



# *Last Lecture*

"What I Learned from You"

presented by

Gordon McQuere, Ph.D.

Professor Emeritus of Music Theory and Composition



Gordon McQuere is Professor Emeritus of Music Theory and Composition at Washburn University. From 2002-13 he served as Dean of the College of Arts and Sciences. He holds a bachelor's degree from the University of Tulsa and a master's degree from the University of Iowa in music composition. In 1978 he was awarded the Ph.D. in music theory, also from the University of Iowa. Before coming to Washburn University, Dr. McQuere was Head of the Department of Music and Interim Associate Dean of the College of Arts and Sciences at Eastern Michigan University. Prior to that, he was Associate Dean of the School of Music at Baylor University. Dr. McQuere's areas of specialization in music are style analysis and the history of Russian music theory. Among his publications is the book, *Russian Theoretical Thought in Music*, for which he served as editor and contributor. He is the composer of numerous musical works.

Memorial Union – Kansas Room

3:00 pm

*This lecture is made possible with support from the Washburn University Foundation. Dr. McQuere has generously requested this contribution be made to the College of Arts and Sciences General Fund.*

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*Past Last Lectures presented by:*

Dr. Nan Palmer	2016	Dr. Bill Roach	2015
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)

<b>Time/Location</b>	<b>Presenter</b>	<b>Title</b>
<b>12:10 pm – 12:30 pm</b>		
HC118	Tanner Triggs	<i>Foreign Exchange Trading Algorithm</i>
<b>12:35 pm – 12:55 pm</b>		
HC118	Bryan Lunzmann	<i>Algorithmic Text Analysis: A Writer's Aide</i>
<b>1:00 pm – 1:20 pm</b>		
HC118	Michael Smalley	<i>Implementation of a Lattice-Boltzmann Fluid Simulation Model</i>
HC107	Kara Decker, Lydia Gibson, Megan Throm, and Codi Ebert	<i>Haiti Lifeline Ministries</i>
HC112	Andy Vogel	<i>International Students' Perceptions of Online Education</i>
<b>1:25 pm – 1:45 pm</b>		
HC118	Isaac Hockenbarger, Stephen Hockenbarger, and Gabriel Phelps-Rope	<i>V-Port: A Raspberry Pi Vitals Kit</i>
HC103	Jonathan Hart	<i>Richard Burton: A Thoughtful Observer of African Culture</i>
HC107	Benjamin Anderson, Emma Staats, and Grace Foiles	<i>London Spring 2017 Trip: Art and Theatre in London</i>
HC112	Erika Lane	<i>Enslaved Mothers and Children: The Unbreakable Bond</i>
<b>1:50 pm – 2:10 pm</b>		
HC118	Benjamin Helms, Alexis Loya-Ruiz, Yunhai Chen, and John Nichols	<i>Swarm: An Arcade Style Side Scrolling 2D Video Game</i>
HC103	Abigail Stuart	<i>"We're All White Here": An Analysis of the Racial Themes in The Great Gatsby</i>
HC107	Amanda McGuire	<i>Discovering a People Through Material Culture: Ancestral Puebloan Ceramics</i>
HC112	Mark Feuerborn	<i>Full Production and Animation Showcase - Mass Media Department Website Promotional Video</i>
<b>2:15 pm – 2:35 pm</b>		
HC118	Shannon Hoffman	<i>Text Message Archive Mobile Application</i>
HC103	Mallory Lutz	<i>The Hidden Cost of Brown v. Board: African American Educators' Resistance to Desegregating Schools</i>
HC107	Amanda McGuire	<i>Simplicity in Art: What Inspired Minimalist and Conceptual Art in the 1960s</i>
HC112	Rory Stewart	<i>Scapular Dyskinesia Assessment and Treatment</i>
<b>2:40 pm – 3:00 pm</b>		
HC118	Bo Zhao	<i>A Simulation of SAM Computer Architecture</i>
HC103	Kaitlyn Bull	<i>Women in Politics and Gender: Inequality's Impact on Corruption</i>
HC112	Troy Russell	<i>Frank William Blackmar: The "Pioneer" Sociologist From Kansas</i>

(Insert Washburn campus map on this page)

# Fine Arts Presentations

10:30 a.m. – 1:00 p.m.

WTE denotes Washburn Transformational Experience

## Session 1

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► 10:30 a.m. – 10:50 a.m.                      Carole Chapel                      Moderator: Penelope Weiner

*The Time is Now*  
**Kraig Dafoe**  
Mentor: Penelope Weiner, Theatre

This is a ten-minute play.

► 10:50 a.m. – 11:10 a.m.                      Carole Chapel                      Moderator: Penelope Weiner

*Common Cents*  
**A. M. Houchell**  
Mentor: Penelope Weiner, Theatre

This is a short one-act play. It is about a character who helps others with their problems, including a young man seeking love, a young girl (who is short), and an elderly lady.

► 11:10 a.m. – 11:30 a.m.                      Carole Chapel                      Moderator: Penelope Weiner

*One Day an Angel Fell from the Sky*  
**Andrew Fletcher**  
Mentor: Penelope Weiner, Theatre

WTE

This is a short play set during the biblical Apocalypse. Graham Bennet, a perfectly average character, has his average Apocalyptic life disturbed when he discovers an angel has fallen on his car. He is then forced to take care of the angel until she is healthy enough to continue fighting in the great war between Heaven and Hell. As Graham aids Ambriel back to health, he discovers a connection between the two. After this knowledge is uncovered, a close friend dies, and a drunken meeting with the devil takes place. Graham must decide which side to choose. It is a story primarily of discontentment, the desire for escape, and the inefficacy of love.

► 11:30 a.m. – 11:50 a.m.

Carole Chapel

Moderator: Sharon Sullivan

*Sisters of Survival Chapbook Project*

**Julie A. Velez**

WTE

Mentor: Sharon Sullivan, Theatre

During the last school year, I have been helping to facilitate a creative writing group at the women's prison. I have gained a sense of who these women are and have started a project to publish their work whose goal is twofold: to empower the writers and to share their work with the world at large. The project has been 225% backed on Kickstarter, and the book should be published before graduation day. I'd like to present a poster on my experience working with these women and on their poetry.

## *Session 2*

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► 12:00 p.m. – 1:00 p.m.

Henderson 217

Moderator: Dennis Etzel

*A Woman's Place*

**Darcey Evans, Krista M. Kubie, and Christianna J. Pope**

WTE

Mentor: Dennis Etzel, English

This is poetry, prose, and lecture that explores the dynamics of what it means to be a woman, and how women are affected by modern-day society, religion, culture, and biology.

# Oral Presentations

12:10 p.m. – 3:00 p.m.

$\mathcal{H}$  denotes University Honors Student

$\mathcal{WTE}$  denotes Washburn Transformational Experience



## Session $\alpha$

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► 12:10 p.m.            Henderson Learning Resources Center, Room 118

*Foreign Exchange Trading Algorithm*

**Tanner Triggs**

Mentor: Nan Sun, Computer Information Sciences

I sought to use the Meta Trader trading platform to develop an automated strategy to trade in the currency markets around the globe. I was able to learn various trading strategies. I developed a game plan using indicators in MQL5, Meta Trader's proprietary programming language, where I tested and evaluated the results. Lastly, I narrowed those results which incorporated concepts from several models, and used the trades that were most profitable.

► 12:35 p.m.            Henderson Learning Resources Center, Room 118

*Algorithmic Text Analysis: A Writer's Aide*

**Bryan D. Lunzmann**

Mentor: Nan Sun, Computer Information Sciences

For this project, I wrote an intelligent feedback system for writers using the programming language Java, with Apache's POI library used extensively throughout for MS Office integration. The development was all done in Eclipse, a popular IDE. The core functionality of the program is the ability of the user to select a writing sample of his/her choice and have the program provide algorithmically generated feedback. The program's outputs include spreadsheets detailing the frequency of words used, and the variability of sentence length throughout the writing sample, as well as a variable length summary of the original text, among others. The program achieves all this at little expense to the user, as it seamlessly integrates Microsoft Office products, using Word and Excel files for inputs and outputs. Simple and intuitive user interfaces, coupled with a toggle-able tutorial add to the comfortable user experience.

► 1:00 p.m.                    **Henderson Learning Resources Center, Room 118**

***Implementation of a Lattice-Boltzmann Fluid Simulation Model***

**Michael R. Smalley**

Mentor: Bruce Mechtly, Computer Information Sciences

Fluid Simulation Models are one of the most computationally intensive applications of computer programming. Using Navier-Stokes equations, models simulate the movement of liquids and gasses around physical objects. Used to develop submarines, wind turbines, supersonic jets, and rockets, these simulations require the use of super-computers for accurate results. In the early 1990s, Boltzmann kinetic equations were applied to develop a fluid model which required significantly fewer resources and produced similar results to the Navier-Stokes equations. Learning from Dan Schroeder's implementation of the Lattice-Boltzmann Equations, I developed a Java model which accurately reflects fluid flows around a barrier. This interactive model will be presented running in real-time to display the application of this method.

► 1:25 p.m.                    **Henderson Learning Resources Center, Room 118**

***V-Port: A Raspberry Pi Vitals Kit***

**Isaac Hockenbarger, Stephen Paul Hockenbarger, and  
Gabriel T. Phelps-Roper**

WTE

Mentor: Nan Sun, Computer Information Sciences

“Vital signs are an important component of patient care. They determine which treatment protocols to follow, provide critical information needed to make life-saving decisions...Accurate, documented vital signs are a very important part of EMS” (2007, FireEngineering.com). Responding to a catastrophic event poses many challenges for search and rescue responders, one of which is quickly assessing a victim’s vital signs to determine the best course of action to care for that patient. However, when seconds count, victims are found and immediately moved to a central location before vitals are taken. Using a Raspberry Pi microcomputer, a prototype vitals taking kit has been built to show the versatile and mobile application of the Raspberry Pi. Advancing technology has wide spread impact on many fields, including the medical field that will help reduce price and offer aide to more people when they need it.

► 1:50 p.m.                    **Henderson Learning Resources Center, Room 118**

***Swarm: An Arcade Style Side Scrolling 2D Video Game***

**Benjamin D. Helms, Alexis Loya-Ruiz, Yunhai Chen, and John D. Nichols**

Mentor: Nan Sun, Computer Information Sciences

In this project, we developed an interactive entertainment software application. Swarm is our interpretation of a retro-style video game meant to invoke a feeling of nostalgia. As a group, we wanted to capture the intensity of the non-stop run and gun feeling experienced in original arcade

cabinet video games. The game is a post-apocalyptic zombie survival scenario. It involves the player running through the levels killing all zombies in their path without dying. We chose to develop the game using the Unity game engine, specifically Unity 4.7. Within the game engine, we created the script behaviors using the C# programming language. Also, we created and modified the graphical components using the photo-editing software GIMP.

► **2:15 p.m.**                    **Henderson Learning Resources Center, Room 118**

*Text Message Archive Mobile Application*

**Shannon Hoffman**

Mentor: Nan Sun, Computer Information Sciences

The Android mobile platform is host to several apps that attempt to serve various functions related to text messaging. There is, however, no single catch-all solution for viewing, searching, saving, restoring, and analyzing text messages sent and received by a user. This project is an attempt to fill the gap in the market by laying the foundation for a single application that can provide all of these functions in an easy-to-use and aesthetically pleasing front-end. After completing the basic functionality, the app will be built upon for a possible full release in the Google Play Store.

► **2:40 p.m.**                    **Henderson Learning Resources Center, Room 118**

*A Simulation of SAM Computer Architecture*

**Bo Zhao**

*WTE*

Mentor: Nan Sun, Computer Information Sciences

SAM computer architecture is a hybrid of SAP 3, designed by Albert Paul Malvino in Digital Computer Electronics, and MARIE, a pedagogical machine architecture in The Essentials of Computer Organization and Architecture. SAM adapts the two's complement, 8-bit program counter, 16-bit general registers, 16-bit ALU, and 256-byte RAM. In practice, the right most 5 bits are reserved for the most significant bit, generating 31 instructions through the Instruction Decoder. Depending on the instruction, the Control Unit generates a unique 28-bit control word to determine the action of each component. In this project, I initially implemented SAP 1 in logic gates without using three-state buffers; I then designed SAM to incorporate the complete set of MARIE instructions.



