Washburn University Apeiron απειρον

April 20, 2018

Schedule of Events

10:00 am	**Student Registration and Poster Setup** *Memorial Union, Washburn A & B Lobby*
10:30 a.m. – 12:15 p.m.	**Fine Arts Presentations** *Mulvane Art Museum* *Rita Blitt Gallery*
11:45 a.m. – 3:00 p.m.	**Oral Presentations** *Henderson Learning Resources Center* *Rooms 118, 206, 210, 217*
3:00 p.m. – 3:45 p.m.	**Welcome** *Memorial Union, Washburn B* Dr. Courtney Sullivan, Chair, Apeiron Committee
	Introduction of Last Lecture Dr. Shirley Dinkel Professor of Nursing
	Last Lecture Dr. Cynthia Hornberger Professor Emeritus of Nursing
3:45 p.m. – 5:00 p.m.	**Poster Session and Reception** *Memorial Union, Washburn A*

www.washburn.edu/apeiron

WASHBURN UNIVERSITY CAMPUS MAP

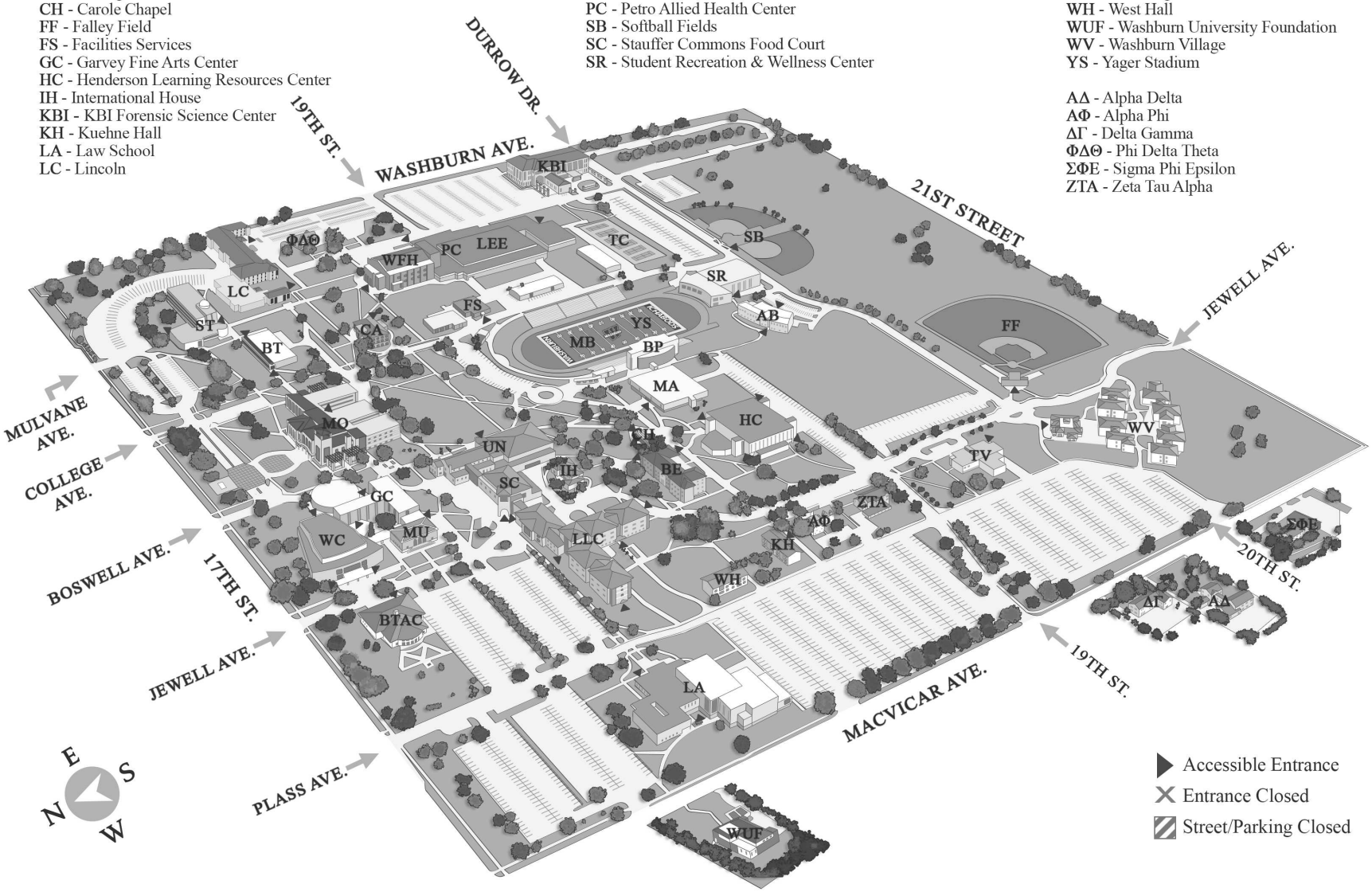
1700 SW College Ave., Topeka, Kansas 66621 • 785.670.1010

AB - Art Building
BE - Benton Hall
BP - Bianchino Pavilion
BT - Bennett Computer Center
BTAC - Bradbury Thompson Alumni Center
CA - Carnegie Hall
CH - Carole Chapel
FF - Falley Field
FS - Facilities Services
GC - Garvey Fine Arts Center
HC - Henderson Learning Resources Center
IH - International House
KBI - KBI Forensic Science Center
KH - Kuehne Hall
LA - Law School
LC - Lincoln

LEE - Lee Arena
LLC - Living Learning Center
MA - Mabee Library
MB - Moore Bowl
MO - Morgan Hall
MU - Mulvane Art Museum
PC - Petro Allied Health Center
SB - Softball Fields
SC - Stauffer Commons Food Court
SR - Student Recreation & Wellness Center

ST - Stoffer Science Hall
TC - Tennis Courts
TV - KTWU Television Studio
UN - Memorial Union
WC - White Concert Hall
WFH - Whiting Field House
WH - West Hall
WUF - Washburn University Foundation
WV - Washburn Village
YS - Yager Stadium

ΑΔ - Alpha Delta
ΑΦ - Alpha Phi
ΔΓ - Delta Gamma
ΦΔΘ - Phi Delta Theta
ΣΦΕ - Sigma Phi Epsilon
ΖΤΑ - Zeta Tau Alpha



Last Lecture

"A Purposeful Life: Creativity and Leadership in a Complex World"

presented by

Cynthia Hornberger, Ph.D.

Professor Emeritus of Nursing

Dr. Hornberger will share personal stories from nursing, leading, teaching and creating to illustrate principles of complexity science and the importance of the space between us. Living in a connected world described as volatile, uncertain, complex and ambiguous, she will share humorous insights and evolving thoughts about new ways to perceive, think, and purposefully act to enhance our creativity and leadership.

Memorial Union – Washburn B
3:00 pm

Cynthia Hornberger is a Professor Emeritus in the School of Nursing. A member of the Washburn University faculty since 1989, Cindy served as the Dean of the School of Nursing from 2000 to 2009 and Special Assistant to the President from 2010 to 2016. Her past administrative responsibilities included leadership of the School of Nursing; and the University Relations, Strategic Analysis and Reporting, and the Alumni Association departments, as well as leading development of the Leadership Washburn professional development program and the Vision 2022 Strategic Plan. As professor her academic interests began in medical-surgical nursing and finished with health policy and leadership in complex systems, and international education. Her research and publications topics included tobacco cessation; heart failure management; the nursing shortage; international double degree programs; and leadership. She is certified as a Lean Six Sigma: Green Belt and as a Clinical Nurse Leader by the American Association of Colleges of Nursing.

Dr. Hornberger previously served as President of the Kansas Association of Colleges of Nursing, and on boards of several health-related organizations. She received numerous teaching, leadership and service awards and is a Rotary International Paul Harris Fellow, a 2006 graduate of Leadership Kansas, and a Washburn University Alumni Fellow. Her academic degrees include a Bachelor of Arts in Human Development, a Master of Science and PhD in Nursing, and a Master in Business Administration from the University of Kansas; and a Bachelor of Science in Nursing from Washburn University. In addition, she holds a certificate in Health Care Outcomes Management from The University of Kansas Medical Center.

This lecture is made possible with support from the Washburn University Foundation. Dr. Hornberger has generously requested this contribution be made to the Ellen Carson Nursing Scholarship Fund.

Schedule of Oral Presentations

(HC = Henderson Learning Resources Center)

Time/Location	Presenter	Title
11:45 am – 12:05 pm		
HC 118	Tucker Schell, Aaron Spero, Bejamin Wolf, Christopher Ford, and Yuquan Hong	*Social Media: Propaganda with Bot Automation* (Mentor: Nan Sun)
HC 206	Shuting Ye and Yueyi Sun	*Destruction and Rebirth: A Composition of Electronic Music and Digital Art* (Mentor: Shiao-Li Ding)
12:10 pm – 12:30 pm		
HC 118	Isaac Cason, Aaron Morris, and Brandon Habig	*Comparison of Electrical Efficiency in Cryptocurrency Mining Algorithms* (Mentor: Nan Sun)
HC 206	Samantha Cockrell, Natasha Manning, and Rachel Hadel	*Travelling Abroad: Costa Rica* (Mentor: Lenora Edwards)
HC 210	Heather Ossiander	*Cultural Communication Competence: A Guide for Residential Property Managers* (Mentor: Leslie Reynard)
HC 217	Paul Heffren	*Isolation of the Azamacrocycles Formed from the Detosylation of Cyclic Tosylamides* (Mentor: Shaun Schmidt)
12:35 pm – 12:55 pm		
HC 118	Angela Kiamco, Jessica Lancaster, Abida Syed, and Tisha Prather	*To Browse or to Purchase: Which Device Is the Answer?* (Mentor: Nan Sun)
HC 206	Marissa Meis, Brooke Manny, and Claire Leffingwell	*Mastering the Rule of 33%: Empowering Yourself and the Women Around You* (Mentor: Michael Gleason)
HC 210	Sarah McILrath	*Initial Analysis of Scrapers from the Saxman Site (14RC301): A Great Bend Aspect Site in Rice County, Kansas* (Mentor: Laura Murphy)
HC 217	Bridget Minellono	*Creating Algorithms to Test Various Expectations Involving Quantitative Modifiable Randomizers (MR)* (Mentor: Gaspar Porta)
1:00 pm – 1:20 pm		
HC 118	Chris Rouse, Mitchell Brattin, and Bridget Minellono	*FestPoint – An Online Management System for Events and Festivals* (Mentor: Nan Sun)
HC 206	Hannah Fairchild and Mackenzie Moore	*Exploring Leadership in Response to Natural Disasters* (Mentors: Andrew Herbig and Michael Gleason)
HC 210	Lori Holstrom	*Test Excavations at the Classen Ranch, Meade County, Kansas* (Mentor: Laura Murphy)
HC 217	Gregory Osuji	*Creating a Game Using Quantified Modifiable Randomizers (MR)* (Mentor: Gaspar Porta)

