

April 24, 2015

Schedule of Events

- 10:00 am** **Student Registration and Poster Setup**
Memorial Union, Washburn A & B Lobby
- 10:30 a.m. – 12:00 p.m.** **Fine Arts Performance Session**
Carole Chapel
- 12:00 p.m. – 1:00 p.m.** **Welcome**
Shaun Schmidt, Chair, Apeiron Committee
Memorial Union, Washburn B
- Recognition of Student Designer**
Israel Sanchez
Regina Cassell, Apeiron Committee
- Introduction of Last Lecture**
Jim Martin, Professor of Business
- Last Lecture**
Bill Roach
Professor Emeritus of Business
Memorial Union, Washburn B
- 1:00 p.m. – 2:50 p.m.** **Oral Presentation Session**
Henderson Learning Resources Center
Rooms 107, 112, 303, 304, 307, and 308
- 3:00 p.m. – 5:00 p.m.** **Poster Session and Reception**
Memorial Union, Washburn A



www.washburn.edu/apeiron

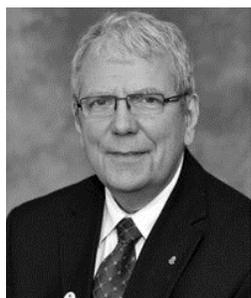
Last Lecture

“Teachers Who Made a Difference in My Life”

presented by

Bill Roach, Ph.D.

Professor Emeritus of Business



Dr. Bill Roach was born during World War II. He earned a B.S. in Mathematics from the University of Notre Dame, an M.B.A. from Northwestern University, and a Ph.D. in Business Administration (Statistics and Management Science) from the University of Michigan. He taught at Washburn University from 1983 until 2014. He has also worked as an actuary in the insurance industry and in regulation. Dr. Roach has been active in university governance, and he has been an active researcher.

He has also worked on LGBT issues at Washburn. His current activities include volunteering at Lawrence Memorial Hospital, playing bridge, and working in amateur radio.

**Memorial Union – Washburn B
12:00 pm**

This lecture is made possible with support from the Washburn University Foundation. This year Dr. Roach has generously requested this contribution be made to the WU School of Business Clubs and Organizations Fund.

Past Last Lectures presented by:

Dr. Mary McCoy	2014	Dr. Jorge Luis Nobo	2013
Dr. Reinhild K. Jenzen	2012	Dr. Howard Faulkner	2011
Dr. William O. Wagnon	2010	Dr. Ron Ash	2009

Schedule of Oral Presentations

(HC = Henderson Learning Resources Center)

Time/Location	Presenter	Title
1:05 pm – 1:25 pm		
HC 107	Mollyanne Gibson	<i>Retinol and Beta-Carotene Concentration in Fruit and Vegetable Supplements</i>
HC 303	Shaun Kelly	<i>The Need for Co-op Health Insurance in the State of Kansas</i>
HC 112	Keval Shah, Zachary Smith, and Michaela Saunders	<i>What Makes Them Click: Gender, Social Media, and the College Audience</i>
HC 308	Tessa Graf	<i>Efficacy of Complementary and Alternative Medical Therapies on Stress and Anxiety</i>
HC 304	Angela Gonzales	<i>T-Town Tacos: The History of Mexican Cuisine in Topeka, 1900-1970</i>
HC 307	Christopher Helt	<i>Divine Intervention and Crime Deterrence: Exploring the Effect of Religious Adherence on Rates of Violent and Property Crime</i>
1:30 pm – 1:50 pm		
HC 107	Jalen Dickson	<i>Solvent-Free Synthesis of Biologically Active Stilbene Derivatives</i>
HC 303	Jordan McDowell and Amira Akacha	<i>Empowering the Lives of Students at Asbury Mount Olive</i>
HC 112	Jeremy Ellison	<i>Detecting Denial of Service Attacks: Data Mining Analysis</i>
HC 308	Shelby Ferguson	<i>Patellar Dislocations in Women: The Causes, Treatments, and the Rehabilitation</i>
HC 304	James Martin	<i>Industrial Wastelands</i>
HC 307	Mudasur Khan	<i>The Impact of Sentence Length on Recidivism</i>
2:00 pm – 2:20 pm		
HC 107	Aaron Stadler	<i>Detosylation of Cyclic Tosylamides using Na/Hg to Form Azamacrocycles</i>
HC 303	Patricia Carrillo	<i>Reproductive Travel: Expanding Definitions of Parenthood or Reinforcing the Status Quo?</i>
HC 112	Jeremy Ellison	<i>Network Neutrality: A Survey Study on Public Awareness</i>
HC 308	Jeffrey Hale	<i>Meniscal Transplantation: Allograft vs. Scaffold</i>
HC 304	Scott Brackey	<i>The Atlantic World Beholds the Rebel Túpac Amaru: Narrative Depictions of the Rebellion in the Andes and the Shaping of Memory</i>
HC 307	Nathaniel Valdivia	<i>Rules of Engagement: Policy or Doing What it Takes</i>
2:25 pm – 2:45 pm		
HC 107	Hai Ping Sun	<i>Further Studies of the Synthesis of Dipyrrrolyl-α,β-Unsaturated Ketone Using Aldol Condensation</i>
HC 303	N. Bennet Bleil	<i>The Role of Barbershops in the Perception of Style and Masculinity</i>
HC 112	Rory MacDonald, Nathan Purcell, Sergio Salas, and William Oliver	<i>Explaining the Gap Between Computer Information Science Enrollment and Employment</i>
HC 308	Lara Doescher	<i>Active vs. Passive Treatment for Iliotibial Band Syndrome</i>
HC 304	Monica Schroeder	<i>Life and Order, Consciousness and Art: Woolf's Jacob and Septimus as "Modern Fiction"</i>

(Insert campus map here)

Fine Arts Presentations

10:30 a.m. – 12:00 p.m.

WTE Denotes Washburn Transformational Experience

► 10:30 a.m. Carole Chapel Moderator: Karen Benda

Reinecke and Romanticism

Caitlin Nicole Ediger, James A. Gutierrez, Meaghan Hartley, and
Krystal Lynn Harry

Mentor: Karen Benda, Music

WTE

This presentation will provide a brief overview of Carl Reinecke's life and most notable compositions as well as explore the history of chamber music. As part of this analysis, Reinecke's Trio for Clarinet, Horn, and Piano, Op. 297, and Trio for Oboe, Horn, and Piano, Op. 188, will be contrasted in order to highlight the means through which Reinecke utilized the romantic style of the time in his chamber music. Each ensemble will play excerpts from both trios, demonstrating the similarities and differences in the movements of the two pieces. After these examples are given, the ensembles will play the movements fully.

► 11:00 a.m. Carole Chapel Moderator: Penny Weiner

Rivers Flow Apart

Vanessa Nunez

Mentor: Penny Weiner, Theatre

Race and race relations are topics that have become uncomfortable to discuss. Over the last few months recent events have led many to believe that society as a whole should reconsider the belief that we live in a post-racial society. In *Rivers Flow Apart*, a friendship is tested through the differences of race and class. My current plan with *Rivers Flow Apart* is to develop the characters and expand the play, dramatizing events that occur before the scene to be presented. I hope to continue writing more plays and other works that explore racial issues.

► 11:30 a.m. Carole Chapel Moderator: Penny Weiner

Always the Optimist

Jamie A. Schartz

Mentor: Penny Weiner, Theatre

Always the Optimist is a play written in my Playwriting class during fall semester of 2014. It is about Naomi, a teenage girl facing the world on her own for the first time. She seeks the help of her older sister, Melody, who is facing her own set of problems.

► 11:45 a.m. Carole Chapel Moderator: Penny Weiner

Unclaimed Baggage

Marissa Nicole Meis

Mentor: Penny Weiner, Theatre

Unclaimed Baggage is a play that focuses on a young girl's struggle toward forgiveness with the help of an unlikely stranger. In this scene, we witness the initial meeting of the main characters. Though there is a difference in age and background, both April and Marge come to understand each other and see how truly important compassion can be. The play is meant to highlight that forgiveness is a road, not a destination. This is the first play I have written and am honored to have it performed for an audience. I have learned a great deal about myself as I developed this piece and hope to expand it into a full length play as I further my theater education.

Oral Presentations

1:00 p.m. – 2:50 p.m.

H denotes University Honors Thesis Project *WTE* denotes Washburn Transformational Experience



Session α

Moderator: Lisa Sharpe Elles

► 1:05 p.m. Henderson, Room 107

Retinol and Beta-Carotene Concentration in Fruit and Vegetable Supplements

Mollyanne Gibson

Mentor: Lisa Sharpe Elles, Chemistry

The importance of dietary phytonutrients such as β -carotene and retinol in cancer prevention, vision, development, and cardiac health has been established. However, the efficacy of fruit and vegetable supplements in providing phytonutrients has not yet been determined. The retinol and β -carotene content in two fruit and vegetable supplements was determined by extracting phytonutrients from the supplements and detecting β -carotene and retinol by HPLC. Quantifying the retinol and β -carotene content of several popular fruit and supplements provides the ability to compare these supplements with fresh fruit and vegetables and groundwork for further studies on the bioavailability and recommended amounts of fruit and vegetable supplements.

► 1:30 p.m. Henderson, Room 107

Solvent-Free Synthesis of Biologically Active Stilbene Derivatives

Jalen L. Dickson

Mentor: Stephen Angel, Chemistry

WTE

Organic reactions, including the synthesis of pharmaceuticals, historically occur in the presence of a solvent. Recently, there are an increasing number of organic compounds reported to form in solvent-free conditions. Research to optimize conditions of the solvent-free Wittig reaction tested different bases, aldehydes with different melting points/reactivity, and the influence of atmospheric moisture. It was found that reactions that afford high-percentage completion and short reaction time were performed in conditions using a low melting point aldehyde and hygroscopic bases while being open to atmospheric moisture. Therefore, in an attempt to connect these concepts, optimized solvent-free Wittig reaction conditions were applied in the synthesis of prospective chemopreventative stilbenoid compounds, (*E*)- and (*Z*)-resveratrol trimethyl ether (RTE). As a result the solvent-free synthetic pathway afforded high yield, short reaction time, and utilized a much more sustainable chemical pathway in comparison to traditional methods of synthesis.

► 2:00 p.m. Henderson, Room 107

Detosylation of Cyclic Tosylamides using Na/Hg to Form Azamacrocycles

Aaron Stadler

Mentor: Shaun Schmidt, Chemistry

The goal of this research was to detosylate a library of azamacrocycles with complete characterization of the products. Tosylated amine, a precursor to the detosylation, was synthesized through tosylation of the amine, allylation, and ring closing metathesis. The initial detosylation method used was reduction using sodium amalgam. Detosylation was unsuccessful using this method and it was suspected that the sodium amalgam was too strong and that the amalgam was forming a sodium alkoxide with methanol. The reaction solvent was changed to tetrahydrofuran. No reaction was observed after allowing stirring at reflux for one week. While the detosylation reaction conditions were varied, side reactions were made in order to synthesize a new cyclic tosylamide to add to the library. Detosylation was successfully completed on one library structure by switching the methodology from reduction to sulfuric acid hydrolysis. The ¹H-NMR spectrum showed that the detosylation was complete with slight impurities. Future research on this subject would include an optimization of the sulfuric acid method in order to proceed to hydrogenation of C=C bonds.

► 2:25 p.m. Henderson, Room 107

Further Studies of the Synthesis of Dipyrrolyl- α,β -Unsaturated Ketone Using Aldol Condensation

Hai Ping Sun

Mentor: Sam Leung, Chemistry

H

One way to improve photodynamic therapy (PDT) is by using photosensitizers with increased conjugation, which allows the photosensitizer to be activated by light of a longer wavelength. The goal of this research is to synthesize an oxophlorin with an expanded conjugation system. Oxophlorin was thought to have the potential to become a useful photosensitizer because it is a derivative of porphyrin, and porphyrin compounds have been successfully used as photosensitizers. A dipyrrolyl- α,β -unsaturated ketone is the key precursor of the expanded oxophlorin and the immediate target of this research. Past attempts in using the aldol condensation or enamine reaction to synthesize a dipyrrolyl- α,β -unsaturated ketone have been unsuccessful. Currently, the aldol condensation is revisited as the reaction to produce the desired compound. Here we report the progress of the aldol condensation reactions. The use of *N*-protected pyrrole ketone with *N*-unprotected pyrrole aldehyde was unable to yield product. Using *N*-protected pyrrole ketone with *N*-protected pyrrole aldehyde was also unsuccessful. Further effort goes towards changing the pyrroles used and the reaction conditions.



Session β

Moderator: Sharla Blank

► 1:05 p.m. Henderson, Room 303

The Need for Co-op Health Insurance in the State of Kansas

Shaun Kelly

Mentor: Barb Quaney, Allied Health

WTE

Kansas currently has the highest number of uninsured residents without healthcare coverage. Even with the Medicare expansion that is being brought up before the legislature, the gap would only increase 183% over the poverty level. This still leaves many Kansans without coverage. There is a need for a co-op healthcare plan that is available to all Kansans that is affordable and allows for access to healthcare.

► 1:30 p.m. Henderson, Room 303

Empowering the Lives of Students at Asbury Mount Olive

Jordan E. McDowell and Amira Akacha

Mentor: Rick Ellis, Learning in the Community

WTE

The Youth Empowerment Program (Y.E.P.) at Asbury Mt. Olive United Methodist Church offers a summer and school year program for at-risk children from a low-income area of the Topeka community. Y.E.P. provides academic and enrichment activities to support the educational and personal success of youth from kindergarten through 12th grade. We have each been with this program for three years where we have provided academic support and mentorship to the students. As the current and future team leaders for the Washburn University students who implement the program we have also had the opportunity to develop programming and events (e.g. history and self-esteem lessons, a clothing and supply drive for the children, etc.) as well as manage volunteers for the organization. In addition to the activities we do specific to the program, we also support the students outside of the program by attending their sporting events and helping them with projects for other things that they are involved in such as Girl Scouts, Young Lions, and programs at their schools. This presentation will describe the Y.E.P. structure and programming; the importance and impact of this program for the community; how we developed sustainable programming and our leadership roles; and, as Social Work majors, how the experience benefitted our understanding of what it means to be a part of the social work profession and the underlying issues that affect our community.

