

1A LIB 207
Moderator: Janice Johnson

Kory Byrne

Mentor: Michael Barnhart

Developing a Higher Level Programming Language for Music Composition

In computer programming there are different language levels ranging from a list of numbers representing electrical signals to very high level languages with commands similar to English. One of these high level language categories is called Declarative Programming, wherein rules to attain a goal are specified to the computer instead of a list of commands. I have spent this semester prototyping my own declarative type language for Music Composition and experimenting with rules governing how individual notes proceed from chord to chord. My presentation will examine both the music theory involved in making this language and the development of its algorithms. A short musical demonstration will follow.

1B MAS 204
Moderator: Kimberly Inman

Lauren Wright & Dustin Hines

Mentor: Kimberly Inman

Development of an Embryonic Model System to Study Pathogenesis of Diabetes Related Birth Defects

Upwards of seventy-five percent of congenital defects remain unidentified in causation. Of the known causative agents, diabetes is the most prominent instigator of birth defects. For this reason, it is imperative to investigate the pathogenesis of diabetes on the developing embryo. Our purpose is to explore the effects of an uncontrolled glucose environment on embryogenesis using *Gallus gallus domesticus* as our model organism. Following 24-hours of incubation, the developmental environment is treated with a glucose solution resulting in a model system mimicking the diabetic womb. The abundance of glucose is present during late gastrulation stages, resulting in disruption of proper embryogenesis. Of the defects observed, hindbrain malformation, neural tube deformity, and caudal regression are the most represented. These defects are consistent with disruption of accurate formation of the neural tube and present with an incidence rate of approximately thirty-five percent. Future studies will investigate the underlying mechanism of these defects.

Lindsey Baker & Nicole Stimmel

Mentor: Kimberly Inman

Molecular Cloning of Chicken *FOXC1* for Gene Expression Analysis

During early embryonic development neural crest cells (NCCs) migrate into many regions of the vertebrate embryo, including the pharyngeal arches. Once in the pharyngeal arches, NCCs generate most of the cartilage, bone, and connective tissue of the head and face, including the jaw and middle ear bones. Analysis of jaw and middle ear development in a mouse model has indicated the requirement of *Foxc1* gene expression for development of both structures in mammals. The jaw joint in mammals differs from other gnathostomes, with the middle ear bones in mammals being homologous to the jaw joint in other organisms, such as the chicken. This research aims to discover if *FOXC1* plays a role in proper formation of the jaw joint in non-mammalian gnathostomes. We have begun the process of cloning a fragment of the *FOXC1* gene in order to create a timeline of gene expression in the developing chick embryo.

Aaron Wamsley & Johelen Taylor

Mentor: Jennifer Napper

Does Acute Myelogenous Leukemia Use Anaerobic Glycolysis? Let's Find Out!

The tendency of cancer cells to depend on anaerobic glycolysis for their energy needs has been well documented. We wish to determine whether acute myelogenous leukemia (AML) cells share this same dependence. Dichloroacetate (DCA) is an inhibitor of anaerobic glycolysis. It acts by forcing the cells through oxidative pathways when metabolizing glucose for energy. It is our hypothesis that treating AML cells with DCA will stimulate cell death. Two AML cell lines, HL-60 and THP-1 cells, were treated with varying concentrations of DCA and kill curves were constructed. Next, we are attempting to address the mechanism of apoptosis, by measuring the down regulation of two important anti-apoptotic proteins, Bcl-2 and survivin. So far, our results have been inconclusive. Our hope is to provide insight into the mechanism of DCA toxicity in AML, which could possibly lead to novel treatments for this deadly disease.

1C UNC 214

Moderator: Amy France

Hegean Mershon, Wesley Bender, & Kelsey Swackhamer

Mentor: Amy France

Case Study of Guillain Barre

A case study presentation on an 86 year old female patient diagnosed with Guillain barre syndrome. The presentation will cover the time from the patient's stay from Hospitals A-D as well as the suspected link between the flu vaccination and Guillain barre syndrome.

