SCHEDULE OF EVENTS

Concurrent Session I 9 - 9:50 A.M.

» BROOKS AUDITORIUM

Welcome Address by
Elissa Heil, vice presdient of academic affairs, dean of faculty

Moderated by **Abbey Heinbaugh '20**

Vanessa Lybarger '17
Evaluation of Factors that Increase the Load of Pathogenic E.coli *in the Conococheaque, a Freshwater Creek in Franklin County, Pennsylvania*

Tracy Dile '17
Effects of Apiary Practices on Colony Collapse Disorder in the European Honey Bee, Apis mellifera

Ahmed Alshahrani '18
An Epidemiological Modeling Approach to Study the Correlation Between Dromedary Camels, Camelus dromedarius *and MERS-CoV*

LENFEST LEARNING COMMONS

Welcome Address by **Barbara Mistick, president**
Moderated by **Megan Sterling '17**

Christie Munson '17
The Strange Case of Lindsey Holt: A Novella

Jenna Kauffman '17
Super: A Novella

Kyla Martin '17
After Life: A Novella

Concurrent Session II 10 - 10:50 A.M.

» BROOKS AUDITORIUM

Moderated by **Kali Swartz '19**

Gina Rea '17
Effects of Family Support and Visitation on Recidivism of Prisoners

Alyssa Bianco '17
Various Species of Pets and their Relationship to their Owner's Personality Traits and Self Esteem

Jahniya Wesley '17
The Impact of Makeup Application on Female Self-Esteem

LENFEST LEARNING COMMONS

Moderated by **Shanelle Spotts '19**

Ben Luzier '17
"We Certainly Are Doing Our Bit": Life for a College Educated Woman during World War II

Stephanie Marshall '17
"Allein, und doch nicht ganz allein": Barbara and Regina Leininger, German Captives from the Pennsylvania Frontier

Annika Dowd '17
Frida Kahlo: Pain Into Power

Session III 11 - 11:50 A.M.

» BROOKS AUDITORIUM

Moderated by **Keion Adams '19**

Michele Rogers '18
Examining the Relationship Between Outdoor Recreation and Depressive Symptoms

Heather Jordan-Clapsaddle '17
Examining Attitudes about Obesity after Weight Loss Surgery

Patricia Hall '18
Unwilling or Unable? Understanding and Identifying with the Poor in America

Session III 11:30 - 11:45 A.M.

» APPENZELLAR DANCE STUDIO

Moderated by
Megan Mizanty, visiting assistant professor of dance

Dance 234 Performance Projects
Amanda Dunn '17 (visual art), Shannon McKenzie '18 (dancer), Jamie Daley '05, G'15 (dancer), Jessica McDowell (dancer), and Sami Heckendorn '20 (dancer)

"Bricks, Bones, Shelves, Shoulders"
A Collaborative, Interdisciplinary Creative Process

Poster Session 1 - 2:30 P.M.

» BROOKS AUDITORIUM

Biology 306 Immunology

Gaser Ahmed '17, Ahmed Alshahrani '18, Lauretta Birabwa '19, Iris McLane, Myah Quirin '18, and Catarina Lynn Versichelli '19

Biology/Chemistry 398 Design and Methods of Scientific Research

Amanda Haase '18, Debby Rifflard '18, Myah Quirin '18, Megan Fangman '18, and Kirstin Lehman '18

Psychology 352 Collaborative Research

Gina Rea '17

Health Science 216 Human Anatomy and Physiology II

Chronic Obstructive Pulmonary Disease (COPD)

Sarah Burkholder '20, Cheyenne Fulton '20, Kristin Hoffman '17, Jenaya Jay '20, Jenna Keller '19, Taylor Lehman '20, Olivia Noone '18 and Cierra Rhodes '19

Cerebal Palsy

Bassil Andijani '19, Kristyn Fogg '18, Shelby Fogus '20, Autumn Langley '20 and Duane Yves Pineda '20

Amyotrophic Lateral Sclerosis/ Lou Gehrig's Disease

Payton Dziemburski '19, Erica Henry '19, Amber Jones '18, Deeana Martin '20, Jordyn Day '19, Ryan Sevret '19 and Chance Wheeler '20

Congestive Heart Failure

Skye Bennet '20, Lauren Bradley '20, Nicole Dudley '20, Kaitlin Fegely '20, Kristin Smith '20 and Sarina Smith '20

Osteogenesis Imperfecta

Hannah Fittry '20, Lee Price '19, Heather Robinson '20, Keion Adams '19, Sara Reese '20, Kendra Foltz '19 and Megan Sterling '17

Integumentary System - Psoriasis

Julia Barra '17, Chelsea Amsley '20, Brystol Miller '20, Geneva Myers '20, Latoya Hunter '21 and Bailey Keefer '20

Nursing 361 Medical Surgical Nursing

Kristy Brammer '19, Sierra Watson '19, Jennifer Laman '19, Kayelynn Pittman '20, Morgan Bechtold '19, Heather Paxson '18, Cathy Rice '18, Ashley Lynch '20, Taylor Amsley '18, Brittany Chandler '19, and Bev Meyers '20 with the assistance of Monica Dice, Gina Long, Rhianna Myers, Susanne Casella, and Polly McMullen from Summit Health

Session IV 1 - 1:50 P.M.

» BROOKS AUDITORIUM

Moderated by **Karis Daniel '18**

Darren Stephens '17

Human Mating and Evolutionary Psychology in "The Clerk's Tale"

Caitlyn Minelli '15, G'17

Voice as Presence in Creative Writing

Adam Ellerbrock G'17

The War on Memory: The Role of Cultural Memory in Dismantling Dystopias

Concurrent Session V 2 - 2:50 P.M.

» LENFEST LEARNING COMMONS

Moderated by **Sardrick Owusu '19**

Amanda Dunn '17

Falling into the Unknown

Erin Stephan '18

Oak Wilt Risk Assessment in Pennsylvania

Brant Swartz '17

Homerule and Autonomy In Pennsylvania

LENFEST LEARNING COMMONS

Moderated by **Katelynn Gilbert '19**

Spanish 209 Intermediate Spanish Conversation

Jalisah Arline '19, Alexis Enders '19, Ian Frazier '19, Amanda Haase '18, Elen Harutyunyan '19 and Megan Varga '17

Cultural Outreach: Bridging Language and Cultural Divides

Brie Burdge '16, '17

The Cycle of Poverty Close to Home: Poverty in Franklin County and the Public Assistance System Intended to Alleviate it

Stephanie Marshall '17

Making the Past Present: Holocaust Remembrance and Collective Memory

Session VI 3 - 3:30 P.M.

» BROOKS AUDITORIUM

Moderated by **Kristin Smith '20**

Biology 270 Experiential Tropical Ecology

Emily Coslett '20, Karis Daniel '18, Jessica Eichmann '18, Kirstin Lehman '18, Michele Rogers '18, Breana Sneed '18, Shanelle Spotts '19, Kali Swartz '19, Tracy Sweat '17, Caroline Wilson '18, Danielle Zona '18, Judith Scriptunas '11 (TA) and Jessica Meck '15

Ecology and Conservation Biology in South Africa, January, 2017
Homerule and Autonomy In Pennsylvania

Honors Session 3:40 - 4 P.M.

» BROOKS AUDITORIUM

Moderated by **Bradley Engle, associate professor of biology**

Gaser Ahmed '17

Analysis of the Effects of Gluten Proteins and Low-Gliadin Wheat Products on Celiac Disease in NOD-DQ8 Mice

Honors Session II 4:05 - 4:25 P.M.

» BROOKS AUDITORIUM

Moderated by **Steven Schmidt, assistant professor of psychology**

Jamie Burnett '17

Factors Influencing Middle School and High School Students' Vocational Decision-Making

Disert Scholar Session 4:30 - 5 P.M.