## Session $\beta$

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► 1:25 p.m.                    Henderson Learning Resources Center, Room 103

*Richard Burton: A Thoughtful Observer of African Culture*

**Johnathan Lee Hart**

Mentor: Thomas Prasch, History

Was Richard Burton an advocate of British Imperialism and an extremely racist explorer in the nineteenth century or was he a thoughtful observer of African culture who was racist as a product of his era? The truth is that Burton was a complex man who falls somewhere in the middle of these extremes. Burton's more popular works, *First Footsteps in East Africa*, *The Lake Regions of Central Africa*, and *Wanderings in West Africa*, are written for his reading audience rather than his personal convictions. By comparing these writings to that of Burton's colleagues, especially those of his traveling companion John Hanning Speke, Burton shows himself to be less of an imperialist and more of a sympathist for the African people. In his private writings, Burton takes the time to record details about each culture he encounters and learns many of the African dialects even when it does not benefit his expeditions. His willingness to humanize Africans makes Burton's portrayal as an imperialistic racist problematic.

► 1:50 p.m.                    Henderson Learning Resources Center, Room 103

*"We're All White Here": An Analysis of the Racial Themes in The Great Gatsby*

**Abigail Stuart**

Mentor: Kara Kendall-Morwick, English

In 1925, during the middle of the Harlem Renaissance, F. Scott Fitzgerald published his classic masterpiece, *The Great Gatsby*. At the time of publication, *The Great Gatsby* was not a commercial or critical success, with TIME magazine publishing a one paragraph review of the book and the book selling less than twenty thousand copies the first six months it was released (time.com, Mizener). However, despite its lack of immediate accreditation and analysis, *The Great Gatsby* has dazzled readers and enthralled scholars ever since. While *The Great Gatsby* has classically been read as a commentary against materialism, recent scholars have begun to read *The Great Gatsby* in a racial context, especially in regards to the race of one of the book's protagonists, Jay Gatsby (Schreier, 153). As Benjamin Schreier discusses in his essay, "Desire's Second Act: 'Race' and *The Great Gatsby*'s Cynical Americanism," reading the novel through this lens becomes problematic because it induces questions of what it means to portray a black character passing as white (Schreier, 162). In the end, *The Great Gatsby* makes a difficult case for any concrete conclusion as to the race of Jay Gatsby, especially given the historical time frame when *The Great Gatsby* was published. Upon examining the book, however, it is clear that the novel is not silent on the subject of race.

► 2:15 p.m.                    Henderson Learning Resources Center, Room 103

*The Hidden Cost of Brown v. Board: African American Educators' Resistance to Desegregating Schools*

**Mallory Lutz**

*H*

Mentor: Rachel Goossen, History

My research focuses on the black community in Topeka during the first half of the twentieth century. Using archival sources such as the black press and letters from educators and administrators to state officials and newspapers, I examine the reasons some African-American teachers and families were hesitant to desegregate the public school system. Some black Topekans feared desegregation because they believed it would harm students physically and emotionally. They also believed desegregation discouraged racial pride and forced children into environments where they were “merely tolerated.” Many black teachers emphasized the unique perspective they brought to their classrooms, stating that they were better able to empathize with their students. Desegregation spelled the possibility of demotion for black teachers, yet if they voiced concerns about potential job loss and desegregation, they risked being seen as hypocrites in the fight for racial equality. With their schools, teachers, and livelihoods at stake, blacks in Topeka initially resisted the efforts of white school boards and lawyers to take their schools away from them. In 1954, however, the U.S. Supreme Court ruled “in the field of public education the doctrine of ‘separate but equal’ has no place.” The outcomes of desegregation continue to affect black students, communities, and the field of education over half a century later.

► 2:40 p.m.                    Henderson Learning Resources Center, Room 103

*Women in Politics and Gender Inequality's Impact on Corruption*

**Kaitlyn R. Bull**

Mentor: Linsey Moddelmog, Political Science - Geography

In this comparison of data between countries, I've compiled information regarding a number of independent variables that could impact the dependent variable of a country's corruption levels for the year of 2014. The intention of the study was to test the relationship between gender and corruption to test the specific hypothesis of whether women are inherently less corrupt than men when it comes to governing. However, many variables were considered to determine their impact on a country's level of corruption as represented in the Corruption's Perception Index (CPI). I gathered data for nearly all the countries that had World Bank data for 2014 and, through regression analysis, it was revealed that the gender inequality index of a country did have an impact on its CPI. However, there was no significant relationship between the representation of women in parliament and a country's CPI.



## Session $\gamma$

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► **1:00 p.m.**                    **Henderson Learning Resources Center, Room 107**

*Haiti Lifeline Ministries*

**Kara Decker, Lydia Gibson, Megan Thom, and Codi M. Ebert**

WTE

Mentor: Keith Farwell, Allied Health

Haiti is a country that has historically suffered from natural disasters, an unstable political system, and poverty. Religious organizations, such as Topeka Bible Church and Grace Bible Church, have been involved in providing financial and medical aid to Haiti. One such local organization, Haiti Lifeline Ministries, operates an orphanage, medical clinic, and school, and provides support to local Haitian churches. From March 31st to April 7th, 2017, a team including Washburn students traveled to Haiti to provide medical care to the children at the orphanage and the community. During the journey, the team was able to connect with the children, engage in the culture, and learn about the healthcare structure in Haiti. The trip was more challenging than expected; however the personal impact outweighed it all.

► **1:25 p.m.**                    **Henderson Learning Resources Center, Room 107**

*London Spring 2017 Trip: Art and Theatre in London*

**Benjamin Anderson, Emma J. Staats, and Grace Foiles**

WTE

Mentor: Paul Prece, Theatre

This is a presentation of photos and video exploring our ten-day experience in London. These photos will cover many sightseeing location and pictures of art and theaters we visited. The presentation will be given by Benjamin Anderson, Emma Staats, and Grace Foiles. We will also be there to discuss the shows we saw and their impact on our trip.

► **1:50 p.m.**                    **Henderson Learning Resources Center, Room 107**

*Discovering a People Through Material Culture: Ancestral Puebloan Ceramics*

**Amanda Lee McGuire**

Mentor: Kerry Wynn, History

In this presentation I will demonstrate how I analyzed Ancestral Puebloan ceramics for my history capstone project. Through the analysis of ceramics and the oral traditions of modern Puebloan peoples, I aim to gain a better understanding of the Ancestral Pueblos of the Southwest. This presentation will explain my analysis methodology through two to three examples of the ceramics that I collected for research. I will present my own results and critique my research based on other publications that analyze Ancestral Puebloan ceramics, inspiring others to see how material culture reflects how a people lived and died.

► 2:15 p.m. Henderson Learning Resources Center, Room 107

*Simplicity in Art: What Inspired Minimalist and Conceptual Art in the 1960s*

**Amanda Lee McGuire**

Mentor: Kelly Watt, Art

This paper compares Minimalist and Conceptual art as they developed over the course of the 1960s. I will be exploring what inspired the movements, how they developed, and a brief look at their impact on recent artists. The goal is to understand how the art movements developed and how they inspired later artists. Defining these movements continues to be problematic, so this paper will discuss the sociopolitical context of the 1960s as the backdrop to a larger analysis of both movements in order to construct a clearer picture of the period and its art.



## Session $\delta$

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► 1:00 p.m. Henderson Learning Resources Center, Room 112

*International Students' Perceptions of Online Education*

**Andy Vogel**

WTE

Mentor: Carolyn Carlson, Education

The purpose of this study is to explore international students' desires towards online education to find out which options they prefer to help guide the policies at Washburn University and state and regional international educators and hopes to add to the small body of work in regards to the perceptions of international students' opinions of online higher education in the United States. As more classes go online and more international students come to the US to pursue university they would either have fewer classes to choose from, the immigration laws would need to be reformed or they could choose to stay in their home country and take classes online.

► 1:25 p.m. Henderson Learning Resources Center, Room 112

*Enslaved Mothers and Children: The Unbreakable Bond*

**Erika N. Lane**

WTE

Mentor: Kelly Erby, History

My research focuses on enslaved mothers and the relationship with their children in the antebellum South. My paper explores what life was like from the perspective of the enslaved mothers and children. It also focuses heavily on the separation of slave families, the great lengths that enslaved mothers went to in protecting their children, and the extreme efforts mothers went to in hopes to reconnect with their children once separated from them. Using slave narratives and advertisements written by slave's themselves post war, I examine the importance of family and their children to the slave mother. I use sources such as Frederick Douglass's *Narrative in the*

*Life of Frederick Douglass*, Harriet Jacob's *Incidences in the Life of a Slave Girl*, William Grimes, Lewis Clark, along with many other slave narratives. In my paper I closely examine these narratives and argue that family life was where the enslaved women thrived. I argue that family was the most important factor to an enslaved woman, and that slave mothers went to extreme measures to keep and protect their children from the institution of slavery.

► **1:50 p.m.**                    **Henderson Learning Resources Center, Room 112**

***Full Production and Animation Showcase - Mass Media Department  
Website Promotional Video***

**Mark A. Feuerborn**

WTE

Mentor: Maria Stover, Mass Media

Witness the debut of the Mass Media Department's new website video. Junior mass media major Mark Feuerborn will give a timeline of his creation process for the new fully-animated promotional video for the Mass Media department, offering a glimpse into the features of Adobe After Effects, brainstorming, and storyboarding that helped lay out the concept for this video. Mark Feuerborn has developed this promotional video over the course of the Spring 2017 semester as a one-man team. He had the opportunity to work with digital tablet software to illustrate the video by hand, and utilized the university's audio suite to record narration and background ambience for the entire video. Additionally, he puts his own perspective on how the Mass Media department has benefitted him and other students alike to share with prospective students of Washburn University.

► **2:15 p.m.**                    **Henderson Learning Resources Center, Room 112**

***Scapular Dyskinesia Assessment and Treatment***

**Rory Stewart**

WTE

Mentor: Park Lockwood, Kinesiology

This presentation is a literature review of the current findings of scapular dyskinesia assessment and its treatment protocols.

► **2:40 p.m.**                    **Henderson Learning Resources Center, Room 112**

***Frank William Blackmar: The "Pioneer" Sociologist from Kansas***

**Troy C. Russell**

WTE

Mentor: Chris Conner, Sociology - Anthropology

Troy Russell will be presenting a co-authored paper, titled "Frank William Blackmar: The "Pioneer" Sociologist From Kansas." The presentation is a culmination of research on the biography of Frank Blackmar, known as "the pioneer sociologist from Kansas." Using previously published articles, the special collections archive at KU and Washburn, and other

historical sources. Troy argues that Blackmar created the first, and longest running, sociology course in America at the University of Kansas (Elements of Sociology). Blackmar likely had influence on Washburn University via his public lectures delivered in Topeka, KS. Blackmar also was instrumental in arguing for the formation of a distinct academic discipline entitled “sociology.”

# Poster Presentations

3:45 p.m. – 5:00 p.m.  
*Memorial Union, Washburn A & B*

$\mathcal{H}$  denotes University Honors Student

$\mathcal{WTE}$  denotes Washburn Transformational Experience

1

## *Washburn University Map Mobile Application*

**Shannon Hoffman**

Mentor: Bruce Mechtly, Computer Information Sciences

One of the most difficult aspects of entering college can simply be finding one's way around a new campus. This project aims to help students and visitors navigate the Washburn campus and learn more about the university with a professional mobile application personalized for the unique features of Washburn. Constructed for the Android mobile platform, this app displays a map of the university and a location marker that expresses the user's current location on campus by accessing the GPS coordinates of the device. In addition, the app provides the ability to click on buildings (or select them from a list) to find out more information about them. Along with information regarding buildings, information pertaining to various services and departments will be available to users, allowing them to locate these items on campus. With the foundation of this app completed, supplementary features can be added in the future, such as a campus scavenger hunt.

2

## *Sole Survivor: An Analytical Comparison of Narrative Styles Between the Three Finalists of the Show Survivor: Millennials vs Gen X*

**Stephanie S. Mannell**

$\mathcal{WTE}$

Mentor: Leslie Reynard, Communication Studies

This research project will study similarities and differences in the narratives of finalists for a million dollar prize in the television game, Survivor: Millennials vs. Gen-X, broadcast in 2016. Studying the persuasive approaches of the three finalists, I will look at both gender, age, and other differences and similarities. This analysis will test Walter Fisher's Narrative Paradigm Theory compared with Robert Rowland's Rhetoric Analysis. The focus will be on the content and delivery using main communication themes of ethos, logos, and pathos of each of the three finalists from the Survivor: Millennials vs Gen X season.