► 2:00 p.m. Henderson, Room 303

Reproductive Travel: Expanding Definitions of Parenthood or Reinforcing the Status Quo?

Patricia Carrillo

Mentor: Sharla Blank, Sociology-Anthropology

Human reproduction cross-culturally is a contested realm, specifically in regards to the use of modern technologies to aid in fertility and conception. As a result of certain countries' restrictions on the use of Assisted Reproductive Technologies (ARTs), some individuals and couples have begun traveling internationally to receive treatment. Reproductive travel has far reaching implications on conceptions of reproduction. Restrictions on ARTs prompt reproductive travel and consequently reinforce Euro-American views on who may become a parent, as well as highlight the inherent power dynamics between donors and recipients.

► 2:25 p.m. Henderson, Room 303

The Role of Barbershops in the Perception of Style and Masculinity

N. Bennet Bleil

Mentor: Cheryl Childers, Sociology-Anthropology

WTE

This ethnographic study examines two phenomena 1) barbershops as a staple within their community and as facilitators of style and 2) how masculinity and identity are enacted through hairstyles. Its theoretical framework is rooted in Goffman's research on the "production of self" and explores how it is played out in a subordinate group-barbershop setting.



Session γ

Moderator: Bruce Mechtly

► 1:05 p.m. Henderson, Room 112

What Makes Them Click: Gender, Social Media, and the College Audience

Keval Shah, Zachary S. Smith, and Michaela R. Saunders

Mentor: Nan Sun, Computer Information Sciences

WTE

We focus on how men and women within the college audience use social media to interact with and influence one another. We build upon the research of others, which suggests men and women utilize social media to communicate for different purposes. By analyzing Twitter data and the results of a survey and of a targeted Twitter-based messaging campaign, we intend to gain deeper understanding of the role of social influencers, by gender, on a college campus. We believe our findings will have implications in the arenas of communications, marketing and information-sharing in the increasingly social and digital society.

► 1:30 p.m. **Henderson, Room 112**

Detecting Denial of Service Attacks: Data Mining Analysis

Jeremy Ellison

Mentor: Cecil Schmidt, Computer Information Sciences

A denial-of-service (DoS) attack generally consists of efforts to temporarily or indefinitely interrupt or suspend services of a host connected to the Internet, and distributed denial-of-service attacks are sent by two or more people, or bots, and denial-of-service attacks are sent by one person or system. DoS attacks are a major problem facing all Internet connected services, and have been a major problem for years. They are a very simple concept, and for that reason are very hard to resolve conclusively. For this reason more research is needed in this area. I will use the KDD Cup 99 dataset for my experiments which is derived from a dataset provided by the Defense Advanced Research Projects Agency (DARPA). I plan to use techniques of data mining to uncover possible patterns that could be used by researchers to remedy DoS attacks in the future.

► 2:00 p.m. **Henderson, Room 112**

Network Neutrality: A Survey Study on Public Awareness

Jeremy Ellison

Mentor: Nan Sun, Computer Information Sciences

Network neutrality is the principle that all Internet traffic should be treated equally. According to Columbia Law School professor Tim Wu, the best way to explain network neutrality is as a principle to be used when designing a network: that a public information network will end up being most useful if all content, sites, and platforms are treated equally. There are obvious constitutional issues to be considered if legislation and regulation is going to be successful. If the public is not properly informed what the issues are that challenge their liberties informed public discussion will not happen. I plan to approach this problem in a few ways. 1) Conduct a survey of the voting population to determine what level of awareness the voting public has regarding the First Amendment, the Internet, and network neutrality, and 2) Conduct interviews with informed individuals in both industry and education to determine their awareness.

► 2:25 p.m. **Henderson, Room 112**

Explaining the Gap Between Computer Information Science Enrollment and Employment

**Rory Robert MacDonald, Nathan D. Purcell, Sergio Salas,
and William H. Oliver**

Mentor: Nan Sun, Computer Information Sciences

WTE

In this study we investigate why people choose computer information science as a major as well as what deters people from it. We collect data through an online survey of people who are already computer science majors and those who are not. We will analyze the survey results and decide what aspects of the field are attracting people and what parts are causing people to choose other majors. With this information we hope to learn what could be done to get more people

interested in the field in order to fill the numerous amounts of jobs that require a computer science background



Session δ

Moderator: Tracie Lutz

► 1:05 p.m. Henderson, Room 308

Efficacy of Complementary and Alternative Medical Therapies on Stress and Anxiety

Tessa R. Graf

Mentor: Michael McGuire, Psychology

H

The 2014 Stress in America Report by the American Psychological Association found that forty-two percent of adults do not feel they are doing enough to manage their stress, and twenty percent are not managing it at all. With stress and anxiety posing major issues for so many, it is imperative to determine which forms of therapy can effectively relieve stress and anxiety. In the present review, research on four complementary and alternative medical (CAM) therapies will be assessed for their effectiveness in the reduction of stress and anxiety. The four therapies include mindfulness, art therapy, yoga, and massage therapy. The studies reviewed apply a variety of methods and measures across a range of populations. The objective of this review is to summarize the present studies' findings demonstrating the use of CAM therapies for the treatment of stress and anxiety. Research findings suggest that increasing the reliability and availability of CAM therapies provides relief for many stress and anxiety sufferers, especially those who have not found relief in traditional medicine.

► 1:30 p.m. Henderson, Room 308

Patellar Dislocations in Women: The Causes, Treatments, and the Rehabilitation Process

Shelby Lynn Ferguson

Mentor: Park Lockwood, Kinesiology

Researchers have indicated that women are four to six times more likely to suffer from knee injuries than men (Rauch, 2001). Research indicates that 3-5% of all knee injuries in women are due to patellar dislocations, or approximately 29 out of 100,000 clinically diagnosed knee injuries each year (Tsai et al., 2012). Factors including hyper-laxity of joints, anatomical abnormalities and decreased hip and core strength increase the likelihood of this injury. Side effects of patellar dislocations can include knee instability, patellofemoral arthritis, and an inability for patients to return to their normal activities (Köhlitz et al., 2013). Over the past decade, physical therapists and physicians have improved surgical and rehabilitation techniques to increase the success rate for patients. The purpose of this literature review and observational research was to examine the prevalence of patellar dislocations in women, and further discuss the treatment options and rehabilitation process.

► 2:00 p.m. Henderson, Room 308

Meniscal Transplantation: Allograft vs. Scaffold

Jeffrey A. Hale

Mentor: John Burns, Kinesiology

WTE

Meniscal injuries are common and are starting to be treated with meniscal transplants in effort to enhance the life of the individual. In recent studies, researchers have looked at the benefits of receiving a meniscal transplant and the difference between a meniscal allograft transplant and the scaffold. There are two main criteria to determine how effective the transplant surgery was, pain rating and reoperation rate. Fifteen articles were reviewed to discuss the benefits and disadvantages of both the allograft transplantation and the scaffold transplantation. With meniscal transplant surgeries becoming more popular, it is important to distinguish which transplantation technique is more beneficial to the patients.

► 2:25 p.m. Henderson, Room 308

Active vs. Passive Treatment for Iliotibial Band Syndrome

Lara Doescher

Mentor: Karen Garrison, Kinesiology

WTE

With initial treatment, passive treatment such as NSAIDS and rest seem to have the most effect on iliotibial pain when compared to active treatment such as stretching and rehabilitation exercises. Some studies have found, however, that a combination of active and passive treatments have been beneficial with initial symptoms as well.



Session E

Moderator: Ian Smith

► 1:05 p.m. Henderson, Room 304

T-Town Tacos: The History of Mexican Cuisine in Topeka, 1900-1970

Angela Gonzales

Mentor: Kelly Erby, History

WTE

This paper presents the history of Mexican food in Topeka by examining how the assimilation and acculturation processes affected early Mexican immigrant food choices. The paper also examines the influences that the early Mexican immigrant had on the Anglo-Topekan community in Topeka.

► 1:30 p.m. Henderson, Room 304

Industrial Wastelands

James Anthony Martin

Mentor: Glenda Taylor, Art

Over the fall semester of 2014, I explored the impact of industrial manufacturing on society and the planet through a series of three sculptures. The first piece is a fired-in-place ceramic and steel sculpture that re-lived the Pittsburgh steel industry collapse. I built a slab roller to make the bricks for the fired-in-place sculpture. It uses a 1958 Cadillac steering wheel that was manufactured in Detroit. The slab roller carried over into project two. It is a series of documentary photos showing the impact of the automobile industry in Detroit. The third sculpture deals with modern consumption and its role in manufacturing. The rate at which we consume forces manufacturers to produce at alarming levels. This drives up pollution and creates more for a throwaway society to waste. The sculpture uses a hand-cranked conveyor belt to carry slab-formed cylinders to the end of the belt where they fall off and break on the ground. This is a representation of how fast we consume and dispose of materials in our society.

► 2:00 p.m. Henderson, Room 304

The Atlantic World Beholds the Rebel Túpac Amaru: Narrative Depictions of the Rebellion in the Andes and the Shaping of Memory

Scott M. Brackey

Mentor: Kim Morse, History

H

George Orwell's dystopian proverb, "Who controls the past controls the future: who controls the present controls the past," encapsulates the efforts on the part of the Spanish in the depiction of José Gabriel Túpac Amaru and his rebellion. A war "fought in the realm of memory," the Spaniards portrayed Túpac Amaru as an anomaly, coercing people into his cause rather than championing popular sentiment. The narrative of the uprising as merely a hopeless and isolated conspiracy proved effective in mitigating interest in knowing or, more importantly, repeating the past. Controlling the memory of Túpac Amaru and his rebellion was necessary for maintaining colonial power and order. Moreover, the representations of Túpac Amaru in Atlantic newsprint and Spanish reports reflected the authors' own political and social objectives as well as their worldview attitudes to indigenous peoples and their place in society. Ultimately, the narratives and interpretations reveal more about the commentators than a historical Túpac Amaru.

► 2:25 p.m. Henderson, Room 304

Life and Order, Consciousness and Art: Woolf's Jacob and Septimus as "Modern Fiction"

Monica L. Schroeder

Mentor: Kara Kendall-Morwick, English

WTE

Believing that "in or about December, 1910, human character changed forever," Woolf envisioned a present and future that required a new sort of literary form, one that would resonate with the modernist character, and express human consciousness. In her novels, *Jacob's Room*

and *Mrs. Dalloway*, Woolf uses the characters of Jacob Flanders and Septimus Smith to prove that the characteristics and challenges of the age make the expression of human consciousness even more imperative than it had been in past eras. Indeed, examining the characters of Jacob and Septimus through the lens of the principles laid out in her essay “Modern Fiction,” allows for deeper insight into Woolf’s belief that fiction should seek to express the intersubjective nature of human consciousness, something Woolf believed both necessary and beyond the achievements of past literary ages. Unlike Jacob, who remains trapped in linear notions of time, Woolf believed that if life was to be understood, and new literary art to be created, the modern consciousness must rethink its notions of time and self-expression. Ultimately, I show how Woolf uses Jacob and Septimus to guide her readers in the expression of their own consciousness, thereby enabling them to reconcile the seeming rupture of the past and present, transcending time and recognizing, like Septimus eventually does, that time and beauty, past and present are all fluid concepts.



Session ζ

Moderator: Stephanie Decker

► 1:05 p.m. Henderson, Room 307

Divine Intervention and Crime Deterrence: Exploring the Effect of Religious Adherence on Rates of Violent and Property Crime

Christopher Michael Helt

Mentor: Steven Cann, Political Science-Geography

In this empirical study, I analyze nation-wide crime and religious adherence data to answer the question of whether higher numbers of religious adherents in a given area results in a decrease in the rate of violent and property crime for said area. The counties which contained 100 cities randomly selected from a nation-wide list of United States cities with a population of 100,000 or higher, were analyzed to determine the rate of crime in said county as well as the number of religious adherents in the selected area. Multiple regression analysis yielded the finding that no correlation exists between the number of religious adherents in an area and the rate of crime, and that certain other variables prove to be superior indicators of crime proliferation.

► 1:30 p.m. Henderson, Room 307

The Impact of Sentence Length on Recidivism

Mudasar Khan

Mentor: Steven Cann, Political Science-Geography

In this study, I analyzed the length of time a person served in prison by the likelihood of that person to be reconvicted of another crime once released from prison. The total number of prisoners analyzed was more than 30,000. The sample size was larger, but parameterized based on missing data, and individuals who died between the five-year span of the original data collection done by the Bureau of Justice statistics. Ultimately, there was a weak statistical association that showed the inverse of the direct hypothesis. The more individuals stayed in prison, overall it was less likely they would be reconvicted of another crime.

► 2:00 p.m.