» BROOKS AUDITORIUM

Disert Introduction by
Elissa Heil, vice presdient of academic affairs, dean of faculty

Moderated by
M. Dana Harriger, professor of biology and
Deborah Austin, professor of chemistry

Anna Harutyunyan '17

Synthesis and Effects of Fe-AZT on Viability of Human Hepatocytes and Hepatocellular Carcinoma Cells

ORAL RESEARCH PRESENTATION

Vanessa Lybarger '17

Major: Biology
Activities: Gaming Club, Student research assistant for the USDA-ARS-ANRI

Advisers
M. Dana Harriger, professor of biology
Christine Proctor, assistant professor of biology

Evaluation of Factors that Increase the Load of Pathogenic E. coli in the Conococheaque, a Freshwater Creek in Franklin County, Pennsylvania

Escherichia coli, naturally occurring bacteria in the intestinal tract of humans and animals, are often introduced into the environment and waterways through fecal material. Although most strains of *E.coli* are non-pathogenic, when present, pathogenic strains can inflict severe health effects. Different types of environments affect the ability of *E. coli* to reach and survive in waterways. Once there, they may infect humans through irrigation of food crops and recreation. Monitoring streams for the amount of *E. coli*, while also recoding surrounding land use is important for identifying factors that increase the risk of pathogenic *E. coli* in waterways. This study aims to identify what factors may increase the contamination risk of pathogenic *E. coli* in the Conococheaue creek. Contamination is defined by the EPA as exceeding a threshold of 126 CFU/100 ml. Water samples were collected weekly at five predetermined USDA research sites, each within different land uses. Samples were membrane filtered, filter placed onto *E. coli* selective media, and incubated to determine colony counts. To assess potential risk factors, a variety of environmental indicators were collected. Animal input, stream bank integrity, surrounding land use, and weather factors were all examined. Animal input was monitored using trail cameras and track beds, stream banks were monitored using an established USDA habitat assessment rubric. Surrounding and upstream land use for each site was determined using USDA land use maps in a geographic information system. Lastly, weather stations, including rain gauges, recorded weather events. A regression analysis was used to determine which factors have a greater influence on increasing the presence of *E. coli*. Results of this study will contribute to the understanding of factors that increase the prevalence of pathogenic *E. coli* is important in prevention of human infections.

ORAL RESEARCH PRESENTATION

Tracy Dile '17

Major: Biology

Advisers
Andrea Nagy, visitng assistant professor of chemistry
Christine Proctor, assistant professor of biology

Effects of Apiary Practices on Colony Collapse Disorder in the European Honey Bee, Apis mellifera

Nearly 90% of all flowering species of plants need help from animal pollinators for reproduction. *Apis mellifera*, or the European honey bee, is the most utilized pollinator in commercial crop production, responsible for 80% of commercial crop pollination. Their estimated agricultural economic contribution via assisted fertilization worldwide is greater than $200 billion annually. Without the service of honey bees, manual pollination by humans would be very costly, and have a detrimental economic impact to agriculture. Large populations of adult bees are disappearing, leaving behind stores of honey, brood, and most surprisingly, their queen. Named Colony Collapse Disorder in 2006, researchers have yet to determine a cause for this phenomenon. Theories have included cell phone towers, bacterial and viral diseases, as well as neonicotinoid pesticides, yet none of these theories individually have yielded a positive correlation. This study analyzed USDA colony loss data from commercial apiaries across the United States from January 2015 to March 2016. Commercial apiaries were defined as operations with 5 or more colonies. Generalized linear models were used to assess what factor or combination of factors best explained percent colony loss in 2015. Factors analyzed included: apiary type (honey production vs. pollination services), queen replacement, parasite infestation, bacterial and fungal infections, pesticide exposure, extreme weather, monthly temperatures, and hive destruction. The data from this study took a multi-impact approach and is a crucial first step in focusing future research investigating CCD.

ORAL RESEARCH PRESENTATION

Ahmed Alshahrani '18

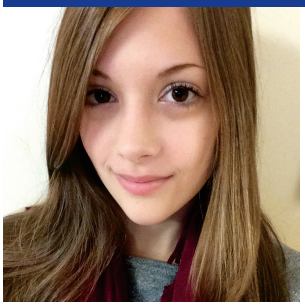
Major: Biology
Activities: Men's soccer, Muhibbah Club

Advisers
Christine Proctor, assistant professor of biology
M. Dana Harriger, professor of biology

An Epidemiological Modeling Approach to Study the Correlation Between Dromedary Camels, Camelus dromedarius and MERS-CoV

The Middle Eastern Coronavirus (MERS-CoV) is a coronavirus that emerged in Saudi Arabia in 2012, and has spread to 27 countries around the world. The largest outbreaks, approximately 80% of reported cases (1269), have occurred in Saudi Arabia. Like other coronaviruses, MERS-CoV affects the upper respiratory tract causing cough, fever, or breathing difficulties. In some studies, dromedary camels have been indicated as a potential host for the virus, with zoonotic transmission (animal to human) occurring. Aerosol transmission (human to human) has also been suggested to occur. To study the transmission, an SRI model was created to study the correlation between several risk factors (age, sex, population density, co-morbidity, contact to dromedary camels, exposure to infected cases, consumption of raw camel's milk), and the transmission of MERS-CoV. The data for all 1269 reported MERS cases in Saudi Arabia were collected from the World Health Organization (WHO) and a follow up of the cases was conducted with Saudi Ministry of Health and Saudi International Health Regulations (IHR). Generalized linear models were used to evaluate which potential risk factors or combination of factors best explained the observed transmission rate. The study aims to identify which risk factor or a combination of risk factors are driving the transmission rate of MERS-CoV. Results from this study can be used to control or minimize the spread of the virus, and to avoid future outbreaks of MERS-CoV.

ORAL RESEARCH PRESENTATION



Christie Munson '17

Major: English (creative writing)
Minors: Psychology, Sociology
Activities: Music Club, Environmental Club, Botton Shelf Review

Adviser
Michael Cornelius, professor of English

The Strange Case of Lindsey Holt: A Novella

Lindsey Holt wants to be the victim of a serial killer—the more mysterious, brutal, and disturbing, the better. Without any true talent (academic, creative, or otherwise), she believes this is the only way to be remembered. Lindsey dreams of finding someone who will do the job for her in a way that gives her the validation she craves. As if that weren't strange enough, the ghost of Lindsey's grandmother frequently appears to her seeking the answers to an unending crossword puzzle; she makes friends with a stray porcupine; and she gets the creeping suspicion that someone is following her.

Lindsey seeks her killer by putting herself in dangerous situations including hitchhiking and meeting strangers from Craigslist. Along the way she meets a kind trucker, a porn star, and a wannabe vampire. Attempting to juggle this secret life along with her college classes proves to be rather difficult. *The Strange Case of Lindsey Holt* is a novella that explores a girl's attempt at finding a purpose, her inner struggle as she discovers herself, and her acceptance of what life has thrown at her while trying to provide a relatable yet absurd representation of how humans want to leave a mark on the world no matter the cost.

ORAL RESEARCH PRESENTATION

Jenna Kauffman '17

Majors: Communications and English
Minor: French
Activities: Editor-in-Chief: The Wilson Billboard, Campus Activity Board, Botton Shelf Review

Adviser
Michael Cornelius, professor of English

Super: A Novella

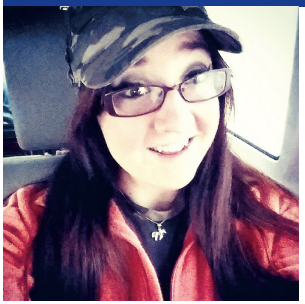
Callie Fields is just a *super* ordinary girl—literally. She, along with a small portion of society, inherited heightened abilities due to a specific chromosome from her parents. Not only can she hear a whisper from twenty miles away, but she can also see through objects and fly. Her parents also have these heightened abilities, and have learned to live with them, but Callie is reluctant to do so.

Threatened by the advantage of their abilities, the majority of the non-super population has outcast these super individuals from society, and Callie isn't too happy about that. Neither is her best friend, Jane, and the boy-next-door, Carter.

When Carter comes up with a plan to potentially turn the tables, Callie doesn't hesitate to get involved. But will everything go according to plan? Can two teenagers really change the way society is run? Or will their plan ultimately lead to more trouble than before?

Super is a novella that shows a character just wanting to fit in and follows her journey to do so. The novella is set in a real-world while also bringing in a fantasy that any normal person can only dream about. This novella shows, though, that being different and having superpowers isn't always a good thing, while also bringing into question the people in life you can trust.