### 3

***Salt! It's Not Just for Popcorn: Promoting Financial Literacy Amongst Students Through Use of the Salt Program***

**Nathaniel Boyd Arbuckle Higdon**

WTE

Mentor: Susan Bjerke, Biology

When you think of financial literacy, what comes to mind? Money, budgeting, taxes...perhaps your mind goes blank? Within society people are often financially illiterate which has serious consequences. Student loan debt currently exceeds \$1 trillion, loan defaulters and delinquents continue to rise, and household debt averages around \$100,000. Many students are financially illiterate and seek out money for school regardless of strings attached. Many don't know the money they take out today requires repayment later. Universities/organizations have begun campaigning to help students with their financial lives. Through modules, quizzes, and articles these programs inform students about financial topics like loan repayment, budgeting, taxes, etc. As student and Financial Aid worker, I see how financially illiterate students are. I decided to initiate a change project to promote financial literacy among fellow students. Using Washburn's financial literacy program, Salt, I hope to increase awareness and use of the program on campus. I have participated at New Student Orientations, high school financial aid nights, and done tabling on campus. Financial Knowledge is financial freedom!

### 4

***Global Communication: Focus on London***

**Sarina Marie Smith, Wesley A. Tabor, Verliisa J. Cradle,**

**Anna Elise Ciummo, Elizabeth Lily Moore, and Nancy Ellen Heeney**

WTE

Mentor: Tracy Routsong, Communication Studies

This WTE group traveled to London and Stratford-Upon-Avon and experienced museums, theater, and historical tours. This was an opportunity to observe and participate in intercultural communication. Through photography, journals, and discussions, there was a greater understanding of the unique culture of both communities.

### 5

***Exploring Borderline Personality Disorder in Childhood and Adolescence***

**Kiley E. Monaghan**

WTE

Mentor: Angela Duncan, Psychology

Borderline Personality Disorder (BPD) is a serious mental illness characterized by severe behavioral and emotional dysregulation, high rates of comorbidity with other mental disorders, and suicidality (Crowell, et al., 2009). The presence of BPD in individuals under the age of 18 is controversial. Some call these behaviors precursors, predictors, or pathways, while others argue that they are symptoms of BPD that already exist in these individuals. This is a literature review using articles from the PsycINFO database. I sought to Investigate the presence of BPD in individuals under the age of 18 (children and adolescents), determine what predicts BPD and

what the early signs are, identify what these predictors and early signs look like in these individuals in terms of health and behavioral patterns, and learn the causes of BPD and how to prevent the development of this disorder early on. Diverse results were found relating to BPD in children regarding their sleep patterns, resilience, responses to therapists and therapeutic methods, and emotionality. Diverse results were found relating to BPD in adolescents regarding their sexuality, responses to harsh punishment, emotionality, self-control, and self-harming behaviors. Results suggest that the disorder can be present in individuals under the age of 18, and that its further development and presence in adulthood can be prevented through proper therapeutic treatment, familial care, and social support.

## 6

### *When They Go Low, We Go High: A Rhetorical Evaluation of Michelle Obama during the 2016 Presidential Campaign*

**Sarah C. Dweik**

WTE

Mentor: Jim Schnoebelen, Communication Studies

During the 2016 presidential campaign between Hillary Clinton and Donald Trump, there were many different stories exposing both candidates. Michelle Obama spoke on behalf of Clinton at many rallies and created a call to action against sexual assault during her speech in October of 2016. This article argues that Michelle Obama speaking about sexual assault was something that we haven't really seen with first ladies and was unique in regards to the presidential campaign. Second, this article argues that the framing and terministic screens that were used within her speech showed that sexual assault is not just a women's issue. The analysis reveals that Michelle Obama spoke to a wide variety of people and in generalities that allowed her audience to relate to her speech in different ways. Lastly, this article argues that only by coming together are we able to resolve how sexual assault is viewed and framed in society and within the government.

## 7

### *Examining Ceramic Glaze Materials*

**Harvey I. Flowers**

Mentor: Monette Mark, Art

Ceramic chemistry is the study of the relationship between the physical properties of fired ceramics and ceramic glazes. Although ceramic technicians have long understood many of these relationships, the deeper understanding of ceramic chemistry has allowed ceramicists to develop new and better clay bodies and glaze formulas. Altering recipes to compensate for flaws in these properties helps to create a better fitting compound. Studying these clays and glaze components helps us to understand how they respond to atmospheric conditions within the kiln. There are four main components to each glaze, the glass former, the flux, the colorant, and the refractory agent. Modifications to these components help to control aspects of the behavior of the glaze including vitrification temperature and expression of color. We fired each of these materials separately at two thousand two hundred and thirty-two degrees Fahrenheit to see the individual behavior of each material to better understand its influence in a glaze. The research examines the

visual and physical qualities of each material after firing. Alternative materials were also examined to see how they would react to the same conditions.

## 8

### *International Media Seminar in Paris, France*

**Shayndel B. Jones**

WTE

Mentor: Maria Stover, Mass Media

I traveled to Paris, France to study mass media as part of the Washburn Transformation Experience International Education program. As part of the International Media Seminar, the students were able to get an extensive look at the world of international media through the experiences of renowned speakers and discussion leaders. Students spent a week in Paris, France, attending seminars and touring landmark organizations including the Eiffel Tower, the Catacombs, the Louvre, Versailles and many other global landmarks. The topics covered in the seminars range widely over the fields of international media and journalism, covering not only the news media, but also other communications media and how media scenes compare and contrast in various parts of the world.

## 9

### *Gotta Catch'em All: Pokemon Go! and Relationship Building*

**Nicole A. Spencer**

WTE

Mentor: Tracy Routsong, Communication Studies

Communication is continuously expanding and morphing at our fingertips. Pokémon is not new; however, it was one of the innovations that took the world by storm. Between its release date on July 6, 2016 and October 20, 2016, Pokémon GO! has generated and estimated amount of \$600 million in revenue (Smith, 2016). Using Privacy Management Theory and Social Penetration Theory the researcher examined the building and maintaining of relationships. Using a mixed method survey, findings indicate that the augmented reality game did impact relationships.

## 10

### *Using Science and Education to Reduce Plant Blindness*

**Meaghan Conant**

WTE

Mentor: Jason Emry, Biology

Broadly defined, plant blindness is the inability to recognize and/or appreciate the plants in one's own environment. The inability to name or recognize plants may not be seen as a problem, but the large-scale implications of societal plant blindness could lead to a decline in the knowledge and interest in the conservation of plants and trees. In order to reduce local plant blindness, data were collected of WU's tree diversity in order to create a dichotomous key that can be used to identify the species on campus. The key is written in such a way to be readable to non-biologists and biologists alike. Washburn University is centrally located within the city of Topeka, and

receives a large amount of recreational foot traffic by the general public. The goal is to distribute these keys along the walking routes on campus, encouraging citizens to further explore and acknowledge their own environment. The main objective of this work is to provide educational resources to both students and the public in order to reduce plant blindness in the larger campus community.

## 11

### *Nicaragua: A Country of Community Connections, Culture, History, and Exploration*

**Andrea Stitt, Morgan Riley, and Reyna T. Perez**

WTE

Mentor: Rick Ellis, Learning in the Community (LinC)

The Nicaragua study abroad trip was meant to be a way for students to gain knowledge about another country and provide service to a community that was in need. However, the experience delivered far more than expected. The students were able to explore and hike an exotic terrain. The students had the opportunity to build relationships with the Nicaraguan families they lived with in the communities. In between volunteering, the Nicaraguan families cooked dinner and did their best to engage with the students, despite the language barrier. Members of different Nicaraguan cities were willing to share the history of Nicaragua and the hardships they faced. At the end of the trip the students left for the United States with appreciation, passion, and motivation to make a difference in their own communities.

## 12

### *Growth Mindset and Learning to Love Learning*

**Andrea Stitt**

WTE

Mentor: Cindy Wooldridge, Psychology

The purpose of this research was to determine if growth mindset feedback or fixed mindset feedback given to the participants along with the participants' previous mindsets impacted their effort in addition to how well they performed on foreign language vocabulary tests. To determine mindset, the participants first completed Dweck's "Growth Mindset" questionnaire. The participants then studied for a fill in the blank Swahili vocabulary test for up to eight minutes, worked on a distractor task for one minute, and then took the vocabulary test for up to five minutes. There were three trials in which each contained a different set of vocabulary words. The participants were assigned at random to either growth mindset feedback or fixed mindset feedback after each trial. The data collection is currently underway. References: Dweck, Carol S. (2006) Test your mindset. Mindset. Retrieved from <http://mindsetonline.com/testyourmindset/step1.php>

## 13

### *Costa Rican Study Abroad*

**Shannon E. Van Hercke, Cailyn Chelemedos, Samantha L. Minihan,  
Alex Sweeney, and Paige Fenley**

WTE

Mentors: Lara Rivera and Lori Edwards, School of Nursing

We are going to be presenting about the opportunity we had to study abroad in Costa Rica through the School of Nursing. During this time we were able to spend ten days setting up clinics throughout poverty-filled cities in Costa Rica. At these clinic setting we were able to organize and coordinate the flow of patients who were wanting a health screening. From these clinic we were able to see over 600 local Costa Rican's and Nicaraguan immigrants. My group's primary goal for the trip was to target and educate childbearing-aged women on the importance of healthy eating to obtain their essential vitamins. These essential vitamins include vitamin. D, folic acid, and iron. If eaten correctly, these vitamins have the ability to create a healthy pregnancy.

## 14

### *Synthesis of Expanded Oxophlorins*

**Ryan Haller**

Mentor: Sam Leung, Chemistry

Expanded oxophlorins are substances that could absorb within the visible spectrum of light. This can be useful as an alternative for cancer treatment in photodynamic therapy (PDT). One way to synthesize expanded oxophlorins is to synthesize a dipyrrolyl- $\alpha,\beta$ -unsaturated ketone. This can then be combined with a dipyrromethane. Since the dipyrrolyl- $\alpha,\beta$ -unsaturated ketones are unknown, much of our research has been focused on this. We have been using aldol condensation and Wittig reactions in this synthesis. While aldol condensation has not been effective, the Wittig reaction has been successfully used to synthesize a precursor to the dipyrrolyl- $\alpha,\beta$ -unsaturated ketone, but it has not been purified due to insufficient materials. An alternative dipyrrolyl- $\alpha,\beta$ -unsaturated ketone with one fewer carbon-carbon double bond has successfully been synthesized, and the synthesis of an expanded oxophlorin was attempted. However, because the reaction scale was too small, success of the reaction could not be determined. Further studies must be performed by increasing the reaction scale.

## 15

### *Washburn University Leadership Transformational Experience: Student Health Services*

**Michael Francis Geha**

WTE

Mentor: Karen Garrison, Kinesiology

The Leadership Transformational Experience is one opportunity for a student to expand on practical experience and application outside the classroom. This project has allowed me to reflect upon myself as an individual and examine the many inspirational leaders on campus and within

the Washburn community. I was fortunate enough to be named Washburn University's Student Health Services social media accounts director during the course of the year. This position allowed me to grow and develop as a healthcare professional and I have gained additional responsibilities and opportunities in continuing my growth as one who leads.

## 16

### *#Old Lives Matter - Not!: The Effects of Ageism Bias on Millennials*

**Nathaniel Boyd Arbuckle Higdon**

WTE

Mentor: Ralynn Schmalzried, Psychology

Ageism is prejudice against people based on their particular age-group (Butler, 1969). Often it is based around negative stereotypes and is projected towards older adults. With longevity rates increasing, the potential for a new prejudicial threat looms. According to Popham et al. 2011, ageism is a response to the fear and knowledge of one's own mortality and is utilized as a way of shielding the ego. Using questionnaires, our research targeted Millennials. We found that ageism bias presents itself as an unwillingness to interact with and care for the elderly, increased risky behaviors, and death anxiety.