Henderson, Room 307

Rules of Engagement: Policy or Doing What it Takes

Nathaniel W. Valdivia

Mentor: Stephanie Decker, Sociology-Anthropology

WTE

The law of war has developed into internationally agreed-upon standards set out about what can and cannot be done by soldiers for the prevention of ill treatment and torture of soldiers on both sides ensuring innocent civilians are not killed unnecessarily. After the defeat of the Iraqi army, civilians of Iraq became involved as insurgents, yet the US forces had trouble distinguishing civilians from insurgents. The military command structure responded by loosening the Rules of Engagement by defining the rules so broadly that any activity by Iraqis could be used to justify using force against them to prevent rising US casualties. Soldiers from the Iraq Veterans Against the War (IVAW) describe in their testimonies the civilian casualties that resulted from official policy. Examining IVAW narratives is especially useful to the literature on behavior in war crimes and official policy as the veterans were not only witnesses to the Iraq War, but also perpetrators within the war and crimes mentioned. This research was done by collecting and analyzing testimonies given by members of IVAW during their Winter Soldier event. Through this method I found that members of IVAW used narratives to rationalize their conduct as a result of positive self-concepts following policy while in the presence of media or audiences fused with a hidden pervasive environment ignoring policy and rules with ambiguous orders.

Poster Presentations

3:00 p.m. – 5:00 p.m.
Memorial Union, Washburn A

H denotes University Honors Thesis Project *WTE* denotes Washburn Transformational Experience

1

Nicaragua Service Experience - The Voice of Poverty and Post-War Delegation

Shelby N. Fehrenbacher

Mentor: Rick Ellis, Learning in the Community

WTE

Nicaragua is the second poorest country in Latin America, preceded only by Haiti. Unsurprisingly, Nicaragua also has a huge proportion of rural populations who farm or find other self-employed businesses to sustain their families. ProNica, an organization built upon creating solidarity between Nicaragua and North America, funds many much-needed projects within the country. These projects include orphanages for the at-risk youth of the streets, maternal houses that cut mortality and morbidity of pregnant women and their babies, and small business loans for education and self-sustaining employment. Our delegation had an opportunity to experience the richness of Nicaragua history (including the effects of war and post-war efforts) and help evaluate where that history has taken the people of Nicaragua and where continued improvements must be made.

2

Cognitive, Social, and Physiological Impairments Caused by Mild Traumatic Brain Injury from Contact Sports

Alex K. Dowty

Mentor: David Provorse, Psychology

WTE

This activity is a literature review designed to provide awareness of the effects mild traumatic brain injuries can have on athletes participating in contact sports.

3

How Cultural and Societal Expectations Shape Body Image among African-American Women

Aquia D. Pusch

Mentor: Angela Duncan, Psychology

WTE

More than one third of the U.S. population suffers from obesity. Non-hispanic blacks have the highest age-adjusted rates of obesity (47.8%). Women who fall into this category may become unsatisfied with their bodies. Reports suggest that the self-esteem and body image of black women is not impacted by obesity in the same way that white women are affected. Traditionally, black culture has been more accepting of a larger silhouette. However, new research suggests a reduction in cultural resistance among black women regarding an internalization of society's thin ideal. As a result, there is a higher level of eating disorder and body dissatisfaction among black

women. The purpose of this literature review is to understand differences in body image among black women.

4

Evidence Based Research Project: Vitamin D and Calcium Supplementation in the Prevention of Stress Fractures

Cassandra R. Roberts

Mentor: Karen Garrison, Kinesiology

WTE

The instances of stress fractures in the female population is an ongoing discussion. Studies have evaluated the nutritional aspects and their correlation to increased or decreased risks of stress fractures, but most of those studies were based on small numbers of subjects and inadequate controls. This literature review gathers results and information from six scholarly articles in order to gather pertinent information regarding nutrient intake and the effects of the adequate amounts of calcium and vitamin D on female athletes. The nutrients that were studied and thought to have impacts on bone mass include calcium, vitamin D, diets high in fruits, vegetables, and iron. The leading risk factors that were discussed within the articles included eating disorders, malnourished diets and endocrinological problems. All of the scholarly reviewed articles focused on females and the impact nutrition can have on their overall bone mineral density, bone mineral content and how this can ultimately predispose them to stress fractures.

5

The Elmslie-Trillat Procedures Effect on Patellofemoral Alignment and Long-Term Development of Osteoarthritis

Shelby Lea Tajchman

Mentor: John Burns, Kinesiology

WTE

Anterior knee pain is common and can result from a variety of mechanisms. In most cases the pain is associated with patellofemoral instability, subluxation, and dislocation of the patella. In recent studies there has been an established relationship between increasing subluxation and worsening pain. This literature review discusses results and information from fifteen scholarly and non-scholarly articles regarding the best treatment procedures used to correct patellofemoral instability and pain. The two most common procedures to correct patellofemoral instability are the Roux (modified) and the traditional Elmslie-Trillat Procedure. The most common factors that cause patellar instability in patients include: genu recurvatum, trochlear dysplasia, patella alta, ligament laxity, excessive quadriceps angles, tight lateral structures, and/or weakness of medial restraints. In addition, improper biomechanics of the knee joint resulting in patella maltracking, indirect trauma such as twisting and/or direct blows to the knee can result in traumatic patellar dislocations. These surgical procedures relieved pain and increased patient function during daily activities but risk the long-term complication of osteoarthritis. Long-term results of procedures are a vital portion of the clinical outcomes, thus it is important to determine which procedure limits the risk of osteoarthritis.

6

Washburn University Campus Wide Awareness of Student Health Services

Nathan T. Wellendorf, Tamara L. Boten, and Mallory A. Schmidt

Mentor: Tracy Routsong, Communication Studies

WTE

This is a Senior Capstone project that stems from a campus initiative needed by the Student Health Service Center. The concern is a lack of campus wide awareness of health services that are offered to students, faculty, and staff at Washburn University. This is the first stage of a multi-staged project whose purpose is to determine the campus awareness of the health center and its services, and then a campaign to reach an audience based upon this portion of the project. An outcome of this study would be the creation of a marketing strategy and health campaign designed and tailored to the particular campus audience deemed in need of information. This project is the first step in a multi-tiered interpersonal health campaign. This initial survey will help determine what services the university campus feels informed about, and which needs to be bolstered. The Student Health Center is interested in increasing their overall use numbers and in determining best practices in getting information to their constituents. This survey is essential for the second stage of the project, which is to create a targeted campaign geared at increasing the number of those who use the SHC, or who use particular aspects of the SHC - with conversations from the Director of Student Health Center after the survey to determine the most desired approach.

7

Anterior Cruciate Ligament Reconstruction in Skeletally Immature Patients

Kristin N. Bell

Mentor: Karen Garrison, Kinesiology

WTE

Adolescents with growth remaining should utilize the traditional transphyseal reconstruction technique rather than the physeal-sparing technique to reduce long-term complications.

8

Nonprofit Volunteer Management: How to Effectively Organize Volunteers that Want to Give Back

Amanda Kennedy

Mentor: Michael McGuire, Psychology

H WTE

When non-profit organizations look at selecting and placing volunteers, it is crucial that a volunteer management plan is in place to ensure that volunteers are placed in correct positions and the volunteer experience is fulfilling. I reviewed the literature that deals with both successful and unsuccessful non-profit organizations while also reviewing literature on volunteer assessment tools. Based on research, this volunteer management plan describes the most effective volunteer assessment tools and how to effectively place volunteers in the organization. A major factor contributing to the success of the organization is to identify volunteer skill sets as they align with the needs of the organization. The plan will provide nonprofits an effective way to assess whether their volunteers are placed in the most impactful and fulfilling positions.

9

Family Service & Guidance Center: Improving the Lives of Youth

Danielle Oliva

Mentor: Julie Boydston, Psychology

WTE

My community service will be done at Family Service and Guidance Center, where I will be shadowing three people in different departments. One of the department is the crisis center also known as CRP (Crisis Resolution Program) where I will shadow employees as they work with clients who maybe going through a crisis and working one-on-one with clients. Another department I visit will be the ECIP (Early Childhood Intervention Program), where preschool children will be coming in everyday to work on behaviors. Finally, I will be shadowing CPST (Community, Psychiatric, Support, and Treatment) which assists older children on getting a job, paying bills, and other important task in life. Each department is followed by a plan that the clients' team has come up with to further life lessons for children.

10

Learning from the Future: My Internship at TARC and Early Head Start Working with Children

Lauren E. Grimes

Mentor: Julie Boydston, Psychology

WTE

I am interning at TARC, working with children at Early Head Start, the PACT program, and the SPARKK program. I interact with children when I am there and try to enhance their learning and social abilities. The children at Early Head Start are infants and toddlers. The children through the PACT and SPARKK programs range from infants to 16 year olds. Every time I interact with them I use skills I have learned in past Child Development and Psychology courses I have taken at Washburn.

11

Identifying Mammalian Interactions and Cloning of the Herpes Simplex Virus Type I UL34 Protein

Blaze V. Witten

Mentor: Susan Bjerke, Biology

H WTE

Herpes Simplex Virus (HSV) type 1 is a double-stranded DNA virus that causes cold sores in and around the mouth and nose. Utilizing the specific viral protein of UL34, HSV-1 is able to exit the host cell and re-infect additional cells. UL34 is known to aid the virus in the envelopment process, but the other proteins that UL34 interacts with in the host cell are unknown. Experimental pulldowns of UL34 with mammalian lysate were performed on an SDS PAGE and data was collected identifying possible UL34-host protein interactions. Although the host proteins bound to the UL34 were not readily isolated, new procedural techniques and applications were created for future experiments. Moreover, the pGEX vector, digested and purified in this experiment will be used to selectively identify the host proteins that interact with the viral UL34, once the host proteins are consistently identified.

12

Personalizing Postpartum Discharge Education

Hailey W. Winterburg

Mentor: Lara Rivera, School of Nursing

WTE

When a new mother is being discharged from the hospital, she has a vast amount of information given to her on both newborn- and self-care. Often times she feels overwhelmed by this, when all she wants to do is go home and rest. The purpose of this project was to create a tool that allows for a more individualized, patient centered approach to postpartum discharge education. This postpartum discharge checklist allows the new mother to pick and choose from a list of topics that are subjective between patients, with a mandatory portion that is gone over by the nurse. By implementing this tool it will allow for a more streamlined discharge process as well as an increase in patient satisfaction due to its personalization.

13

*Identification and Annotation of Gene Features in *Drosophila biarmpies* Contig59 Using a Computational-Genomics Approach*

Jonathan Nelson

Mentor: Takrima Sadikot, Biology

The genome of *D. melanogaster* was completed in 2000 and it has since become a model organism. This fly is one of the most studied species in biology and serves as a model organism for studying many developmental and cellular processes common to higher eukaryotes. In this study, the well-annotated *D. melanogaster* was used as a reference for conservation-based analysis to annotate and identify all the genes present within the contig59 sequence of *Drosophila biarmpies*. Using a number of open-source computational genomic tools for sequence alignment, gene-prediction and *Drosophila* genome browsing, the *Drosophila biarmpies* contig59 was examined for relevant genomic elements such as genes, pseudogenes and repetitive elements. Contig59 corresponds to the dot chromosome of *D. biarmpies* and was observed to contain three putative genes, all in the order and minus orientation, consistent with that found in *D. melanogaster*. Our analysis revealed that of the three genes predicted within this contig, CaMKI erroneously appears in this region only due to shared-conserved domains with CamKII. Thus, in our final conclusion, we state that the *Drosophila biarmpies* contig59 only contains two genes, CamKII and Zyx, which are both well conserved between *D. melanogaster* and *D. biarmpies*.

14

Workflow Model, Digitization, and Summary Data of Washburn University's Herbarium Collection

Jonathan Nelson and Cheyenne C. Bartz

Mentor: Jason Emry, Biology

Many herbarium specimens take a physical toll through the years of storage, and thus warranting repairs. Ongoing systematic studies require existing specimens to be annotated to reflect changes in taxonomic classification and phylogenetic position. Therefore, a safer way to record, store, and access data from herbarium specimens has warranted the use of digital equipment. The

digitization process involves typing in the data for each specimen as annotations are complete and then scanning each specimen to yield a digital picture. Both the picture and the respective data are uploaded to an online database and made available to researchers or other interested parties. The primary goal of this research was to develop a workflow for acquisition, annotation, repair, and digitization of specimens in the Washburn Herbarium. A second goal was to create a status update that summarized all of our records of our existing records and collection history. Taken together, this work will ultimately improve the quality and accessibility of records and ensure that the Washburn Herbarium remains relevant in the digital age.

15

Interprofessional Communication: Safe Patient Handling

Jeri Rose Holwick

Mentor: Kathy Ure, School of Nursing

WTE

Interprofessional communication is the collaboration of health care providers who are a part of a specific patient's care. Physical therapists evaluate the patient to determine the best way to transfer a patient and how much assistance will be needed. Nurses and nurse aides provide patient handling for the majority of time the patient is in the facility. Nursing students are provided with a short one day orientation on safe patient handling at a local facility, whereas physical therapy assistant students spend a semester obtaining knowledge based on safe patient handling. This project will compare level one and level two nursing students. Level two nursing students were provided with a short, one day orientation on safe patient handling at a local facility. Level one students will participate in a two day safe patient orientation at Washburn, provided by physical therapy assistant program staff and students. Level one and level two nursing students will take a test to show that overall, level one nursing students scores surpassed the test scores of level two nursing students. The two day orientation emphasized safety of the patient and safety for the healthcare professional.

16

Suicide Awareness Education for Spouses of Fort Riley

Kelita A. Box

Mentor: Marilyn Masterson, School of Nursing

WTE

The current trend in suicide rate for the U.S. military is increasing. It is therefore imperative that strategies to reduce this occurrence be implemented. Thus, this research study focuses on suicide awareness and early identification of at-risk individuals through the education of military spouses in reducing the incidents of suicide. In so doing, a pamphlet geared at educating the spouses of Fort Riley about warning signs of suicide and available resources for suicide prevention was created. This pamphlet was distributed among the spouses at a family readiness group (FRG) tea party, where depression and suicide was the topic of the event. During the tea party, spouses shared their personal experiences and their thoughts on suicide prevention. For future research on the topic of suicide prevention in the military, it is hoped that more spouses will be reached in the campaign for suicide awareness. Therefore, several events such as the FRG tea party are needed and individuals on Fort Riley who are apart of health promotion, must become involve in the campaign for educating spouses on suicide awareness.