ORAL RESEARCH PRESENTATION



Kyla Martin '17

Majors: Equine Journalism and English
Activities: IHSA Hunt Seat Team, Equine Facilitated Therapy Club, Environmental Club

Adviser
Michael Cornelius, professor of English

After Life: A Novella

Reincarnation exists. The Divine holds the power to reincarnate his people as the animal they desire --provided, of course, they have the wealth necessary to do so. A god among his people, he remains unquestioned until the year of Alistair's twenty-third birthday. Young Alistair has never had cause to question the rules of his society as his father, Caine, a member of The Divine's Council, has always been powerful and has always had the freedom and comfort of wealth. However, Alistair's views begin to change when he meets another young man, Gabriel, with family suffering outside the walls of their safe City of Maison. Alistair and Gabriel begin sneaking to the gate's edge to help alleviate the suffering of the less fortunate, a crime punishable by law. Alistair is caught returning home one evening, and Alistair is banished to the Other Side, where he is forced to live among the people he has never had to understand. As the world opens around him he finds a revolution is forming, with one goal in mind: to strip The Divine of his ultimate power.

After Life is a novella that explores the idea of an ultimate singular power and wealth inequality, while trying to show the lengths to which people will go in order to secure their afterlife.

ORAL RESEARCH PRESENTATION

Gina Rea '17

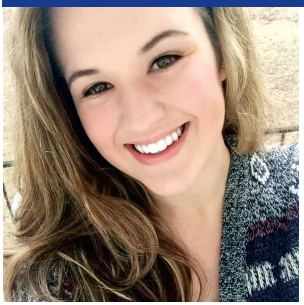
Major: Psychology
Minor: Sociology

Adviser
Steven Schmidt, assistant professor of psychology

Effects of Family Support and Visitation on Recidivism of Prisoners

As overcrowding of prisons continues to be problematic, it is important to explore methods to reduce likelihood of inmates returning to custody after release. Therefore, it was hypothesized that increased family support and visitation of inmates during incarceration would decrease the likelihood of re-offense as perceived by parolees after release. Due to the unforeseen barriers and related delays in recruitment of state parolees, use of simulated data was approved with the goal of completing this thesis research experience. Modified questions from the Medical Outcomes Survey (MOS) were used, with answers generated for fifteen participant responses. The questionnaire contained twelve questions relating to social support of family members, amount of visitation experienced while incarcerated, and confidence in rehabilitation and recidivism risk. Data was analyzed using a correlational model to determine relationships among the research variables. Results found a strong positive relationship between family support and confidence in rehabilitation and risk of recidivism $r(15)=0.74$, $p<.001$, but no significant relationship was found between visitation and recidivism risk or number of visits. Implications will be discussed.

ORAL RESEARCH PRESENTATION



Alyssa Bianco '17

Majors: Equine Facilitated Therapeutics and Psychology
Activities: IHSA Hunt Seat Team

Adviser
Steven Schmidt, assistant professor of psychology

Various Species of Pets and their Relationship to their Owner's Personality Traits and Self Esteem

Many species of animals are owned by humans in the United States as pets. Wilson College has a very large population of pet owners, many of who are allowed to bring their animals to live on campus for a variety of reasons. This study explores the different types of animals owned by twenty-five students of Wilson College and how they relate to their self-esteem levels and different personality types as measured by the Rosenberg self-esteem scale and the Big Five Inventory. Individuals who own horses reported significantly more neuroticism than pet owners who own other species. Pets can play an important role in their owners lives and for some, their mental health as a supporting figure. Understanding why pet owners own the animals they do and how they relate to their own personality can further the understanding of this relationship.

ORAL RESEARCH PRESENTATION

Jahniya Wesley '17

Major: Psychology
Activities: Psychology Club, Black Student Union Treasurer

Adviser
Steven Schmidt, assistant professor of psychology

The Impact of Makeup Application on Female Self-Esteem

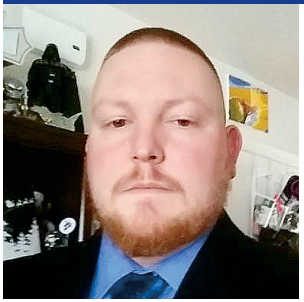
Purpose: The aim of this experimental study is to look at how the act of applying cosmetics influences the self-esteem of women today.

Method: Participants were recruited from the Wilson college undergraduate female student body via email and flyers were posted around campus. The study involved a sample of 16 Wilson College Undergraduate female students. Participants who wear cosmetics made up the experiment group; whereas, participants who do not wear cosmetics made up the control group. Participants in the experiment group were invited to put on makeup in a research room; whereas, participants, who do not use makeup colored a picture from a coloring book. Participants then completed a survey regarding their cosmetic usage (validity check) and self-esteem levels.

Results: It was predicted that women who apply cosmetics will report a higher level of self-esteem than women who color pictures. There was no significant difference in the scores between the makeup group (M=3.06,SD=.355) and the no makeup group (M=3.00,SD=.816); t(14)=.235, p= .817.

Conclusion: These results suggest that applying cosmetics really does not have an effect on self-esteem.

ORAL RESEARCH PRESENTATION



Benjamin Luzier '17

Majors: History and Political Science (history)
Minor: Studio Art
Activities: Pi Gamma Mu Honor Society

Adviser
Kay Ackerman, associate professor of history

"We Certainly Are Doing Our Bit": Life for a College Educated Woman during World War II

This research project will look into the life of Elizabeth McGeorge-Sullivan, who graduated from Wilson College in 1938, and served in the United States Army Air Forces as one of the few Women Airforce Service Pilots from February 1943 up to when the WASP's were disbanded in December 1944. Many of McGeorge-Sullivan's letters to her mother are preserved at the Wilson College Archives and are in near pristine condition. These letters highlight the various aspects of a single woman's life during most of her college years as well as her time in the military. I will be drawing upon Ms. McGeorge-Sullivan's extensive collection of letters in an effort to understand and relay what life might have been like for a woman in a male-dominated military. I will also draw upon other sources to help shed light upon the gender inequality in the United States Military during World War II. The various sources that I intend to use will help to illustrate the trials and conditions that not only Ms. McGeorge-Sullivan was facing but also of the other women who chose to become the elite few, who certainly did their bit.

ORAL RESEARCH PRESENTATION

Stephanie Marshall '17

Major: History and Political Science (history)
Minor: Global Studies
Activities: Wilson Scholar Program, Pi Gamma Mu, Phi Beta Kappa

Adviser
Kay Ackerman, associate professor of history

"Allein, und doch nicht ganz allein": Barbara and Regina Leininger, German Captives from the Pennsylvania Frontier

Since their first publications, captivity narratives of European settlers have intrigued readers and scholars alike, offering both personal accounts of redemption and historic accounts of interactions with their indigenous neighbors. Though only a small number of the thousands of captives taken during the French and Indian War published their experiences, captivity narratives afforded both male and female captives the opportunity to recount their sufferings. For female captives, the public dissemination of their travails required the reconciliation of female agency with gendered expectations of feminine submission and victim-hood often resulting in narratives framed by male narrators and religious themes of redemption and Divine intervention.

Through an investigation into the captivity narratives of Barbara and Regina Leininger, German sisters taken captive by the Alleghany during the Penn's Creek Massacre of 1755, this thesis seeks to examine the motivations behind the publications of their accounts, the gender constraints within which their accounts were written, and the extent to which ethnicity was a factor in their captivity experiences.

ORAL RESEARCH PRESENTATION

Annika Dowd '17

Major: Art History
Minors: Studio Art and English

Adviser
Robert Dickson, associate professor of fine art

Frida Kahlo: Pain Into Power

One of the most well-known and fascinating woman artists, Frida Kahlo, is famous for her vivid, surreal, and honest paintings. Her chronic physical pain is rendered in often brutal and disturbing self-portraits. My analysis shows that Frida Kahlo used her art to conquer the chronic physical pain she suffered from throughout the majority of her life, and utilized it to inform her art by depicting it on canvas. The acknowledgment of the pain gives Kahlo agency and makes her powerful in the face of her chronic suffering. This thesis analyzes a selection of Frida Kahlo's self-portraits through the context of her biography, including medical and psychoanalytic inquiry. In the process, her ability to turn tragedy and suffering, as well as pain into power, allows her to subvert gender norms. Kahlo's artwork is an outward demonstration of how she rises above marginalization, and as a result, cements her role in art history as a feminist icon.