## 17

### *Motivational Appeals and Compliance-Gaining Strategies in Persuasive "Collection" Texts*

**Crystal G. Brown**

WTE

Mentor: Leslie Reynard, Communication Studies

Public administrators are often charged with enforcement of statutes and court orders. In the specific case of child support collection, state agencies utilize many different tools to influence individuals to meet their financial obligations on a monthly schedule. This study focuses on persuasion theories of motivational appeals and compliance-gaining tactics and applies these to create specific revisions to several notification and demand letters currently in use by an agency of the State of Kansas. The study provides an overview of the relevant theories and discusses specific changes to the persuasive messages currently in use. Before and after versions of the messages with theory-linked specifics indicated are provided.

## 18

### *Los Quinchos*

**Shelby Rey Herring, Makenna Evans, and Shyla Ann Mason**

WTE

Mentor: Rick Ellis, Learning in the Community (LinC)

While in Nicaragua, our group traveled through Managua to get to Los Quinchos, a home for children who lived alone on the streets. It takes patience and encouragement from the workers to convince the children to come in off the streets, and many go through a filter house before entering Los Quinchos. The boys we visited gave us a tour of their home, their farm, and the

soccer field, where we spent a majority of the day playing with and against them. We also went to a local market to haggle prices with the vendors to get food for the boys. While that was an incredible experience, bringing back the food to an empty pantry and fridge was something more eye-opening. At the time, we thought it was just a fun activity to practice our Spanish, but we quickly found out that we were the only source of food for the boys that week. Los Quinchos showed our group what life was like in the real world, and how even the people and places meant to help others are still struggling while life passes us by.

## 19

### *The Impact of Activities on Symptoms of Depression in Older Adults in Assisted Living Facilities*

**Arianna Zamora**

WTE

Mentor: Ralynn Schmalzried, Psychology

Depression is a common occurrence for older adults who move out of their homes into assisted-living facilities. The purpose of this research study is to determine if there is a correlation between participation in activities and levels of depression in older adults in assisted-living facilities. In order to determine if the correlation exists, participants were asked to take the Geriatric Depression Scale (GDS) in order to assess depressive symptoms. Then for three weeks participants' activity engagement was recorded to categorize them into groups depending on how often they participate in activities offered at their facility. At the end of the three weeks they were asked to take the GDS a final time, in order to determine if there were any existing correlations between depression levels and activity participation. Results and implications of this study will be discussed during the presentation.

## 20

### *Reframing My Views on Poverty, Social Justice, and Leadership: From Topeka to Nicaragua and Back*

**Rubyt Sandoval**

WTE

Mentor: Kristine Hart, Learning in the Community (LinC)

In August 2014, I joined the LinC Bonner Scholar program at Washburn University. This is a university honor and civic leadership development program that requires at least a three-year commitment of 1000 hours or more of service and 100 hours or more of coursework and training. This presentation will highlight the path I took in my development as a leader the past three years and how the service and education I engaged in caused me to look at the world I live in differently. This path has led me to work on hunger issues, understand the issues around child in need of care cases, build houses for individuals still affected by Hurricane Katrina's devastation, travel to Nicaragua to learn about the people and culture, and be elected by my peers to represent them at national Bonner conferences. These experiences made me a believer in the phrase "a little help can go a long way" and my service to my community and the world in which I live became my greatest pride.

## 21

### *Memory in Business*

**Emily M. Green**

Mentor: Cindy Wooldridge, Psychology

WTE

This study provides a better understanding of how training should be implemented within a company. The study compares the amount of information retained by students after participating in either spaced training or massed training. Two surveys were conducted involving participants studying business materials either spaced out or all at once. Students then take a test over the information. Past research supports the idea that when learning new information, spacing it out in increments will produce the best long-term memory results. To have a deeper understanding of what companies are doing, I also conducted a survey on employees in a well-known successful corporation to have an idea of the type of training that is being implemented, as well as how it affects the employees' job roles and their outlook on their job positions. (Data collection is underway.)

## 22

### *Estimation of Caloric Use during Exercise Using a WiiFit® Model*

**William S. Hesse**

Mentor: Tracy Wagner, Biology

WTE

A wide variety of exercise equipment and software available today provides the user with an estimation of the total calories burned. However the formulas used by the software often don't take account into O<sub>2</sub> usage or heart rate. In some cases, even weight and the rate of exercise are not considered. We examined the Wii Fit®, one such piece of fitness software released by Nintendo®, and obtained the reported caloric expenditure for comparison with the reported oxygen consumption measured by the Oxycon Mobile® from CareFusion. Oxygen consumption is commonly used to estimate caloric use. The experiments utilized a combination of slow and fast step rates with varying step heights. Further data was collected on the subject's height, weight, heart rate, and perceived exertion during trials. Data analysis indicated that the Wii® over estimated calorie expenditure and only used the weight of the subject to determine an estimate of caloric expenditure without consideration of step rate. Increasing the step rate and height both increased the caloric expenditure above the values estimated by Wii Fit®. This data was further corroborated by heart rate measurements and Rating of Perceived Exertion (RPE) which both increased in subject during the experimental trials. This information could be important to anyone using exercise equipment that the accuracy caloric use reported is limited by the number of variables considered.

## 23

### *Helping the Dying to Fully Live: Using the Double ABCX Model to Understand Hospice*

**Jamie L. Singleton**

*H WTE*

Mentor: Tracy Routsong, Communication Studies

Social support is a known benefit to individuals with life-long and life-limiting conditions. Individuals with these conditions rely on social support to live a full and meaningful life. Hospice care is a form of palliative care, or comfort care, which provides care to individuals who are projected to die within the next 6 months. When individuals enter hospice care, it often has a detrimental effect on their social life, and the amount of social support that they receive from their friends and family. A qualitative measure of social support was achieved through the use of the Double ABCX Model. Analysis demonstrated that there is difficulty in identifying consistent stressors, and the perception of resources made an impact in how the family member discussed adaptation to the inevitable death.

## 24

### *Sharing the Stories of SLI: How One Organization Changes Countless Lives*

**Jamie L. Singleton\* and Cheyanne Larene Price**

*\*H WTE*

Mentor: Kristine Hart, Learning in the Community (LinC)

SLI (formerly Sheltered Living) is a local not-for-profit organization that serves individuals with intellectual disabilities. This organization provides an incredibly important service to the Topeka area, and they have a wonderful story to tell. Through our service at SLI we have had the opportunity to overhaul their website, making it more user-friendly and updating it with new stories. The opportunity to serve also reached into SLI's representation on social media sites, as well as the creation of new information and stories to share with the public. In the end, we were able to determine new, more creative and efficient ways to share the mission and vision of SLI with the public, as well as the many SLI clients. This presentation will cover the work we did with SLI, the importance of collaboration between coworkers to achieve our final product, and the impact our work has had on both the organization and ourselves.

## 25

### *Experiences with the Undergraduate Learning Assistant Program*

**Libbie M. Vogelsberg**

*H WTE*

Mentor: Jericho Hockett, Psychology

The purpose of the internship for me was to help determine whether I should focus on a teaching based career or clinical-based career. My duties and responsibilities included holding office hours for students and holding review sessions before exams. I gained skills in presenting in front of public audiences and working with students. I also gained extensive knowledge in clicker technology in the classroom. This internship impacted my career by helping me

understand that I prefer helping people work on different skills one on one versus giving information to an audience. In conclusion, through this experience I have decided that I would like to help and teach others as a therapist instead of becoming an academic professor.

## 26

### *The Effects of Stress Reframing on Test Scores*

**Caitlin McGee**

Mentor: Angela Duncan, Psychology

WTE

Stress can be defined as a state of mental or emotional strain resulting from adverse or demanding circumstances. There are two types of stressful situations: 1) Those that are perceived as a threat and 2) Those that are perceived as a challenge. Threat is associated with negative emotions, such as not feeling prepared for the situation. Challenge, on the other hand, is associated with positive emotions, such as feeling prepared and excited for the situation. To date, a number of studies have involved reframing or reappraising stress. The goal for reframing is to change a threatening stressful situation into a challenging one. The present study examines the literature to determine the positive effects reframing has on performance. Results from previous studies show reframing stress enhances performance during Trier Social Stress Tests (TSST) as well as exams. Additionally, there is some supporting evidence that reframing is more beneficial with women, who are most often stereotyped as being worse at math and science than men. Further discussion will be given on the extent to which individuals take into consideration reframing when acting in real-world settings.

## 27

### *Changes in Blood Lactate Levels due to Carbonated Beverages during Bike Sprints*

**Jeremy Paul Lickteig, Tyler D. Brown, and Ibrahim Sabbarini**

Mentors: Tracy Wagner and Paul Wagner, Biology

WTE

As average soda consumption in America increased over 600% from 1942 to 2000, perceptions of the effects of carbonation on athletic performance have been varied. Often times, large soda brands are sponsors at sporting events in the United States. With the increase in consumption of carbonated beverages, this research seeks to measure the effects of carbonation on lactate levels, and potentially athletic performance. Lactate is produced in skeletal muscle when anaerobic pathways are utilized and activated in decreasing oxygen environments. These conditions arise in short bursts of high intensity exercise. In order to simulate these conditions, participants were asked to perform a series of sprints on a research bike with short recovery periods in between each sprint which should increase lactate levels. We tested the impact of carbonated vs. non-carbonated sports drinks on blood lactate levels, heart rate, rated perceived exertion, and power output data in order to observe any changes due to carbonation. We expect carbonation to cause either a decrease or a shift in blood lactate levels due to pH buffering in both intracellular and extracellular spaces.

28

*Saudi Arabian Mother's Adaption to Western Culture*

**Salihah Alghamdi**

WTE

Mentor: Leslie Reynard, Communication Studies

Autoethnography approach is a well-accepted method of conducting qualitative research intended to gather data with depth, detail, and context of daily life. The purpose of this study is an autoethnographic narrative of mothering in a different culture. Specifically, this study addresses the question: How does a Middle East mother adapt to a new culture? From a scholarly perspective, I use thick description to reflect my experience and to link certain events in such away that these lead to sense-making and adaption to the new surroundings. Using this method enables me to reflect deeply upon my past and current experience, developing an account that provides insight into role conflicts that arise as part of the adaptation process particular to a mother with six children of different ages. Major findings of this paper appear in three themes. First, challenges that face mothers from Middle Eastern culture to adapt to the U.S. culture are different, and possibly more intense, than those faced by mothers from other parts of the world. Second, certain communication strategies you initiate with people in the new culture can be helpful in adapting to this culture. Third, adaptation to the academic culture is different from adaptation to general culture and present an additional dimension of role conflict. Limitations of this study and several future investigations are discussed.

29

*The Impact Physical Activity has on College Students' Self-Reported Stress*

**Anna Katherine Carson**

WTE

Mentor: Angela Duncan, Psychology

Stress experienced by college students can be overwhelming and unavoidable, although there are ways to eliminate or decrease an individual's self-reported stress. Physical activity is commonly advised for a strategy to manage stress. Research shows that physical activity was the most frequently used coping method among college students. A consistent finding throughout research indicated that individuals who do not engage in physical activity reported higher self-reported stress levels compared to individuals who do engage in physical activity. With these findings, engaging in daily physical activity can be shown to have many benefits for college students to improve overall health.

30

*Landing a Job: It's More than Just What's on Your Resume*

**Courtney M. Sweeney**

WTE

Mentor: Ralynn Schmalzried, Psychology

The purpose of this literature review is to take a deeper look at what potential employers are looking for on a subconscious level. By looking at how employers view physically-attractive people compared to average-looking people, this presentation can give an idea on how a

candidate's physical appearance might help or hinder the chances of being employed. This presentation also looks at how physically-attractive people are more likely to be perceived as successful in school and their careers.

## 31

### *Site-directed Mutagenesis in the C-terminal Domain of Telethonin Protein*

**Jacob Yonke**

WTE

Mentor: Takrima Sadikot, Biology

Limb-Girdle Muscular Dystrophy (LGMD) is a group of disorders that affect voluntary muscles, primarily those of the shoulder and pelvic girdle. Currently there are at least 19 forms of LGMD and 15 of these are known to result from genetic defects in muscle proteins. One such form of LGMD, known as LGMD-2G (telethoninopathy), occurs as a result of mutations in the TCAP gene which codes for the muscle protein telethonin. This protein is known to interact with and anchor the muscle protein titin at the ends of the sarcomere, the smallest functional unit of the muscle. Anchoring of titin is important for the regulation and development of normal muscle structure. While many aspects of the interaction between titin and telethonin is well understood, particularly the binding between the two proteins which involves their amino-terminal regions, the function of telethonin's C-terminus is unclear. It is suspected that the C-terminus is phosphorylated during the process of muscle development and that this phosphorylation is necessary for maintaining muscle structure. The goal of this project is to create a C-terminus telethonin mutant that lacks the ability to be phosphorylated using site-directed mutagenesis. This mutant form will subsequently be expressed and purified to compare with the wild-type protein to study form and function.