Time/Location	Presenter	Title
1:25 pm – 1:45 pm		
HC 118	Tucker Schell, Aaron Morris, and David Schepp	*Repertoire: A Retro Approach to Contemporary Learning* (Mentor: Nan Sun)
HC 206	Ashlee Herken	*Replication Characteristics of a Lytic Bacteriophage Infecting Bacillus subtilis* (Mentor: Andrew Herbig)
HC 210	Matthew Parnell	*Greensboro Massacre: The Rise of the White Nationalist Militia* (Mentor: Steve Hageman)
HC 217	Katelyn Meyer	*Analyzing a Conflict Model Between Two Players with Few Outcomes and Diverse Strategies* (Mentor: Gaspar Porta)
1:50 pm – 2:10 pm		
HC 118	Jess Wilson and Connor Dean	*Pitcher's Eye* (Mentor: Nan Sun)
HC 206	Matthew Benorden	*Creating a Psalm of Lament for the Bereaved* (Mentor: Daniel Petersen)
HC 210	Koichi Yoshisaki	*How Do Young Japanese People Feel About "Being Adult"?* (Mentor: Sangyoub Park)
HC 217	Kevin Lewis Jr.	*The Psychological Aspects of Terrorism Portrayed Through French Media* (Mentor: Courtney Sullivan)
2:15 pm – 2:35 pm		
HC 118	Kyle Sell	*Fantasy Fox* (Mentor: Nan Sun)
HC 206	Alexus Rodriguez	*The Mental Music Scene* (Mentor: Dennis Etzel, Jr.)
HC 210	Brandon Black	*Cultural Intelligence in a Midwestern University* (Mentor: Cheryl Childers)
HC 217	Rachel Alexander	*Improving Education: An Argument for Universal Vouchers* (Mentor: Paul Byrne)
2:40 pm – 3:00 pm		
HC 118	Raju Thapaliya	*Health Prediction System: A Web-Based Application for Guidance on Health Issues* (Mentor: Nan Sun)
HC 206	Sam Calderwood	*Jesus Barabbas: A Marginal Character* (Mentor: Christopher Jones)
HC 210	Rose Hastings	*An Examination of the Relationship Between Infant and Maternal Mortality and Healthcare Systems* (Mentor: Steven Cann)
HC 217	Lydia Shontz	*The Importance of Differentiating Between Classic Conspiracy and Real Conspiratorial Political Theories* (Mentor: Jericho Hockett)

Fine Arts Presentations

10:30 a.m. – 12:15 p.m.

Mulvane Art Museum-Rita Blitt Gallery

WTE denotes Washburn Transformational Experience

Moderator: Angela Beatie

►10:30 a.m. – 11:00 a.m.

Ichabods Speak Out: A Reading
Maggie Jo Hutchinson, Natalie L. Engler, and Lakpa Dolma Sherpa *WTE*
Mentor: Dennis Etzel Jr., English

A poetry reading featuring Washburn students who contributed poetry to the book Ichabods Speak Out: Poems In the Age of Me, Too. This book, made possible through generous donations, helps further make Washburn a campus of consent.

►11:00 a.m. – 11:50 a.m.

An Exploration of the Modern Brass Quintet
Music performed by the Washburn University Honor's Brass Quintet:
Andrew Clapp and Dalton Imoff-Brey, *Trumpets*; Caity Morris, *Horn*;
Noah Chard, *Trombone*; Andrew Moss, *Tuba*
Mentor: Michael Averett, Music

The Washburn University Honor's Brass Quintet would like to present a lecture recital outlining historically significant works for the brass quintet idiom. This recital would be 50 minutes in length and feature five student performers and presenters.

►11:50 a.m. – 12:15 p.m.

Me/You
Haley Delgado
Mentor: Benjamin Wills, Art

For Apeiron 2018, I am presenting a spoken word performance accompanied by a sculptural component. The piece is titled Me/You. My poetry deals with my own life experiences and the connection that can be made between the performer and the viewer. I will stand solitary under a chandelier I constructed out of egg cartons, wood, broken glass and marbles. The poem prepared focuses on my younger years in life, expressing the experiences I had and capturing the

atmosphere of those moments with mood-lighting from the chandelier. My chandelier will be hung from a stand of steel that is transportable, so there will no necessary set-up beyond my own apparatus. In order to fully experience my performance, lights will have to be turned off in the room for the two to three minute duration. During that time, my sculpture will change colors to match the verse of my poetry through an LED light that is within the chandelier. My face will be the only thing visible, creating a vulnerability for myself and a secrecy for the viewers. This is meant to capture the ambience my poetry creates and dismiss any distraction that may take away from the performance. Me/You is meant to be experienced within a crowd, viewing a single person opening themselves up to those they can't see. It takes spoken word poetry and combines it with the medium of Sculpture for a unique experience of multiple arts.

Oral Presentations

11:45 a.m. – 3:00 p.m.

Henderson Learning Resources Center

WTE denotes Washburn Transformational Experience

Session α

Moderator: Bruce Mechtly

►11:45 a.m. **Henderson Learning Resources Center, Room 118**

Social Media: Propaganda with Bot Automation
Tucker Schell, Aaron Spero, Benjamin Wolf, Christopher L. Ford, and Yuquan Hong
Mentor: Nan Sun, Computer Information Sciences

IchaBots are used to leverage the application programming interface (API) of selected social media platforms, like Twitter and Reddit, to investigate the operation, strengths, and limitations of social media bots. We also explore options for creating bots without the assistance of an API. After investigating general processes for deploying bots that can target particular users based on their profile content and activity, we set up scenarios to compare the effectiveness of the bots in identifying our target population for each social media platform. This study shows the importance of propaganda bots in a social media landscape and how these systems can be abused to sway the public opinion in events such as elections.

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

Comparison of Electrical Efficiency in Cryptocurrency Mining Algorithms
Isaac R. Cason, Aaron D. Morris, and Brandon J. Habig *WTE*
Mentor: Nan Sun, Computer Information Sciences

Cryptocurrencies rely on computationally expensive cryptographic hashing algorithms to verify transactions. Because mining is necessary for a cryptocurrency to function as a reliable monetary exchange, the power costs associated with it must be kept to a minimum to be sustainable. In this research, we conducted experiments to look into algorithmic solutions to sustainable cryptocurrencies. We set up three identical machines and run mining algorithms for three different cryptocurrencies. We measure and log the power consumption for each machine during that time. We then compare the data of the three and test the differences for statistical significance. We report and explain the algorithm that results in the most electrical efficiency.

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

To Browse or to Purchase, Which Device Is the Answer?
Angela O. Kiamco, Jessica Lancaster, Abida Syed, and Tisha A. Prather
Mentor: Nan Sun, Computer Information Sciences

The purpose of this research is to answer the question "How has technology changed consumer shopping habits?" Online shopping is ubiquitous. Mobile devices such as tablets and smart phones can provide the service needed to users equivalently to desktop computers. In this research we conduct a survey study. Once we collect data, we analyze its statistical results and investigate the common habits of online browsing and shopping. Specifically, we focus on which devices are predominantly used for browsing and purchasing items online in certain age groups. We believe findings of this research will help inform organizations consumers' technology usage habits and needs.

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

FestPoint – An Online Management System for Events and Festivals
Chris W. Rouse, Mitchell C. Brattin, and Bridget Minellono
Mentor: Nan Sun, Computer Information Sciences

FestPoint is an online festival and event management system that helps event organizers automate and track tasks, consolidate and organize information, provides metrics for marketing and task management, and allows interaction with different stakeholders in the festival such as vendors, sponsors, and employees. The system is broken into a Vendor section, a Sponsor section, an Employment section, a Stage Performance Section, an Equipment Inventory section, and a Marketing Section. The user will interact with the system from a dashboard that has different tabs for each section, putting everything that a festival manager needs into one place. They will be able to find contacts, send email invoices, track and manage tasks, and download artist and sponsor assets all from this dashboard. The system is implemented using PHP 7, AJAX, MySQL, HTML, and CSS. The system lives on an external server, and is located at myfestpoint.com. With security in mind, we are using an object-oriented flavor of PHP called PDO to interact with the MySQL database. This limits the chance of a SQL injection attack. AJAX will be used to provide the system with real-time interactivity.

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

Repertoire: A Retro Approach to Contemporary Learning
Tucker Schell, Aaron D. Morris, and David J. Schepp
Mentor: Nan Sun, Computer Information Sciences

Pairing a Java application with a PostgreSQL database, Repertoire is a retro-styled, lightweight digital flashcard learning tool. Users have the choice of loading various dictionaries (in the style of flashcards) into a persistent state profile. Although the application is specific for languages

utilizing non-phonetic alphabets, Repertoire is flexible enough for any subject that might require rote learning. The application features multiple modes including a study mode to review mastered and unmastered cards, an inventory mode to examine mastered cards, and a game mode to incrementally prove mastery of unmastered character cards. Cards feature native language characters (which could be adjusted to images in the case of other subjects) as well as background information on the characters (e.g. type of word).

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

Pitcher's Eye
Jess Wilson and Connor T. Dean
Mentor: Nan Sun, Computer Information Sciences

Pitcher's Eye is a mobile application designed to make tracking pitches robust. Whether it be during a practice or a game, tracking pitches and calculating statistics from the data is essential for every baseball team. This application allows for coaches and players to register an account and have their account tied to a specific team. Each team listing has a list of players that belong to the team and the coaching staff. Once registered, the user is able to track pitches individually and save specifics about each pitch. Once the details of each pitch are entered for any given game or practice, the data are analyzed to produce reports useful to the coaching staff and the baseball players. Pitcher's Eye is developed using Android Studio for the user interface and Google's Firebase database.