ORAL RESEARCH PRESENTATION

Michele Rogers '18

Majors: Psychology and Environmental Sustainability
Activities: Environmental Club, Psychology Club President, SPS Treasurer

Adviser
JeanMarie Bianchi, assistant professor of psychology

Examining the Relationship Between Outdoor Recreation and Depressive Symptoms

The goal of this study was to examine if participation in outdoor recreation activities is related to an individual's mood. Participants (N =198) volunteered to participate via the internet. Participants completed a questionnaire that assessed the total number of outdoor activities engaged in over the past year and depressive symptoms. It was hypothesized that higher amounts of participation in outdoor activities would be negatively associated with depressive symptoms. That is, participants who engage in more outdoor activities will report less depressive symptoms than individuals who engage less in outdoor activities. A correlation test was used to analyze the data. Results are discussed along with limitations and directions for future research.

ORAL RESEARCH PRESENTATION

Heather Jordan-Clapsaddle '17

Major: Psychology
Minor: Sociology
Activities: Psychology Club, Phi Gamma Mu

Adviser
JeanMarie Bianchi, assistant professor of psychology

Examining Attitudes about Obesity after Weight Loss Surgery

In Western society, stigmas about being overweight and/or obese are rampant. Common stigmas about obese individuals include thoughts that they are lazy, sloppy and unmotivated. The objective of this study was to investigate whether formerly obese individuals, who have lost more weight via surgery, show more anti-fat attitudes than those with less weight loss. It was hypothesized that there would be a positive correlation between the amount of weight lost and anti-fat attitudes held about the presently overweight/obese population. Participants (N = 24) completed a survey assessing both the amount of weight lost and anti-fat attitudes post-surgery. The hypothesis that individuals who lost more weight would possess more anti-fat attitudes than those with less weight loss was not supported by the correlation results. The results, limitations of the study, and directions for future research are discussed.

ORAL RESEARCH PRESENTATION

Patricia Hall '18

Majors: Religious Studies
Activities: Fulton County CROP Hunger Walk, Habitat for Humanity

Adviser
David True, associate professor of religion studies

Unwilling or Unable? Understanding and Identifying with the Poor in America

In the early Christian church, a vow of poverty demonstrated one's allegiance to the teachings of Jesus Christ. Today in America, our ability to acquire wealth is proof of our allegiance to the ideal of the American Dream. A reverence for the poor that was encouraged in the early church has been replaced in our modern day with an ethos of antipathy toward the poor. This bitterness was clearly evidenced during the divisive presidential election of 2016. What is the source of middle and upper classes resentment the poor? When did this paradigm shift begin to take shape and how has it evolved over time?

Drawing from the work of Max Weber, Peter Brown, and David Harvey, I will examine how the influences of the Protestant work ethic, capitalism, and neoliberalism have resulted in a distortion of our views of human worth. I will demonstrate how anxiety over salvation and insecurity due to limited resources have contributed to these views over time and how conflicts are resolved through the scapegoat mechanism as theorized by Rene Girard.

ORAL RESEARCH PRESENTATION

"Bricks, Bones, Shelves, Shoulders" A Collaborative, Interdisciplinary Creative Process

Dance 234 Performance Projects

Amanda Dunn '17 (visual art), Shannon McKenzie '18 (dancer), Jamie Daley '05, G'15 (dancer), Jessica McDowell (dancer), and Sami Heckendorn '20 (dancer)

Adviser
Megan Mizanty, visitng assistant professor of dance

Performance Projects is an advanced dance course that met weekly this spring semester. Consisting of four dancers and one visual artist, the ensemble created a work led by Assistant Professor Megan Mizanty. The class examined how rehearsing both collaboratively and between the disciplines of dance and visual art yields unexpected and fresh creative works. Their piece, entitled "Bricks, Bones, Shelves, Shoulders," explores the functionality of weight bearing joints, in tandem with the creation of a large-scale sculptor made of weight-bearing wood (created by visual artist Amanda Dunn). The creation of the dance work and sculpture, made simultaneously, informed and inspired one another's creative trajectory. It premiered at Orchesis's spring show on April 6th, 2017, and will also be shown at Amanda Dunn's senior exhibition on Friday, May 5th.

POSTER RESEARCH PRESENTATION

Biology 306 Immunology

Advisers
M. Dana Harriger, professor of biology
Bardley Engle, associate professor of biology

Gaser Ahmed ’17

The Importance of Microbial Exposure to Build the Immune System

Ahmed Alshahrani ’18

Immune Dysfunction: Diabetes Mellitus (DM)

Lauretta Birabwa ’19

Prognostic Implications/Complications of Juvenile Rheumatoid Arthritis in Kidneys

Iris McLane

An Exploration of the Autoimmune Model of Schizophrenia

Myah Quirin ’18

The Effects of pH on Wound Healing

Catarina Lynn Versichelli ’19

Guillain-Barre Syndrome

POSTER RESEARCH PRESENTATION

Join the students enrolled in Bio 306, Immunology, in an interactive forum and engage with them as you learn about various types of Immunological Disorders. Posters will reflect a comprehensive presentation of knowledge that the students gathered as they researched specific conditions that are Immunologically based. This student-centered, active learning experience incorporated the scientific poster presentation to foster expanded learning of Immunology. Students successfully mined primary literature to collect information ranging from epidemiological data on incidence and population trends, suspected correlations to exposures and heritable factors to current and trending diagnostic and therapeutic approaches. An overlying goal of the poster project was to substantially enhance the depth of understanding of the broad, complicated and sometimes mysterious discipline of Immunology as well as provide a forum for an educational opportunity to convey facts and concepts about Immunology to the broader community.

POSTER RESEARCH PRESENTATION

Biology/Chemistry 398
Design and Methods of Scientific Research

Advisers
Deborha Austin, professor of chemistry
M. Dana Harriger, professor of biology
Bardley Engle, associate professor of biology
Christine Proctor, assistant professor of biology

Amanda Haase '18

Determining Ethanol Concentration in Blood Before and After Putrefaction

Determination of blood alcohol content (BAC) is important in some legal cases, but problems arise when determining BAC from a corpse. Ethyl alcohol concentrations detected post-mortem differ from those that would have been measured ante-mortem. This study aims to determine ethanol levels following a simulated state of putrefaction, and will be conducted using an equine model. Blood samples will be collected, and then ethanol will be added in vitro to simulate concentrations above, at, and below the legal limit. Some samples will be supplemented with both Escherichia coli and Candida albicans, while others will have only one of the microbes, as to mimic normal putrefactive changes over the course of 7 days. In addition, trials will be performed under an aerobic environment, bubbled with nitrogen, or bubbled with carbon dioxide. The final concentrations of ethanol will be measured using gas chromatography–mass spectrometry (GC-MS) and compared with the amounts of ethanol initially present. The results from this study will aid in quantifying the effects of putrefaction on ethanol levels in post-mortem blood samples.

Debby Rifflard '18

The Effect of Probiotics on Canine Weight and Fecal Fat Content

Obesity is a global epidemic that is not only affecting the human population, but also the canine population. A 2016 study by the Association for Pet Obesity Prevention (APOP) found that nearly 54% of U.S. canines are overweight or obese. Obese canines are predisposed to developing a number of diseases such as diabetes, hypothyroidism, and hypertension. These obese animals also experience a decreased lifespan and an overall lower quality of life. It has been demonstrated in numerous animal and human studies that the gut microbiota and several metabolic disorders, including obesity, have a positive correlation. Restoring the beneficial microbiota population by adding probiotics into the canine diet may aid in weight loss. A controlled population of whippets from the Wilson College Veterinary Medical Center will be used in this study. All dogs are housed in the same environment, fed the same diet, and receive the same amount of exercise. The initial weights of the dogs will be recorded. Fecal samples will be analyzed to establish baseline fat content. A probiotic capsule will be administered to the treatment group once a day at the morning feeding. Weight of whippets and fat content of fecal samples will be measured every two weeks for several months and analyzed for total fat content using the Van de Kamer method. Results of this study may provide a possible long-term naturopathic treatment alternative that is non-invasive and cost-effective for the control of obesity in canines.

Myah Quirin '18

The Efficacy of Glucose Oxidase in Honey Against Microbial Growth

Honey has been used in multiple applications in the medical field including inhibiting microbial growth. This is extremely important for cases where the risk of secondary infections of wounds is high, especially as microbes are becoming increasingly resistant to available treatments. Contributing factors to the antimicrobial factors of honey include a low pH, high sugar content, dehydrating properties, and the production of hydrogen peroxide. Glucose oxidase is an enzyme known to be present in honey that produces hydrogen peroxide. The amount of glucose oxidase in different types of honey varies based on the composition of the honey bee's food source. The goal of this study will be to determine the effectiveness of several types of honey against microbial growth using zone of inhibition to determine the concentration level of the enzyme that is most effective. Each sample of honey will be analyzed to determine pH, sugar content, and the concentration of glucose oxidase present.