## 32

### *How Psychology and Law Complement Each Other*

**Rubi Zepeda**

WTE

Mentor: Angela Duncan, Psychology

This project is about Psychology and Law complementing each other. This project explains how and in what situations having a psychologist helps legal situations. One example of law enforcement and psychology complementing each other is whenever there is a person trying to commit suicide. The police calls the psychologist to try to talk the person out committing suicide and avoid a fatality. Another example is when lawyers are dealing with families that have been abused. They rely on psychologists to help these families get over their trauma. In my presentation I will talk about how close psychology and law are. I will also discuss the discoveries I have made, such as the fact that many police departments are required to take a certain amount of hours in Psychology to help them deal with everyday situations. My poster will discuss my internship experience at Washburn School of Law.

### 33

#### *Undergraduate Learning Assistant Experience*

**Leyli Beims**

*H WTE*

Mentors: Jericho Hockett and Linzi Gibson, Psychology

The purpose of the Undergraduate Learning Assistant (ULA) program is to aid the learning of introductory psychology students and promote development of educational and professional skills in ULAs. In this program, I assisted in a Basic Concepts of Psychology classroom, which included working with students during class and office hours, holding study sessions, and giving short presentations. I also conducted a literature review on how gender affects the teacher-student relationship. This program has provided me with valuable experience that I can use in graduate school as both a researcher and potential teaching assistant. I have a much better understanding of the literature review process, which is a vital part of psychological research. My leadership and teamwork skills have greatly improved due to my role in the classroom and close work with three other ULAs. In some ways, the teacher-student relationship is comparable to the therapist-client relationship, so the research I have done to understand that relationship can be directly applied in my future career endeavors. The ULA program has provided an important foundation that I can build on as I continue my education and career.

### 34

#### *Homelessness: The Emotional Stereotyping*

**Rebecca A. Herman**

*WTE*

Mentor: Angela Duncan, Psychology

Despite current research, little is known about the homeless population. What is evident is that many homeless individuals experience daily discrimination. Sexual orientation, criminal record, lack of education, racial identity, and Veteran status are among the many characteristics that ostracize the homeless population. There are changes that need to be made to help this population, become employable especially those who have been incarcerated, lack a school education, or who are unfamiliar with equipment used at job sites. Changing society's view of the homeless can make a difference in not only the homeless population but also the community. The community can also help supply the homeless individuals with resources to take care of themselves, including medications/places to store medications, food, educational resources, and clothing.

### 35

#### *Explicit and Implicit Social Judgments: Gender, Ethnicity, and Body Postures*

**Thaina Dos Santos Jensen**

*H WTE*

Mentor: Linzi Gibson, Psychology

Social judgments reflect the combined influence of multiple sources of information, some of which are directly observable, and others that we must infer. My project's goal was to try and

understand the factors that influence the formation and accuracy of social judgments. This is crucial because social judgments can shape our first impressions and how we respond to others. The consequences of misjudging can harm social relations and contribute to prejudice and stereotype-based discrimination.

## 36

### *The Topology of Facebook*

**Joshua Allen White**

WTE

Mentor: Kevin O'Leary, Communication Studies

The review of literature will uncover previous topological studies of Facebook as well as the history of Facebook itself. In doing so, the study will reflect on the essential structure of Facebook. This structure exists regardless of user or content. As Marshall McLuhan quipped, "the medium is the message." This study is an attempt to uncover the message, or messages, of the medium of Facebook. No human subjects will be used in this study. Instead, this study will be a phenomenological or deep reflection of Facebook from the perspective of the researcher and his use of Facebook while armed with the current literature regarding Facebook. Once the internal logic or ordering of Facebook is explicated, the researcher will reflect on the current and possible effects of that logic upon the social order.

## 37

### *Health Literacy in Low Income Communities*

**Shelbi W. Wagner**

WTE

Mentor: Tracy Routsong, Communication Studies

Health literacy is important because it affects the care plan a healthcare provider should create for a patient. Without the proper approach and care plan, the patient's life is at risk. To determine the healthcare needs of Topeka Housing Authority's Pine Ridge Manor, a low-income community in Topeka, KS, the health literacy of the community must first be measured. There are several different ways to test health literacy, but it was decided the quickest and most effective approach for our community of study was to use the Rapid Estimate of Adult Literacy in Medicine, or REALM-SF. The REALM-SF was paired with a health history survey during an annual community Christmas party. Of the 45 participants there was a distinct split in the results, between people who knew all the words versus people who knew none. Future research should include the THA population who do not have children living in the home, and also include the Spanish version of the REALM-SF.

**38**

***The Effects of Instructor Attire on Student Perceptions and Learning Outcomes***

**Sophia M. Sabala**

WTE

Mentor: Michael Russell, Psychology

The way a person dresses is considered a nonverbal form of communication, regardless of whether a person intends to emit a particular message. Attire can either positively or negatively influence the way people view others. The current research project is a literature review in relation to instructor attire in a college-level environment and the extent to which it has an impact on student perceptions of the course and instructor. After reading and analyzing ten different peer-reviewed academic journal articles, the data suggests that professors who dress in business formal attire are viewed as more credible, organized, and better prepared for class, but there was a higher student-instructor distance. Less formal attire is seen as more friendly and approachable, but commands the least amount of respect. Instructors need to be aware of the message that their clothes emit and how it can affect student perceptions on the quality of the course. The limitation and implications of the research in this area will be discussed.

**39**

***From Trauma to Transformation in Doxazo's Summer Programming***

**Brandon D. Black**

WTE

Mentor: Angela Duncan, Psychology

For my internship this semester I have been working with a division of the Topeka Rescue Mission called Doxazo. Doxazo runs all the children and youth programs in the Hi-Crest community out of Avondale East. Hi-Crest is an impoverished neighborhood on the east side of Topeka. About 92% of children in the community are living in poverty. What that means is that Doxazo comes in during the summer to provide a meal and a day camp three days a week for all the kids ranging from the ages of 0-18. As I have been planning all three programs I have been researching information on trauma and structuring the programs to best help children with trauma. Also I have been able to develop a trauma training for all the volunteers coming to help this summer.

**40**

***The Effects of Coloring on Test Anxiety***

**Katlyn Secrest**

H WTE

Mentor: Ralynn Schmalzried, Psychology

In 1987, Fillmer distinguished good and harmful stress, suggesting that good stress disappears after the task is completed while harmful stress does not. Fillmer suggested relaxation was a useful, but underused, method of coping. More recently, research has focused on specific ways of relaxation through art creation and meditation. Sandmire et. al (2016) found individuals who engaged in activities such as coloring mandalas were successful in lowering overall stress levels.

Similarly, Muthard and Gilbertson (2016) found that coloring lowered levels of anxiety related to giving a small speech. The present study aimed to determine if a positive reduction in test anxiety resulted from completing a coloring page prior to an exam. Preliminary results indicated an alleviation of symptoms following intervention containing a coloring page. Further analysis of results, implications, limitations, and future research will be discussed in the presentation.

## 41

### ***Potential Indirect Effects of an Outbreak of a Native Herbivore Specialist Following the Removal of Honeysuckle***

**Logan R. Appenfeller**

Mentor: Rodrigo Mercader, Biology

Invasive plant species abatement often involves rapid removal of the invasive often leading to rapid uneven growth of native plant species. This condition may lead to rapid expansion of one plant species creating a large resource concentration that may lead to local herbivore outbreaks. At a site in Shawnee Co., KS during the summer of 2012, an outbreak of the locally monophagous herbivore of the common paw-paw, *Asimina triloba*, the *asimina* webworm moth, *Omphalocera munroei*, was observed. This outbreak initiated in locations of rapid increase of understory growth of *A. triloba* following the removal of Amur Honeysuckle, *Lonicera maackii*. Defoliation levels peaked in 2013 reaching near complete defoliation. The outbreak also led to an apparent increase in predator numbers and parasitism rates as suggested by a departure from expected defoliation patterns, and higher parasitism rates observed in larvae collected in 2016 compared to 2014. This suggests a strong potential for increased predation and parasitism of other native species, particularly because *O. munroei* has a single generation emerging late in the summer likely leading predators emerging the following year to feed on other species, and the primary parasitoid observed, *Itoplectis conquisitor*, is a generalist with multiple generations.

## 42

### ***Identification of Genomic Elements in *Drosophila ficusphila* contig25 Using Conservation-Based Bioinformatics Analysis***

**Aseel Abu-Nasser**

WTE

Mentor: Takrima Sadikot, Biology

Using a number of open-source computational genomic tools for sequence alignment, gene-prediction and *Drosophila* genome browsing, the *Drosophila ficusphila* contig25 was examined for relevant genomic elements such as genes, pseudogenes and repetitive elements. The goal of this study was to annotate and identify all the genes present within this contig sequence using the well-annotated *Drosophila melanogaster* sequence as reference for conservation-based analysis. Gene models and gene predictions show that there are nine possible genes within this contig. Our analysis showed that several of these genes, such as CG11425, CG11426, CG11437, CG11438, CG11449, and *laza* are indeed present in this contig and are highly conserved between *D. ficusphila* and *D. melanogaster*. We also identified that a few other genes, including several isoforms of *wun*, *wun2* and CG5062 while shown to be present in contig25, are not truly located

in this region. We suspect that these genes are falsely predicted to be in this region of the *D. ficusphila* genome due to partial-sequence similarity with the other existing genes.

## 43

### *Belize It or Not!*

**Katie Ridgeway**

WTE

Mentor: Judith McConnell-Farmer, Education

"We leave something of ourselves behind when we leave a place; we stay there even though we go away. And there are things in us that we can find again only by going back there." --Pascal Mercier. Being able to experience life in a different country has taught me about simplicity, love, and service to others. We were able to travel to and volunteer in orphanages across Belize. I had no idea that these little ones could love and accept us as brothers and sisters so quickly. Although we were the ones coming up with activity plans and lessons, I could speak on behalf of my group that we learned more from them than they learned from us. Lastly, leaving a piece of my heart in one of the happiest countries, I will forever cherish the opportunity to make memories, learn about another culture, and make new friends.

## 44

### *Schiff Base Cyclization to Form a Cross-Protected Tetraazamacrocycle*

**Christopher Alexander Denton**

WTE

Mentor: Shaun Schmidt, Chemistry

Macrocycles have been used as "hosts" to carry imaging agents through the body. [4<sup>6</sup>]Adamanzane is envisioned to be an alternative to the macrocycles currently used due to the advantages of its potential chemical inertness from the total encapsulation of the metal ion. Milligram scale synthesis of a key intermediate in the synthesis of the final target compound [4<sup>6</sup>]adamanzane, has been achieved by a slow-addition, high-dilution Schiff base condensation between a diamine and dialdehyde using titanium isopropoxide to absorb water produced by the condensation reaction. The initial step in this synthesis is the dialkylation of 4-toluenesulfanamide, which generates the initial two of four amine vertices. The terminal nitrile groups of the protected dialkylated product are selectively reduced into the respective diamine and dialdehyde halves. These halves are condensed together, then reduced to generate the last two amine vertices of [4<sup>6</sup>]adamanzane. The last two amine vertices are then allylated to generate the allylamine group necessary for ring closing metathesis. The first two amine vertices would need detosylated before allylation could occur. However, detosylation of similar protected macrocyclic compounds has been problematic. In an effort to circumvent protecting groups and further study the synthesis of our final target compound, an alternative, more atom-efficient synthetic pathway building off of the unprotected allylamine group is currently being researched.