17

Conversion Disorders

Christina Horvatic

Mentor: Cynthia Turk, Psychology

WTE

Conversion Disorders are a controversial topic in the field of psychology. They have been called many names throughout history. Causes of the disorders have been attributed to many different sources as well. Diagnosis and treatment of the disorders are among the biggest issues present today.

18

Student Perceptions Regarding Inter-Professional Education and Appropriate Models of Implementation

Lainey M. Faulkner and Jamie Pfannenstiel

Mentor: Zach Frank, Allied Health

WTE

Inter-professional education is an education system that involves the collaboration of two or more disciplines in a joint learning environment. Many models have been used to implement an inter-professional way of thinking into allied health educational programs. While there is research regarding the effectiveness of specific models, there is little to no research regarding allied health student perceptions regarding inter-professional education. Therefore a research survey was developed to gain knowledge of student interest of inter-professional education. Based on the results of this study and review of the literature, it is recommended that classroom simulations be used to introduce inter-professional education into allied health programs.

19

Using Various Art Therapies to Assist the Recovery of Adults with Mental Illness: My Internship at Valeo

Tina Brackman

Mentor: Julie Boydston, Psychology

WTE

Valeo behavioral health center is a treatment facility staffed to offer mental health and recovery services to adults in the Topeka area. Their vision is to keep Behavioral Health Care consumer driven, to close the gap on mental health needs and services offered, and provide early screening for mental health. My internship in the Expressive Therapies Department allowed me to work with adults in the C.A.R.E. program. This program gives participants an opportunity to use their creative expression as a form of therapy.

20

Washburn University Psychological Service Clinic: Using Every Tool Necessary to Improve Quality of Life

Diana Lynn Williams

Mentor: Julie Boydston, Psychology

WTE

Established in 1978, Washburn University Psychological Service Clinic is a university and community based mental health service. The clinic offers a range of testing and individual therapy, in addition to therapy groups. The psychological clinic provides opportunities for undergraduate students to bridge from earning a BA and MA and to becoming student therapists. It offers counseling services as well. The clinic makes available affordable services. This service is offered to anyone over the age of 18 in and around the Topeka community. Washburn University Psychological Service has allowed me the experience of solving problems and dealing with certain issues. Learning from the graduate students and their study groups allowed me to see how "healthy relationships" and communication develop among people. Another group does sports psychology including soccer and creative expressions through art therapy. This has allowed me to become more aware of people's behaviors and the issues they face on a day to day basis.

21

From Positive Connections to Washburn Engage: Making a Difference in the Community and on Campus

Micaela R. Sands

Mentor: Rick Ellis, Learning in the Community

WTE

During my first two years at Washburn University, I completed over 900 hours of community activism and engagement work through my association with Learning in the Community (LinC). I started my community work at a non-profit HIV clinic called Positive Connections. Through my work there I realized that there was a need for HIV prevention and awareness at Washburn University. This realization prompted me to approach the staff at the organization about expanding their programming. As a result, my co-workers and I established regular HIV testing days at the College Hill apartment complex near Washburn. It was this work that instilled in me the importance of Washburn and the community working together to have a positive impact on the lives of everyone who calls Topeka home for all or part of the year. This led me to my second project as the High Impact Community Engagement Practices Initiative's High Impact Intern. Within this role, I was charged with the development of Washburn Engage, a website that connects college students, faculty, and staff to opportunities in the community for service, internships and research. This presentation will explore the impact my experiences had on the community, the campus and my own learning.

22

Positive Dynamics & Game On: Encouraging Kids to Be Healthy

Alexis V. Yelland

Mentor: Rick Ellis, Learning in the Community

WTE

During the 2014-15 academic year, I worked at Eisenhower Middle School through the Washburn Literacy Education Action Program (LEAP). While there, I worked as an after school language arts tutor, but also helped facilitate a group called Positive Dynamics. The purpose of Positive Dynamics was to show elementary and middle school children how to cook basic food items while educating them about the importance of nutrition. The lessons demonstrated that with just a little knowledge and time, they could create something that tastes good and is healthier than fast food or processed food. Additionally, at the end of each lesson, the children were able to eat a healthy meal before going home at the end of the day. This was important because over 90% of the children who participated in the program were from economically disadvantaged homes and food insecurity issues were not uncommon. On Thursdays, we also created another “club” called Game On which took the health aspect a step further. Game On allowed the children in the program to engage in physical activities while learning about the need for exercise. In addition to physical exercise, the activities we created encouraged the children to be interactive with each other and use critical thinking skills. This presentation is going to be an overview of my experience working with the children in these programs and how I helped make a positive impact in our community.

23

Exploring Cardiovascular Disease in Costa Rica

Ashley DeFries, Taylor M. Mayhew, Rachel Marie Dongog, Kathryn E. Taylor, and Tess E. Ingermanson

Mentor: Lori Edwards, School of Nursing

WTE

Our group researched cardiovascular disease affecting the Costa Rican population. We decided to do a health promotion on early cardiac warning signs and symptoms. We created culturally sensitive brochures, written in Spanish, to provide more information and to help us with the education we provided. We also created a few educational posters. We held two health clinics and saw nearly 300 individuals during these days. Our health promotion and education were well received by those we served. We gave them the tools needed to recognize and react to symptoms that could be life threatening.

24

LEAP at Oakland Community Center: Changing Children’s Lives Through Education and Mentoring

Wyatt Robinett, Emma Schemm, and Kristen Stinnett

Mentor: Rick Ellis, Learning in the Community

This presentation will cover the implementation and impact of the Literacy Educational Action Project (LEAP) at Oakland Community Center. This is an after school program that focuses on education and mentoring of elementary school children from low socioeconomic backgrounds. There are 30 children who participate in the program and they are supervised by five adult

volunteers from Washburn University. An average day consists of a small snack while reading, tutoring (if needed), an organized activity, and an independent activity (free time). During our time with the program, we have seen the children improve tremendously in spelling, social sciences, and independent thinking. Developing these skills and improving understanding in these subject areas is vital because they are often missed in the general education system. For example, many of the children were not able to name a state at the beginning of the school year, now each child can name at least five. In addition to the improvements we have seen in the academic part of the program, we have seen small improvements in behavior. Many of the children come from single parent homes and often have difficulties in their personal lives. Due to this we have learned how to handle negative emotions and situations and help the children if they are “acting out.” This program does not just provide an educational experience for the children to help them succeed in school, it is also a safe haven for them.

25

SRWC: Promoting Student Wellness and Success

Lance J. Warren

Mentor: Julie Boydston, Psychology

WTE

I am an intern at Washburn University's Student Recreation and Wellness Center. I work with Ben Marx, Assistant Director of Fitness and Wellness, and Joel Bluml, Associate Vice President for Student Life. I spend my afternoons meeting working with Ben by conducting fitness assessments for students and then designing fitness prescriptions based on their individual needs. I also co-lead a new wellness seminar called WuWellness twice a week. I am working with both Joel and Ben by creating a wellness curriculum designed to use campus resources to help students succeed in college. The goals of this internship include: designing the new wellness curriculum, continuing to develop skills such as instructing proper ways to exercise, creating fitness prescriptions, conducting fitness assessments, and holding motivational interviews.

26

Integrating Spanish into Nursing

Amanda Ann Allen, Caysie J. Beetley, Sarah Brock, and Cari Lou Eichholz

Mentor: Jane Robinson, School of Nursing

WTE

The purpose of this project is to examine the need for incorporating basic Spanish vocabulary and speaking skills into the educational curriculum to health care providers in order to accommodate the ever-increasing Hispanic population. There is a shortage of healthcare providers who speak Spanish in relation to the ever increasing Hispanic population. This is evidenced by the review of literature that will be presented to our faculty advisor, Jane Robinson. The articles indicate a communication barrier and high potential for error when providing care for limited English-proficient patients. Patient safety is compromised due to the inability to effectively communicate. Basic Spanish skills with an emphasis placed on medical terminology would be beneficial to healthcare providers in an effort to establish safe care practices.

27

Establishment of Growth Kinetics for *Vibrio vulnificus* ATCC 27562 in Preparation for Bactericidal Assays Involving Amino Acid Based Surfactants

Danielle R. Steffey

Mentor: Andrew Herbig, Biology

Vibrio vulnificus is a potential fatal pathogen to humans. This bacterium causes primary septicemia through ingestion of contaminated oysters or shellfish. Individuals can also contract this *V. vulnificus* if open wounds are exposed to marine waters. This Gram negative, halophilic bacterium has been known to cause gastroenteritis, necrotizing fasciitis, and sepsis. This study was a preliminary step in the process of performing a bactericidal assay to determine the effects of using amino acid based surfactants as antimicrobial agents. A normal growth curve for type strain *V. vulnificus* ATCC 27562 was established to document the growth rate and patterns seen in the laboratory setting. This will later be used to compare results from the bactericidal assay. The results from this study indicate that *V. vulnificus* grew normally in the laboratory setting under closed conditions. The optical density versus time graphs show growth patterns that are similar to those constructed by others studying altered growth patterns of *V. vulnificus*. The plate count data showing the colony forming units per milliliter was found to be lower than expected for the 240 minute time point. Future plans are to perform bactericidal assays with several amino acid surfactants.

28

Servant Leadership in Religious Institutions

David M. Stevens

Mentor: Michael Russell, Psychology

WTE

Servant leadership is a style of leadership that originated in writings of Greenleaf in 1970, 1972, and 1977. Servant leadership emphasizes that leaders be attentive to the concerns of their followers, empathize with them, and nurture them. Servant leaders put followers first, empower them, and help them develop their full personal capacities. Servant leaders are also ethical and lead in ways that serve the greater good of the organization, community, and society at large. This present study is aimed at determining if religious institutions practice servant leadership within their organization. Participants will include both the religious leaders and their congregation and they will be asked to complete a survey to determine if the religious leaders are currently engaging in servant leadership. Because servant leadership is mainly concerned with empowering, empathizing, and nurturing followers, it is hypothesized that the leaders of these religious institutions will be engaging in servant leadership. The findings of this study will be discussed in terms of the degree of the relationship between servant leadership and religious leadership.

29

Effect of Carbonation on Lactate Levels During a Wingate Sprint Series

Christopher Teagan King and Dalan M. Pittz

Mentor: Tracy Wagner, Biology

WTE

A quick search on the Internet pulls up multiple articles that explore the benefits and detriments that drinking sodas may have on athletic performance. Supplement companies sell “performance enhancing” compounds that are designed to neutralize the effects of acid production during exercise (versus increasing acid levels by consuming carbonated beverages.) The Wagner lab has studied the effect of consuming carbonated beverages on lactate levels in the blood, during endurance protocols. These protocols allow time for the blood to flow to other muscles, which would dissipate the effects of localized lactate levels. This study is being done to determine if similar results are seen when subjects are asked to perform a series of sprints with increased resistance added. Resistance levels will be based on subject weight and fitness level. Subjects will be asked to pedal at a minimum of 60 RPM until the sprinting period, at which time the resistance will increase and they will be asked to pedal as rapidly as possible. After each sprint interval, lactate levels and heart rate will be recorded. The subject will complete two trials, one drinking Powerade made with plain water and one with carbonated water. We will then compare these two sets of trials to determine if lactate levels and maximal performance data are altered between the two treatments.

30

The Nicaraguan Healthcare System

Shelby Lynn Ferguson

Mentor: Rick Ellis, Learning in the Community

WTE

Nicaragua is the least densely populated country in Latin America, with approximately six million residents residing on 130,000 square kilometers. Hospitals and clinics are sparse, especially the further you travel from the capital of Managua. Nicaraguans depend on the three tiered healthcare system: the wealthy receiving care at private hospitals, state workers in state-run hospitals, and the poor receiving care from public, usually underequipped clinics. Programs like Casa Materna, and local natural medicine doctors are working to decrease the healthcare shortage in the country.

31

Bold as Love: Examining the Authenticity of Academic Advisors and Students’ Overall Satisfaction with Their Advising Experience

Taylor Michelle Moore

Mentor: Michael Russell, Psychology

WTE

Inarguably, a factor tied to students’ success while studying at a university is the guidance received from their academic advisor. What classes to take, when to take them, and perhaps, even delving into career and personal goals are all important topics. The purpose of this study is to gauge Washburn University students’ overall satisfaction with their advising experiences and to ascertain whether their advisor fits the Authentic Leadership persona. An Authentic Leader promotes both positive psychological capacities and a positive ethical climate, to foster greater

self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, and fostering positive self-development (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). It is hypothesized that the more authentic students rate their academic advisor, the higher level of satisfaction with their advising experience. The implications of the present study will allow for greater understanding of the relationship between academic advisors and students at Washburn University. The results will be used to determine whether authentic leadership is a desirable leadership style for academic advisors and whether it tends to lead to higher overall satisfaction with advising sessions.

32

Kansas Kids @ GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs)

Sierra E. Valdivia

Mentor: Michael Gleason, Leadership Institute

WTE

At Kansas Kids @ GEAR UP I was able to assist the staff with their programming events such as campus visits, ACT prep courses, FASFA help, and more. My biggest project within my internship that influenced the most positive change is the Mock Interview Day I constructed. This is a program I created to put on for high school students to learn about how to interview for jobs. I faced a couple of issues with the wide range of personalities on our team. I was able to think about the concepts utilized in my Leadership classes to help me effectively overcome this problem. I also observed leadership in the staff members especially as they utilized Rawls' theory of Distributive Justice. They worked to give equal opportunities to those kids who may not otherwise have had the access. This internship has helped me to ease into the work world as I am able to reflect back on classroom concepts used in my job. GEAR UP also reinforces my passion for higher education student affairs as I prepare to go to graduate school.