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

Fantasy Fox
Kyle Sell
Mentor: Nan Sun, Computer Information Sciences

Fantasy Fox is an action-adventure game for Windows. The gameplay is similar to the game *The Legend of Zelda*. The idea for the characters is loosely based on the foxes of Japanese folklore. These foxes are rational and have magical powers. Each fox has a special gemstone that they need in order to use their powers. They are powerless without their gem; losing or breaking it would be devastating for them. Some parents have decided that they should keep their childrens' gems for their protection. These young foxes will receive their gem after they have matured enough to be responsible. They also must prove themselves by passing a test; aided by their gem. The game will follow a young fox in this situation. A player is in control of a fox and will navigate this character though wilderness and abandoned human buildings. The fox's task could be to scout out some area,retrieve something, or kill something. The player must pursue their goal while avoid traps and battling other creatures by using physical or magical attacks. Magic can include fire attacks and other classic elements. Tools used include Unity Personal, Microsoft Visual Studio 2017 Express, Blender, and Sketchup Make.

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

Health Prediction System: A Web-Based Application for Guidance on Health Issues
Raju Thapaliya
Mentor: Nan Sun, Computer Information Sciences

In this project, I have developed a system that allows users to get instant support on their health problem through a web-based system. This application provides the user with the list of diseases/illness based on the symptoms provided by the user. The system provides suggestions for the doctor related to that sickness. Furthermore, the user can view profile and expertise of the doctor related to certain diseases and set an appointment with the doctor by viewing the appointment schedule. The data inside the system are controlled and accessed using the concept of data mining. This application allows patients to get possible solutions to health problems in a few clicks. It provides doctors with answers they are looking for the individual patient and get prepared for it in advance. The healthcare sector can highly benefit from the implementation of the application like Health Prediction System.

Session β

Moderators: Tony Silvestri and Rodrigo Mercader

►11:45 a.m. **Henderson Learning Resources Center, Room 206**

Destruction and Rebirth: A Composition of Electronic Music and Digital Art
Shuting Ye and Yueyi Sun *WTE*
Mentor: Shiao-Li Ding, Music

This project is a work of Shuting Ye, a junior of music major, and Yueyi Sun, a senior of art major presenting a collaborative composition of electronic music and art. The work utilizes mediums of Western classical music and oil-painting to create an interdisciplinary digital artwork. "Destruction and Rebirth," inspired by the belief of Buddhism, is the artistic subject of the project. Samsara, in Buddhism, means that death and life do not permanently exist but in a cycle of birth, death, and rebirth. In this composition, the musician explores sounds by using music software and modern recording techniques depicting scenes of life and death. The artist splashes colors on the mirror first and breaks the mirrors into pieces after. This process repeats several times representing the Buddhist belief of the endless cycle of death and rebirth. This interdisciplinary composition is prepared prior to the presentation. The presentation will focus on the artistic ideas and the process of collaborative and creative endeavor.

►12:10 p.m. **Henderson Learning Resources Center, Room 206**

Travelling Abroad: Costa Rica
Samantha A. Cockrell, Natasha M. Manning, and Rachel Kathryn-Marie Hadel *WTE*
Mentor: Lenora Edwards, School of Nursing

This presentation is meant for educational purposes in relation to what nursing students can expect if traveling abroad to Costa Rica. Our goal is to draw attention to this beautiful country in hopes that students will continue participating in such life- changing adventures. The three of us, students of Washburn University, had the opportunity of a lifetime to travel with the School of Nursing to help people much less fortunate than ourselves. On this mission trip we assisted in providing free services such as; blood pressure readings, blood sugar readings, height and weight screenings, cholesterol screenings, ears, nose, and throat screenings, as well as addressed skin concerns and other health related issues the Nicaraguans and people of Costa Rica were undergoing. We provided other services as well, we distributed over 500 pairs of shoes to children in need. On another occasion, we dedicated an evening to feeding children and mothers street-side of a homeless shelter. We spent long hours of construction work for a camp for children who are housed while their parents spent days working in coffee bean fields. None of us knew the experience we were about to live nor the amount of love, compassion, and emotion we would endure, we thought we were traveling to change lives and make a difference in the world, while we accomplished that and beyond, our lives were also changed.

►12:35 p.m. **Henderson Learning Resources Center, Room 206**

Mastering the Rule of 33%: Empowering Yourself and the Women Around You
Marissa Meis, Brooke Manny, and Claire Jannette Leffingwell *WTE*
Mentor: Michael Gleason, Leadership Institute

As representatives of the Leadership Institute at Washburn University, our group gathered information from a variety of sources related to women and mentorship to be presented at the Ignite Conference. This conference was coordinated by the Junior League of Topeka at Washburn University on January 17, 2018. Our presentation features Tai Lopez's Rule of 33%, the theory that leaders should spend equal amounts of time with those who are less experienced, of equal experience, and more experienced than they are. This Rule of 33% can be used to enrich an individual's personal and professional relationships, and we wanted to focus on how women specifically can use this concept to maximize their relationships and leadership skills in the workplace. This presentation will discuss mentorship, supporting and encouraging other women leaders, and how this Rule of 33% can be used to fluidly move through your life using the unique skills you gain from each of your relationships.

►1:00 p.m. **Henderson Learning Resources Center, Room 206**

Exploring Leadership in Response to Natural Disasters
Hannah Mae Fairchild and Mackenzie Moore *WTE*
Mentors: Andrew Herbig, Biology; Michael Gleason, Leadership Institute

In 2017, a Category 4 hurricane, Harvey, affected southern Texas reaching 130 mile per hour winds. It was estimated that Hurricane Harvey did $125 billion worth of damage. We organized a service trip to Texas in January in response to this natural disaster. As volunteers, we assisted with rebuilding and demolishing homes and moving furniture for those in need. During the trip, the group worked in conjunction with Habitat for Humanity and Operation Blessings. The trip reinforced how important it is to have leadership in times of need, specifically servant leadership. Servant leadership begins with the desire to serve first and lead second.

►1:25 p.m. **Henderson Learning Resources Center, Room 206**

Replication Characteristics of a Lytic Bacteriophage Infecting Bacillus subtilis
Ashlee M. Herken
Mentor: Andrew Herbig, Biology

Bacteriophages (phages) are viruses that infect bacteria and are the most abundant microorganisms on Earth. Lytic phages replicate within the bacterium and are released into the environment upon lysing the cell. Use of lytic phages has been proposed as an alternative to treat antibiotic resistant bacteria and has been employed to control food-borne bacterial pathogens. We have begun to characterize a bacteriophage isolated from creek bed sediment on a farm in southeast Kansas. This phage infects *Bacillus subtilis* and forms opaque to clear plaques on a lawn of cells. Preliminary data reveals adsorption of the phage to the cell within 20 minutes. Investigation of growth kinetics indicates that this phage has a latent time of approximately 60 minutes, lyses *B. subtilis* cells by 100 minutes, and results in a burst size of ~200 phage particles per cell. Transmission electron microscopy results reveal that the phage is a *Siphoviridae* in the *Caudovirales* family. In addition to these results, we have preliminary data characterizing the genome of this phage by restriction endonuclease analysis.

►1:50 p.m. **Henderson Learning Resources Center, Room 206**

Creating a Psalm of Lament for the Bereaved
Matthew Benorden *WTE*
Mentor: Daniel Petersen, Social Work

At times, individual persons and groups are unable to process their grief in a meaningful way. They get "stuck" and do not know how to express their grief. In this process, individuals travel through a short, but established outline forming their own unique group lament. The process includes five parts: (1) Address and introductory cry; (2) Complaint or lament; (3) Confession of

trust; (4) Prayer for deliverance, and; (5) Praise. After the group contributes to each part of the outline, the facilitator will then take the contributions and write a distinctive, fluid lament. That finished product is then given to each group member. By doing this, individuals are able to share with "gut-level" honesty within a setting of acceptance and vulnerability.

►2:15 p.m. **Henderson Learning Resources Center, Room 206**

The Mental Music Scene
Alexus N. Rodriguez *WTE*
Mentor: Dennis Etzel Jr., English

This oral presentation shows the research and practice of how music therapy helps with one's mental health. As members of Hope Through Headphones, we strive to not only create a support system for students working with their mental illnesses, but we also work to create an area of education and awareness within all students around campus. Our research shows that music is a form of sensory stimulation that provokes responses due to familiarity, predictability, and feelings of security associated with it. The aim of music therapy is to help individuals develop relationships and address issues they may not be able to address using words alone. We took this into practice by designing, planning, and implementing a community concert to encourage the use of music for mental health. As college students, we want to continue on our mission to "provide mental health education and support to students using music to connect and inspire."

►2:40 p.m. **Henderson Learning Resources Center, Room 206**

Jesus Barabbas: A Marginal Character
Sam Calderwood
Mentor: Christopher Jones, Philosophy

For centuries the Barabbas scene in the Passion narrative has been misinterpreted by Christians. Shedding light on this misinterpretation would led to a clearer understanding of the passion narrative and the objective that the authors of the gospels were trying to achieve. Horace Riggs Jr. in 1945, illuminates the problem of the Barabbas scene, ultimately concluding that Barabbas in not a real person, but is rather Jesus Christ by another name. Though Riggs' position is correct in saying Barabbas is not a real person, his conclusion that Barabbas is Jesus by another name is incorrect. Through evaluation and reference to the Hebrew Bible and extra-Biblical texts, I argue instead that Barabbas is not a real person, but rather a literary creation used as an illustrative instrument to give reference to the scapegoat ritual found in Leviticus 16. Viewing the Barabbas scene in this light will provide a better understanding of what is trying to be achieved by the authors of the gospels by including this scene in the passion narrative.

Session γ

Moderators: Leslie Reynard and Tracie Lutz

►12:10 p.m. **Henderson Learning Resources Center, Room 210**

Cultural Communication Competence: A Guide for Residential Property Managers
Heather Ossiander *WTE*
Mentor: Leslie Reynard, Communication Studies

This project in applied communication theory uses the case method to examine communication challenges often experienced by practitioners in the multi-housing rental industry. Managers must be prepared to work with increasingly diverse cultures whose first introduction to American laws and life-practices often occurs within their apartment community.This study applies theories and concepts from Organizational CN, Organizational Rhetoric, and Intercultural CN as the basis for a training manual oriented to use by managers of residential properties. Focus areas include cultural sensitivity, facilitating processes of conflict and change, and rhetorical strategies to meet and overcome difficult situations that can arise when working with individuals who have moved to the United States from another country.