1D LIB 204
Moderator: Sarah Boehle

Rachel Everetts, Hayley Kline, & Hannah Littler

Mentor: Sarah Boehle

Improving Health and Quality of Life for an Aging Population

This presentation will inform the audience of common health care concerns for aging individuals. Participants will learn about the prevalence of falls in older adults, the health risks associated with falls, and how education and safety training can help to reduce the risk of falls. We will learn about the importance of screening for age-related macular degeneration (AMD). AMD is a common cause of blindness that often has no warning signs in the early stages. Finally, we will learn about a new environmental design concept called Svayus that is being used in long term care facilities. This new design incorporates a number of architectural and environmental enhancements to improve the quality of life for residents with memory impairments.

2A UNC 214
Moderator: Adair Carroll

Anthony Wilburn, Lauren Kirk, Angela Lewis, Blake Fraley, & Kyle Dyer

Mentor: Adair Carroll

Improving Health Literacy for Positive Patient Outcomes

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Health.gov 2017). Unfortunately, a large number of the American population has low health literacy skills, coupled with low socioeconomic status, resulting in a rise of individuals experiencing poor health outcomes. The professional nurse plays an integral role in educating clients and their family members. Students will report on evidence based practice related to health literacy and the teaching interventions they provided to clients to improve health literacy.

Brooke Ballis & Connor Rahm

Mentor: Derek Jones

Exploration of Organic Experiments for Implementation into a Laboratory Manual

Writing experimental procedures to transform into an undergraduate laboratory manual for Organic Chemistry 2 (CHEM 3306) at SSU allowing for cheaper alternatives to traditional publisher's manuals. Design multistep organic synthesis experiments. Perform the nitration of substituted benzene rings to explore the differences in directing groups. This procedure was successful, and students were able to characterize the products through IR and NMR spectra. To present students with an added challenge of product identification, by developing a general Grignard procedure for the synthesis of a variety of aliphatic tertiary alcohols.

Anna Trankina & Terry Waddell

Mentor: Jennifer Napper

Does inhibiting DNA Methylation Effect Leukemia Cells?

Cells naturally regulate gene expression through DNA methylation, which is carried out by DNA methyltransferases (DNMT). DNA methylation ultimately results in a reduction of target protein expression in cells. Abnormal gene expression due to DNA methylation has been described in many types of cancer. We wish to determine whether inhibition of DNA methylation has an effect on AML cell survival. 5-azacytidine, a chemical analog of the nucleoside cytidine, has been well documented to inhibit DNMTs. It is our hypothesis that treating AML cells with 5-azacytidine will inhibit AML cell growth. Two AML cell lines, HL-60 and U937, were treated with 5-azacytidine and kill curves were constructed. Appropriate concentrations of 5-azacytidine were determined from the kill curve data. After 48 hours of treatment, DNA from cells was isolated and treated with sodium bisulfite. Bisulfite treatment will allow us to determine the extent of methylation in target genes using PCR and sequencing.

Vincent Hall

Mentor: Dan Finnen

The Development Of New Fluorescent Benzimidazoles For Use As Optical Sensors

One of the most diverse classes of nitrogen heterocycles in chemistry are the benzimidazoles, which have been used to develop everything from fire resistant fibers to pharmaceuticals. Benzimidazoles have numerous interesting properties including fluorescence, which is often utilized to develop various optical sensors. The benzimidazoles formed in this research involve condensing polyaminopolycarboxylic acids with o-phenylenediamine, and although the target compounds have

successfully been produced and characterized in our laboratory, the synthesis often required a long reaction times, high temperatures, and yields were lower than desired. The specific goal of this particular project was to develop a new set of reaction conditions that would shorten times, lower temperatures, and improve yields for these reactions. To date, a variety of reaction conditions have been modified including the use of new reagents such as Eaton's Reagent. The results of these modifications and new reactions will be described during this presentation.

2C MAS 212
Moderator: Pat Spradlin

Ethan Byers, Lauren Boland, Christopher Cleland, & Shannon Lykins

Mentor: Greg Lyons

Super WiggleBall Sports Mix

Super WiggleBall Sports Mix is an award winning physics game taking place in the far future where players compete in 4 unique futuristic sports for the glory of the robot overlords. To celebrate the history of the now deceased human race, Robots from all of the world come together to compete in what they believe were sports humans participated in. Players compete in a variety of sports using the physics and unusual nature of the Wiggles to their advantage. These game modes include WiggleBall, WiggleGolf, WigglePong, and WiggleKatamari. All these game modes to come together for a hilarious multiplayer experience with plenty of replayability and fun times with your friends and family.