33

Perceptions of Trait-Based Leadership between Faculty and Department Chairs

Haley A. Hanson

Mentor: Michael Russell, Psychology

WTE

Trait Theory of Leadership proposes that the effectiveness of a leader is dependent on the leader possessing certain personality traits. The five traits most commonly associated with effective leadership are intelligence, self-confidence, determination, integrity, and sociability. It can be expected that the perceived personality of a leader is what determines, in part, the effectiveness of that leader. Therefore, it is important to know how a leader perceives himself/herself as well as knowing how others perceive a leader. The participants in the present study were sent a link directing them to the online survey. The participants were asked to complete the Leadership Trait Questionnaire (LTQ) a 14-item survey. Each of the items on the LTQ were to be answered on a Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). Chairs were instructed to respond to the 14-items in relation to themselves. Non-chairs were asked to consider their Department Chair when completing the survey. The findings of the present study will provide an opportunity for Chairs to reflect on how their personality may affect their ability to fulfill the duties associated with their positions.

34

Assessing Adaptive Leadership Among Washburn University Faculty

Kelsee Mae Wright

Mentor: Michael Russell, Psychology

WTE

The concept of Adaptive Leadership was proposed less than a decade ago. Not unexpectedly, Adaptive Leadership has lacked empirical support due to its novelty. Adaptive leadership is based on the idea that change is necessary for an organization to thrive. To date, no known research has directly examined the leadership qualities of Washburn University faculty. Given that the climate of Washburn University can be expected to change over time, it is essential for faculty to adapt to those changes. The purpose of the present study was to determine the extent to which adaptive leadership exists among Washburn University faculty. In order to assess interested individuals, an email was sent to all faculty currently employed at Washburn University. The email contained a link directing them to the online survey. Participants were asked to complete a survey containing 66 items associated with adaptive leadership. The 66 items ask the participants to report on the frequency and intensity of various behaviors. New and valuable research on adaptive leadership will be gained from the results of the present study. More specifically, the findings of the present study will reveal the extent to which Washburn University faculty are able to adapt to change.

35

Adaptive Leadership Qualities in Washburn Athletic Coaches

Jeremy J. Carlisle

Mentor: Michael Russell, Psychology

WTE

Adaptive Leadership is defined as the practice of mobilizing and motivating people to tackle tough challenges and thrive (Heifetz, 2009). In athletics, adaptive motivation could very well be the difference between winning and losing. In this study, I ask the coaches and athletes of Washburn University athletic teams to complete a survey assessing how often the coaches of said athletic teams demonstrate particular adaptive leadership qualities. Each participant was sent an email that contained a link to the Adaptive Leadership Questionnaire, a 30-item survey assessing particular adaptive leadership qualities. Coaches were instructed to consider themselves when completing the questionnaire while athletes were instructed to consider their coach. As a result of conducting this study, it will be possible to determine the degree of agreement and disagreement between coaches and players. Subordinate feedback is a very important part of being an adaptive leader, and this study will provide feedback in a very non-critical, productive way. The findings of this study will, hopefully, give the coaches of the Washburn University athletic teams an awareness of certain leadership qualities that they possess. More importantly, it could show them the leadership qualities that they think they show often, but in reality do not show.

36

Assessment of Adaptive Leadership within the Washburn Student Government Association

Jared C. Dechant

Mentor: Michael Russell, Psychology

WTE

Adaptive Leadership is a relatively new theory which essentially focuses on the capability of an individual or group being able to respond to changes. The key concept in this theory is that leaders and groups who possess adaptive qualities will be able to thrive in a changing environment. The purpose of this study was to assess the leadership qualities of the Washburn Student Government Association (WSGA). The adaptive qualities of leaders within WSGA were assessed based on the perception of students, both inside and outside of the organization. Participants completed the Adaptive Leadership Competency Profile 2.0 through an online survey format. I hypothesize that members of WSGA will have a higher perception of adaptive leadership within the organization, and that students outside of WSGA will have a lower perception in comparison. The results of this study can be useful to the upcoming administration, as elections for the upcoming year took place not long before this study was done. Additionally, this study contributes to the limited amount of research that has been done on this topic.

37

Assessing Adaptive Leadership Toward Faculty and Chairs

Autumn O. Fitten

Mentor: Michael Russell, Psychology

WTE

Adaptive leadership is described as a set of strategies and practices that can help organizations and people in them break through gridlocks, accomplish deep change, and develop the adaptability to thrive in complex, competitive and challenging environments. In the present study, I will determine how faculty in the College of Arts and Sciences perceive Department Chairs as adaptive leaders. Participants were sent a web link to the questionnaire via email. Faculty completed the Adaptive Leadership Questionnaire, a 30-item survey where participants answered questions on a scale of 1-strongly disagree to 5-strongly agree. The study will give insight into whether Department Chairs give useful direction to themselves and their team. It will also help us understand how the chairs' leadership affects the faculty performance. The findings of this study will enable the faculty to see how their leader(s) affect the team's performance and their own personal performance. Lastly, it will give the department an opportunity to make improvements.

38

FYE Peer Educator Adaptive Leadership Assessment

Chance B. Barrow

Mentor: Michael Russell, Psychology

WTE

WU101 is a course required of almost every incoming first year student. The purpose of the program is to aid students in acclimating to the college environment and assist them with their needs in order to further their academic success. The purpose of the project is to assess peer educators with respect to their adaptive leadership abilities. Adaptive Leaders are individuals

who are capable of responding to change. In an academic setting, it is often required for a peer educator to address and respond to changes. The results of the proposed study will determine the extent to which peer educators are adaptive leaders. To date, almost no empirical research exists in the area of adaptive leadership. This study will be the first completed research using the Adaptive Leadership Competency Profile with undergraduate students. WU 101 instructors will be contacted and asked to encourage their WU 101 students to participate in the proposed study. Participants will also be recruited through the PY100 (Basic Concepts in Psychology) subject pool. Participants will be asked to complete an Adaptive Leadership Competency Profile, a survey that contains 66 items associated with adaptive leadership. This project will be beneficial to the Washburn University campus on where it is excelling and possibly identify those areas where improvement can be made.

39

The Role of DbpA in E. coli Ribosome Assembly

Sarah Walker

Mentor: Lisa Sharpe Elles, Chemistry

WTE

Ribosomes are essential, which means that the steps leading to ribosome formation, ribosome assembly, are also essential. Current antibiotics that are designed to disrupt ribosome function are becoming less effective as bacteria develop resistance genes. Therefore, new antibiotics could be designed to target enzymes that participate in ribosome assembly, such as RNA-modifying enzymes or helicases. With this potential in mind, our goal is to understand more about ribosome assembly, specifically of the 50S large subunit, by studying DbpA, a DEAD box ATP-dependent RNA helicase that binds to pre-50S subunit particles. The precise role for DbpA in vivo has not been determined because the knockout cell line grows similarly to wild type cells. In this experiment we further examined the knockout cell strain under various environmental stressors and antibiotics. However, none of the conditions produced a difference in cell growth. If a growth difference is identified, then the cells will be analyzed for ribosome assembly defects using sucrose gradients and ribosome profiles.

40

Accept Yourself, Love Yourself. My Experience as a "Girls on the Run" Coach

Nicole Marie Sloan

Mentor: Julie Boydston, Psychology

WTE

This presentation discusses my experience coaching and mentoring two small groups of elementary school girls, ranging in grades from 3rd-5th, in a program called Girls on the Run. Girls on the Run offers young girls ways to empower themselves and give them the tools to create a source of self-confidence through team building, thought provoking, and self-reflective activities. The goal of the program is to inspire girls to be joyful, healthy and confident using a fun, experience-based curriculum which creatively integrates running. This program is offered through the YWCA of Topeka.

41

Empowering Youth: Asbury Mt. Olive Y.E.P. (Youth Empowerment Program)

Adam Edward Siemieniewski

Mentor: Kristine Hart, Learning in the Community

WTE

My Community Service WTE project was to serve as a tutor, youth counselor/mentor and STEM coordinator for the Youth Empowerment Program (Y.E.P.) at Asbury Mt. Olive Methodist Church. This summer and school-year program provides academic and enrichment activities to support the educational and personal success of at-risk children from a low-income area of the Topeka community. While all of my roles with this program were important, it was the development and implementation of science, technology, engineering and math (STEM) activities with these children that was both the most challenging and the most rewarding. This presentation will describe the Y.E.P. structure and programming; the importance and impact of this program, especially focusing on the STEM curriculum; and, as an Education major and future teacher, how the experience has benefitted me and affected my perspective on teaching and learning.

42

Fostering Knowledge: Empowering High School Students at Topeka West

Nicolette Rodriguez

Mentor: Kristine Hart, Learning in the Community

WTE

Topeka West High School, a USD501 public school located in Topeka, KS, has an Extended Learning Center (ELC) that provides multiple areas of support for academically at-risk students. This includes tutoring, credit recovery courses, ACT test prep instruction, among other services. During my time at the ELC, I primarily served as a tutor and academic mentor to struggling learners. This presentation will contain general information about Topeka West, the ELC, and the work I did on a daily basis. I will explain my specific work tutoring students, as well as support and encouragement I provided in the classroom. Additionally, I will provide details about the impact of this program on the community within the context of the work I did with the students, specifically in relation to how this work addresses poverty in our community.

43

Course Perception – “One Size” Does Not Fit All

Dawn M. Jensen

Mentor: Michael Russell, Psychology

WTE

Previous research has shown that a “one size fits all” type of course/instructor evaluation form, in fact, does not fit “all”. Research shows that many factors can influence the ways that students evaluate their professors. To date, no single form has been found to produce valid or reliable results when applied across the entire campus community. The purpose of the present study is to determine (1) if significant differences exist between professors and their students in terms of item essentiality, (2) whether significant differences exist between students within a particular course in terms of item essentiality, and (3) whether there are significant differences between students across different disciplines in terms of item essentiality. Participants identified a course they were currently enrolled in or teaching. Each participant was then asked to identify 10 items

in each category that he or she thought were essential in evaluating the identified course. The results of the present study will be discussed in terms of the degree to which individuals differ in the degree to which they believe an assessment item is useful when evaluating a college course.

44

Identification and Annotation of Gene Features in *Drosophila biarmipes* Contig54 using a Computational-Genomics Approach

Jacob F. May

Mentor: Takrima Sadikot, Biology

The goal of this project is to annotate genes in the fruit fly, *Drosophila biarmipes*, using *D. melanogaster* as a reference species. More specifically, we will analyze a long stretch of DNA sequence within contig54 of *D. biarmipes* and compare it to *D. melanogaster* for the presence of genomic features. This region is approximately 45,000 bases in length and is postulated to contain seven different genes. Sequence analysis and data collection will be carried out using a number of open-source computational genomic tools for sequence alignment, gene-prediction and *Drosophila* genome browsing. The data files and resources for this project are available through the Genomics Education Partnership (GEP) sponsored by Washington University in St. Louis. Data analysis and interpretation will require careful screening of the DNA sequence of interest, identification of gene markers and comparison of the predicted gene features to a reference *D. melanogaster* DNA sequence. A detailed project report will be submitted to the mentor and GEP for their data repository.

45

The Treatment of Myositis Ossificans: A Literature Review

Rebecca Mary Maasen

Mentor: Park Lockwood, Kinesiology

H

Myositis ossificans is an injury in which bone fragments grow in the belly of a muscle. This abnormal bone growth is an error in the body's healing process after a traumatic impact to a muscle. A deep muscular bruise or repeated impacts to the same area can lead to a development of these bony deposits. There is no way to predict whether myositis ossificans will progress after an injury, but once the bony deposits have started to collect they can lead to a decreased ability to use the injured muscle and joint, pain and weakness. Acute treatment immediately following the injury has been well supported, however, after the bony mass has progressed for approximately two weeks the most effective treatment is unclear. Acetic acid phonophoresis, extracorporeal shock-wave therapy, acetic acid iontophoresis, dry needling, and surgical excision are the treatment options that will be evaluated.

46

Experiences in Sea Turtle Conservation

Hai Ping Sun

Mentor: Kellis Bayless, Biology

WTE

Sea Turtle, Inc. is a non-profit organization that focuses its efforts toward the rehabilitation and conservation of sea turtles and education of the public. The purpose of our trip to South Padre Island was to gain hands-on experience in sea turtle conservation and to learn about the lifestyle of endangered sea turtles and current human rehabilitation efforts. Our activities involved building a corral for the protection of sea turtle eggs, working on the Sea Turtle, Inc. facilities, and cleaning the beaches in order to help prepare for the 2014 nesting season.

47

Why Some Engage in Non-Suicidal Self-Injury and Others Do Not

Zoe G. Brown

Mentor: Michael Russell, Psychology

WTE

I began this literature review with the intent of finding out why particular people are more inclined to self-injure than others. The point of this inquiry would give therapists the knowledge about where to direct their energy to help those who self-injure. Non-suicidal self-injury (NSSI) is not uncommon, but researchers have yet to isolate definitively its cause(s). Through my research, I found what they think could be key contributing factors: emotion dysregulation, specific personality traits (e.g. negative urgency), environmental/social factors, body disregard, higher pain threshold, and less aversion to self-injurious stimuli. Based off of these main themes I read about, my conclusion is that future research and analysis should be concerned with altering the patients' perceptions and conducting longitudinal studies, not in trying to find a pharmaceutical treatment for NSSI. Of great interest should be body disregard and the personality traits. Ultimately, more research into self-injury will determine what the biggest contributor to the practice is, but the current literature base provides a clear picture of the direction that research should take.