►12:35 p.m. **Henderson Learning Resources Center, Room 210**

Initial Analysis of Scrapers from the Saxman Site (14RC301): A Great Bend Aspect Site in Rice County, Kansas
Sarah McILrath *WTE*
Mentor: Laura Murphy, Sociology & Anthropology

The Saxman site (14RC301) is a Great Bend Aspect (AD 1400-1700) camp or village site in Rice County, Kansas. The site was surface-collected and excavated by Mike Weimer in the late 1960s. Weimer donated 1,198 artifacts to the Kansas State Historical Society. Of these artifacts, 316 were classified as scrapers. Here we present an initial analysis of the scrapers; they were organized by material type, and then measured, weighed, and described, to include the number of worked edges. Of 278 identified scrapers, the most prevalent material type was Permian chert at 61%, followed by Smoky Hill Jasper at 12%, suggesting that most of the lithic material was local and expedient; however 16% was Alibate material from Texas. Of 366 scrapers, the average weight was 6.4 grams, maximum length is 110 mm, width is 52 mm, and thickness is 17 mm suggesting these scrapers were used to the point of discard. However, the range in size (e.g.110 mm long to 12 mm short) may indicate specialized or expedient tools. Both the size and number of scrapers may indicate the site was an intensive hide production center as well. Through the analysis of a donated collection, we hope to enrich our understanding of the use of scrapers at this Proto-Wichita site and how these tools relate to everyday women's tasks with hide working.

►1:00 p.m. **Henderson Learning Resources Center, Room 210**

Test Excavations at the Classen Ranch, Meade County, Kansas
Lori L. Holstrom *WTE*
Mentor: Laura Murphy, Sociology & Anthropology

In July 2017, we conducted survey and test excavations at the Classen Ranch, located 15 miles south of the town of Meade, Kansas, as part of an archaeological field school with Washburn University and the Odyssey program at the University of Kansas. Here, we documented and excavated a hearth feature (14MD101) within a buried soil between 50 and 80 cm below surface near the Sandy Creek cutbank, a low-order tributary of the Cimarron River. The feature contained charcoal, fire cracked rock, burned bone fragments, an antelope-sized jaw bone, and chipped-stone. My ongoing research of the site has been to clean, catalogue, and tabulate the artifacts excavated from the site. As well as researching literature about Claude Hibbard and archaeological excavations within the region. I also helped prepare two charcoal samples we sent to a lab in Illinois for radiocarbon dating. These two charcoal samples yielded AMS14C uncalibrated ages of 780 +/-15 and 790 +/- 20 BP. These initial test excavations add to our knowledge about the lives of late-Holocene High Plains hunter-gatherers and their environment, of which we have little evidence of in the archaeological record.

►1:25 p.m. **Henderson Learning Resources Center, Room 210**

Greensboro Massacre: The Rise of the White Nationalist Militia
Matthew Louis Parnell *WTE*
Mentor: Steve Hageman, History

The 1979 Greensboro Massacre showed America the brutish and violent nature of white nationalist organizations. The Massacre is the result of a long history of Neo-Nazi and Klan organizations intermingling and exchanging ideas. In this exchange of ideas and ideology, a militant fervor overtook hold over the white nationalists. This presentation will trace the development of militant white supremacy in the mid-twentieth century. The Greensboro Massacre will act as a climax that filters through all the development since the fifties. Starting with the death of George Lincoln Rockwell, the founder of the American Nazi Party, white nationalism within American began long process that resulted in outbreaks of radicalized and ideological violence. For many, the American Nazis were viewed as just another political organization until this time. For many, the Greensboro Massacre acted as a painful reminder that white nationalism still existing in America and it was changing. This presentation will demonstrate the changing tide of white militia groups from the fifties all the way until the late seventies and early eighties.

►1:50 p.m. **Henderson Learning Resources Center, Room 210**

How Do Young Japanese People Feel About "Being Adult"?
Koichi Yoshisaki *WTE*
Mentor: Sangyoub Park, Sociology & Anthropology

This research explores how Japanese young people understand the meaning of adulthood in an age of uncertainty. At the same time, this study examines whether Japan has a new social stage, "emerging adulthood" as part of growing-up process. Previous studies highlight that the transition to adulthood for young Americans is very hard due to economic turbulence over the past 10 years, thus the need to change the timetable for transitioning from adolescent to adulthood. Compared to the U.S, many Japanese young people have encountered a gloomier economic downturn for much longer, causing turmoil for adolescents entering adulthood. This cross-cultural research will shed some light on how being adult is defined and redefined outsides the U.S.

►2:15 p.m. **Henderson Learning Resources Center, Room 210**

Cultural Intelligence in a Midwestern University
Brandon D. Black *WTE*
Mentor: Cheryl Childers, Sociology & Anthropology

Over the last five years or so, researchers (see Earley and Mosakowski 2004; Thomas 2006; Ang et al. 2007) have used the concept of "cultural intelligence" to facilitate mutual understanding between cultural groups. Cultural intelligence is defined as "a person's capability to adapt as s/he interacts with others from different cultural regions (Ang et al. 2007:337). Being culturally intelligent allows individuals to meet other individuals "where they are at" by using their cultural knowledge to interpret the situation. It is important to integrate cultural intelligence into everyday routines. Universities are places where cultural intelligence should be applied (Ancis, Sadlecek, and Mohr 2000; Otten 2003). In Topeka, the administrators of Washburn University promote it as being diverse and where all cultural groups are welcomed and nurtured. This study is to explore the level of cultural intelligence of administrators and employees who interact regularly with students. Culturally intelligent administrators and support personnel in any university increases the likelihood of providing students with a well-rounded education that prepares them for a diverse, dynamic world. In this study we generated a survey that selected academic staff and non-academic staff at Washburn will fill out through Survey Monkey that asks a series of questions that will determine if and how culturally intelligent they truly are.

►2:40 p.m. **Henderson Learning Resources Center, Room 210**

An Examination of the Relationship Between Infant and Maternal Mortality and Healthcare Systems
Rose Hastings
Mentor: Steven Cann, Political Science

In this study, an analysis was conducted in order to determine whether the type of healthcare used by a nation (universal, private, etc.) had an effect on the infant and maternal mortality rates of that nation. Forty-seven countries were surveyed, looking at both different factors of maternal and infant health, as well as other factors that could contribute to lower survival rates for mothers and children. Overall, it was discovered that those countries that had higher levels of public spending on healthcare had lower infant and maternal mortality rates than those nations with higher private spending on healthcare.

Session δ

Moderators: Steve Cann and Miguel Gonzalez-Abellas

►12:10 p.m. **Henderson Learning Resources Center, Room 217**

Isolation of the Azamacrocycles Formed from the Detosylation of Cyclic Tosylamides
Paul M. Heffren
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. Microwave-assisted base hydrolysis and 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.

►12:35 p.m. **Henderson Learning Resources Center, Room 217**

Creating Algorithms to Test Various Expectations Involving Quantitative Modifiable Randomizers (MR)
Bridget Minellono
Mentor: Gaspar Porta, Mathematics and Statistics

My focus is calculating expectations regarding conflicts using quantified Modifiable Randomizers (MR). Working within a setting in which we compare the outputs of two or more quantified MR, I developed algorithms, simulations, and models that carry out a variety of these dynamics—giving access to empirical data regarding their behavior. A great deal of emphasis is placed on streamlining strategies and comparing fixed strategies with adaptive strategies. Additionally, I present recursive programs that I created to calculate the exact expectations (the probability of any one side 'winning') of outcomes of conflicts in these settings. Finally, I explore search algorithms to find five and seven rock-paper-scissors-like cycles.

►1:00 p.m. **Henderson Learning Resources Center, Room 217**

Creating a Game Using Quantified Modifiable Randomizers (MR)
Gregory N. Osuji *WTE*
Mentor: Gaspar Porta, Mathematics and Statistics

I coded a virtual game using Modifiable Randomizers (MR). The MR are used in conjunction with a schedule of implementation of modifications to create a dynamic that has a high player decision moment ratio. The user interface allows single player and PVP settings, and an adventure that grows with a randomly influenced predictive growth curve allows for simple scenarios within which the player gages their strategies and effectiveness during the decision points. This is the first stage in an ongoing game design project.

►1:25 p.m. **Henderson Learning Resources Center, Room 217**

Analyzing a Conflict Model Between Two Players with Few Outcomes and Diverse Strategies
Katelyn Meyer *WTE*
Mentor: Gaspar Porta, Mathematics and Statistics

I was interested in the simplest way to model a conflict between two players. Modifiable randomizers gave me a simple environment within which I could explore this type of dynamic. We designed an experiment with few outcomes but with an infinite number of possibilities as a parameter went to infinity, which involves long strings of repetitions of these outcomes. I am going to show you some of the remarkable results we were able to conclude! In particular I will describe elements of our exploration that had to do with "strategy".

►1:50 p.m. **Henderson Learning Resources Center, Room 217**

The Psychological Aspects of Terrorism Portrayed Through French Media
Kevin L. Lewis Jr. *WTE*
Mentor: Courtney Sullivan, Modern Languages

Terrorism has become a problem that has proliferated in recent years. It has struck several nations throughout the past decade and has no indication of stopping. Therefore, it is important to evaluate and apply what we can learn from terrorism in the past and use it to analyze how we can better combat terrorism. One of the most prominent purveyors of thoughts, feelings, and international sentiments is the media, with film being one of the most powerful. Film can be seen as a mirror that reflects the public's anxiety about terrorism. In the two films that I address, *Made in France* and *Nocturama*, we can see the psychological aspects of terrorism play out. The two films illustrate the role of group dynamics within terrorist organizations, the need for brotherhood or family, and the desire to fight for a greater cause. Overall these films reflect these psychological traits from what we see in the real world today. These films help us understand the mindset of terrorists and understanding is crucial to being able to combat and fix the root causes of terrorism. While entertainment is certainly a factor in the creation of these films, is there anything we can glean from these films to better contain the threat of terrorism?

►2:15 p.m. **Henderson Learning Resources Center, Room 217**

Improving Education: An Argument for Universal Vouchers
Rachel Alexander *WTE*
Mentor: Paul Byrne, School of Business

This paper looks at how universal vouchers might improve the current school system in America. The paper takes a theoretical approach with empirical data integrated throughout. It looks at the problems that exist in the current American school system how universal vouchers could address the problems. It examines real voucher programs' effects and why the stated effects may be understating the benefits of the vouchers. The paper addresses changes that would occur within the market for school teachers. Finally it addresses objections from dissenters and why the objections may not be as much of a concern as they are believed to be.

