexibility as well as its effectiveness in helping students learn and understand complex concepts. The combination of experiential learning and foreign language education through participating in an internship could become the new norm in society as internships continue gaining popularity. Internships can offer foreign language students a new medium of learning which will allow them to continually build previous experiences on one another. By repeatedly reflecting on past experiences and applying their knowledge to new situations, students will be able to increase their foreign language learning capabilities exponentially. While experiential learning through participation in an internship is by no means a perfect way to learn a foreign language, the benefits to students could be enormous. Through my own personal experience of an internship at a Japanese company, an analysis of the benefits and flaws of internship based experiential learning will be conducted. Elements from my experience will be accompanied by an analysis of literature to give examples of the effects an internship can have on the study of the Japanese language.



## Formal Presentation Abstracts

will be conducted post-exercise. Measurements will be taken pre-workout and post-intervention as well as 24, 48 and 72 hours after testing. The measurements will include perception of soreness on a Likert scale, thigh girth, power output using a KMS system and creatine kinase (CK) levels in the blood. Results were analyzed using repeated measures ANOVA. Results: It is expected that CWI intervention group will show no increase in performance but may possibly show a decrease in pain perception when compared to the passive recovery group. Creatine kinase and power output levels are expected to remain the same for each group.

### **Bryant L. Roby, Jr. (Political Science)**

**Faculty Sponsor: Lori Kumler, Department of Political Science and International Studies**

3:30 p.m., Kolenbrander-Harter Information Center, Room 013

*The Puzzling Minority of the African American Republican Voter: Why do African Americans Affiliate with the Republican Party?*

Why do certain African Americans vote Republican? Since the 2000 presidential election, only 7% of African Americans have voted for Republican presidential candidates. No other race or ethnicity affiliates as strongly with a certain party as African American voters do. Nevertheless, this small percent chooses to go against voting norms and vote Republican. Scholars argue that most African Americans vote Republican based on their higher level of education, income, or socioeconomic class, or alternatively because they hold a negative view of social programs that are associated with the Democratic Party. I examined whether empirical data support these theories. Using the American National Election Studies data set which provides data from face to face interviews with Americans from 1948-2012, I used a multinomial regression model to examine the strength of association between education, income, and attitude toward African Americans receiving aid and African Americans who affiliate with the Republican Party. My findings did not support an association between my independent variables and African Americans affiliating with the Republican Party. Although my study had a small sample, my findings were significant because it shows that the literature may be incorrect, and if the scholars are wrong we must gain more insight into the African American conservative to figure out if there is another driving force behind their political views.



### **Andrew Rothermel (Finance)**

**Nick Popely (Finance)**

**Kyle Roberts (Finance)**

**Faculty Sponsor: Pat Matthews, Department of Economics, Accounting and Business Administration**

3:30 p.m., Engineering and Business Building, Room 206

*Soaring to New Heights: An analysis of the Airline Industry*

This presentation includes an in-depth analysis of the airline industry and a recommendation on how to properly invest in the stock market. First, we did an in-depth analysis of the entire economy, particularly looking at economic indicators such as growth in gross domestic product, as well as durable goods spending. Next we did a comprehensive analysis of the airline industry, looking at the industry life cycle, the industry structure, regulations, and the affects of crude oil on the industry. After that we analyzed the financials of the major players in the industry, and made graphs comparing the ratios of the three companies. Lastly, we did extensive fundamental and technical analysis to evaluate Southwest Airlines, United Continental Holdings, and American Airlines. Overall, we were able to make recommendations on which companies to invest in within the airline industry, and gain a better understanding of the economy and stock market.



## Formal Presentation Abstracts

asked to complete a similar questionnaire to calculate Body Image Self-Other Discrepancy. If our predictions are supported, our study will provide valuable information about how women's body image ideals bias their perceptions of self. Showing women that others do not scrutinize their bodies with the same critical eyes may be the first step in overcoming the preoccupation that American culture has on unattainable body standards.

### Joy Raub (Sociology and Religious Studies)

**Faculty Sponsor: Kathleen Piker-King, Department of Sociology and Criminal Justice**

10 a.m., Kolenbrander-Harter Information Center, Room 013

*Behind the Presidential Doors: A Sociological Examination of the Office of Academic Affairs*

The Department of Sociology and Criminal Justice requires all sociology majors to take a course titled Senior Practicum (SOC 490), which mandates the completion of 80 hours of practicum experience and the writing of a monograph that analyzes the internship and host organization. I interned as a research assistant for the Director of Institutional Effectiveness and Accreditation through the Office of Academic Affairs at the University of Mount Union, conducting a literature review of research pertaining to academic quality with a focus on meta-analyses that evaluate effective assessment tools. I concentrated my research on four dimensions of academic quality, including teaching effectiveness, diversity, co-curricular and experiential education, and program review processes, and used the findings to create a qualitative survey for the university's peer and aspirant institutions. At the end of the practicum, I prepared an annotative bibliography of my research to be used by the Academic Quality Improvement Program (AQIP) Steering Committee. For this presentation, I will briefly describe the history of the internship site, analytically examine the organization of Academic Affairs within the wider structure of the university, apply Conflict Theory to the functioning of the institution, provide a hypothetical research design for a study that could be conducted by Academic Affairs, and explore the ethical issues associated with the Office's delivery of services.