48

*Influence of an Outbreking Herbivore, *Omphalocera munroei*, on Recently Formed Patches of the Common Paw-paw*

Taylor Gentry, Steven James Clary, and Andrew I. Euler

Mentor: Rodrigo Mercader, Biology

Relatively little is known regarding the potential for herbivorous insect to act as the main regulatory factor of plant populations. Following the removal of the invasive Amur honeysuckle, *Lonicera maackii*, from the Karyle Woods (Shawnee Co, KS) the native common paw-paw, *Asimina triloba*, proliferated. In 2012, a population outbreak of the native herbivore asimina webworm moth, *Omphalocera munroei*, was identified on these plants. *O. munroei* is a specialist on plants in the genus *Asimina* and in Kansas it is ecologically monophagous on *Asimina triloba*. Damage levels during the outbreak year were measured across a grid and nine paw-paw patches were established for long term observation. Work performed in 2012-2013 indicated that *O. munroei* caused exceptionally high levels of defoliation and preferred larger paw-paws. Whether

these defoliation levels and pattern will continue or lead to population regulation remain unknown. Here we report that defoliation levels in 2013-14 exceeded those observed in 2012 and that differences in defoliation observed in 2012 impacted growth rates in 2013 -14 and decreased the likelihood of survival for the plants through 2014. Complimentary cage studies also indicated that herbivory by *O. munroei* directly affects growth in the common paw-paw, rather than the moth simply being attracted to stressed plants. Together these results show a strong potential for *O. munroei* to regulate paw-paw populations.

49

Forest in the Rice Paddy

Christina M. Seeley, Tina Ruecker, Addie E. O’Connell, and Anthony D. Whitfield

Mentor: Brian Ogawa, Human Services

WTE

Dr. Shoma Morita, a Tokyo psychiatrist, pioneered Morita Therapy in the early 1900s. Influenced by Zen Buddhism, Eastern philosophy, and medical science, Dr. Morita’s approach was initially developed as a treatment for anxiety-based disorders (shinkeishitsu), but its central focus is on holistic well being, inherent healing processes, and natural contextual treatment. Western culture has framed mental health intervention and recovery in aggressive and confrontational language. Commonly used phrases such as “conquering fears” or “battling anxiety” are often employed. Morita Therapy, however, views these “disorders” as a natural part of human existence and the desire for life (sei no yokubo), suggesting that to eradicate them is unnecessary, unrealistic, and impractical. Our WTE group made a presentation at the professional seminar sponsored by the River Phoenix Center for Peacebuilding, “Morita Therapy: Practitioner’s Introduction to Major Therapeutic Goals and Key Methods for Individual Counseling” in Gainesville, Florida on April 9, 2015. This poster session displays the highlights of that presentation.

50

Data Entry at Easter Seals Capper Foundation

Madison Wieggers

Mentor: Rick Ellis, Learning in the Community

WTE

The Easter Seals Capper Foundation provides programming and services for individuals with disabilities and their families with the goal of successfully supporting them to live, learn, work, and play in their communities. My Community Service WTE project involved working with the Topeka Easter Seals Capper Foundation's development and fundraising staff. During the approximately 18 months I have been with them, my primary role has been to manage and update their donor database. This presentation will describe the organization and its services, the details of the project I managed, the importance and impact of the program (especially focusing on the role that fundraising plays in supporting the organizational mission), and how the experience has benefitted my own learning and understanding of my place in the community both as a Washburn student and in my future profession.

51

Pilot Study of Electrical Stimulation in a Fall Prevention Program for Elderly Individuals

Chelsea A. Jamison

Mentor: Jean Sanchez, Allied Health

WTE

As people age, they lose muscle mass. The first type of muscle fiber strength lost is in fast-twitch muscle fibers. Fast-twitch muscle fibers participate in actions that require a fast response time, such as maintaining balance. This loss in fast-twitch muscle fibers is one reason why older adults are more likely to experience falls, which can cause slow-healing injuries. Despite the naturally occurring loss of fast-twitch muscle fibers, scientific evidence demonstrates humans can reduce the rate of decline in muscle mass with exercise. In rehabilitation, the goal of fall-prevention programs is to encourage strengthening and conditioning to improve the balance in older adults. However, it may be possible to create a more effective fall-prevention program through the use of electrical stimulation, an intervention commonly used in physical therapy clinics that stimulates muscle contractions. An important aspect of electrical stimulation is that it excites fast-twitch muscle fibers first. Therefore, electrical stimulation as an adjunct during the patient's exercises may be a quicker, more effective way to prevent falls and improve balance. This research project is a pilot study that explores whether electrical stimulation used in conjunction with an exercise program in the elderly population improves balance more effectively than exercise alone.

52

Bods Feeding Bods: Providing On-Campus Health Awareness and Services that Address Hunger and Nutrition Issues in our Community

Sara Escandon and Kelsey A. Rose

Mentor: Rick Ellis, Learning in the Community

WTE

Bods Feeding Bods is an umbrella organization that contributes to the overall health, wellness and awareness of the Washburn University community by addressing hunger and nutrition issues that affect the campus and the local, national and global world in which we as students, faculty and staff live. Our goal is to ensure the sustainability of Washburn University's initiatives that are committed to being responsibly involved in addressing hunger and nutrition issues both on and off campus. Bods Feeding Bods is an advisory board made up of Washburn University students, faculty and staff who are committed to the alleviation of hunger. The organization was established in August 2014, and supports several initiatives at various stages of development on the Washburn campus right now. These initiatives include The Exchange, Oxfam America, and Campus Kitchen. The Exchange is an on-campus food pantry located in the basement of Henderson that provides meal plan options for students, faculty, and staff, as well as their families if needed. Oxfam America is an international relief and development organization that creates lasting solutions to poverty, hunger, and injustice which has teamed up with the LinC Scholar/Bonner Leader program at Washburn. Lastly, Campus Kitchen is an initiative that is coming soon that will provide our campus community with hot meals.

53

Isolation of Bacillus subtilis Bacteriophage from Soils

Kim Montague and Rachel Beiker

Mentor: Andrew Herbig, Biology

Bacteriophage are viruses that specifically infect and replicate inside bacteria. Bacteriophage are ubiquitous in nature and, at an estimated 10³⁰ to 10³² plaque forming units, are the most abundant microbe on earth. We sought to isolate and characterize bacteriophage that specifically infect the soil-dwelling bacterium *Bacillus subtilis* and related species. Soil samples from four different locations on the Washburn University campus (koi pond, union lawn, fountain, and the Morgan Hall construction site), as well as commercial potting soil were collected. We prepared suspensions of bacteriophage by adding water to each of the soil samples. Five mL of the aqueous layer was removed and incubated with rich medium for 24 hours at 37 °C while shaking to promote germination of *Bacillus* spores and release of bacteriophage. Samples were passed through a filter and the filtrate was combined with a liquid culture of *B. subtilis* as host. The *B. subtilis*/phage mixture was combined with TY top agar, poured on an LB plate and incubated at 37 °C for 48 hours. Plaques formed on both the potting soil and fountain plates. Two different plaque phenotypes were observed on the potting soil plate, while a single phenotype was obtained from soil by the fountain. We are currently working to purify bacteriophage from each of the plaques via serial dilution. Future research will involve determining the host range of each bacteriophage as well as their molecular characteristics.

54

Educating the Community About Interpersonal Violence

Kelsey A. Rose

Mentor: Rick Ellis, Learning in the Community

WTE

Through my time at the YWCA in Topeka, I have led groups and given presentations on interpersonal violence. I've interacted with middle school classes, high school clubs, collegiate organizations, community groups, addictions centers, and correctional facilities. My efforts work to bring awareness to the issues of abuse and violence, educate people about all the dimensions of violence, share resources, and advocate for healthy relationships. For example, at the women's correctional facility in Topeka I have led groups for more than 300 women, 90% of whom have been in abusive relationships. The class is an opportunity to help them heal from past relationships and avoid future abusive relationships.

55

Applied Behavioral Analysis in Children and Adolescents with Autism Spectrum Disorder

Yates C. Cristine

Mentor: Julie Boydston, Psychology

WTE

This is a brief presentation of my experiences observing and providing Applied Behavioral Analysis services to families with children who have autism spectrum disorder in and around the Topeka area and what I learned from this experience.

56

Washburn Psychological Services: Gaining Insight about Healthy Relationships, Performance Enhancing Skills, and Creative Mediums

Valerie A. Harms

Mentor: Julie Boydston, Psychology

WTE

During my field experience at Washburn's Psychological Services in Henderson, I worked with the graduate students projects in the community. There are three different groups, each with a different focus. One group focused on Healthy Relationships and Domestic Abuse. This group focused on the sorority houses on campus and educated them on cues of an unhealthy relationship. Another group worked with the Washburn women's soccer team and helped use mental cues/skills to develop performance enhancing groups called PEGS. The third graduate group focused on creative mediums and mental blocks with artists. The purpose of this presentation is to describe my experiences in working with each group, my roles and responsibilities (as well as the research that is similar to the graduate groups I am working with), and my knowledge on the psychological procedures with different emphases on the respective topics.

57

The Chinese Dream

Andrew J. Vogel

Mentor: Bob Beatty, Political Science-Geography

This capstone project is an examination of the Chinese Dream. This capstone explains what the Chinese Dream is and what are the Chinese dreams for China. Through surveys and interviews, it explores the visions of the Chinese to better understand what shapes China and the Chinese. The results will provide a thorough understanding of the Chinese Dream and will provide key insights into China. This capstone examines through secondary sources Xi Jinping's idealistic key slogan "Chinese Dream" (中国梦) from the CCP's official Chinese perspective and compares it to interpretations of the Chinese Dream from western experts on the subject. Then, through both surveys and interviews, this capstone asks Chinese from different geographic areas what are their interpretations of the Chinese Dream. In conclusion, this study aims to target what are the dreams and visions of the Chinese, which could then be used as a platform for course design or for further study in pursuit of a Ph.D. in international studies.

58

A Student Lobbying for Students

Elaine Guadalupe Januszka

Mentor: Lauren Edelman, Leadership Institute

WTE

Individual participation is key to any efficacious democracy. Every democratic government has many moving parts: the legislators, revisers, staff, and lobbyists. Lobbying can take various forms, all in an attempt to secure their clients interests. At Little Government Relations I have been able to participate in the lobbying process first hand. The Kansas Legislature of 2015 debated a very controversial bill regarding the Student Data Privacy Act, an act that would render the Kansas Communities That Care Survey obsolete.

59

Sex, Drugs, and Impulsivity

Baylee N. Kampfe

Mentor: Julie Boydston, Psychology

WTE

The concept of impulsivity has been studied in certain mental disorder diagnoses such as ADHD. However, this concept has not been looked at in a non-clinical population. Those who possess a high level of impulsivity have been shown to participate in risky behaviors. Through examining three separate variables of impulsivity, alcohol consumption, and participation in risky sexual behaviors, this study explores this concept further. In this study, it is hypothesized that there will be a strong correlation between those who display higher levels of impulsivity and high levels of both alcohol consumption and participation in risky sexual behaviors.

60

Justifying Violence: The Use of Prioritization in Debate

Ian M. Mikkelsen

Mentor: Kevin O'Leary, Communication Studies

WTE

This study examines how violence is justified through the application of priorities as well as the deployment of ethical claims.

61

Exploring the Benefits of Joint Task Forces in Law Enforcement

Dawson J. Saia

Mentor: Erin Grant, Criminal Justice-Military Science

WTE

This study was a qualitative investigation on the benefits of having Joint Task Forces in multiple jurisdictional law enforcement agencies. The study was aimed to compare the working relationships between law enforcement agencies on the local, state, and federal level by interviewing actual law enforcement officers in the Joint Task Forces and the administrators above those officers. Observed in this study was how well working relationships were between agencies, the success rate in solving crimes by the Joint Task Force, and if the resources within the Joint Task Force were useful to all the agencies involved.

62

Chapultepec Hill: The Heart of North America

Nalini Johnson

Mentor: Miguel Gonzalez-Abellas, Modern Languages

WTE

Chapultepec Hill, in the heart of Mexico City, has been home to Aztec kings, Mexican presidents and even an Austrian Emperor and his wife. This bi-lingual poster presentation explores the various land use patterns on this forest land over the centuries, such as a grand European-style castle, a military college, a battleground in the U.S.-Mexico War and as the setting for Mexico's cry of independence from Spain. The material gathered represents various perspectives, including excerpts from modern literature, pre-hispanic poetry, and contemporary civic writing.

The aim is to make the case that this small hill is indeed the heart of North America, beating life-blood across northern lands, in the form of its people, and claimed through historic events and land uses, such as the setting up of Tenochtitlán, and the shared heritage of Canada's indigenous cultures. Today, this living monument to the history of North America continues to connect the histories of the peoples of North America through its very own Museum of Cultures.

63

Positive Pathways Program: Assistance for At-Risk Youth with the Benefits of Mentorship

Zachary C. Perez

Mentor: Julie Boydston, Psychology

WTE

Positive Pathways Program works with people aged 16 to 24 who have been involved in the juvenile detention program. These people are at a disadvantage in learning professional and life skills that are necessary for independent living. In my internship with Big Brothers Big Sisters of Kansas, I saw how mentorship can offer a sense of normalcy and stability, allowing the clients to learn necessary life skills and avoid negative pressures where they may occur.

64

The Labeling Masquerade: Examining How Accountability in Phrasing Influences Our Perceptions of Others

Taylor Michelle Moore

Mentor: Jericho Hockett, Psychology

WTE

The more we, as humans, become aware and familiar with our unconscious motivations, the more we can stop ourselves from acting on autopilot and redirect our actions to mirror our beliefs. The power of subtle linguistic cues can prevent even private unethical behavior by invoking people's desire to maintain a self-image as good and honest (Bryan, Adams, & Monin, 2013, 1001). I hypothesized that when self-relevant nouns are used to describe a character the participant will judge the character's behavior more harshly and as a permanent aspect of his or her personality, than if a verb was used. Participants were randomly assigned a vignette with the character Jack labeled as either "a cheater" or "cheats a lot." They reported their feelings of warmth towards him, how they believe Jack views himself, and their perception of Jack's likelihood of changing his behavior. An overall test of conditional effects was non-significant. However, some near significant results led to follow up independent samples t-tests which showed significance with warmth and permanency of phase consistent with my hypothesis. Generalizability is limited because of the small sample size. Partially supported hypotheses provide evidence that helps me to understand how phrasing influences perception of others and how those perceptions shape feelings, actions, and behavior towards them.