POSTER RESEARCH PRESENTATION

Biology/Chemistry 398

Megan Fangman '18

Diagnostic Viability Blood Serum Protein Levels as an Indicator for Equine Ulcers

An estimated sixty percent of horses develop moderate to severe ulcers, which disrupt normal activity and can be life-threatening. As high as ninety percent of thoroughbreds, a common racing breed, can develop ulcers. Currently, diagnosing ulcers is done via gastroscopy, which involves viewing the internal environment of the stomach. This procedure requires at least eight hours of fasting and light sedation and can be inappropriate for some horses. By quantifying blood serum protein levels, the presence of ulcers may be able to be identified based on albumin and globulin levels, eliminating the need for gastroscopy. For this study, blood samples will be obtained from healthy non-thoroughbred breeds to establish a standard baseline and from healthy and suspected ulcerated thoroughbreds. Total protein count will be determined using a Biuret test, and individual quantification of globulin alpha 1, alpha 2, beta, and gamma will be performed using gel electrophoresis. Abnormalities of the gut bacteria H. pylori is suspected to contribute to the formation of ulcers. The presence of elevated interleukin 1-B is a result of a gastric inflammatory response and will be quantified using an ELISA assay. A combination of albumin levels, globulins, and interleukin-1B factors will be compared between groups to determine if serum levels are statistically different. Low albumin and increased globulin and interleukin-6 factors is expected to occur in the suspected ulcerated thoroughbreds compared to the healthy subjects.

POSTER RESEARCH PRESENTATION

Biology/Chemistry 398

Kirstin Lehman '18

Investigation of Possible Points of Contamination by Lactobacillus *and* Pediococcus *in a Microbrewery*

The number of microbreweries, breweries that produce a limited amount of beer, has grown 15 percent since 2015 and now makes up 12 percent of the beer industry, according to the Brewers Association. Microbreweries are at increased risk for contamination by microbes due to limited resources and increased human manipulation of product. This poses a problem economically because spoiled beer decreases profit. Lactobacillus and Pediococcus are Gram positive, anaerobic bacteria that most commonly spoil beer, making it unpalatable with an unfavorable aroma. At some point during the brewing process these spoiling bacteria are becoming introduced to the beer. Brewing begins with malting grains, which are then boiled. After boiling, the liquid is transferred to a tank where hops are added. This liquid is then cooled and transferred to a fermentation tank, where yeast is introduced. After fermentation, the fluid portion goes to a conditioning tank, where it stays until bottling. For this study, samples will be collected throughout the brewing process, particularly at points of transfer within a microbrewery. Samples will be cultured on Hsu's Lactobacillus Pediococcus medium, an agar that inhibits the growth of yeasts and selectively grows Lactobacillus and Pediococcus. Any bacterial growth will be evaluated for genus properties and the colonies will be counted. Lagers and ales require different processing temperatures; therefore, microbial growth in these two types of beer will also be of particular interest. Ultimately, identifying the specific points of bacterial contamination will allow the brewer to evaluate existing protocols, enhancing the quality of their products.

POSTER RESEARCH PRESENTATION

Psychology 352
Collaborative Research

Adviser
Steven Schmidt, assistant professor of psychology

Gina Rea '17

An Analysis of Trends in Institutional Attitudes and Bystander Beliefs Among Wilson College Students

In 2013, Wilson College, a historically women's college, first opened is traditional undergraduate education to men, and in 2014, the residential facilities became coed. In the years since Wilson College has become a coeducational institution, the Campus Climate Survey has been used to collect data on behaviors, perceptions, and attitudes surrounding sexual violence and campus safety. As part of that larger study, this subset exploratory analysis investigates three years of Campus Climate data with the goals to identify possible relationships among and trends in attitude change of Wilson College students regarding institutional attitudes (personal connections, preparedness of the college, responsiveness of the college, and knowledge of reporting policies) and bystander beliefs (personal and campus). Such trends may help inform the college administration of changing needs of the Wilson College student body.

POSTER RESEARCH PRESENTATION

Health Science 216
Human Anatomy and Physiology II

Adviser
Tonia Hess-Kling, assistant professor of exercise and sport science

Sarah Burkholder ’20, Cheyenne Fulton ’20, Kristin Hoffman ’17, Jenaya Jay ’20, Jenna Keller ’19, Taylor Lehman ’20, Olivia Noone ’18 and Cierra Rhodes ’19

Chronic Obstructive Pulmonary Disease (COPD)

Bassil Andijani ’19, Kristyn Fogg ’18, Shelby Fogus ’20, Autumn Langley ’20 and Duane Yves Pineda ’20

Cerebal Palsy

Payton Dziemburski ’19, Erica Henry ’19, Amber Jones ’18, Deeana Martin ’20, Jordyn Day ’19, Ryan Sevret ’19 and Chance Wheeler ’20

Amyotrophic Lateral Sclerosis/ Lou Gehrig’s Disease

Skye Bennet ’20, Lauren Bradley ’20, Nicole Dudley ’20, Kaitlin Fegely ’20, Kristin Smith ’20 and Sarina Smith ’20

Congestive Heart Failure

Hannah Fittry ’20, Lee Price ’19, Heather Robinson ’20, Keion Adams ’19, Sara Reese ’20, Kendra Foltz ’19 and Megan Sterling ’17

Osteogenesis Imperfecta

Julia Barra ’17, Chelsea Amsley ’20, Brystol Miller ’20, Geneva Myers ’20, Latoya Hunter ’21 and Bailey Keefer ’20

Integumentary System - Psoriasis

POSTER RESEARCH PRESENTATION

Students enrolled in HSC216 participated in group research projects that acted as a culminating experience to a two semester course studying human anatomy and physiology. This project was aimed at creating an active and student-centered learning experience; while also educating students how to conduct research in the health and medical field. During this project each group conducted research on one chronic disease of their choice; reinforcing understanding of cellular mechanisms and bridging that with anatomy and physiology of the human body. Students were able to successfully collect information on their specific chronic condition ranging from causation, anatomical and physiological changes and/or adaptations to current diagnostic and therapeutic methods. This allowed students to discover specific impacts chronic disease has on the body's anatomical and physiological systems. Group posters on display represent the knowledge students gained from their research. The overall goal of this project was to encourage and enhance a deeper understanding of chronic disease, how that translates into anatomical and physiological implications, conveying those facts and concepts to the community while also raising awareness.

POSTER RESEARCH PRESENTATION

Nursing 361
Medical Surgical Nursing

Adviser
Julie Beck, associate professor of nursing

Kristy Brammer '19 and Sierra Watson '19 with Monica Dice

Staffing Crisis

In doing our project, we decided to examine the effects that nurse staffing has on the outcomes of our patients. There is a growing need for registered nurses in the United States and there is a growing amount of studies that holds this to be true. Without the correct amount of nurses, patient safety can significantly suffer, taking it longer for call bells to be answered, medications to be administered, and patients to get the treatments they need (Bobay. L. K., Huges, G. R., Jolly, A. N., Hughes. G. R.,2013). Not only do patients suffer from short staffing, but so do the nurses. Adequate nurse staffing is paramount to patient safety and nursing research reveals that nursing burnout is frequently avoided when staffing ratios are adequate. It is stated that there has been an increase in readmissions due to not enough staffing. Some of the conditions that are seen are myocardial infarction, pneumonia, heart failure, etc. (Robert Wood Johnson Foundation., 2013). Unfortunately, healthcare is a business, and businesses keep staffing minimal to keep the costs down (Gurses. P. A., Pascale,C., n.d.). It is important to review how hospitals manage their nurse/patient ratios for staffing. The nurse staffing numbers are managed using the midnight census. As the day progresses, the flux of patients admitted into nursing units can drastically change and create the need for more nurses at the bedside. This disparity can cause nurses to be mandated to stay longer hours in order to care for the patients. Longer nursing shifts have been linked to the incidence of nurse burnout. With the growing need of nurses in healthcare today, researching the impact of longer nursing shifts on patient safety becomes monumental. The purpose of this project is to investigate the research that examines nursing shifts on not only the wellbeing and retention of nursing staff, but also patient safety within the organization. Hospital staff manage staffing by midnight census, which this can drastically change by morning. This paints a false picture for the actual staffing needs. Not only does this cause readmission, but it also causes things such as falls, aspiration, missing early signs of acute issues, medication administration errors and more. With the problems that have created for the increase number of patients also causes a tre-

mendous impact on the staffing as well. Staff get overworked and often get burned out. Nurses get so overworked that they do not feel satisfied from the work that they do and they get extremely exhausted and overloaded. Overload oftentimes leads to being absent as well as poor job performance. This usually eventually leads to anger and things start to go downhill from there. It is important for staffing to be regulated to prevent burnout of staff and to give the best care possible to the patients.