### Rachel Rector (Exercise Science)

### Nicholas Hendershot (Exercise Science and Biology)

**Faculty Sponsor: Lonnie Lowery, Department of Human Performance and Sport Business**

10:20 a.m., Kolenbrander-Harter Information Center, Room 013

*The Effects of Cold Water Immersion on Recovery from Delayed-Onset Muscle Soreness*

Delayed-onset muscle soreness (DOMS) is a common phenomenon that usually occurs in the muscles after an intense workout. Cold water immersion (CWI) is one of the most common forms of recovery used to recover from DOMS. The research on this form of recovery is extensive but the results are extremely varied. Some research has shown that CWI is effective in decreasing the perception of soreness and increasing performance. Other research has shown that CWI does indeed help decrease the perception of soreness, but does not have any effect on performance which attributes the cold temperatures to only aiding in decrease of pain perception. The intent of this study is to help draw a more definitive conclusion as to whether or not CWI is an effective method of recovery. Methods: 10 collegiate non-athletes (18-22) were recruited for this study (both male and female). Subjects were split into two groups using a randomized block design where one group used CWI as recovery and the other group used a passive recovery. A workout composed of 100 drop jumps will be performed in sets of 20 with a minute and half rest between each set and the recovery intervention for each group



## Formal Presentation Abstracts

### Joshua Pryor (Civil Engineering)

### Xuelin Wang (Civil Engineering)

### Brad Linerode (Civil Engineering)

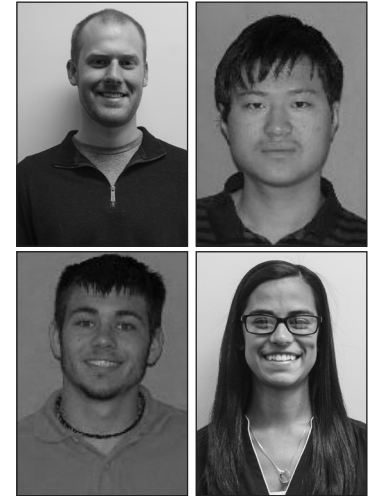
### Taylor Cline (Civil Engineering)

**Faculty Sponsor: Yan Liu, Department of Engineering**

1:30 p.m., Engineering and Business Building, Room 203

*GeoWall Design 2015*

This project involved designing and building a model mechanically stabilized earth (MSE) retaining wall using paper reinforcement taped to a poster-board wall facing. Our project is a part of the national GeoWall Competition presented by the Geo-Institute of the American Society of Civil Engineers (ASCE). The group designed the retaining wall to support the weight of 500 pounds of sand as well as a 60 pound load of sand in a bucket that was placed near the wall facing. The group performed experiments to determine the properties of the backfill material as well as the reinforcement strips. Based on these results, the group designed the wall using standard MSE wall procedures to determine the width of reinforcement strips, spacing between reinforcement, and length of reinforcement. The group has tested various designs and determined the most efficient design to construct at the competition. The competition's time constraints limits the complexity of the design so the simplest and most effective design was chosen. This project represents the first competition that the Civil Engineering Department has participated in and is a good measure of where we stand compared to other engineering departments from around the country.



### Emily Quandt (Psychology)

### Kelly Bruce (Psychology)

### Jaden Houchen (Psychology and Japanese)

### Amanda Layman (Psychology)

### Brennan Mashchak (Psychology and Early

Childhood Education)

**Faculty Sponsor: Tamara Daily, Department of Psychology and Neuroscience**

4:10 p.m., Kolenbrander-Harter Information Center, Room 013

*The Relationship Between Body Image Satisfaction and Body Image Discrepancy in Female College Students*

Despite the growing prevalence of obesity, the ideal female body continues to shrink, leaving many women unsatisfied with the way they look. Although appearance is an issue that impacts people of all ages, students may be at an increased risk of forming negative body images during their college years. This study will investigate the relationship between body image dissatisfaction and body image discrepancy. It is predicted that high levels of two forms of discrepancy (Body Image Self-Ideal and Body Image Self-Other) will correlate with body image dissatisfaction. In this study, female students were first asked to complete a questionnaire that focuses on their body image and body image ideals in order to calculate Body Image Self-Ideal Discrepancy and assess levels of body image dissatisfaction. Once completed, each participant viewed photographs of another participant and were