Andrew Polanco & Austin Ferguson

Mentor: James Hudson

Investigating Stock Market Predictions Using Artificial Neural Networks

Artificial neural networks are collections of artificial neurons that imitate the learning processes of the brain. This is accomplished by extracting patterns from data sets through mathematical abstractions. Recently, the field of artificial intelligence has seen a resurgence of interest in neural networks due to advancements in areas such as deep learning. These techniques are constantly becoming more widespread, and their applications range from image recognition to stock market analysis. This study attempts to apply artificial neural networks in order to predict stock market fluctuations.

Catherine Koeppel

Mentor: Stylianos Hadjiyannis

Cyber Warfare: the New "Art of War"

Cyber security is a growing concern and is increasingly affecting the United States and international community. Cyber threats today pose many serious challenges due to the rapid advancements in technology. This presentation is to spread awareness of cyber threats and cyber security measures that can be adopted as an individual and as a country to prevent cyber attacks.

3A UNC 214

Moderator: Adair Carroll

Alison Castle, Danielle White, Kristen Matney, Abbey Wheeler, Megan Ashton, Scott Adkins, & Melanie Smalley

Mentor: Adair Carroll

Health Literacy

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Health.gov 2017). Unfortunately, a large number of the American population has low health literacy skills, coupled with low socioeconomic status, resulting in a rise of individuals experiencing poor health outcomes. The professional nurse plays an integral role in educating clients and their family members. Students will report on evidence based practice related to health literacy and the teaching interventions they provided to clients to improve health literacy.

3B MAS 209

Moderator: Catherine Bailey

Crystal Holtgrewe & Tori Harr

Mentor: Catherine Bailey

Question the Foley

Nurses integrate the best available evidence to guide clinical practice with the ultimate goal of improving patient outcomes. Presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding the insertion and care of a Foley catheter and compare their findings with contemporary practice.

Deborah Smith, Emily Dunham, & Matt Penix

Mentor: Catherine Bailey

Nursing Management of Chemotherapy

Cancer and other conditions may be treated with chemotherapy and the Registered Nurse (RN) assumes an important role in this treatment. It is important for the RN to deliver care that is based on current evidence, includes the perspective of the patient, and considers the clinical expertise of the nurse. Presenters will share their scholarly inquiry regarding current best practice associated with nursing management of chemotherapy and compare with current clinical practice.

3C LIB 207

Moderator: Laura Hakala

Melissa Thompson

Mentor: Leila Lomashvili

How to Prepare Appalachian Students to Be Successful?

Written as a problem-solution essay, this paper analyzes the current challenges of the school system in the Appalachian region of Ohio to prepare secondary school students for tomorrow's jobs. It specifically addresses the budget cuts directed at the local school district which affects the learning outcomes of students who are falling behind their peers on various standardized tests for various reasons and sometimes cannot even finish vocational schools to acquire useful skills of tomorrow's workforce. The paper proposes several solutions of how to foster support system of students early in their college carrier such as increasing family support as well as educating them on the various financial resources such as grants, scholarships, etc. that are available for the beginning college students, reaching out to their professors for out-of-classroom help, etc. In short, by drawing on peer-reviewed sources the paper effectively summarizes several solutions to the problem.

Sydney Roberts

Mentor: Laura Hakala

Gender Revolution in *The Coquette*

The Coquette, written by Hannah Webster Foster, is a seduction novel that was published in 1797. This particular story follows the life of the young Eliza Wharton. She is pressured to find love, and she is left with two options for love that are very different from one another: Mr. Peter Sanford and Mr. Jon Boyer. While she falls in the grasp of the potentially wrong choice, Mr. Sanford, she learns a lot about herself, what she wants, and the friendships she has formed along the way. By taking into account womanhood during the 18th century, my presentation explores the ways in which *The Coquette* shows the beginning of gender revolution for women in the areas of friendship, courting, and marriage. Foster is exposing that women are allowed to make their own choices and that they do not have to follow the expectations that society has set for them.

Whitney Berryman

Mentor: Sarah Boehle

How Does Human Resources Help Stressed Out Employees Improve their Job Performance?