POSTER RESEARCH PRESENTATION

Nursing 361

Jennifer Laman '19 and Kayelynn Pittmann '20 with Gina Long

Nurse's Donning and Doffing Personal Protective Equipment Accurately

The purpose of this project is to further examine the nurses' use of personal protective equipment and RSV incidence in a neonatal intensive care unit. Personal protective equipment (PPE) is used to prevent the spread of organisms from one patient's room to the next or if a person is on isolation. It protects the nurse and the patient from the possibility of acquiring other pathogens. PPE is comprised of gloves, gown, mask, and eyewear. Respiratory Syncytial Virus (RSV) is a highly contagious virus that causes mild, cold-like symptoms in adults but becomes more severe in infants. RSV is a consistent problem and the most common expensive cause of nosocomial infections in neonatal intensive care units (NICUs) and pediatric wards. The purpose of this project is to study NICU nurses' use of PPE. The goal is to address any gaps in the procedure with an educational offering and then study its effects on the incidence of RSV in the NICU. We believe this study will show that improvement of PPE techniques in NICU nurses will decrease the incidence of nosocomial incidence of RSV.

Cathy Rice '18 and
Ashley Lynch '20 with
Susanne Casella

"Code Green" at 25 years: Chambersburg Hospital endeavors to keep its workers as safe as possible

In an attempt to be proactive, health care facilities have taken different approaches to protecting their employees from physical harm. One such approach is the "Code Green" Alert, which combines de-escalation and a mustering of further resources, and was implemented at Chambersburg Hospital in March of 1992. (There is no record of any sentinel event that precipitated the implementation of this response, according to Jonathan Williams, Director of Safety and Emergency Preparedness at Chambersburg Hospital.) Hospital workers, nurses in particular, suffer the highest incidence of work-related injury and violence, and both the number and severity of incidents are on the rise.

The Occupational Safety and Health Act, a federal law that was enacted in 1970, mandates that each employer in the United States "shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees…" (Congress, 1970) There are, however, many compelling factors in the healthcare paradigm, two of which are the duty to treat and the idea that coping with assaultive behaviors are "part of being a nurse." This cultural perception that violence is inescapable needs to change in order to provide the safest work environment possible.

In the private sector of employment, areas such as construction, manufacturing and retail typically have fewer than 2 incidents of workplace violence per 10,000 full-time employees, but those listed as "healthcare and social assistance" had almost four times as many cases: 7.8 per 10,000 employees. (Occupational Safety and Health Administration, 2015, p. 1) This does not reflect the cases that did not require the employee to take any time off of work, or the cases that went unreported.

When a patient is admitted to Chambersburg Hospital, the admitting clerk checks past admissions for documented behaviors to assess potential threats. Thirteen such behaviors will cause a patient's medical record to be "flagged,' which in turn will result in the appropriate response from staff. These actions range from a

warning to the receiving floor staff to a patient being monitored one-on-one by security staff.

The "Code Green" alert is part of the orientation for all hospital employees and volunteers and is reviewed annually. It involves de-escalation of violence and the marshalling of security staff and local law enforcement to protect staff and other patients. (Williams, 2017) The training is effective, as evidenced by an assault that took place on November 3, 2016 when a patient brandished a knife. The "Code Green" was initiated and no staff member was injured (Ruhl, 2016)

POSTER RESEARCH PRESENTATION

Nursing 361

Morgan Bechtold '19 and Heather Paxson ' 18 with Rhianna Myers

Palliative Care

Dame Cicely Saunders stated "You matter to the last moment of your life, and we will do all we can, not only to help you die peacefully, but live until you die."

The purpose of this research project is to explore Palliative Care; how it is perceived by staff and does the medical staff's perception influence its initiation with patients. Palliative Care is comfort care provided for people suffering from chronic conditions. This specialty care focuses on improving the quality of life for both the patient and their families no matter the diagnosis or stage of disease (Mayo Clinic-Palliative Care, 2017). Unfortunately, when people hear the term Palliative Care, a common misconception is that it is the same as Hospice Care; and thus signals futility in patient care. Hospice care is focused on reducing suffering for a patient and their family when treatment for a disease is no longer available (Summit Palliative Care-Brochure, 2016). Palliative Care focuses on reducing pain, symptoms and stress for patients with serious illnesses, especially while they are receiving treatments for that disease (Summit Palliative Care-Brochure, 2016). Research has shown that in many patient circumstances, that palliative care gets initiated too late and often patients and their families are not able to reap the reward of this specialty care. It is important to research the bedside staff perceptions of palliative care in order to improve patient outcomes and reduce unnecessary suffering due to engaging this process too late. It is the hope of this project to understand bedside staff perceptions of palliative care educate them on the difference between hospice care and eventually employ palliative care it was ideally created.

POSTER RESEARCH PRESENTATION

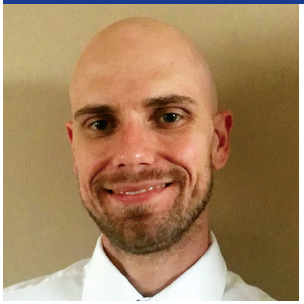
Nursing 361

Taylor Amsley '18,
Brittany Chandler '19 and
Bev Meyers '19 with
Polly McMullen

The Effects of Falling

Fall risks have become a major issue in healthcare facilities and in patient's homes. Due to this epidemic, hospitals have been examining the numbers of falls and their respective patient costs. The impact that falls have on hospitals and communities is significant. A once independent person must now rely on family, friends, caregivers, and agencies to take care of them temporarily or permanently. Losing independence may create hardships between patients and their families, especially if they have limited financial or physical resources which leads to potential issues with cost and may lead to self-esteem and issues with depression. This project will illustrate statistical factors and evidenced base practice behind the cost of a fall. This project will also discuss ways to prevent falls at home and in health care facilities and provide education to patients and their families regarding the seriousness of falling and interventions to initiate in order to prevent falling in the future. This poster will also point out medications that increase the risk of a fall and several disease processes that contribute to falling. Lastly, this project will compare fall statistics between two local hospitals: Chambersburg Hospital and Waynesboro Hospital.

ORAL RESEARCH PRESENTATION



Darren Stephens '17

Major: English

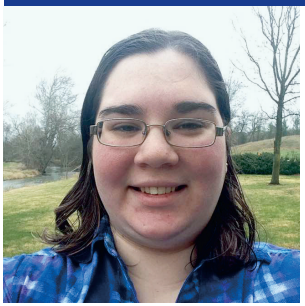
Adviser
Michael Cornelius, professor of English

Human Mating and Evolutionary Psychology in "The Clerk's Tale"

At the center of Geoffrey Chaucer's "The Clerk's Tale" is the marriage between Walter and Griselda. Before they are wed, Walter conditions that Griselda must obey him in all things, to which she agrees; in order to "tempte [test] his wyf," Walter feigns the destruction of their children, all to appease his "gentils" (Chaucer 452, 480). Before doing this, however; Walter makes it a point to ask Griselda for permission to proceed, to "assente as in this thyng" (Chaucer 499). Griselda complies.

The tale and the marriage of Griselda and Walter may broadly be interpreted in two ways. The Clerk himself describes it as a parable for how one should remain steadfast and devoted to God despite the hardships, trials, and tribulations through which He permits and/or ordains one to suffer. Other pilgrims on the journey to Canterbury view the story as a direct representation of an idealized marriage, as conceptualized in Chaucer's day, and specifically with regard to the conduct of the wife. This essay is concerned with the latter interpretation, and it examines why Griselda consents to the "rules" of the marriage; why Walter is compelled to test his wife; and why Griselda is complicit in perceivably committing filicide. I will do this through the lens of evolutionary psychology, which indicates that human mating behavior and "sexual strategies" are "evolved solutions to the problems posed by survival and reproduction," as David Buss, author of *The Evolution of Desire*, has theorized (7). This shows that Walter and Griselda act in accordance to these "sexual strategies," regardless of how illogical or reprehensible their actions may be.