45

*Influence of Aging on Ovipositional Behavior of Pieris rapae*

**Malcolm Mikkelsen**

Mentors: Rodrigo Mercader and Tracy Wagner, Biology

For many Ovipositional behavior is considered to play a key role in determining host range evolution in plant feeding insects. Identifying the factors that influence host-selection behavior will therefore help gain a mechanistic understanding how associations between plants and plant feeding insects evolve. Due to its effect on the time available for host selection and learning, butterfly age is expected to have a significant effect on host selection. Here we examine the influence of aging on behaviors associated with host acceptance by *P. rapae*. *P. rapae* is a synovigenic insect species for which the ability to learn has been demonstrated. Therefore, as adult females age they are expected to become less selective as they become time limited, but also have the potential to be more efficient foragers due to prior experience. To test this, *P. rapae* were reared in laboratory conditions and female ovipositional behavior recorded 4, 8, and 12 days after emergence and subsequently behavioral sequences were analyzed. Females were recorded with three host options, a preferred n host, a lower-quality host, and a non-host. Preliminary results suggest that in effect *P. rapae* do exhibit less selectiveness as they age and decrease the time required to recognize a proper host.

46

*Enrichment of Magnetotactic Bacteria from a Northeastern Kansas Lake*

**Ashlee M. Herken**

*H WTE*

Mentor: Andrew Herbig, Biology

Magnetotactic bacteria (MTB) contain magnetosomes that allow them to align with the magnetic field of the earth. The alignment with the magnetic field allows these bacteria to migrate toward nutrient rich medium at the oxic-anoxic water-sediment interface. Species of MTB are found in stagnant aquatic environments throughout the world. The purpose of this study was to use a race-track enrichment method to isolate MTB from a water sample collected near the Perry Lake dam. Enrichment was successful, resulting in the isolation of highly motile MTB exhibiting coccobacillus morphology. We are currently investigating the enriched sample to see if the bacteria are sensitive to a magnetic field produced by a standard bar magnet.

47

*The Impact of Religion on Sexuality*

**Abigale J. Welch**

*WTE*

Mentor: Jericho Hockett, Psychology

The purpose of the study is to look for how religion may be related to the development of a person's sexuality and mental health. What was concluded from exploring previous research was that religion has both positive and negative correlations with an individual's developing sexuality

and mental health (Hawley, Mahoney, Pargament, & Gordon, 2015; Pargament, Mahoney, Shafranske, Exline, & Jones, 2013). We expect empirical data (currently in collection) will show that as religiosity increases, satisfaction with one's own sexuality and mental health will decrease, especially for religious non-heterosexual individuals.

**48**

***International Media Seminars in Paris, France***

**Carney Ziegler\*, Noah Paul Cross, and Derrick A. Schwarz**

*\*H WTE*

Mentor: Maria Stover, Mass Media

The presentation will be of the study abroad trip to Paris, France over spring break. Marketing tactics were learned, journalistic tips were given, and various forms of advertisements were analyzed, so this will be the primary theme of the presentation. The group met several journalists who write for both newspapers and magazines, so the group will share what they learned from those writers and contributors. One member's topic was advertising in Paris, so she will be able to speak more on the advertisements seen in France in comparison to those in America. Many of these relate to the food or sexual content present in the advertisements. Along with the media-related aspect of the trip, the cultural differences the group found while in France will be presented, and the group will also be willing to share information on the different architecture and monuments they saw. The sights they were exposed to were historical and culturally diverse from those in America. Therefore, images will be available to display those differences that the group was able to experience.

**49**

***The Effect of University Sports Participation on Academic Performance***

**Holly J. Johnston**

*WTE*

Mentor: Michael Russell, Psychology

It is commonly thought that the busier a person is the quality of performance on other tasks will generally decrease. This project's goal is to determine whether this is the case when comparing participation in college sports and academic performance. Does playing a college sport hinder the athlete from spending the appropriate time on class work? Or does playing a college sport help the student prioritize and open up other helpful opportunities in the classroom? To research this, I analyzed ten different peer-reviewed articles and compared their data to help determine this issue. From these articles the research backs up that college athletes tend to have higher GPAs than non-athletes. There are of course many outlying factors such as type of sport (top revenue producing or not), division, and the coach's personality, but the overall theme is that college athletes tend to also have better GPAs. This could be due to less time to procrastinate, availability to tutors, or support from team and coaches to perform in classroom as well.

**50**

***Anxiety in the Workplace***

**Cassidy B. Merriman**

WTE

Mentor: Ralynn Schmalzried, Psychology

In this poster, I will explore the link between work environment and anxiety. My poster will share causes of workplace anxiety and solutions to lowering anxiety in the workplace. I will compare different literature on the related topics to better understand the positive and negatives of anxiety, as well as exploring in-depth methods to lowering anxiety and stress. Past research suggests that some anxiety can either positively or negatively affect an individual's work environment, depending on how the stress/anxiety is handled. The purpose of this poster is to propose a study to observe what factors make a workplace stressful and understand how individuals can use anxiety and stress to their benefit.

**51**

***Perception of Vertical Gaps: Is Perception Based on Eye Height or Total Body Height?***

**Kimberly Day**

WTE

Mentor: Michael Russell, Psychology

Previous research has examined the ability of individuals to judge whether a vertical gap affords passage and whether passability judgments are based on total height or eye height. Based on previous research individuals are generally accurate at judging whether a vertical gap affords passage. However, this research does not tell us if individuals use eye height or total body height to perceive gap passage. The present study assessed individuals' abilities to judge eye height, total body height, and minimal gap size for passage. Participants in the eye height condition were instructed to position the bottom of the target, with the help of the experimenter, so it is aligned with the middle of their eyes. Each participant completed a task 6 times for a total of 18 trials. Neither feedback nor practice were provided. The order of task was counterbalanced. Using the data collected, we will determine if participants are more accurate at judging eye height or total body height in relation to gap passability judgments.

**52**

***Impact of Stress and Coping in the Workplace***

**Jason A. Kelsey**

WTE

Mentor: Ralynn Schmalzried, Psychology

The aim of my literature review is to examine the causes of stress and how it impacts workers on job performance and what are the ways one can cope with the stress. My goal is to examine different types of stress, identify them, and explain what they do to people in the workplace. Furthermore, the amount of stress someone may have could affect the job performance, which could lead to having less job satisfaction. Coping is a way of handling the stress and finding different possible ways of how each person may have a different form of coping. The ability of

one overcoming and handling the stress at work can help increase job performance, job satisfaction, and the stress that comes along with it.

## 53

### *Establishing Plots for Forest Recovery Following Invasive Honeysuckle Invasion*

**Paul E. Bergeron**

Mentor: Rodrigo Mercader, Biology

*Lonicera maackii* is a difficult to manage invasive plant species that rapidly out competes native understory plants and can disturb regeneration pattern of canopy species. Unfortunately, Honeysuckle abatement can be exceedingly labor intensive and may not be feasible under many circumstances. This study has been initiated to determine whether small scale removal of *L. maackii* would allow for the recolonization of native plants to create small native patches that may serve as future sources of native plants if a larger abatement effort were possible in the future or an incremental abatement effort were attempted. To test this, 20 small plots within dense *L. maackii* located in Shawnee County, KS were selected. Half of them were cleared of all *L. maackii* and the other half was left untouched. Plant cover was surveyed and age of *L. maackii* was determined by counting tree rings using stem cuttings or cores for each plot in early spring immediately following abatement efforts. Plant cover was reassessed in late summer and soil samples were collated to estimate the available seed bank. Plots mean age was 18 yrs old with the oldest plot containing a 35-year-old *L. maackii*. Initial plant survey indicates a mean coverage by species other than *L. maackii* of 18.8% coverage and no significant increase in percent cover in our late summer survey. Results also indicate low levels of viable seeds present in soils. Together these results suggest a very low diversity in these plots, providing a good baseline on which to test the possibility of using low intensity management efforts to create small patches that may serve as sources of native plants for future restoration efforts.

## 54

### *Hopelessness and Affective Forecasting: Mediating Factors of Suicidal Ideation in College Students*

**Delaney Zaborowski**

WTE

Mentor: Ralynn Schmalzried, Psychology

This study was performed to gain further understanding of factors that may mediate suicidal ideation and thoughts. Based on the literature, hopelessness and affective forecasting have been positively correlated with suicidal thoughts. We hypothesized that individuals who show higher tendencies to predict future events to have negative effects will show higher rates of hopelessness and in turn show increased risk for suicidal ideation. Participants completed questionnaires addressing hopelessness, affective forecasting, and suicidal ideation.

## 55

### *Replication Characteristics of a Lytic Bacteriophage Infecting *Bacillus subtilis**

**Rachel N. Seuell**

WTE

Mentor: Andrew Herbig, Biology

Bacteriophages (phages) are viruses that only infect bacteria and are highly specific for certain types of bacteria, sometimes even down to the strain level. Phages are the most abundant microbe on Earth, and can be found anywhere bacteria are found. In previous work from our lab, a phage infecting *Bacillus subtilis* was isolated from a soil sample collected in southeast Kansas. The purpose of this study is to characterize this phage (named “Southfield”; SF) and learn about its replication cycle and molecular properties. We performed one-step growth curves, adsorption rate, lysis kinetics, and host-range experiments on the SF phage. Total phage DNA was purified and subjected to restriction digest analysis. Our preliminary results suggest the genome size of the SF is approximately 12,000 base pairs. The SF phage is a lytic virus that, at a multiplicity of infection of 1, replicates and lyses its *B. subtilis* host within 30 minutes. Ongoing studies will further characterize the SF phage at the morphological and molecular levels.

## 56

### *Active Learning Strategies in a College Class Setting*

**Andrew Z. Koster**

Mentor: Tracy Wagner, Biology

Many universities and colleges are under pressure from a variety of sources to reduce the cost of education and increase graduation rates. As a result, in the sciences many “wet labs” with hands on experiences are being reduced due to higher costs and the increased faculty resources that are required. However, this is at the expense of learning strategies that are kinesthetic or active in process which have been shown to increase understanding of the material. Most of the studies demonstrating the benefit of active learning have been done with students in the elementary and secondary levels. Additionally, most college educators have not had much “educational” training. This combined with their many other duties tends to reduce the amount of experimentation with active learning in the lecture setting. This led to our question of whether active learning strategies in the lecture would be an effective supplement for courses which do not have a lab or have had the lab removed. We are utilizing a series of activities in a science course that does not have a lab to see if this impacts student understanding. This will be assessed by comparing data on quizzes (lecture only) with data from exams (after the activity), as well as personal observations and comments from the students. It is anticipated that students will show more in-depth understanding of topics and that they will comment on specific ways they believe the activities aided their understanding.

57

*Schedule Flexibility in the Workplace and Job Satisfaction*

**Nicolette Paige Womack**

WTE

Mentor: Ralynn Schmalzried, Psychology

This presentation is looking at previous research over flexible schedules in the workplace and how it is related to job satisfaction and employee turnover. I believe that companies who enforce a flexible schedule will see a significant increase in job satisfaction and decrease in turnover. Articles have shown that employees who perceive that they have a more flexible work week will have less conflict between family and work life. Research has also examined the different types of schedules that should be implemented in different companies to gain the full effects of this flexible schedule. This allows for workers to have more job satisfaction in their organization and thus decreases employee turnover.

58

*Community Based Food Program at Shawnee County Juvenile Detention Center*

**Hayley K. Normandin**

WTE

Mentor: Rick Ellis, Learning in the Community (LinC)

My Apeiron presentation will cover a community-based project discussing food insecurity among juvenile youth in Topeka and the implementation of a food program to help this population. While working at the Shawnee County Juvenile Detention Center for my Washburn social work practicum, I began to notice a potential correlation between hunger and behavior with my clients. I worked alongside the KU Child Behavior Lab and created a food insecurity measure to be IRB approved and distributed during my practicum. We surveyed the current and incoming youth from January to March of 2017 and recognized a correlation between the children's behavior and signs of food insecurity. In order to address the issue, I reached out to Harvesters Community Food Bank. Through the implementation of the Harvesters Give Lunch program, each individual who books into the detention center and leaves will be provided with a shelf stable meal that he or she is able to consume in order to improve their behavior and fight hunger in the community. The program will be continued through the Bods Feeding Bods pantry at Washburn University.