►2:40 p.m. **Henderson Learning Resources Center, Room 217**

The Importance of Differentiating Between Classic Conspiracy and Real Conspiratorial Political Theories
Lydia R. Shontz *WTE*
Mentor: Jericho Hockett, Psychology

While certain aspects of the term "conspiracy theories" are generally accepted, the term itself lacks a definition, especially when practically applied. Experts have attempted to fill this gap, with the term "conspiracy theory" becoming multi-categorical to account for varying validity,

content, and viewpoints. We concur that a division of conspiracy theories is appropriate, however, we propose a more objective split. Our proposition is that the most imperative features dividing conspiracy theories are authenticity and falsifiability. While some conspiracies subscribe to a classic, perhaps paranoid explanatory pattern, others are more realistic. Real conspiracies do happen within our political and social structure, but by referring to all conspiracies in the same vein, we are dismissing investigation into tangible conspiratorial activities. Thus, we are proposing a framework developed from a multitude of academic texts to assist in distinguishing between paranoid and practical conspiracies. Arguments to the validity are addressed as well as necessity and positive outcomes of such a split. We also discuss theoretical gaps, and possible future research beyond the literature review.

Poster Presentations

3:45 p.m. – 5:00 p.m.

Memorial Union, Washburn A

WTE denotes Washburn Transformational Experience

1

Propositional Logic Expression Parser and Evaluator

Derek Jase Wright

Mentor: Bruce Mechtly, Computer Information Sciences

This project utilizes a java program that implements Dijkstra's Shunting-yard algorithm to parse a logic expression. Dijkstra's shunting-yard algorithm uses stacks to convert expressions from infix to postfix notation. It does this by pushing operators onto a stack, then popping them off once they have the correct number of expected variables. This program uses the algorithm to create an expression in postfix notation. The program then uses the postfix notation to evaluate the expression and display a truth table for the possible values of the variables.

2

Health & Willpower Experiment

Alex L. Hothan *WTE*

Mentor: Michael Russell, Psychology

Over the years, there have been several advancements in the fields of weight loss and exercise. While ways to improve our health have increased, the struggles of maintaining our health or changing unhealthy lifestyles remain. With regards to college students, higher numbers of work hours and/or college credit hours can consume much of the day, leaving little energy and time for keeping their bodies healthy. It has been shown that increased stress and lower willpower are correlated with unhealthy lifestyles and increased struggles with improving overall health. On the contrary, healthier people are known for expressing higher willpower and self-efficacy. The current study examines the relationship between our self-perceived willpower, self-efficacy, and how they relate to the achievement of health goals. Participants are first surveyed on their schedules, self-perceived willpower, and self-efficacy. Measurements of weight, BMI, and fat percentage are then recorded for baseline measurements of health. These measurements are taken at time one and then again after five weeks. Discussion will be given to (1) the interrelationship between self-efficacy, willpower, and the obtainment of a healthier self, and (2) a theoretical argument for enhancing success for those seeking to be healthier.

3

Women in Leadership: Steps to Success
Allison Elsbernd *WTE*
Mentor: JuliAnn Mazachek, Leadership Institute

This literature review explores the position that women hold as leaders and how to best involve women in more leadership positions. Women are not represented equally throughout leadership roles within organizations. Many studies believe this to be because of gender roles that restrict women from being seen as effective leaders. Women are seen as more nurturing and collaborative, while men are controlling and demanding. This idea is challenged when women take on leadership roles that require the traits that are thought to be masculine, leading to a negative impression to subordinates. However, when looking at genders, men and women are comparable in their abilities. Both genders are capable of being effective leaders, each having the traits that are necessary for leaders. With this knowledge, there are steps that can be taken within companies and workers to help bridge the gender gap such as training, approaches to the topic, and mentoring.

4

Group Division Making in Small Business and Management Techniques
Alex Edward Head *WTE*
Mentor: Kevin O'Leary, Communication Studies

My presentation will discuss and review different management theories and take a look at how communication and division making is achieved. I will examine approximately five to ten different management theories and and see how they fit in with different businesses. I am writing a paper approximately 6 to 8 pages on this topic. My major is integrated studies with business and communication focuses including a fine art minor. I feel this project allows me to dimonstrate the use of all of those while also preparing me for the world outside of college.

5

Depictions of the Effects of French Colonialism in Recent Haitian and Martinican Literature
Ailyn Castillo Najera
Mentor: Courtney Sullivan, Modern Languages

There is no doubt that the exploration of the New World greatly harmed the native people of the unexplored lands. With the arrival of the colonists came heinous acts such as slavery, rape, and genocide. Today, these acts form a part of history that is often forgotten. Yet, it must be known that the colonization that took place years ago continues to affect people today—specifically, people of color. Thus, by using literary works such as *Le Livre d'Emma* (*The Book of Emma*) and *La Rue Cases Nègres* (*Black Shack Alley*) this project will explore how French colonialism in Haiti and Martinique continues to affect people of color. For instance, poverty, lack of education,

racism and colorism are all product of the colonization that took place centuries ago. Along with presenting these issues, this paper searches for answers as to how society can heal the scars of slavery while solving the current issues we have at hand.

6

Marijuana and Crime Rates

William P. Haynes *WTE*
Mentor: Steven Cann, Political Science

In 1996 California became the first state to legalize marijuana for medical use. The trend continued and even though today the federal government still considers marijuana a schedule 1 narcotic, over 29 states including Washington D.C. have legalized the drug for medical purposes. Eight states have even gone as far as to legalize the drug for recreational sale and consumption. The purpose of this analysis is to determine what effect, if any, statewide medical marijuana legislation has on total property crime in the United States. By using a time series analysis with multiple regressions it has been determined that there is a strong correlation between the number of states that have enacted medical marijuana policies and the reduction of the total U.S. property crime rate over time.

7

Analysis of Melamine in Pet Food Using Gold Nanoparticles and UV-Vis Spectroscopy

Elizabeth K. Goodrow *WTE*
Mentor: Seid Adem, Chemistry

The purpose of this research is to develop a colorimetric sensor using gold nanoparticles (GNPs) to detect the presence of melamine in solid pet food samples. Due to its low cost and high nitrogen content, there has been evidence that melamine has been illegally added to various products to falsely increase the apparent protein content. The currently used methods of detection are expensive, time-consuming, and require skilled personnel. Thus, there is a need to develop cheap, fast, and portable technique to detect and analyze melamine contamination. Techniques based on gold nanoparticles are being developed for this purpose. When GNPs are in their colloidal state they exhibit a wine-red color, however, in the presence of melamine, GNPs aggregate which causes the solution to change color to blue or purple. The aggregation-based change in color can also be monitored through the use of UV-Vis spectroscopy. In the presence of melamine, the absorption band of GNPs shifts from 520 nm to above 750 nm. The limit of detection for this method was determined to be 0.12 ppm.

8

Forensic Fiber Analysis of Vehicle Interiors for Possible New Forensic Database

Katlyn J. Hays *WTE*
Mentor: Holly O'Neill, Chemistry

In the world of forensics, databases are frequently utilized as tools for comparison with case evidence either for identification of evidence or to assist in narrowing down a list of potential suspects. Currently, however, there is no database for the interior fabrics of vehicles, though many crimes are committed in vehicles. The purpose of this research was to evaluate the potential usefulness of such a database. Interior fibers from a randomly chosen sample set of vehicles (5 different makes and models) were collected and characterized using polarized light microscopy (PLM) and relative refractive index comparison. Fourier transform infrared (FTIR) microscopy was then used in transmission mode to help identify the vibrational modes of the functional groups in each fiber and assign each fiber to a polymer fiber class (if indeed they were man made). Results show that 3 major classes of fibers are used in vehicle interiors including polyester (PET), polypropylene and nylon, although more data is needed to determine if there is a general trend for fiber classes used in certain makes and models of vehicles.

9

Morita Therapy Seminar on Outpatient Counseling

Leandra Hamm *WTE*
Mentor: Jericho Hockett, Psychology

Morita Therapy is an Eastern therapy modality that is not widely practiced in the United States. I was able to attend a conference at the University of Puget Sound in Tacoma, Washington in May of 2017. The conference hosted Dr. Peg LeVine (Morita Therapy Practioner) and Dr. Ogawa (Morita Therapy Scholar), with whom I was able to interact with as a student respondent on a panel at the conference. During my time in Tacoma, I along with other students, also participated in an intensive residential Morita treatment program. During this intensive residential, we were able experience many aspects of Morita Therapy in a practice setting.

10

Oxidation of Benzylic Methyl Groups on Pyrrole Compounds Using OXONE on Silica Gel

Nicholas E. Sloop *WTE*
Mentor: Sam Leung, Chemistry

Based on the work by Fields *et al*, Oxone ($KHSO_5$) was used as an oxidizing agent with silica gel to pursue surface-mediated reactions to oxidize α-methylpyrroles to α-formylpyrroles. Previous work by research students Long and Flohrschutz provided a simple reaction that was carried out successfully and easily reproducible. However, the reaction time was long. In this

study, to speed up the reaction, heat was applied and the ratio of Oxone and silica gel was adjusted. The reaction times were shortened from the 4-day range to as little as 1 day.

11

Karyotype Variation in Early Generation Polygeneric Wide Hybrids of Perennial Wheat

Reegan AJ Miller
Mentor: Matthew Arterburn, Biology

Perennial wheat breeding lines are produced by crossing annual hexaploid bread wheat (*Triticum aestivum*, 2n = 6x = 42, AABBDD) with perennial wheatgrass species such as tall wheatgrass (*Thinopyrum elongatum*, 2n = 14, EE) and intermediate wheatgrass (*Thinopyrum intermedium*, 2n = 6x = 42, EEJJSS). The hybridization process is usually followed by doubling chromosome content with colchicine so that each chromosome has a pairing partner. These hybrids exhibit a perennial life cycle and are useful in sustainable agriculture systems. When these perennial wheat lines are used in crosses to other wheat varieties, subsequent generations experience considerable chromosome number variation. We performed cytological examination of a unique set of perennial wheat crosses, involving various Thinopyrum parents, that were performed without the use of colchicine. We examined F1, F2 and F3 specimens of these crosses. Expectedly, chromosome number varied considerably in the specimens examined. Fertility rates were very low and multiple specimens were completely sterile. We used genomic in situ hybridization (GISH) to identify the genome origins of the chromosomes present, and detected considerable variation among the alien chromosomes.