The health care field is one of the most rewarding fields to work in but can also be one of the most challenging, stressful fields to be in. Health care allows you to give back to the community and help someone who may not be able to help themselves. It takes a special person to work in the health care field, and it is important for businesses to have the adequate resources to take care of their employees, so they can take care of the patients. This presentation explains what human resources role is in helping stressed out employees improve their job performance.

4A MAS 209

Moderator: Catherine Bailey

Amy Lore, Chimdiya Nosiri, & Staci Davis

Mentor: Catherine Bailey

Peritoneal Dialysis Protocol

The serious condition of chronic renal failure may be treated by removal of the body's waste products and fluid through peritoneal dialysis. The Registered Nurse (RN) assumes an important role in this treatment. It is important for the RN to deliver care that is based on current evidence, includes the perspective of the patient, and considers the clinical expertise of the nurse. Presenters will share their scholarly inquiry regarding current peritoneal dialysis best practice recommendations compared with current nursing practice.

Kylie Berry, Derrick Dillow, & Cody Redman

Mentor: Catherine Bailey

Evidence-Based Recommendations for GI Intubation

Evidence-based practice in nursing provides patient care that is based on current evidence, includes the perspective of the patient, and considers the clinical expertise of the nurse. Presenters will discuss their scholarly endeavor to locate, review, and summarize the evidence regarding the nursing procedure of GI intubation and compare their findings with contemporary practice.

Carrie Wynn, Stacy Wheeler, & Raigan Sammons

Mentor: Catherine Bailey

Family Presence During CPR

Family-centered patient care has become a practice standard in acute care clinical settings. However, presence of family in the room when a patient is undergoing complicated life-saving measures such as cardiopulmonary resuscitation (CPR) is controversial. The presenters will discuss their scholarly work comparing current practice with best-practice recommendations regarding the presence of family during CPR.

4B UNC 214

Moderator: Monica Orlando

Amber Applegate

Mentor: Darrell Rudmann

The Affects of Anxiety on Working Memory, Performance Tasks, and Test Anxiety

Anxiety can affect the ability of the brain to recall items from working memory. Anxiety often reduces accuracy on performance tasks, as well as causes detrimental effects on tests in individuals with high-test anxiety. Worry and emotionality/arousal are major components of test anxiety and are reflected in exam settings. Worry initiates poor performance, while emotionality has little affect. The two types of anxiety, state and trait anxiety, are present during the task, but trait anxiety is more likely to affect performance. A variety of settings provokes anxiety on performance tasks and results in a reduction on performance, which includes choking under pressure, stereotype threat, factors of self-awareness and motivation. Reduction in performance due to anxiety can be explained by the attentional control theory (ACT).

Cara Dillon

Mentor: Brian Richards

Psychological Reactance and Popular Media

A great deal of beloved entertainment is replete with deviant and antisocial characters and actions. Why is popular entertainment, such as *Breaking Bad*, Lil' Wayne, *Deadpool*, so appealing? Our research explored the relationship between psychological reactance (a desire to assert one's freedom in the face of rules and restrictions) and a preference for media with socially deviant themes. We hypothesized that part of the appeal of such entertainment is that people satisfy their desire for autonomy by living vicariously through the characters. In an initial study, the researchers noted a correlational relationship between trait levels of psychological reactance and preference for various instances of deviant media. In a follow up study, a relationship was found between higher levels of state reactance and approval of various instances of deviant media.

McKenna Warner

Mentor: Darrell Rudmann

How Mood Could Effect Memory in Children with Brain Damage Caused by Epilepsy

This will be a presentation based on research I conducted trying to see if a mood state could affect the memory in children with brain damage caused by epilepsy.

4C ATC 134

Moderator: Eugene Burns

Katherine Spencer & Olivia Thoroughman

Mentor: Eugene Burns

Carriage of Group A *Streptococcus* Among SSU Students

Streptococcus pyogenes, the only member of Lancefield Group A, is an infectious bacterium that can cause severe invasive diseases, such as necrotizing fasciitis and the common strep throat. Some members of the population can transiently carry these bacteria and remain asymptomatic but can still spread the disease to others. The purpose of this study is to determine the rate of carriage of Group A *Streptococcus* among Shawnee State University students which can be correlated with demographic information, such as age, gender, encounters with children, and race. Throat swabs collected from random student volunteers were plated on sheep's blood agar plates to isolate by hemolysis. β -hemolytic colonies from each sample were isolated. The isolated colonies were Gram and typed using a rapid latex agglutination method in order to confirm GAS colonies. Polymerase chain reactions were used to amplify specific emm genes present and determine the M type of the samples.