ORAL RESEARCH PRESENTATION



Caitlyn Minelli '15, G'17

Master of Arts in Humanities
English language and literature

Activities: Wilson College Billboard, Bottom Shelf Review

Adviser
Michael Cornelius, professor of English

Voice as Presence in Creative Writing

Voice is a concept of creative writing that has been dealt with by using an "I cannot define it, but I know it when I see it" attitude by scholars, teachers, students, critics, and writers alike. It comes from working within the craft and working with different techniques and perspectives without truly understanding how it is created or developed, even though it is one way used to identify and measure mature or "good" writing. Many scholars have substituted voice with different concepts in creative literature in attempts to explain it, while there are other critics who do not think voice exists. They equate it to something created by professionals to give writers something to work toward, but will never truly attain, in order to make a writer's work better. Despite the controversies, voice exists and this project works to define and differentiate it from three concepts that it commonly gets mistaken for, which are tone, style, and writer identity. In order to show how these terms differ from voice, each concept is defined and isolated to show how it works in creative literature. The examination of these concepts makes it apparent that voice has been neglected in creative writing studies. It is not to say that these concepts do not work together to help a writer perfect his or her writing. At the same time, it does not mean that tone, style, or identity is voice, or that the combination of the three equates voice. Voice, instead, is not only the building block of "good" writing, but a product of purposeful writing, and functions as the writer's presence in a piece of literature that a writer is able to consistently project throughout a work. However, using presence as the measurable factor to define voice borders on the philosophical and the metaphysical because it is lacking in demonstrable evidence. Instead, presence is looked at how a writer is able to constitute cognitive awareness in readers who are capable of identifying abstract concepts based on an individual's engagement or compulsion to acknowledge the abstraction, in this case voice.

ORAL RESEARCH PRESENTATION

Adam Ellerbrock G'17

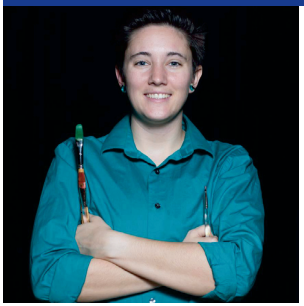
Master of Arts in Humanities
English language and literature

Adviser
Larry Shilock, professor of English

The War on Memory: The Role of Cultural Memory in Dismantling Dystopias

Scholars have traditionally approached the dystopias represented in Aldous Huxley's *Brave New World* (1932) and George Orwell's *1984* (1949) by focusing on totalitarian oppression, censorship, and surveillance. In the process, they have foregrounded the means through which the State wields its power and given little attention to the resistance it provokes in its citizens. My analysis shifts the focus onto the subjugated populations of these dystopias and examines the ways they contest and renegotiate memory. In particular, this study incorporates Ridley Scott's film *Blade Runner* (1982) to demonstrate how the Replicants resist their creators through the formation of counter-memories. The first chapter focuses on Brave New World, following John the Savage's struggle to integrate the memes and cultural memory of the Old World into the State's master narrative. Chapter two examines *1984's* dystopia, focusing on the State's use of trauma to both block and create cultural memory. The final chapter follows *Blade Runner* to examine how the posthuman Replicants engage in violent resistance to form counter-memories that will underscore new identities. The study concludes by examining the HBO series *Westworld* and its treatment of counter-memory and resistance.

ORAL RESEARCH PRESENTATION



Amanda Dunn '17

Major: Studio Art
Activities: Environmental Club, Allies, Orchesis

Adviser
Philip Lindsey, associate professor of fine arts

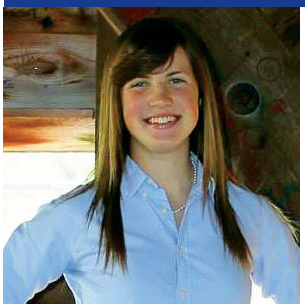
Falling Into the Unknown

The human body is a vessel of emotion and fantasy. When those experiences are captivated by a moment, it triggers a unique journey throughout the body. Likewise, works of visual and performance art have the potential to bring forth similar encounters. The paintings, sculptures, and choreography in this series are intended to encourage the viewer to contemplate their relationship with each work of art.

The paintings in *Falling into the Unknown* are large, acrylic, upstretched canvases, and are designed to engage the viewer through scale and expressive mark making. The sculptures were constructed as components of choreography to form a fuller work of art, and to link those connections with emotions, fantasy, mind, and body. The relationship between the sculpture and choreography are meant to provide a possible framework for one's thoughts and emotion, and the vulnerability associated with this work.

Art should engage more than sight alone. Art should engage thought and feeling.

ORAL RESEARCH PRESENTATION



Erin Stephan '18

Major: Environmental Science
Minor: Mathematics
Activities: Women's Soccer, Student-Athlete Advisory Committee, Student-Athlete Mentors, Footsteps, Environmental Club

Advisers
Edward Wells, professor of environmental studies
Christine Proctor, assistant professor of biology

Oak Wilt Risk Assessment in Pennsylvania

Since its recognition as an invasive species, oak wilt poses a threat to oak trees comparable to that of Dutch elm disease. It is caused by a fungus, *Ceratocystis fagacearum*, which now occupies several states in the midwestern and eastern states as well as Texas. The most susceptible species are those in the red oak group, however all oak species can be infected. Oak species not in the red oak group have an increased resistance and can survive longer with the fungus. In Pennsylvania, oak wilt is present west of the Susquehanna River. When managing invasive species, efforts are most successful and cost-effective when detected early, which is also true of the control of *C. fagacearum*.

The objective of this research is to provide susceptibility information for Pennsylvania that will indicate areas at high risk for invasion of oak wilt. A risk assessment will be performed using Geographic Information Systems (GIS) and a map articulating these at-risk regions will be created. The factors which predispose a particular region to invasion will be overlaid in a GIS to create a risk index. Raster Calculator will compile all of the data layers and determine which regions have the highest overall predisposition to oak wilt. Zero will be used to represent areas with no risk to a particular factor, while a 12 will indicate areas of highest risk. The identification of these regions will be useful to determine where increased monitoring should be established and public awareness and education efforts should be made.

ORAL RESEARCH PRESENTATION

Brant Swartz '17

Major: Environmental Sustainability
Minor: History
Activities: Campus Gaming Club

Adviser
Edward Wells, professor of environmental studies

Homerule and Autonomy In Pennsylvania

The ability of self determination and the freedom of choice is a value that, here in the United States, we hold very close to our hearts. However, this ideal is not inherently universal throughout the different aspects of the nation. Cites, towns and municipalities throughout the country all have a say in what goes on in and around their own jurisdiction. However, this power and the legal ability to use it only goes insofar as to allow basic ordinances. Due to this limitation, most cities and towns are restricted at the state level from enacting ordinances to meet some of the demands and desires of the local population, this is known as preemption. Preemption is the overlapping of two laws from different levels of government, in this case state and local. In a case were preemption is evident the law or jurisdiction of the higher legal entity is affirmed over the lower level of jurisdiction. Thus many have been demanding higher levels of local autonomy be granted to the many different cities, and towns within the state of Pennsylvania, as to better represent the will of the residents living within them. At the same time there are an equal number of supporters of the status quo, who feel that greater autonomy is not necessarily the best solution to representative problems. Thus in order to determine the best solution to this problem, it is necessary to understand each side and why each believes that they are correct. In doing so it will be possible to draw a conclusion in regards to local autonomy and whether or not it is truly the best path forward.

ORAL RESEARCH PRESENTATION

Cultural Outreach: Bridging Language and Cultural Divides

Spanish 209 Intermediate Spanish Conversation

Jalisah Arline '19, Alexis Enders '19, Ian Frazier '19, Amanda Haase '18, Elen Harutyunyan '19 and Megan Varga '17

Adviser
Kiah Berman, Spanish lecturer

Authentic communication and cultural exchanges are essential components to meaningful foreign language education. The inclusion of such an experience was one of main objectives for Spanish 209 students this semester as they participated in a community based learning experience with local Hispanic migrant families. An equally significant goal was to encourage community engagement in order to bridge cultural and language divides with this distinctive yet continuously growing population. Students conducted weekly home visits during which they practiced Spanish, gained first-hand cultural insight, helped parents learn English, and offered homework help to the children, many of whom are enrolled in Learning Campus here at Wilson. In this manner, students and families engaged in a symbiotic relationship of mutual benefit and strengthened ties between Wilson and the community. Students will share their experiences in a group presentation, highlighting their initial expectations, knowledge gained, family perspectives, and reflections.