12

FTIR Analysis of Automotive Paint Chips

Ryan Haller *WTE*
Mentor: Holly O'Neill, Chemistry

In criminal cases involving vehicles, automotive paint chips may require analysis and characterization in the forensic laboratory. In such cases, the bulk of the analysis and identification used to obtain such a list is accomplished using Fourier Transform Infrared Spectroscopy/Microscopy (FTIR Microscopy). Normally, each individual layer of a paint chip is first isolated using a stereomicroscope and a sharp blade, in a time and labor intensive process, followed by infrared analysis to identify vibrational modes such as carbonyl stretching bands, characteristic peaks in the fingerprint region, from 1000 to 600 cm^{-1}, corresponding to the stereochemistry of the compounds, and sometimes vibrational modes in the far IR region, past 3000 cm^{-1}.These vibrational modes translate to functional groups that are present in the binders and pigments in paint. Transmission is used in this technique instead of attenuated total reflectance (ATR) because ATR tends to cause peak shifting. The purpose of this study is to compare the FTIR data obtained from the layer isolation technique with that obtained using a faster and less labor-intensive cross-sectioning technique. Preliminary results suggest that cross-section analysis produces equally viable data, provided that each paint layer in the cross-section slice is approximately 10 microns or greater in thickness.

13

Implementing Community Service in Place of Suspension

Andrea Stitt WTE
Mentor: Richard Ellis, Center for Community Services

The Youth Court program allows students who have been suspended from school to have positive learning experiences by completing community service hours. The number of community service hours is based on the intensity of the offense, frequency of offense, and number of offenses by the student. When students are suspended they miss out on learning in the classroom and can get behind in school work. This program allows the students to stay in school and complete their community service either after school or during the weekend. Adolescents who participated in a volunteer intervention program reported significantly greater intentions to become involved in political, community, and helping behaviors than those in the control group and viewed virtuous and altruistic behaviors as part of their self-worth (Snyder and Smith, 2015). Furthermore, increasing school engagement, rather than decreasing school engagement by expelling a student, acts as a deterrent for future delinquent behaviors (Keating, Tomishima, Foster, and Alessandri, 2002). Implementing community service in place of suspension would not only benefit the suspended students by increasing their learning and decreasing problematic behaviors, but also benefit the community by providing organizations with much needed service.

14

How Small is Too Small: Pushing the Limits of Aperture Size for Useful FTIR Data Collection for Forensic Automotive Paint Samples

Dekeysha L. Cooper WTE
Mentor: Holly O'Neill, Chemistry

The collection of trace automotive paint samples in a forensic laboratory is a tedious and time-consuming process. Most forensic laboratories require analysts to isolate individual layers of the automotive paint chip to maximize the aperture area available for analysis by a Fourier Transform Infrared Spectrophotometer (FTIR) Microscope. The FTIR spectra are interpreted to obtain information regarding the binders present in each layer. In this study, a complex 6-layer automotive paint chip was prepared and analyzed using two different slicing methods. The automotive paint chip was first sliced to isolate each layer then analyzed using an FTIR microscope and a variety of aperture sizes ranging from 25 microns x 120 microns to 4 x 120 microns. The resulting spectra from each aperture size were overlaid and compared. The same FTIR analysis was then performed for a cross-section slice of the same paint chip, and the spectra from all aperture sizes were overlaid and compared. Finally, the spectra from the smallest aperture size for each slicing technique were overlaid and compared. Initial results of this study show that while the baseline has some variation, spectra from the small aperture sizes have consistent overlap with spectra from the larger aperture sizes in the areas that lead to the classification of the binder. A comparison of the isolation spectra and the cross-sectional data shows similar results as well.

15

The Effect of Higher Cigarette Taxes on State Smoking Rates

Skyler P. Urban WTE
Mentor: Steven Cann, Political Science

This study examines the effect of the cigarette tax rate on the percent of the population that smoke in each state. I compare the rate of smoking in 2005 to 2015 within each state. I then attempt to find any correlation or effect of taxes on smoking rates. Using regression, I find the correlation and the amount of variation in smoking rates that can be accounted for due to state tax rates. I also introduce, as an independent variable, if a state has put in place a comprehensive ban on smoking. Smoking bans have also seen a strong increase in popularity. This variable introduction makes it possible to show if raising the cigarette tax rate is, in fact, the best way to achieve lower smoking rates when considering popular state legislation. In this study, I intend to show that raising taxes on cigarettes has a measurable effect on reducing the state smoking rate. Throughout my analysis, I found that raising taxes on cigarettes can, in fact, account for a measurable decrease in the percentage of the state population that smokes.

16

Gun Control Laws and Their Effect on Gun-Related Death

Talin A. Golightley WTE
Mentor: Linsey Moddelmog, Political Science

Forty-eight states in America have adopted at least one gun control law that prevents at-risk criminals from owning a gun legally. This study focused on determining if these gun control laws, compiled in a list by Shapiro, Chinoy, & Williams (2017), decreased gun death rates in the states that had adopted them using Center for Disease Control firearm mortality rate by state data from 2015. It has been determined in this study that gun control laws do have a negative impact on gun death rates. College education rates and unemployment rates also affect gun death rates negatively.

17

Effects of Emotional Regulation, Transformational Leadership, and Intervention Strategies on Burnout

Zorrae M. Bowie WTE
Mentor: RaLynn Schmalzried, Psychology

Because of the emotional nature of care-giving professions such as social work, individuals are vulnerable to burnout. Feelings of burnout are associated with low levels of motivational resources, and have negative consequences for job performance, organizational culture, and an individual's mental health. Reasearch has shown that burnout is one of the most influential aspects of worker disengagment thus it has costly effects for the organization (absenteeism, increased turnover) and has taxing emotional effects for the individual (mental health). The research for this project was centered on identifying what burnout is, how it impacts employee

engagement and finding suggestions for reversing characteristics of burnout and improving organizational and individual outcomes.

18

What Did You Say?: Observing Public Speaking Training Through the Lens of Uncertainty Reduction

Randall R. Smith *WTE*
Mentor: Tracy Routsong, Communication Studies

To be able to speak publicly is an important life skill. At a local youth organization, the afterschool program stresses that importance, to the point where there is a scholarship competition based not only on experiences, but on speaking skills. Using a training guide created by Washburn University through the theoretical framework of the Uncertainty Reduction Theory, this project observed the process of working with one student on speaking skills.

19

The Reduction of 2-Tosylamidoethyl Disulfide

Keith R. Johnson
Mentor: Shaun Schmidt, Chemistry

A reduction of 2-tosylamidoethyl disulfide to 2-tosylamidoethanethiol was researched and experimented on over a course of a semester. The starting material of 2-tosylamidoethyl disulfide was prepared and was reduced to 2-tosylamidoethanethiol with various reducing agents which included DTT, BME, and $NaBH_4$. The percent yield of the crude starting material is 30.15% and the purified starting material is 33.36%. Each product, including the starting material, was characterized by nuclear magnetic resonance. The only reducing agent that was powerful enough to break the disulfide bond of 2-tosylamidoethyl disulfide was DTT, but with the added effect of DTT removing the tosyl group from the starting material.

20

Immersion into the Athletic Training Profession: National Athletic Trainers' Association Student Leadership Committee

Alexis Vale Yelland *WTE*
Mentor: John Burns, Kinesiology

This presentation will analyze the leadership opportunities the leadership development that students have gained by working with our professional organizations in Athletic Training. Alexis Yelland has served as the District V Executive Director and as the National District V Representative for the Athletic Training Student Leadership Committee. These committees enabled Alexis to network, problem solve, and gain professional experience while also being a student in the Athletic Training program at Washburn. During her service she worked to review and rewrite the committees bylaws and policies, initiate a Leadership Academy in District V, and

planned the entire student session at the National Convention this upcoming June. Through this process she encountered several leaders and learned how to become a well rounded leader who can continue to take on these crucial roles in the profession.

21

Technology and Its Effects on Comprehension

Rebecca A. Herman *WTE*
Mentor: Linzi Gibson, Psychology

With the growing age of technology, face-to-face interactions and in some cases, voice-to-voice interactions, are becoming less common, while texting, emailing, hash tagging, and writing (reports, business letters, etc.) are becoming more prevalent. These new modes of communication have the potential for detrimental effects on humans and how they comprehend nonverbal communication. For example, if an individual continually texts, they may not have the same understanding of sarcasm, something that is difficult to convey through text than someone who spends the majority of their socializing by communicating face-to-face with individuals. By first understanding the participants' preferred method of communication, and then testing their comprehension of sarcastic and sincere statements, we can examine the effects electronic communication has on the comprehension social exchanges.

22

Characterization of SFΦ, a Siphoviridae Bacteriophage

Kayden A. Webb and Reuben P. Powell
Mentor: Andrew Herbig, Biology

Bacteriophages (phages) are viruses that are host-specific to prokaryotes. These infectious particles, which consist of proteins and an encapsulated nucleic acid genome, are the most numerous and diverse of all microbes. Recently, interest in phages has increased due primarily to their potential as antibiotic alternatives and use in combatting bacterial food-borne diseases. In 2016, Washburn students isolated a bacteriophage, herein referred to as SFΦ, from local soil samples that infects the Gram-positive bacterium *Bacillus subtilis*. Here, we describe results of experiments designed to characterize the replication and genome of this phage. Based on transmission electron microscopy of purified phage, SFΦ belongs to the taxonomic Order Caudovirales and Family *Siphoviridae*. Adsorption rate of the phage to *B. subtilis* was determined as was latent period and burst size from one-step growth curve data. The genome of SFΦ was compared to the well-characterized Bacillus phage SPO1 using restriction fragment polymorphism analysis. Our findings confirm that SFΦ is a unique phage from SPO1.

23

The XYZ's of Peer Acceptance
Shawna Meree Allen *WTE*
Mentor: RaLynn Schmalzried, Psychology

There are three main topics for this project; peer acceptance, peer rejection and victimization in preschool children. The study of peer acceptance and rejection is crucial during early emotional and social developmental years in youth as it could be the foundation of later life acceptance and emotional well-being. Peer rejection and victimization is a common topic for older adolescents and teens and has not been focused on as much for children of preschool ages. There are multiple factors that can increase the likelihood of a child's chance of being rejected by peers. By studying peer rejection in preschool aged children, preventative measures can be developed to help decrease later in life rejection and/or victimization once children enter their teen years and adulthood.