65

Grade Level Reading in Topeka

Chaiya Zahara

Mentor: Rick Ellis, Learning in the Community

WTE

The United Way of Greater Topeka has partnered with The National Campaign for Grade Level Reading. This is a collaborative effort to ensure that more children in low-income families succeed in school and graduate prepared for college, a career, and active citizenship. On average, 55% of children entering kindergarten in Shawnee County do not have the basic skills necessary to start learning. Those who start behind often stay behind and are less likely to graduate high school. Children who are not proficient in reading and math by sixth grade comprise 60% of the students who will not graduate from high school. This presentation will describe the program and the impact that it is having on the Topeka community.

66

Perceptions of Technology in the Classroom: A Nontraditional Student Perspective

Dallas B. Hathaway

Mentor: Tracy Routsong, Communication Studies

WTE

The following study examines the perceptions of nontraditional students in regards to technology use within the classroom. A quantitative survey was distributed which assessed students general knowledge about technology, the technology used within the classroom, and the level of comfort in relation to Washburn University's online learning platform Desire2Learn. The Unified Theory of Acceptance and Use of Technology was applied as a framework for this study to determine if students were anxious while using various technologies within the classroom.

67

No One Else Can Take Your Place: Factors Predicting LGBT Suicide Risk

Chelsea E. Cates

Mentor: Jericho Hockett, Psychology

WTE

Many studies have found that suicide rates are higher in lesbian, gay, bisexual, and transgender (LGBT) individuals than in heterosexuals (e.g., Plöderl, et al., 2010; Mathy et al., 2011). Previous research has linked family history, parental support, and peer victimization to LGBT suicide rates (e.g., Espelage et al., 2008; D'Augelli et al., 2005). Internalized homophobia has also been associated with LGBT suicide, depression, and low self-esteem (Barnes & Meyer 2012). To extend the previous research, the current study conducted a survey which used the biopsychosocial model as a framework to discover which of the previously examined factors most highly correlates with LGBT suicidal ideation: biological, psychological, or social factors. It was hypothesized that psychological factors would be the strongest predictors of LGBT suicidal ideation. Data was analyzed using a hierarchical regression analysis. Biological factors were found to predict suicidal ideation, social factors were not, and psychological factors were found to most strongly predict suicidal ideation, above and beyond biological and social factors. Thus, suicide prevention methods should target biological and psychological factors in LGBT individuals.

68

The Gender Dichotomy Effect: Mental Health in Gender Consistent and Inconsistent Individuals

Murray Heikes

Mentor: Jericho Hockett, Psychology

WTE

According to previous research, gender-inconsistent individuals (i.e., those who do not conform to social gender norms) are more likely to have poorer mental health than gender-consistent individuals (Plöderl & Fartacek, 2009; Strong, Singh, & Randall, 2000). Additionally, research has shown that sexual-minority individuals are more likely to have poorer mental health quality than heterosexual individuals due, in part, to gender roles/norms (Hamilton & Mahalik, 2009; Kashubek-West & Syzmanski, 2008; Syzmanski & Carr, 2008; Syzmanski & Ikizler, 2013). The purpose of the current study was to assess the differences in mental health (i.e., self-esteem and depression) based on conformity to gender roles, gender identity, and sexual orientation. I hypothesized that gender-inconsistent individuals would have poorer mental health than gender consistent individuals. The study found that gender consistent individuals had significantly higher levels of self-esteem and marginally significant lower levels of depression than gender inconsistent individuals. Furthermore, non-heterosexual individuals had significantly lower levels of self-esteem and significantly higher levels of depression than heterosexuals. Though our generalizability is limited, these findings suggest that individuals who do not conform to gender roles/norms may have poorer mental health than those who do. Practically speaking, therapists may integrate this information into their therapeutic methods.

69

Tardigrade Abundance and Diversity in the Canopy of Eastern Kansas

Kaylyn Renee Hobelman

Mentor: Jason Emry, Biology

Tardigrades, also known as water bears, are aquatic invertebrates measuring from 100-1000 μ m. Tardigrades are remarkable for their ability to survive extreme temperatures and pressures for extended periods of time by entering a cryptobiotic state in which they dehydrate and metabolism is temporarily stopped. This adaptation allows tardigrades to thrive in a multitude of environments. Limno-terrestrial tardigrades live in pockets of water in mosses and lichens. For the last 164 years limno-terrestrial tardigrade research has primarily utilized samples obtained within a collector's reach from the ground. The focus of this project was to discover tardigrades in the unexplored forest canopy. Our project aimed to test whether tardigrade populations exist in the canopy, and if so, are they uniform in comparison to each other, with respect to height. Samples of moss and lichen were collected over a 10 week period at 8 different sites in eastern Kansas. Samples were taken from increasing height levels on the trees and tardigrades were extracted from the samples in the lab. It was found that tardigrade populations increase with the height on the tree. The genus richness also was found to increase, possibly due to tardigrades being transported by wind or 'tardigrade rain'. Future directions for this study could include testing the theory of increased abundance due to wind and rain transportation of tardigrades by looking into the effect of canopy structure on tardigrade abundance.

70

How Does Social Media Influence Political Behavior In Individuals?

Steven J. Stanek

Mentor: Tracy Routsong, Communication Studies

WTE

The purpose of this study is to figure out the role in which social media has taken in individual's political behavior. The reasoning for doing so is seeing how social media has become a form of communication for individuals to keep up with what is happening in the news, media, and society. Politics is one of the major topics discussed via social media, and has found a way to shape an individual's perspective of their own political beliefs, what news stories to keep up with, their willingness to participate in voting in elections, and expressing their own personal beliefs on certain topics. The role of this study is to further explore how social media sites, such as Facebook and Twitter, have become major communication sources for politics and political news stories within the United States.

71

Canopy Cover of College Campuses from Eastern Missouri to Western Kansas

Connor M. Lutz and Ties Thompson

Mentor: Jason Emry, Biology

Urban forestry has become the subject of increased research due to its role in the local ecosystem and impact on the well being of individuals who reside in the community. This study used i-Tree software to investigate how the land covers of seven schools on similar latitude compare with each other as well as their immediate surrounding communities. Canopy cover ranged from 8.27% to 23% of campuses and from 14.5% to 48% of their corresponding communities. The community tree cover reflects the general pattern of eastern Missouri to western Kansas loss of tree cover. The campuses are less so and are also distinct from their communities due to their infrastructures containing a number of large buildings and other impervious surfaces. Future studies should address the impact these campuses have on their communities with the movement of some species through natural corridors. Campuses with lower cover than their communities may serve as an inhibitory zone to the movement of animals, an effect possibly due to both a lack of canopy cover and an increase in impervious surfaces.

72

Overcoming Language Barriers when Providing Health-Related Education

Rachel Menager

Mentor: Lori Edwards, School of Nursing

WTE

When one cannot effectively communicate with a patient, it can be extremely difficult to be assured that the patient has received the intended message clearly. McCarthy, Cassidy, Graham & Tuohy (2013) state that the establishment of the nurse-patient relationship is dependent on the ability to communicate and share common understanding, and that language is the cornerstone of communication. The purpose of this project was to compile suggestions to improve communication between Washburn University nursing students studying abroad in Costa Rica and the non-English speaking patient population. A review of the literature was conducted to determine the effects of the presence of a language barrier on patient care. Based on the aim of

finding ways to ease the language barrier between nursing students and the patient population, a 10-question survey was created. These surveys were distributed to the Washburn nursing students in Costa Rica following a patient-teaching experience during the study abroad. All of the surveys included learning Spanish as a way to ease the language barrier. Based on this result, a short Spanish elective could be created for the nursing students participating in the next study abroad trip to Costa Rica, and the effectiveness of this class could be evaluated using a modified version of the survey used in this study.

73

Further Advancement and Optimization in the Synthesis of Dipyrromethanes with a β -Azo Linkage to Nitrobenzene

Stephen Toth

Mentor: Sam Leung, Chemistry

Porphyrins have been studied a significant amount in the medical science community due to their use as photosensitizing agents in a type of treatment known as photodynamic therapy (PDT). Over the past fifty years or so, several different kinds of porphyrins have been synthesized in order to achieve maximum potency in regards to the treatment. However, many of these synthetic macrocyclic organic molecules fall short of being considered an “ideal photosensitizer.” One of the main qualities of an ideal photosensitizer is that it has a strong absorption in the red/near infrared region of the electromagnetic spectrum (600-800 nm). It has been shown that porphyrins with meso-azo linkages to a nitrobenzene have an absorption at ~692 nm. This research project aims to determine if this absorption remains the same or increases when the azo linkage is moved to a β -position of the porphyrin. A series of experiments was performed in order to determine the optimal conditions for the reaction previously investigated by McKee and Sheutz to produce a pyrrole with an azo linkage in the β -position and the subsequent reaction to synthesize the acetoxy-methylpyrrole, which was made successfully in high yield. This acetoxy-methylpyrrole with the azo linkage would then be reacted with an α -free pyrrole to make a dipyrromethane, constituting half of the target porphyrin.

74

Caregiver's Cry for Help: Elicitation of Themes from Alzheimer's Online Support Groups

Adam S. Dilley

Mentor: Mary Pilgram, Communication Studies

WTE

Alzheimer's disease is the most costly disease in the United States (Alzheimer's Association, 2015). This financial burden is on top of the mental burden that comes from taking care of a loved one with Alzheimer's. Many caregivers use online support groups as means to vent frustration or seek advice. Others use the forums to discuss stories and anecdotes that range from being positive to negative. Some posts depict a bit of humor, in an attempt to lighten others' moods. There are many reasons one would visit online support groups. This study is a content analysis of three online support groups for Alzheimer's caregivers to discover the reasons or “themes” behind each individual's post. This review consists of using pre-established themes in order to discover if the same themes are relevant. Previous studies found the common themes to reflect caregivers' needs to: seek control in their lives and the way in which caregivers regained and maintained the control in their lives.

75

A Java Program to Explore FAT-32 and NTFS File Systems

Fritz Helbert

Mentor: Bruce Mechtly, Computer Information Sciences

I wrote a Java program to examine Windows file systems for forensic analysis. The program is written as an educational tool to show how directories and files are stored on a device. The program shows the raw data on the device in hexadecimal, highlighting the parts that are connected to a particular file or directory. Deleted files and directories are shown if they have not been overwritten. A search feature allows one to search for strings and numbers, showing which directory or file they belong to, if they do.

76

Topeka Police Department Criminal Intelligence Unit: Targeting Crime & Bringing Topeka's Community Together

Leah Curtis

Mentor: Julie Boydston, Psychology

WTE

My presentation will be based on what my internship at the Topeka Police Department has entailed, as I have been assigned to the Criminal Intelligence Unit. Part of my research is from ten peer-reviewed journals, a few being specific on criminal intelligence in the law enforcement community, and observing juveniles under the age of 18 understanding their rights as they are being questioned as suspects by the police without a parent present. I will present what the CIU has brought to the police department and what their strategies are in predicting crimes in certain areas by certain suspects.

77

Kansas Humanities Council

Kathryn M. Clark

Mentor: Michael Gleason, Leadership Institute

WTE

As the intern at the Kansas Humanities Council, I have had the chance to learn about what the humanities can do for both communities and individuals. The preservation of history and developing ways to show that off has revealed that when you instill pride in your community, there is an overwhelming need to share that with others. When people are invested in their own link to history, it can lead to the flourishing of a town and involvement of community members. I have observed that there is a great desire and need for programs in which people can participate in to expand their own knowledge and make connections. Through programs such as TALK and Speakers Bureau, community members have the chance to mingle, learn about a new topic or discover a different perspective on one that is well known. As the Kansas Humanities Council's mission statement says, they work hard to connect communities with history, traditions, and ideas to strengthen civic life. Through interning, I was challenged to use my own leadership skills to work towards the greater goal of what the humanities strive to do.

78

American Horror Story and African American Women Stereotypes

Joy L. Bell

Mentor: Jim Schnoebelen, Communication Studies

WTE

People of color have always been subject to ridicule and stereotype. Black women, in particular, have been faced with a specific set of stereotypes that are often highlighted and perpetuated throughout society and the media. The purpose of this research project is to focus on the manner in which strong black women are presented on the television show *American Horror Story: Coven*.

79

Leadership through Professional Development

Austen Witte

Mentor: Michael Gleason, Leadership Institute

WTE

During my leadership internship I had ample opportunities to utilize the leadership skills I have obtained from prior classes. I created, developed and implemented professional development courses at Blue Cross and Blue Shield of Kansas. I completed three eLearning modules, and one classroom project. Through these projects I analyzed the differences among leaders and learned how to develop successful instructional designs. The three modules I created pertained to Legal Holds, Records Governance, and HIPAA. I created interactions to enhance individuals' engagement. These interactions included drag and drop games, matching games and fill in the blank questions. The classroom lesson I worked on in collaboration with Melia Stockham is called The Happiness Advantage. Through this half-day class students will be able to learn that even the slightest bit of happiness can change his or her perspective. My work during the leadership internship allowed me to put leadership theory into practice in the real-world and understand how to meet the needs of developing learners through applying leadership theories.