ORAL RESEARCH PRESENTATION

Brie Burdge '16, '17

Majors: Spanish, Global Studies
Minor: Business Management

Adviser
Nicolaos Catsis, visiting assistant professor of global studies

The Cycle of Poverty Close to Home: Poverty in Franklin County and the Public Assistance System Intended to Alleviate it

Currently over 45 million people in the United States are living below the poverty line. That is 1 out of every 6 Americans struggling to make ends meet. And poverty doesn't stop here or today. Many children raised in impoverished households will continue to live in poverty, creating a perpetual cycle of poverty. Despite public misconceptions, poverty is not the glamorous, government-subsidized "easy life" that it is sometimes portrayed as. Those living in poverty face a number of struggles, one being gaining access to the public assistance system. In many states, the system is not designed for long-term aid and, often, can be insufficient for lifting individuals out of poverty. This project will discuss the current policies in place in Pennsylvania. It will also use real testimonials from individuals who have experienced the barriers that exist when one is working towards a better life. All of these support the argument that we need to revise not only our assistance programs, but our attitudes towards the impoverished.

ORAL RESEARCH PRESENTATION

Stephanie Marshall '17

Major: History and Political Science (history)
Minor: Global Studies
Activities: Wilson Scholar Program, Pi Gamma Mu, Phi Beta Kappa

Adviser
Nicolaos Catsis, visiting assistant professor of global studies

Making the Past Present: Holocaust Remembrance and Collective Memory

In the decades following liberation of the death camps and the end of the Holocaust, Germany and countries around the world commenced the process of remembering the victims, survivors, heroes, and perpetrators. More than 70 years have passed since the Holocaust came to an end on May 8, 1945, during which time Germany has sought reconciliation with its role in the atrocities committed against millions of peoples persecuted under the Nazi regime. Despite continued documentation, commemoration, and memorialization, Holocaust remembrance in Germany, and world-wide, has faced a growing sense of urgency in recent decades; with ever fewer Holocaust survivors and the need to preserve their narratives.

Through case studies of three victim groups of the Holocaust – European Jews, political dissenters, and the Roma - this thesis seeks to analyze the ways in which victims of the Holocaust have been remembered, as well as the function of such memorialization in the formation of a collective memory of Holocaust-era atrocities. This thesis will also explore the questions that arise from such an analysis: Who is a victim? Does gender-specificity matter in remembering victimhood? What ethical concerns must be considered in remembering and memorializing victims of the Holocaust?

ORAL RESEARCH PRESENTATION

Ecology and Conservation Biology in South Africa, January, 2017

Biology 270 Experiential Tropical Ecology

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Adviser
Christine Mayer, director, Fulton Center for Sustainability Studies

Fourteen students and alumnae traveled with Operation Wallacea, "an organization that runs a series of biological and conservation management expeditions in remote locations across the world" to South Africa in January, 2017. We lived and worked in Denokeng and Gondwana game reserves for a course entitled Experiential Tropical Ecology (BIO 270). We explored topics in conservation biology including ecotourism, indigenous peoples, trophy hunting, ecosystem management and the pros and cons of fencing in game reserves. Our presentation will highlight the work we accomplished during our two weeks in country and students will be available for a Q and A panel discussion afterward.

HONORS RESEARCH PRESENTATION

Gaser Ahmed '17

Majors: Biology and Chemistry
Activities: Volunteer at the Chambersburg Hospital

Advisers
M. Dana Harriger, professor of biology
Bardley Engle, associate professor of biology

Analysis of the Effects of Gluten Proteins and Low-Gliadin Wheat Products on Celiac Disease in NOD-DQ8 Mice

Celiac disease (CD) is an autoimmune disorder triggered by the ingestion of gliadin, a wheat gluten protein. Gluten is composed of gliadin and glutenin. According to Mayo Clinic data, 1% of adults in the U.S. have CD. Although there are medications that can suppress the symptoms, there are no cures for CD and a strict gluten-free diet is the only resort. Gliadin is the causal agent that triggers the immune response. The down-regulation of gliadins in wheat by RNAi (interference) provides low gliadin products, which may offer several more options for CD patients. This study was performed to determine the effects of gluten, gliadin, glutenin, and the low-gliadin products on the progression of CD plus ascertain if there is an intake threshold. The transgenic mouse model, NOD-DQ8, was utilized. Mice were exposed to different amounts of gluten, gliadin, and low-gliadin products by oral gavage. Blood samples were collected every two weeks from the tails, and the tissue transglutaminase tTG-IgA enzyme-linked immunosorbent assay (ELISA) was performed on the samples. Biopsies of the small intestine were collected for histological analysis of crypts, villi abnormalities, and the count of intraepithelial lymphocytes. Results of the study will provide further information about the immunotoxicity of gliadin, glutenin, and the safety of consumption of low-gliadin products, which may set the stage for application toward humans.

HONORS RESEARCH PRESENTATION

Jamie Burnett '17

Major: Psychology
Minor: English
Activities: Psychology Club, Environmental Club

Adviser
Steven Schmidt, assistant professor of psychology

Factors Influencing Middle School and High School Students' Vocational Decision-Making

The objective of this study is to explore the factors that influence middle school and high school students' vocational decision-making. The variables being analyzed are student demographics (i.e. middle school or high school, sex, age, race), parent demographics (i.e. race, education, career), plans after grade school, career goals, goal certainty, goal change, parent expectations, perception of family and teacher support, perception of college, self-esteem, gender roles, competency, motivation, relationship with parent, and gender stereotypes. Because this is an exploratory study, there is no hypothesis. An eight-page survey was distributed to the Green Castle Antrim middle and high school students. The survey was completed during homeroom and TEAM periods in the beginning of the school day and picked up by the researcher after completion. Descriptive statistics will be reported for all of the variables. T-tests, correlations, chi square, and analysis of variance procedures will be run to identify predictors of decision-making variables (plans after high school and career goals). These variables will be entered into a logistic regression model to test the relative contribution to the variation in decision-making scores. The results may provide the public school system with suggestions to improve the way in which students are guided in their vocational decision-making.

DISERT SCHOLAR RESEARCH PRESENTATION

Anna Harutyunyan '17

Majors: Biology and Chemistry
Activities: Muhibbah Club, Orchesis Secretary

Advisers
M. Dana Harriger, professor of biology
Deborha Austin, professor of chemistry

Synthesis and Effects of Fe-AZT on Viability of Human Hepatocytes and Hepatocellular Carcinoma Cells

Hepatocellular carcinoma (HCC) is the fifth most common cancer and third most common cause of cancer mortality around the world. HCC is difficult to treat due to early metastasis and progression, therefore developing and testing new anticancer agents that target HCC cells is critical. Several studies have demonstrated that azidothymidine (AZT) has antitumor activity and induces apoptosis in malignant cells. AZT is phosphorylated intracellularly and is integrated into the cell's DNA, which terminates the phosphate-sugar backbone, thus damaging the DNA and inducing apoptosis. Several organometallic complexes of AZT have been synthesized and shown to have antimicrobial activity, however their anticancer properties were not tested. In this study, an organometallic complexes of AZT and trivalent iron (Fe3+) was synthesized. The structure and mass to charge ratio of the complex were confirmed by IR spectroscopy and mass spectrometry. The apoptosis-inducing ability of the Fe-AZT was assessed and compared to that of AZT by treating HCC cells (HepG2) and normal human hepatocytes (THLE-2) with several concentrations of Fe-AZT and AZT. The viability of both cell lines was quantified by 3-(4,5-Dimethylthiazol-2-Yl)-2,5-Diphenyltetrazolium Bromide (MTT) assay. The efficacy of both complexes in inducing apoptosis was compared by one-way ANOVA and Tukey's post-hoc test. The results demonstrated that Fe-AZT has higher toxicity than AZT. Furthermore, the malignant cells (HepG2) were significantly more sensitive to Fe-AZT toxicity as compared to normal hepatocytes.