24

Short-Term Marine Biology Field Program at Veritas Universidad in Costa Rica
Claire M. Pickert *WTE*
Mentor: John Mullican, Biology

Tropical seas hold the highest ecosystem and species diversity in the oceans. The Short-Term Marine Biology Field Program at Veritas Universidad focuses on the interaction between marine species and their environment by introducing the basic concepts of oceanography, marine geology, marine ecology, and marine biology. The course also covers the natural and human environmental impact, and the utility, management, and conservation of the ecosystems. The course consists of a hands-on field program followed by a molecular biology laboratory component. Participating students spend time in San Jose, Costa Rica, where Veritas Universidad is located, as well as travel the entire length of Costa Rica's Pacific Coast during the field program portion.

25

International Leadership Case Study Competition 2017: Addressing Systemic Issues of Poverty and Mental Illness Through Authentic Leadership and Situational Leadership
Brooke Manny and Claire Jannette Leffingwell *WTE*
Mentor: Michael Gleason, Leadership Institute

Presenters, who traveled to Brussels, Belgium for one week for the International Leadership Association Conference, will share research presented at the conference's Case Study Competition. Students involved with this WTE opportunity, worked to find a leadership-based solution to a social problem facing turbulent times. One of two Washburn teams presented "A living death: The study of children facing mental illness in poverty." This presentation

investigated the causes of mental health and poverty in children through the analysis of multiple studies. These studies continually found that poverty and mental health issues are a cyclical issue and cannot be solved individually. These studies also found that solutions focused on tackling poverty first were unsuccessful compared to mental health relief based solutions. Therefore, the speakers posited solutions to alleviate the pain children face as a result of poverty and poor mental health through authentic and situation leadership. Understanding the research found home-based solutions were unsuccessful, the speakers argued this relief should first come from education programs. Authentic leadership as analyzed by Bill George could help teachers focus on plans for children specifically, and not a one-sized-fits-all solution. Likewise, situational leadership as analyzed by Peter Northouse allows teachers to use this authentic leadership to work best with students in different environments--not just for the children's personality.

26

Living and Learning in Havana, Cuba
Danielle E. Irwin *WTE*
Mentor: Georgina Tenny, Modern Languages

I had the opportunity to explore the culture and history of Havana, Cuba. Our group participated in Spanish lessons as well as various excursions, including several tips to downtown Havana, a weekend in Viñales, and a day at the beach. We witnessed firsthand how Cubans embrace their incredible culture in their day-to-day lives. In addition, I not only built on my speaking and comprehension skills, but I was also able to return to the United States as a more worldly person.

27

Trust-Based Relational Intervention (TBRI)
Taylor J. Marriott *WTE*
Mentor: RaLynn Schmalzried, Psychology

My presentation is over trust-based relational intervention (TBRI) training. I chose this topic because I am interning with the Kansas Children's Service League and working in the Kansas Post Adoption Resources Center there. I am helping with Kid's Club and Parent's Circle which is an opportunity for families who are adopting or fostering children to sign up and bring their children. The majority of the children who attend are what they call children from hard places because they have traumatic pasts. The purpose of this is for the children and parents to learn the techniques of TBRI training along side each other for ten weeks in the hopes that the parents will be able to use these techniques with their children at home and better connect and care for these children.

28

Social Interaction: The Key to Coping with Mental Illness

Cydnee R. Ford *WTE*
Mentor: RaLynn Schmalzried, Psychology

Social interaction is a fundamental aspect of the human experience. In other words, being social with others is a key component in having a healthy life. This key is especially important to those suffering from mental illness. Increased socialization has many benefits to those suffering from mental illness, like improved pulmonary function among other things. The importance of socialization in "recovery" is evident, and a critical part of the coping process with mental illness.

29

Community Resilience and Natural Disaster

Clayton R. White *WTE*
Mentor: RaLynn Schmalzried, Psychology

Community resilience after disaster events is associated with community social cohesion and other pre-existent conditions formed before the disaster event. Residents of communities that display high levels of social cohesion before experiencing a natural disaster are less likely to display symptoms of mental distress after the event occurred. Several metrics have been proposed to measure community cohesion and disaster resiliency. This literature review aims to compare these antecedent conditions and patterns in the research available.

30

Analyzing Protein Interactions of the Herpes Simplex Virus Type 1 UL34 Protein

Nathaniel Boyd Arbuckle Higdon *WTE*
Mentor: Susan Bjerke, Biology

Herpes Simplex Virus Type-1 (HSV-1) is easily communicable and infections can present in varied forms including cold sores, genital herpes, and herpes whitlow. HSV-1 proliferates within the host cell nucleus. Once replication is complete the virus exits the nucleus. Viral protein UL34 is essential for virus departure of the nucleus. It is unknown which nuclear proteins UL34 is interacting with during this phase. UL34 is a highly conserved protein in all human herpesviruses and could be an ideal candidate for future drug treatments. If UL34 function could be blocked, HSV-1 would be unable to exit the nucleus and infect other cells. To determine interaction partners for UL34, pulldown assays were performed. In a pulldown assay, purified UL34 protein was mixed with HEp-2 cell lysate; UL34 and any binding partners were then removed from the mixture. Our past results showed some potential UL34 binding partners, however, upon replication of the experiments, inconsistent results were obtained. To try and obtain more similar results from our assays, we expressed a new GST control protein in *E. coli*. We will use this control to compare to the proteins that are being pulled down by a GST-tagged UL34 protein.

Additional adjustments were made to our pulldown procedures. We hope our results will again show potential UL34 binding partners. If more convincing protein interactions occur, isolation experiments will be performed to identify the binding protein(s).

31

A Comparative Analysis of Stature Estimation Methods for Application in Forensic Anthropology

Kellie J. Bush and Susie C. Athey
Mentor: Alexandra Klales, Sociology & Anthropology

Forensic anthropologists use anatomical and mathematical methods for stature estimation of unidentified individuals. Anatomical methods use all bones contributing to stature and have long been considered the most accurate; mathematical methods use correlations of long bones to overall stature and are more popular. The aim of this research was to determine if anatomical methods and newer revisions are in fact more accurate than mathematical methods. Skeletal measurements were collected for 72 white males and females of known stature from the Bass Donated Collection. Measurements were added together for the anatomical methods (n=2) or put into regression equations (n=4) to estimate stature using mathematical methods. Estimated stature was compared to known stature to calculate method accuracy. Overall, most methods tended to underestimate stature. The anatomical methods were more accurate and the revised methods provided more accurate estimates than the older ones, likely due to secular change. For example, Raxter et al.'s (2006) revision of Fully's (1956) anatomical method provided a stature estimate closer to known height in 75% of males and females. Newer mathematical methods (Ousley 1995, Wilson et al. 2010) also produced higher accuracy rates (94-97%) than the originals (Trotter & Gleser 1952,1958). The results of this research suggest that if remains are complete, anatomical methods should be used; however, mathematical methods can be used to accurately estimate stature.

32

Inconsistencies in the Calorie Measurement as Recorded by the Wii Fit Board

David J. Cunningham Jr. and Ann A. Elliott
Mentors: Tracy Wagner, Biology, and Paul Wagner, Biology

People have traditionally used many different methods to maintain their physical fitness. However, some methods are more accurate in measuring caloric usage during the workout. With this in mind, the experiment compared the calories burned for both high-step and fast-speed or low-step and slow-speed set ups. Calories burned were measured by both the Wii and Oxycon systems. The Oxycon system converts liters of oxygen used into calories burned. After obtaining a baseline set of data, indicated caloric output was measured using the Wii Fitness Board aerobics program versus caloric output as measured by the Oxycon system. This step was performed once for each the combinations of step set ups. One of the significant observations made over the life of the experiment is the invariability of the caloric usage as measured by the Wii regardless of speed or step height. This is in contrast to the varying caloric usage as measured by the Oxycon system. With this observation it is possible to conclude that the Wii Fit

Board workout system can be used for exercise, however, caloric usage readings only account for duration of exercise and weight of the individual. Therefore, the Wii Fit Board calorie measurements are inaccurate for a variety of the possible settings, and should not be used as the sole method of measuring calories burned.

33

The Effects of Luteolin on the Interactions Between CXCL16 and AKT Signaling

Michelle Hernandez *WTE*
Mentor: Matthew Cook, Biology

Luteolin a flavonoid found in plants is shown to prevent breast cancer proliferation. In this study, we utilize the hormone-dependent T-47D breast cancer cells which express the progesterone and estrogen receptors. Hormone-dependent breast cancer represents the majority of all breast cancer subtypes and is treatable with conventional therapies. Sometimes breast cancer “escapes” or is resistant to conventional treatment. Therefore, novel treatment options with the capacity to prevent breast cancer may offer an exciting alternative for women. To this end our understanding of how luteolin prevents breast cancer proliferation needs further clarification. Based on studies in gastric and prostate cancer, we hypothesize that luteolin decreases breast cancer cell proliferation by decreasing C-X-C motif ligand 16 (CXCL16) cytokine production and the downstream effector protein kinase B (AKT). The phosphatidylinositol-4, 5-bisphosphate 3-kinase (PI3K) pathway which plays a crucial role in the growth and proliferation of breast cancer cells, is in part, under the control of CXCL16. In gastric cancer, luteolin reduces expression of CXCL16 messenger RNA, as well as, decreases PI3K/AKT signaling. The purpose of this study is to explore the effects of luteolin on the interactions between CXCL16 and AKT signaling in the T-47D breast cancer cell line.

34

Restricted Environmental Stimulation Therapy (REST)

Justine M. Kovatch *WTE*
Mentor: Linzi Gibson, Psychology

Two methods of relaxation are progressive muscle relaxation (PMR) or mindfulness meditation and restricted environmental stimulation therapy (REST). The purpose of the current study is to find if one of the two methods has more benefits and which is more beneficial to individuals with a trauma history. PMR is a process of tensing particular muscle groups throughout the body to then focus on relaxing each muscle groups. This practice helps to focus your attention on the state of your body and relieve stress. In the second part, mindfulness meditation, the goal often does not require the participant to focus on a particular object or event, but to remain in a monitoring state and avoid attentional selection of internal or external stimuli. The REST method also known as "floating" which is used to limit an individuals environmental stimuli. The participant enters a chamber with 10-11 inches of body-temperature water with high saline levels. The chamber can be easily opened, stimuli is reduced with earplugs and controlled lighting. Though it may be more difficult for individuals to have access to the REST method, it

ultimately requires less practice and attention than PMR and, therefore, the researchers believe the REST method will be more beneficial in reducing stress. Participants will be recruited from Washburn University and the Topeka community. There are currently 21 participants in the REST group (experimental group) and 25 participants in the PMR group (control group).