59

*Isolation of the Azamacrocycles Formed from the Detosylation of Cyclic Tosylamides*

**Paul M. Heffren**

WTE

Mentor: Shaun Schmidt, Chemistry

Azamacrocycles are used in medical imaging and treatment. The synthesis of these structures requires that the amine groups in the structure be protected from side reactions. Acid hydrolysis deprotection from tosylamide to amine is problematic, but microwave-assisted deprotection has

shown promise. Microwave-assisted acid hydrolysis of tosylamides was investigated using varying solvent composition and heating schemes. Microwave-assisted base hydrolysis using high-boiling solvent was tested as an alternative. In both major microwave-assisted schemes, an Anton Paar Monowave 400 pressurized microwave reactor was used. In addition, reductive cleavage methods were explored using sodium naphthalenide at standard temperature and pressure. Complete deprotection was achieved using microwave-assisted acid hydrolysis. Reductive deprotection produced a mixture of partially deprotected tosylamides and unknown side-products. While complete deprotection was achieved using microwave-assisted acid hydrolysis, the reactor vessel remained pressurized after the heating cycle was complete, and most of the reaction mixture was lost due to explosive effervescence of the mixture. Future investigations will focus on optimization of this procedure and its compatibility with the pressurized reaction system.

## 60

### *Internships: Good and the Bad*

**Evan L. Stilgenbauer**

*WTE*

Mentor: Ralynn Schmalzried, Psychology

The purpose of this literature review is to provide a background on the information researchers have deemed relevant and possibly crucial for interns and students who may want to obtain an internship in the future. Students are continually being pushed to obtain internships as undergraduates, and it is not unusual for recent graduates to take an unpaid internship with hopes of turning it into a future position or at the very least making some contacts and building upon their résumé. This literature review will attempt to decode the mystery of internships and provide a clear and concise summation of recent research on internships and how they can be useful but also in some cases, detrimental.

## 61

### *Solvent-Free Synthesis of Biologically Active Stilbene Derivatives*

**Dekeysha L. Cooper**

*H*

Mentor: Stephen Angel, Chemistry

Solvent-free synthesis of reactions have been increasing in recent years. Reactions such as Aldol condensation, etherification of alcohols, Baeyer-Villiger oxidation, have been completed in the absence of a solvent. The solvent-free Wittig reaction is used to make (E) & (Z) Resveratrol trimethyl ether, used in treatments of cancer. In general, the Wittig reaction is used to form carbon-carbon double bonds. The reaction forms an ylide from a triphenylphosphonium salt and then the base reacts with an aldehyde/ketone which forms the alkene and a triphenylphosphine oxide. The reaction time can be shortened by using a high-energy ball mill (HEBM) and a mild hygroscopic base. Thin layer and column chromatography were used. Adjustment of the mobile phase to help with separation were tried in the isolation of (E) and (Z) Resveratrol trimethyl ether. To further reduce solvent use, column chromatography was replaced by catalytic diphenyl disulfide Isomerization.

62

***What Impact does Laughing Have on Mental Health?***

**Virginia C. L. Kennedy**

WTE

Mentor: Angela Duncan, Psychology

There are countless individuals who suffer from mental disorders every day. Personally knowing someone with a mental disorder, I was curious and eager to do some research. At the beginning of my research, I wanted to know what activities, if any, would be effective for a person suffering from a mental illness or disease. During my research, I came across a topic I found some great information on. My presentation will focus on the information I found on laughter and mental health. The goal of my presentation is to show the impact laughter has on mental health. Through research gathered, laughter not only impacts mental health as a whole, but also plays a different role in various mental disorders. Research tells us that laughter has been shown to buffer a person against negative life circumstances that can often lead to depression or other mental disorders. This presentation will examine ways laughter or humor helps those who suffer from mental disorders such as depression, schizophrenia, bipolar disorder, OCD, panic disorder, and PTSD.

63

***The Role of Glucose Metabolism in Bladder Cancer***

**Amie M. Brunkow**

WTE

Mentor: Takrima Sadikot, Biology

Incidences of bladder cancer account for 5% of cancers in the United States. Most of these are limited to the inner layer of the bladder wall and are called non-muscle invasive bladder cancers. Despite treatments there is a high rate of recurrence with relatively high morbidity/mortality rates. Higher blood glucose concentrations appear to support and increase cancer cell proliferation. The goal of this project is to understand and evaluate the role of glucose metabolism in bladder cancer growth. UMUC-3 cancer cell lines were grown in varying glucose concentrations (25, 100 and 200 mg/dl) to analyze the genes that play a role in the glucose metabolic pathway. Genes of the glucose breakdown pathway were shown to be upregulated at high glucose concentrations. One enzyme of this pathway, pyruvate kinase muscle isoenzyme 2 (PKM2), is a driver of glucose breakdown. PKM2 is active in its tetrameric form and promotes normal glucose metabolism. In a cancerous cell, however, PKM2 forms inactive dimers and adversely effects the normal glucose breakdown pathway. Shikonin, a major component of zicao, a Chinese herbal medicine, is a PKM2 dimer inhibitor. In order to evaluate the efficacy of Shikonin as a potential drug for bladder cancer, we used blue-native gel electrophoresis to check for active PKM2 tetramer formation (a hallmark for glucose breakdown) at the various glucose concentrations and study the effect of Shikonin on the formation and/ or breakdown of these complexes.

64

*The Impact Social Media has on the Job Hiring Process*

**Morgan R. El-Attrache**

WTE

Mentor: Ralynn Schmalzried, Psychology

In this presentation, I will be discussing the impact that social media has on the job hiring process. More specifically, I will briefly touch on the advantages of this topic, and then really demonstrate in depth the disadvantages that can come from an individual's personal social media accounts while trying to apply for a job. After reviewing the literature, research has found that it has become more and more common for an employer to review an applicant's Internet accounts. With that being said, it is important for career-seeking individuals to be aware of the content in their accounts that can be detrimental to their career.

65

*Testing the Reliability of Morphological Sex Estimation Methods Used in Forensic Anthropology*

**Mackenzie M. Walls**

Mentor: Alexandra Klales, Sociology - Anthropology

Biological profile estimation from the human skeleton is one of the primary roles of forensic anthropologists. Recent court cases and the seminal report by the National Academy of Sciences (NAS) in 2009 has pushed for a re-evaluation of the methods used in all forensic sciences, including forensic anthropology. Two morphological methods have been developed in the last decade to more accurately and reliably estimate sex from the human skeleton in light of the Daubert proceedings and the NAS report. The Walker (2008) method uses five skull traits, while the Klales et al. (2012) method examines three pelvic traits. The practitioner examines each trait using the methods, scores them, and then enters these scores within a statistical framework to calculate the probability of sex. This research examines if the methods could be applied accurately by individuals with varying degrees of experience. Three observers with varying levels of experience scored over 100 individuals. Observer agreement was measured using the intraclass correlation coefficient. Results varied by trait, but overall, each observer could reliably and accurately apply the methods; however, accuracy and reliability increased with greater training and experience. This research is part of National Institute of Justice grant #2015-DN-BX-K014 (PI: Dr. Alexandra Klales).

66

*Motivation in the Workplace*

**Clayton R. White**

WTE

Mentor: Ralynn Schmalzried, Psychology

The focus of this literature review is to find the optimal conditions for properly motivating employees in the work place. I will first identify factors that result in employees' genuine enjoyment of and dedication to their jobs. I will then link those motivating factors with job

performances and ease of integration into the workplace. My goal is to gain an understanding of what general motivators most commonly yield high job loyalty and dedication to performing work-related tasks consistently well.

**67**

***Effect of Mood and Anxiety Disorders on Job Performance and Success***

**Kaitlin Sherwood**

Mentor: Ralynn Schmalzried, Psychology

I will be reviewing ten research articles that examine the impact of mood and anxiety disorders on job success and performance. With the use of a poster board as a visual aid, I will be giving a brief overview of the articles I have annotated and how they relate overall to my topic. I'll then discuss how these articles relate to one another and differ. This includes similarities and differences in and between experiments, measures, participants, results and difficulties within the research.

**68**

***Bods Feeding Bods: Addressing Food Insecurity and Accessibility on Campus***

**Ashley Caylor**

WTE

Mentor: Kristine Hart, Learning in the Community (LinC)

This presentation will include information regarding the Bods Feeding Bods on-campus food pantry and the impact it has on the Washburn community. The Bods Feeding Bods mission is to contribute to the overall health, wellness, and awareness of the Washburn University community by addressing hunger issues that affect the campus and the local, national, and global world in which we as students, faculty and staff live. The pantry opened in November 2014 and strives to allow all Ichabods to be able to focus on their ability to succeed and maintain their health at a level that allows them to meet the requirements of their role within the walls of the University. As a student-led and run organization, Bods Feeding Bods is comprised of a student executive council to manage pantry operations and student volunteers to staff the pantry. My role with Bods Feeding Bods this year has been to serve as the Executive Director and Volunteer Coordinator which has primarily involved developing goals for the pantry, recruiting and training new volunteers as well as coordinating a monthly-volunteer schedule. This presentation will address how I have engaged with Bods Feeding Bods and the results and impact this pantry has made on the Washburn University campus.

69

***Employability and College Experience: A Broad Overview of Student Employment, Internships, and Cultural Capital***

**Eric Gorton**

WTE

Mentor: Ralynn Schmalzried, Psychology

In college it is commonplace for students to work on campus, take internships in the community, and utilize and/or gain their cultural capital (e.g., information, skills, familiarity) and social capital (e.g., groups, athletics, community service) in their navigating the educational institution. In the following presentation I will examine the literature of employability skills as well as examining the literature concerning various types of college experiences students participate in. Broadly included will be the implications of access and value of student employment, internships, and cultural/social capital.

70

***Surface-Mediated Oxidation of  $\alpha$ -Methyl Groups on Pyrroles with Oxone***

**Dylan J. Flohrschutz**

Mentor: Sam Leung, Chemistry

Methods currently used for the  $\alpha$ -methyl oxidation on pyrroles are harmful to the environment and its inhabitants because these methods involve the use of heavy metal-based oxidants. Therefore, investigating oxidative methods which are environmentally and economical sustainable is necessary to improve upon the standard synthetic methods used today. Oxone has been shown to be a mild oxidizing agent for a variety of organic molecules in addition to its benign effects on the environment. We have started to explore the use of oxone for the oxidation of  $\alpha$ -methyl substituted pyrroles. In our study, oxidation of pyrroles with oxone adsorbed onto solid-surfaces, such as silica gel, was shown to have a high selectivity for the oxidation of its  $\alpha$ -methyl at low reaction temperatures in dichloromethane. At room temperature, the selectivity of oxidation diminished, but a significant amount of aldehyde was still formed relative to the amount of side products. Further studies are needed to optimize this oxidative method on  $\alpha$ -methyl substituted pyrroles.

71

***Burnout Among Social Service Workers***

**Julia AF Beaman**

WTE

Mentor: Ralynn Schmalzried, Psychology

Individuals working in a career associated with human services have a higher risk of experiencing the burn-out effect. This is characterized by a state of multiple exhaustive factors. Doubt in your ability to positively influence those you are working closely with is another example of job related burn out. In many cases, the work is not only emotionally exhausting, but can also cause physical exhaustion as well. Within these professions, self care is an important part of their daily tasks. Examples can include exercise, personal hobbies, and other creative

outlets. Many aspects of an individual's life can also be effected by work related stress. Personal and professional relationships can suffer if burn out occurs. It is important to be conscious of your own emotional intelligence regarding burn out related warning signs.

**72**

***Democracy and Quality of Life***

**Bailee M. Keeney**

WTE

Mentor: Linsey Moddelmog, Political Science - Geography

Does democracy improve the quality of life for its citizens? It's been long assumed by scholars that it does, but innovations in technology have given way to new research, calling this orthodoxy into question. At its core, this paper tests the hypothesis that democracy does provide a greater quality of life than other systems of governance do, authoritarian regimes in particular. Using GDP/per capita, foreign direct investment, infant mortality rate and enrollment in primary education, among other factors, as core measures of quality of life, I conduct a paired sample t-test of this hypothesis. Using a paired sample t-test to differentiate means, I find substantial support for the aforementioned hypothesis.

**73**

***College Student Satisfaction with Mental Health Services***

**Pasang Tamang**

WTE

Mentor: Angela Duncan, Psychology

The poster presentation is about my experience as an intern at the Washburn Psychological Clinic. This experience is also combined with the research information on the topic of college student satisfaction with mental health services. Firstly, the poster provides information about the clinic and its benefits of having a clinic within the campus. Secondly, the poster will provide the information about my experiences and my involvement with the activities with on and off the site of the clinic. Lastly, the poster will give information regarding the research on college student satisfaction with psychological services in mental health. So, overall it will give the idea about what I have learned through those experiences as I interned at the clinic and how I could apply those skills to my future career. It also gives information about some of the duties I have performed off or on site the clinic. There is some research included in the poster which details college student satisfaction measurement for the psychological services in mental health including short length versus long length session of therapy preference, walk in single session preference etc.