# SCHOLAR Day Activities

## April 21, 2015

9-9:45 a.m.	<b>Poster Session I</b> , Giese Center for the Performing Arts (Participants listed in program. Breakfast foods will be served.)						
10-11 a.m. <b>Presentation Session I</b>	<b>Start</b>	<b>Chapman 111</b>	<b>Chapman 104</b>	<b>T&amp;H 100</b>	<b>KHIC 013</b>	<b>EBB 203</b>	<b>EBB 206</b>
	10 a.m.	<b>Athletic Training</b> John Bruketa	<b>Writing</b> Gabriella Pishotti	<b>Art</b> Jessica Mae Berner	<b>Sociology/Criminal Justice</b> Joy Raub	<b>Mechanical Engineering</b> Colin Combs, Matt Jones, Lexi Scala, Mark Amabeli	<b>Psychology/ Neuroscience</b> Dekota Toot
	10:20 a.m.	<b>Physician Assistant Studies</b> Kelsey Meyer		<b>Education</b> Amy Achenbach, Mark Allen, Hannah Blackley, Laura Buchanan, Leon Kimmelfield	<b>Exercise Science</b> Rachel Rector	<b>Political Science</b> Courtney Wachal	<b>Mechanical Engineering</b> Eric Spencer, Jarrod Dawson, Dustin Matak, Johnathan Hartong, Taylor Bishop, Alex Reid
	10:40 a.m.	<b>Political Science</b> Ben Todd	<b>Athletic Training</b> Autumn Timko		<b>Criminal Justice</b> Brandon German	<b>Psychology/ Neuroscience</b> Michelle Stiltner, Sam Clarke, Erika Druzine, Chris Holmes, Ben Swope	
11:30 a.m.-12:30 p.m.	<b>Senior Recognition and Honors Convocation,</b>						
12:30-1:30 p.m.	<b>Picnic Lunch for Participants and Guests,</b> Tented Area in the Quad						
1:30-2:30 p.m. <b>Presentation Session II</b>	<b>Start</b>	<b>Chapman 111</b>	<b>Chapman 104</b>	<b>T&amp;H 100</b>	<b>KHIC 013</b>	<b>EBB 203</b>	<b>EBB 206</b>
	1:30 p.m.	<b>MAEL</b> Kourtney Betler	<b>History</b> Megan Clevenger	<b>Psychology/Neuroscience</b> Rachel Horseman, Heather Lee, Clarice Nock, Nicole Simons	<b>Finance</b> Tristin Tokos, Brian Ruhe	<b>Civil Engineering</b> Joshua Pryor, Xuelin Wang, Brad Linerode, Taylor Cline	<b>Biology</b> Seokyeong Yee
	1:50 p.m.	<b>Exercise Science</b> Sean Donnelly, Jason Paulovich, Brendan Graves	<b>Education</b> Caitie Shimp, Jacob Ward, Kelly McMahon, Joshua Scott, Maya Brown				
	2:10 p.m.	<b>Honors</b> Garrett Graber		<b>Japanese</b> Kevin Princic	<b>Athletic Training</b> Christopher Ifantiedes	<b>Political Science</b> Dylan Garritano	
2:30-3:15 p.m.	<b>Poster Session II</b> , Bracy Hall First Lobby and Second Floor Lobby						
3:30-4:30 p.m. <b>Presentation Session III</b>	<b>Start</b>	<b>Chapman 111</b>	<b>Chapman 104</b>	<b>T-H 100</b>	<b>KHIC 013</b>	<b>EBB 203</b>	<b>EBB 206</b>
	3:30 p.m.	<b>Physician Assistant Studies</b> Kelsey Tasker	<b>Psychology/Neuroscience</b> Tyler Lowe, Kristen Green, Lydia Gonzalez	<b>English</b> Gabriella Pishotti	<b>Political Science</b> Bryant Roby	<b>Exercise Science</b> Amanda Wise, Kara Opryzsko	<b>EABA</b> Andrew Rothermel, Nick Popely, Kyle Roberts
	3:50 p.m.	<b>Exercise Science</b> Sarah Schleich, Sean Mohny	<b>English</b> Jamie Laubacher	<b>Education</b> Gabriela Botzman, Paula Kyser, Chloe Bortmas, Alyssa Suffron, Alexis Parsons, Zach Maenz, Kayla Dunlap, Cassidy Ott	<b>Chemistry</b> Amanda Myhal		
4:10 p.m.	<b>Biology</b> Hayley Buzulencia	<b>Sports Business</b> Alysun Daniel			<b>Psychology/Neuroscience</b> Emily Quandt, Kelly Bruce, Jaden Houchen, Amanda Lay- man, Brennan Mashchak	<b>Chemistry</b> Nichole Heaton	<b>Political Science</b> Jack Weber