35

Developing Young Minds With Washburn University

Sammy Strecker *WTE*
Mentor: Kristine Hart, Center for Community Services

University Child Development (UCD) is a nonprofit organization that primarily provides child care services to Washburn University students, staff, and faculty. Children from six weeks to five years of age can attend UCD anytime between seven in the morning and five-thirty in the evening Monday through Friday. The program is offered to any parent, but Washburn students, staff, and faculty have the special opportunity to enroll their children part-time, affording them the ability to shape the child's daycare schedule around the university's class times. Additionally, low-income families can enroll their children at a reduced cost which allows access to a quality educational experience for both the children and their parents who attend classes at Washburn. The goal of UCD is to provide an environment where the children can feel accepted while engaging in experiences that broaden and enrich their learning and social development. During the 2017-2018 academic year, I served as a teacher's assistant at UCD and in this role I helped facilitate various creative and educational activities, while also providing support and structure for the children's daily developmental schedule. The University Child Development center has taught me to treat each child differently, but not unequally and to also celebrate life's little milestones. This presentation will describe the UCD program, my work, and what I accomplished and learned about my community through this program.

36

Beliefs and Spirituality in Older Adults

Rachel Flenniken *WTE*
Mentor: RaLynn Schmalzried, Psychology

This literature review explored the religious and spiritual aspects of older adults and determining whether or not it enhances an individidual's quality of life. Speficially, it looked at the relationship between spirituality and religious connection and reducing regret, depression, and other health-related issues as well as how faith and spirituality influence how a person copes with some of the losses associated with age such as mental health decline, being less mobile and less independent. And finally, this project considers what, if anything, nursing homes are doing to accommodate the needs and desires of older adults in terms of religious and spiritual life.

37

Be a Doer Not a Delayer
Madeline Pushpa Rieck *WTE*
Mentor: RaLynn Schmalzried, Psychology

This literature review examined the five main factors that influence procrastination (absence of structure, unpleasant nature of the task, timing, anxiety, and self-confidence). This literature review also examined the role of procrastination in college students, health risks associated with chronic procrastination and stress, and finally, ways to reduce procrastination. This coincides with my internship as an Undergraduate Learning Assistant, where I have mentored students in an introductory psychology class and considered how procrastination impacts student performance and motivation.

38

A Longitudinal Investigation on the Psychological Benefits of Restricted Environmental Stimulation Therapy (REST)
Rachel Elizabeth Ledbetter *WTE*
Mentor: Linzi Gibson, Psychology

At any given moment humans are exposed to an enormous amount of sensory information. Our nervous system must select, interpret, and store the external stimuli we detect in the environment via the cognitive processes of attention, perception, and memory. These processes require resources, mental energy, and our resources are limited. Particularly in our current culture, we tend to allow little time for our minds to rest. When we neglect our psychological well-being, the result can be chronic stress and stress-related illness. The current study explores the benefits of Restricted Environmental Stimulation Therapy (REST), specifically the benefits of stress reduction and decreased emotional reactivity.

39

A Closer Look at the Auditory Perception of Elevation: A Summary and Critique of the Literature
Holly Jo Johnston
Mentor: Michael Russell, Psychology

The location of a stationary, sound-producing object can be described using 3 coordinates: azimuth, distance, and elevation. Azimuth refers to the horizontal (left-right) angle and is measured in degrees. Distance refers to the amount of space between two objects (e.g., observer and sound-producing object) and is measured in feet/inches or meters/centimeters. Elevation (also known as altitude) refers to the vertical (up-down) angle and is also measured in degrees. Compared to what is known about the perception of azimuth and distance, research regarding elevation, and our ability to accurately judge the elevation of an unseen sound source, is lacking. The goal of this literature review is to discern what research has been conducted on elevation and where the gaps are in the research. For example, it appears certain is that our ability to accurately

judge elevation is based on cues derived from the pinna (the external part of the ear). The pinna is a source for spatial cues that may account for sound localization. The pinna provides several paths to the ear canal, and the path that the sound takes influences our perception of sound location. The problem is that despite significant differences in pinna shape, individuals tend to have highly similar judgments of sound elevation. As will be discussed, there appears to be a many:1 mapping rather than what many researchers consider to be a 1:1 mapping.

40

Variables of Organizational Change in Relationship to Employee Commitment

Diana Hall WTE
Mentor: Jericho Hockett, Psychology

The longevity of an organization partially depends on its ability to adapt and remain resilient against competitors. To stay relevant, change (e.g. financial, structural, procedural) must occur, usually mirroring fluctuations in cultural ideals. Further, commitment underscores change, and arguably determines its success, therefore the successful implementation of organizational change (OC) is widely based on how the change is perceived by employees (Cullen et. al, 2013), which, over time, can evolve into a strong organizational commitment (Vanhala, Heilmann, & Salminen, 2016). Extending my theoretical findings in a prior qualitative study, "Employees' Perceptual Influence on Organizational Change," the present study will further examine Study 1 variables, levels of organizational trust, perceptions regarding the relationship employees have with leaders, expectations of change (i.e. uncertainty, change characteristics), and the extent to which they correlate with employee commitment. This study will reinforce the importance of employees' support toward OC procedures, as these attitudes have been shown to lead to a more positive work environment and higher levels of performance (Cullen et al. 2013). I am interested in observing the relationship between these employee perceptions and individual commitment.

41

Using Cognitive Behavioral Therapy to Treat Anxiety and Depression in Adults with Dementia

Kylie Christian WTE
Mentor: RaLynn Schmalzried, Psychology

During the course of the semester I have spent my time at Stormont Vail's Clinical Research Center. It has opened my eyes to how difficult it is to treat Alzheimer's Disease, how it affects the patient, and how challenging it can be for caregivers. There are currently not any treatment options to reverse or prevent the disease but only to treat the symptoms. Realizing this led me to researching behavioral ways to treat the symptoms. Several researchers have started programs that take the ideas from traditional CBT and make them compatable for someone with a cooccuring memory issue. Overall this has been a very postive and eye opening experience and is something I feel very proud to have particpated in.

42

The Brewster Experience
Paige N. Sharp *WTE*
Mentor: RaLynn Schmalzried, Psychology

Brewster is an excellent site to complete an internship. Students like myself, who are interested in psychology, can observe first-hand the effects of a variety of mental illness, such as dementia. Interns can expect to through New Employee Orientation, which gives insight as to how Brewster is run and the programs they offer to their residents. Brewster provides interns with the opportunity to build engaging relationships with its residents, as well as becoming more familiar with the duties required of a professional in their field of interest. My experience at Brewster has been very knowledgeable and rewarding, and I want to promote this site to other students.

43

Pink, Blue or Violet: The Revolution of Gender in Contemporary French Culture
Adam Rankin
Mentor: Courtney Sullivan, Modern Languages

This paper explores the former and present conditions of transgenders living in Francophone communities specifically Canada and France in the last 25 years. It will analyze the implications that gender has on one's self, close relationships, and society as a whole. By looking at the films *Laurence Anyway* and *Ma Vie En Rose*, one is able to examine the pressures society places on the trans individual as well as their loved ones. These depictions raise pertinent questions about our society and how it molds gender expectations. For instance, without strict definitions of gender, what would our society look like? Can individuals exist outside the gender binary? Furthermore, how is the gender revolution changing the view of transgenders in Francophone communities?

44

Smooth Sailing: Factors That May Contribute to a Successful College Transition
Kristen Shook *WTE*
Mentor: RaLynn Schmalzried, Psychology

This literature review will discuss three themes that contribute to a successful transition to college. Research shows having a positive mindset and learning about positive psychology will enhance ones way of thinking, leading to an easier transition. Self evaluation and self efficacy are two important factors on an individuals ability to successfully complete this transition due to the internal goals and motivation one has. Having coaches or mentors from previous years continue to be in an individuals life will also impact the nature of important changes in life, such as beginning college.

45

Exploring the Relationship Between Empathetic Behaviors and Socioeconomic Status

Rebekah R. Zimmerman *WTE*
Mentor: Jericho Hockett, Psychology

One of the largest recognized cultural divisions in American society exists between the upper and working classes. This divide contributes to misperceptions and misdirected aggression between individuals on both sides. For an improved analysis of how personal experiences are affected by socioeconomic status, we explored the relationship between empathetic behaviors and socioeconomic status amongst American adults. This literature review examines recent and relevant fieldwork regarding empathetic behaviors (Mekawi et al., 2016) and socioeconomic status (Munsell et al., 2016) in the United States. Conclusions focus on the importance of developing a necessary ability for the practice of empathetic behaviors.

46

Comparing Fidget Spinners and Coloring Books in the Reduction of Anxiety

Makenzie L. Ford *WTE*
Mentor: Michael McGuire, Psychology

This study examined the effects of coloring books and fidget spinners in the reduction of anxiety. It was hypothesized that both interventions would reduce anxiety but that coloring would have more of an effect. Participants were undergraduate students from different sections of PY 100, and their ages ranged from 18 to 59. Anxiety levels were measured before and after the intervention using a brief form of the State Trait Anxiety Inventory (STAI) (Berg, Shapiro, Chambless, & Ahrens, 1998). The intervention included 10 minutes of either coloring or fidgeting with a fidget spinner. The data collection is currently underway and results will be discussed during the presentation.

47

Have You Had "The Talk": Exploring the Relationship Between Teen Births and Comprehensive Sex Education

Maci D. Hagelgantz *WTE*
Mentor: Steven Cann, Political Science

In this study we performed an analysis of the level of sex education within a state by the teen birth rate within that state. The purpose was to determine whether there is a positive relationship between comprehensive sex education and teen birth rates. Data on 41 states and the District of Columbia was compiled and entered into SPSS. Multiple tests including regressions and ANOVA's revealed that there is no correlation between sex education and teen birth rates but there is a correlation between a state's poverty/education level and the teen birth rate.

Reception

Chinese Menu

Honey-sesame chicken skewers

Chinese spare ribs

Fried rice

Vegetable spring rolls with sweet and sour dipping sauce

Crab Rangoon dip with crispy won-tons

Spicy tofu lettuce wrap

Almond cookies

Fried mini donuts

Pineapple lemonade

Ginger and mint infused water

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