80

Going the Full Forty

Brianna J. Hill

Mentor: Marilyn Masterson, School of Nursing

WTE

Labor induction and cesarean surgeries for non-medical indications prior to completion of full-term gestation (defined as 39 and 40 weeks) is a worrisome trend in the United States. Elective delivery rates have more than doubled since 1990 and continue to persist in spite of increased negative maternal and neonatal outcomes. The topic of study is the exploration of reasons behind the trend, identification of risks/problems, and ways to promote/support full-term pregnancies while also reducing non-medically indicated labor inductions and C-sections. Three overall themes were identified and compiled by Moore & Low (2012) to understand contributing reasons for choosing non-medical inductions. Numerous health risks in the neonate and mother are associated with induction and cesarean surgery (especially prior to full-term gestation). Risks to the neonate include respiratory difficulties, inadequate multi-organ systems development, iatrogenic pre-term complications, and heightened admissions to intensive care units. Risks to the mother include (but are not limited to) hemorrhage, infection, blood clots, and heightened

complications related to surgery and induction. Studies demonstrate elective delivery rates are reduced with concise policy-making, more current information on medical indications, increased education and collaboration between health providers and mothers-to-be, and imposing interventions to address maternal discomforts during pregnancy.

81

Doula: Additional Support for Childbirth

Ejemeare I. Imafidon

Mentor: Amy White, School of Nursing

WTE

A doula is a person who is trained to provide continuous support to pregnant women during active labor. This includes the physical and/or emotional needs of the woman. There is little awareness about doulas and the job duties of a doula during the childbirth process. The purpose of the study is to examine a community's knowledge of what a doula is and what a doula does. Several patients at the St. Francis Women's Center who were using midwives were asked to voluntarily fill out surveys examining their understanding of what a doula is and whether they would want to have or consider using a doula during childbirth. The results showed that about half of the women did not know what a doula was. Over sixty percent of the women said they would use or consider using a doula during childbirth for support. The information gained from the surveys suggested that more education and awareness may be beneficial to the childbearing community.

82

Let's Get Creative: Advisors Excel and Hospitality Psychology

Rylee Erin Cain

Mentor: Julie Boydston, Psychology

WTE

I am doing my Creative Activity at Advisors Excel on the Events Team. Advisors Excel is a FMO and IMO, financial marketing organization, and independently owned marketing organization. The Events Team is the who, what, when, where, why, and how. We know who is coming to every event, what they are visiting AE for, whether it be for internal or external events. We know when they will be arriving and leaving. We know where they are going for meals and activities as well as where they are staying. We know why are we having an event, why are we sending them to this restaurant, why are we partaking in these activities and finally how everything and everyone is getting to the event, getting event specific gifts, materials, nametags, etc. assembled and done. We are the ones who think about everything else that people just assume will be done or that someone is working on. We are very good at rolling with the punches and being able to accommodate too many needs at once.

83

Holistic Care from a Volunteer's Perspective

Mariah K. Cunningham and Jamie Lynn Singleton

Mentor: Kristine Hart, Learning in the Community

WTE

This presentation will demonstrate the impact of the holistic care delivered to local residents by staff and volunteers at Midland Care Connection in Topeka, KS. Midland Care Connection is a not-for-profit community based organization that specializes in end-of-life, palliative, bereavement and frail elder care services. This presentation will primarily address the work we have done with grief and loss services and end-of-life experiences, as well as palliative and respite care. Additionally, however, we will discuss our roles in training and managing volunteers for the organization and our work with Youth Corps, a five session youth program that educates 10-15 year olds in areas of grief, loss and death, end of life rituals, gerontology and volunteerism. The impact of our work on the organization, community, and ourselves as a Nursing major and Communications Health Emphasis major will also be explored.

84

Aquaponics Construction at Amor Fey Esperanza School in Honduras with Trash Mountain Project

Mollyanne Gibson

Mentor: Tracy Wagner, Biology

WTE

Many communities around the world face extreme poverty. Trash Mountain Project (TMP) is a local organization that improves the lives of children and families who survive by scavenging trash dumps. I have worked with TMP since Summer 2014 learning how to operate an aquaponics system. In February, I traveled with Trash Mountain Project to Tegucigalpa, Honduras to build an aquaponics system at Amor Fe y Esperanza (AFE) school, which will supply food to 130 children. Aquaponics is a synergistic system of interconnected tanks of fish and plants. The fish waste is used as fertilizer by the plants, and the plants filter the water to be recycled back into the fish tanks. The aquaponics system built at AFE will provide vitamin-packed vegetables and protein-rich tilapia fish for the undernourished children. In addition to helping with the aquaponics construction, I interacted with the AFE students, attended a local church, and shadowed at the AFE medical clinic.

85

The Effects of Maternity Leave on the Level of Educational Attainment

Errin E. English

Mentor: Linsey Moddelmog, Political Science-Geography

WTE

This research will focus on whether maternal leave policies increase the average mean years of schooling by age 25 for every country. 176 countries will be used. Data comes from the United Nations Human Development report which gives us their overall human development index score, the GNI, life expectancy, and the mean years of expected schooling which is our dependent variable. The International Labor Organization provides a complete data report on maternal leave for each country for our independent variable. I examine certain countries that provide maternity leave benefits in comparison with those who do not. The social policy of

maternity leave is controversial and varies across countries. The main objective of this analysis is to see if we can find a correlation with higher education and longer maternal leave. We will examine how this can effect children early on into their development years. We will see what benefits can arise from maternity leave, and the effects on cognitive development.

86

The Duty of the Day

YunHao Tu

Mentor: Kristine Hart, Learning in the Community

Topeka West High School is a USD501 public school where approximately 50% of the student population comes from economically-disadvantaged homes. The Extended Learning Center at the school serves many of these students, particularly those at risk of not graduating with their high school diploma. This center is staffed with Topeka West teachers and tutors from Washburn University. The assistance students receive here range from help with homework (especially math), finding resources to complete academic projects, and mapping out ideas for academic essays. The goal is for each student to be able to succeed in their classes and to improve their grades by working with students one-to-one in order to improve their academic skills and confidence in their abilities. This presentation will focus on the work of the Extended Learning Center, the impact it has on the students who use it and how the experience of working with the students affected my learning and view of my community.

Apeiron Committee 2015

Shaun Schmidt, Chair

Administrative Support by Grace Hildenbrand and Christine Rhoads

Print Materials and Program

- Erin Chamberlain (Chair)
- Matt Arterburn
- Paul Byrne
- Kelly Erby
- Sam Leung
- Ian Smith

Food and Reception

- Denise Ottinger (Chair)
- Marin Abell
- MaryDorsey Wanless

Poster Presentations

- Brian Thomas (Chair)
- Kevin Charlwood
- Rob Coffelt
- Rodrigo Mercader

Oral Presentations

- Sharla Blank (Chair)
- John Burns
- Tracie Lutz
- John Paul
- Tony Silvestri

Fine Arts Presentations

- Courtney Sullivan (Chair)
- Chris Kelts
- Kelly Watt
- Penny Weiner

Publicity

- Regina Cassell (Chair)
- Bassima Schbley
- Michael McGuire

Web Content and Registrations

- Bruce Mechtly (Chair)
- Steve Black



Index of Presenters

(presenter, page number)

Akacha, Amira, 9
Allen, Amanda Ann, 26
Barrow, Chance B., 31
Beetley, Caysie J., 26
Beiker, Rachel, 38
Bell, Joy L., 47
Bell, Kristin N., 19
Bleil, N. Bennet, 10
Boten, Tamara L., 19
Box, Kelita A., 22
Brackey, Scott M., 14
Brackman, Tina, 23
Brock, Sarah, 26
Brown, Zoe G., 35
Cain, Rylee Erin, 48
Carlisle, Jeremy J., 30
Carrillo, Patricia, 10
Cates, Chelsea E., 42
Clark, Kathryn M., 46
Clary, Steven James, 35
Cristine, Yates C., 38
Cunningham, Mariah K., 49
Curtis, Leah, 46
Dechant, Jared C., 31
Dickson, Jalen L., 7
Dilley, Adam S., 45
Doescher, Lara, 13
Dowty, Alex K., 17
Ediger, Caitlin Nicole, 5
Eichholz, Cari Lou, 26
Ellison, Jeremy, 11
English, Errin E., 49
Escandon, Sara, 37
Euler, Andrew I., 35
Faulkner, Lainey M., 23
Fehrenbacher, Shelby N., 17
Ferguson, Shelby Lynn, 12, 28
Fitten, Autumn O., 31
Gentry, Taylor, 35
Gibson, Mollyanne, 7, 49
Gonzales, Angela, 13
Graf, Tessa R., 12
Grimes, Lauren E., 20
Gutierrez, James A., 5
Hale, Jeffrey A., 13
Hanson, Haley A., 29
Harms, Valerie A., 39
Harry, Krystal Lynn, 5
Hartley, Meaghan, 5
Hathaway, Dallas B., 42
Heikes, Murray, 43
Helbert, Fritz, 46
Helt, Christopher Michael, 15
Hill, Brianna J., 47
Hobelman, Kaylyn Renee, 43
Holwick, Jeri Rose, 22
Horvatic, Christina, 23
Imafidon, Ejemeare I., 48
Ingermanson, Tess E., 25
Jamison, Chelsea A., 37
Januszka, Elaine Guadalupe, 39
Jensen, Dawn M., 33
Johnson, Nalini, 40
Kampfe, Baylee N., 40
Kelly, Shaun, 9
Kennedy, Amanda, 19
Khan, Mudasar, 15
King, Christopher Teagan, 28
Lutz, Connor M., 44
Maasen, Rebecca Mary, 34
MacDonald, Rory Robert, 11
Martin, James Anthony, 14
May, Jacob F., 34
McDowell, Jordan E., 9
Meis, Marissa Nicole, 6
Menager, Rachel, 44
Mikkelsen, Ian M., 40
Montague, Kim, 38
Moore, Taylor Michelle, 28, 41
Nelson, Jonathan, 21
Nunez, Vanessa, 5
O'Connell, Addie E., 36
Oliva, Danielle, 20
Oliver, William H., 11
Perez, Zachary C., 41
Pfannenstiel, Jamie, 23
Pittz, Dalan M., 28
Purcell, Nathan D., 11
Pusch, Aquia D., 17
Roberts, Cassandra R., 18
Robinett, Wyatt, 25
Rodriguez, Nicolette, 33
Rose, Kelsey A., 37, 38
Ruecker, Tina, 36

Saia, Dawson J., 40
Salas, Sergio, 11
Sands, Micaela R., 24
Saunders, Michaela R., 10
Schartz, Jamie A., 5
Schemm, Emma, 25
Schmidt, Mallory A., 19
Schroeder, Monica L., 14
Seeley, Christina M., 36
Shah, Keval, 10
Siemieniewski, Adam Edward, 33
Singleton, Jamie Lynn, 49
Sloan, Nicole Marie, 32
Smith, Zachary S., 10
Stadler, Aaron, 8
Stanek, Steven J., 44
Steffey, Danielle R., 27
Stevens, David M., 27
Stinnett, Kristen, 25
Sun, Hai Ping, 8, 35
Tajchman, Shelby Lea, 18
Thompson, Ties, 44
Toth, Stephen, 45
Tu, YunHao, 50
Valdivia, Nathaniel W., 16
Valdivia, Sierra E., 29
Vogel, Andrew J., 39
Walker, Sarah, 32
Warren, Lance J., 26
Wellendorf, Nathan T., 19
Whitfield, Anthony D., 36
Wiegers, Madison, 36
Williams, Diana Lynn, 24
Winterburg, Hailey W., 21
Witte, Austen, 47
Witten, Blaze V., 20
Wright, Kelsee Mae, 30
Yelland, Alexis V., 25
Zahara, Chaiya, 42

Index of Mentors

(mentor, page number)

Angel, Stephen, 7
Bayless, Kellis, 35
Beatty, Bob, 39
Benda, Karen, 5
Bjerke, Susan, 20
Blank, Sharla, 10
Boydston, Julie, 20, 23, 24, 26, 32, 38,
39, 40, 41, 46, 48
Burns, John, 13, 18
Cann, Steven, 15
Childers, Cheryl, 10
Decker, Stephanie, 16
Duncan, Angela, 17
Edelman, Lauren, 39
Edwards, Lori, 25, 44
Ellis, Rick, 9, 17, 24, 25, 28, 36, 37, 38, 42
Emry, Jason, 21, 43, 44
Erby, Kelly, 13
Frank, Zach, 23
Garrison, Karen, 13, 18, 19
Gleason, Michael, 29, 46, 47
Gonzalez-Abellas, Miguel, 40
Grant, Erin, 40
Hart, Kristine, 33, 49, 50
Herbig, Andrew, 27, 38
Hockett, Jericho, 41, 42, 43
Kendall-Morwick, Kara, 14
Leung, Sam, 8, 45
Lockwood, Park, 12, 34
Masterson, Marilyn, 22, 47
McGuire, Michael, 12, 19
Mechtly, Bruce, 46
Mercader, Rodrigo, 35
Moddelmog, Linsey, 49
Morse, Kim, 14
Ogawa, Brian, 36
O'Leary, Kevin, 40
Pilgram, Mary, 45
Provorse, David, 17
Quaney, Barb, 9
Rivera, Lara, 21
Robinson, Jane, 26
Routsong, Tracy, 19, 42, 44
Russell, Michael, 27, 28, 29, 30, 31, 33, 35
Sadikot, Takrima, 21, 34
Sanchez, Jean, 37
Schmidt, Cecil, 11
Schmidt, Shaun, 8
Schnoebelen, Jim, 47
Sharpe Elles, Lisa, 7, 32
Sun, Nan, 10, 11
Taylor, Glenda, 14
Turk, Cynthia, 23
Ure, Kathy, 22
Wagner, Tracy, 28, 49
Weiner, Penny, 5, 6
White, Amy, 48

Notes

Notes