74

*Psychological Aspects of and Gender Differences in Marketing*

**Sarah Cowan**

WTE

Mentor: Angela Duncan, Psychology

I am interested in what psychological factors are involved with marketing and advertising as well as the psychology behind appealing to males and females and what those differences are and how psychological concepts could and are used in marketing. I will be reporting on my internship experience at a marketing firm. Upon conducting research, I found information about gender differences and psychological influences in marketing. The research indicates that advertising still reflects stereotypical roles for males and females. For example, men are seen doing yardwork and using tools whereas women are seen using cleaning products and making dinner. However, marketing firms are starting to abandon this type of advertising as women are becoming more independent and defying traditional gender roles. Sensory marketing is another area of research focused on using the senses to make products more appealing. Studies have shown that the more senses that marketing can appeal to, the more likely it is that people will buy the product.

75

*Been There, Done That: Grandparents Raising Grandkids*

**Nancy Ellen Heeney**

WTE

Mentor: Tracy Routsong, Communication Studies

It is not an uncommon reality for grandparents to raise their grandchildren. The purpose of this study is to understand the parenting issues related to the inter-generational relationship using the Double ABCX Model. Lavee, McCubbin, and Patterson (1985) updated a 1949 theory by Hill to further understand the stressors, resources, perceptions, and adaptations of family stress. Using qualitative research, stories were analyzed using the model.

76

*My Experience in the UK with Morita Therapy*

**Michelle Rana Clearwater**

WTE

Mentor: Brian Ogawa, Human Services

In 2016 I had the privilege of traveling to the University of Exeter Medical School to attend the "9th Annual International Congress of Morita Therapy". I experienced what the world is doing to work toward making Morita Therapy a more mainstream option for the treatment of mental health issues. Morita is being studied around the world as therapy for depression, Ocular Discomfort Syndrome, Chronic Pain, Stress, Cruelty Based Trauma, Atopic Dermatitis, Schizophrenia, OCD, and Psychosis. We then went to a place called Greengate Cottage out in the countryside to participate in the Residential Training necessary to gain certification for Morita Therapy. Every moment is constructed to teach us to "live well" with the expectation of residing together with consideration, thoughtfulness, and meaning with the focus building character,

peaceful interactions, holistic wellness and immersion in Nature. Finally we spent two days of cultural immersion in London, England. We spent one day seeing the sights and the second day we found a huge flea market called Camden Locke giving us the opportunity to experience some local culture and customs.

**77**

***Animal Assisted Therapy with Children***

**Carly W. Brown**

WTE

Mentor: Michael Russell, Psychology

Animal assisted therapy (AAT) is a form of therapy used in combination with other forms of therapy and when other forms of therapy are ineffective at achieving the desired end goals for the patient. Since AAT is a new form of therapy, there is not extensive research examining its effects. Though a variety of animals can be used for AAT, my literature review focused on AAT involving dogs and children. With the limited amount of research of AAT this specific focus was even more limited. The dogs were used in a variety of different setting with children who were severely mentally handicapped to children with no physical or mental limitations. Research has revealed, for example, that dogs were a distraction to AAT while other research found that holding a dog for fifteen minutes had a calming effect. Additional research discovered inconclusive results. In short, the literature shows that there are positive, negative, and neutral results that have been found between AAT and children. The implications and limitations of the research will be discussed along with general knowledge about ATT.

**78**

***Analysis of Melamine in Pet Foods Using Gold Nanoparticles***

**Elizabeth K. Goodrow**

Mentor: Seid Adem, Chemistry

The purpose of this research is to analyze the presence of melamine in pet food with the use of gold nanoparticles. Melamine has been widely used in things such as fertilizer, flame retardant, and resin. However, due to its low cost and high nitrogen content, there has been evidence that it has been illegally added to various foods and products—particularly pet food and infant formula—to falsely increase the apparent protein content. The addition of melamine to various food and dairy products has huge consequences; because when it is consumed, it combines with cyanuric acid which forms insoluble crystals in the kidneys. Gold nanoparticles (GNPs) have excellent optical properties, and can be used as a colorimetric probe to detect for the presence of melamine. Furthermore, when GNPs are in their colloidal state, they exhibit a wine-red color. However, in the presence of melamine, GNPs aggregate and cause the solution to change color to blue. The aggregation-based change in color can also be verified through UV-Vis spectroscopy.

# *Reception*

## Middle Eastern Menu

Roasted Red Pepper Hummus  
Traditional Garlic Hummus  
served with toasted pita wedges

Grape leaves stuffed with rice and vegetables

Beef kebabs - chef's choice of style

Falafel and Gyro meat served in pocket pita bread with onions and  
tomato slices, and Tzatziki on the side

Tunisian Couscous Salad –  
combination of roasted red peppers, cumin, tomatoes,  
cucumbers and cayenne

Basmati rice with diced eggplant, basil and lemon

Baklava

Lemonana - classic Israeli mint lemonade



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**Shaun Schmidt, Chair**

**Administrative Support by Christine Rhoads**

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# *Index of Presenters and Mentors*

(name, page number)

Abu-Nasser, Aseel, 32  
Adem, Seid, 47  
Alghamdi, Salihah, 27  
Anderson, Benjamin, 12  
Angel, Stephen, 40  
Appenfeller, Logan R., 32  
Beaman, Julia AF, 44  
Beims, Leyli, 29  
Bergeron, Paul E., 37  
Bjerke, Susan, 17  
Black, Brandon D., 31  
Brown, Carly W., 47  
Brown, Crystal G., 22  
Brown, Tyler D., 26  
Brunkow, Amie M., 41  
Bull, Kaitlyn R., 11  
Carlson, Carolyn, 13  
Carson, Anna Katherine, 27  
Caylor, Ashley, 43  
Chelemedos, Cailyn, 21  
Chen, Yunhai, 8  
Ciummo, Anna Elise, 17  
Clearwater, Michelle Rana, 46  
Conant, Meaghan, 19  
Conner, Chris, 14  
Cooper, Dekeysha L., 40  
Cowan, Sarah, 46  
Cradle, Verlisa J., 17  
Cross, Noah Paul, 35  
Dafoe, Kraig, 5  
Day, Kimberly, 36  
Decker, Kara, 12  
Denton, Christopher Alexander, 33  
Dos Santos Jensen, Thaina, 29  
Duncan, Angela, 17, 26, 27, 28, 29, 31, 41, 45, 46  
Dweik, Sarah C., 18  
Ebert, Codi M., 12  
Edwards, Lori, 21  
El-Attrache, Morgan R., 42  
Ellis, Rick, 20, 22, 39  
Emry, Jason, 19  
Erby, Kelly, 13  
Etzel, Dennis, 6  
Evans, Darcey, 6  
Evans, Makenna, 22  
Farwell, Keith, 12  
Fenley, Paige, 21  
Feuerborn, Mark A., 14  
Fletcher, Andrew, 5  
Flohrschutz, Dylan J., 44  
Flowers, Harvey, 18  
Foiles, Grace, 12  
Garrison, Karen, 21  
Geha, Michael Francis, 21  
Gibson, Linzi, 29  
Gibson, Lydia, 12  
Goodrow, Elizabeth K., 47  
Goossen, Rachel, 11  
Gorton, Eric, 44  
Green, Emily M., 24  
Haller, Ryan, 21  
Hart, Johnathan Lee, 10  
Hart, Kristine, 23, 25, 43  
Heeneey, Nancy Ellen, 17, 46  
Heffren, Paul M., 39  
Helms, Benjamin D., 8  
Herbig, Andrew, 34, 38  
Herken, Ashlee M., 34  
Herman, Rebecca A., 29  
Herring, Shelby Rey, 22  
Hesse, William S., 24  
Higdon, Nathaniel Boyd Arbuckle, 17, 22  
Hockenbarger, Isaac, 8  
Hockenbarger, Stephen Paul, 8  
Hockett, Jericho, 25, 29, 34  
Hoffman, Shannon, 9, 16  
Houchell, A. M., 5  
Johnston, Holly J., 35  
Jones, Shayndel B., 19  
Keeney, Bailee M., 45  
Kelsey, Jason A., 36  
Kendall-Morwick, Kara, 10  
Kennedy, Virginia C. L., 41  
Klales, Alexandra, 42  
Koster, Andrew Z., 38  
Kubie, Krista M., 6  
Lane, Erika N., 13  
Leung, Sam, 21, 44  
Lickteig, Jeremy Paul, 26  
Lockwood, Park, 14  
Loya-Ruiz, Alexis, 8  
Lunzmann, Bryan D., 7  
Lutz, Mallory, 11  
Mannell, Stephanie S., 16

Mark, Monette, 18  
 Mason, Shyla Ann, 22  
 McConnell-Farmer, Judith, 33  
 McGee, Caitlin, 26  
 McGuire, Amanda Lee, 12, 13  
 Mechtly, Bruce, 8, 16  
 Mercader, Rodrigo, 32, 34, 37  
 Merriman, Cassidy B., 36  
 Mikkelsen, Malcolm, 34  
 Minihan, Samantha L., 21  
 Modellmog, Linsey, 11, 45  
 Monaghan, Kiley E., 17  
 Moore, Elizabeth Lily, 17  
 Nichols, John D., 8  
 Normandin, Hayley K., 39  
 Ogawa, Brian, 46  
 O'Leary, Kevin, 30  
 Perez, Reyna T., 20  
 Phelps-Roper, Gabriel T., 8  
 Pope, Christianna J., 6  
 Prash, Thomas, 10  
 Prece, Paul, 12  
 Price, Cheyanne Larene, 25  
 Reynard, Leslie, 16, 22, 27  
 Ridgeway, Katie, 33  
 Riley, Morgan, 20  
 Rivera, Lara, 21  
 Routsong, Tracy, 17, 19, 25, 30, 46  
 Russell, Michael, 31, 35, 36, 47  
 Russell, Troy C., 14  
 Sabala, Sophia M., 31  
 Sabbarini, Ibrahim, 26  
 Sadikot, Takrima, 28, 32, 41  
 Sandoval, Ruby, 23  
 Schmalzried, Ralynn, 22, 23, 27, 31, 36, 37, 39, 40,  
 42, 43, 44  
 Schmidt, Shaun, 33, 39  
 Schnoebelen, Jim, 18  
 Schwarz, Derrick A., 35  
 Secrest, Katlyn, 31  
 Seuell, Rachel N., 38  
 Sherwood, Kaitlin, 43  
 Singleton, Jamie L., 25  
 Smalley, Michael R., 8  
 Smith, Sarina Marie, 17  
 Spencer, Nicole A., 19  
 Staats, Emma J., 12  
 Stewart, Rory, 14  
 Stilgenbauer, Evan L., 40  
 Stitt, Andrea, 20  
 Stover, Maria, 14, 19, 35  
 Stuart, Abigail, 10  
 Sullivan, Sharon, 6  
 Sun, Nan, 7, 8, 9  
 Sweeney, Alex, 21  
 Sweeney, Courtney M., 27  
 Tabor, Wesley A., 17  
 Tamang, Pasang, 45  
 Throm, Megan, 12  
 Triggs, Tanner, 7  
 Van Hercke, Shannon E., 21  
 Velez, Julie A., 6  
 Vogel, Andy, 13  
 Vogelsberg, Libbie M., 25  
 Wagner, Paul, 26  
 Wagner, Shelbi W., 30  
 Wagner, Tracy, 24, 26, 34, 38  
 Walls, Mackenzie M., 42  
 Watt, Kelly, 13  
 Weiner, Penelope, 5  
 Welch, Abigale J., 34  
 White, Clayton R., 42  
 White, Joshua Allen, 30  
 Womack, Nicolette Paige, 39  
 Wooldridge, Cindy, 20, 24  
 Wynn, Kerry, 12  
 Yonke, Jacob, 28  
 Zaborowski, Delaney, 37  
 Zamora, Arianna, 23  
 Zepeda, Rubi, 28  
 Zhao, Bo, 9  
 Ziegler, Carney, 35

## *Notes*