Noah Wickerham & Katie Sebring

Mentor: Eugene Burns

***Bordetella bronchiseptica* in Rodents of Southern Ohio**

Bordetella bronchiseptica is a gram negative rod which causes kennel cough in dogs, rhinitis and conjunctivitis in cats, snuffles in rabbits, and atrophic rhinitis in pigs, as well as respiratory infections in many other animals. While the disease is well understood, the reservoir of *B. bronchiseptica* in southern Ohio is not definitively known. The purpose of this research is to find animal(s) that can be considered reservoirs for *B. bronchiseptica*. Rodents were chosen as the main focus of this project due to their relative abundance and even dispersal across southern Ohio. The mice were captured with live traps and euthanized via cervical dislocation. Blood samples from the mice were then analyzed using ELISA and cultures grown from tracheal swabs were analyzed using PCR.

Sabrina Callaway & Miranda Melvin

Mentor: Eugene Burns

Art Under the Microscope

A stimulating collision of two fields, the arts and the sciences. To many these disciplines remain seemingly unrelated. The fields of art and science benefit greatly when used simultaneously to both intellectually and visually stimulate their audience. Similar projects exist within the Center for Disease Controls Emerging Infectious Disease Journal as they use their journal's cover art to illustrate ideas to the scientific community. Honors students will present a collection of chosen artworks from various periods, mediums, and styles. This discussion will demonstrate a well-rounded thought process when analyzing artworks by unveiling the connection between seemingly unrelated works and the fundamental topics of cellular biology. This project aims to assist in bridging the gap between these fields to allow the further use of artistic mediums to assist in the illustrating and personifying of the complexity of the world that surrounds us.

5A UNC 214

Moderator: Pablo Salinas & Gianna Anderson

Savannah Nelson, Myla Netral, Jennah Wright, Edy Johnson, Melissa Ashton, & Laken White

Mentor: Pablo Salinas

Cultural Production Surrounding Hispanic Women (Part 1)

In this panel presentation, we will commemorate the various Hispanic women's rights and sacrifices they have made for the betterment of their cultures and societies. Through a survey of Hispanic women in contemporary literature and film, we will cover women's bravery in revolutionary times, the plight in the Indian-Guatemalan War, folklore (Legend of La Llorona), the fight for gender equality under dictatorship and the birth of International Day for the Elimination of Violence against Women.

5B MAS 209

Moderator: John Whitaker

Levi Little

Mentor: John Whitaker

A Probability Analysis of the Phase 10 Card Game

This presentation will be a preliminary report on the probabilities of one certain Phase 10 card hand. We will describe the game of Phase 10, give a brief listing of probability rules, and then share the results of the probability of getting two sets of three in a single hand.

Abby Shupert

Mentor: Phil Blau

The Best Movie Seat Using Regiomontanus' Angle Maximization Problem

Have you ever been to a movie theater and wondered which seat is the best? This question is more complicated than you may think; for example, you need to consider what angle will give you the best view of the screen. The angle of maximization problem of Regiomontanus is one way to solve this problem. In the 15th century he gave a method that allows us to find the largest possible angle for viewing the movie theater screen, thus letting us get the best picture possible. In the presentation we will break down this problem step by step and determine how to achieve the best picture and how this can be applied to any problem to find the best angle to view anything from the Statue of Liberty to a simple painting.

Diana Paola Piedra Moreno

Mentor: Aaron Bruewer

Democracy and Mathematics Education? A Perspective of Critical Relations

The school is a very powerful tool of social transformation, and therefore, it is extremely controlled. Math teachers have participated in this control game by believing that conceptual and mechanical knowledge is what deserves the most attention in the classroom. For some teachers, talking about democracy, diversity and power is something that should be done in the context of some extracurricular activity or in the social studies class. We must rethink our ideals of education to contribute from our own class to the development of citizens and political beings. To achieve this, instead of talking, we must live democratic values through dialogue. I have tried to understand the relationship between democracy and mathematics education because it is a key for the development of critical thinking in the mathematics class. At this conference, I explain a link between mathematics education and democracy.

5C ATC 134

Moderator: Jon Bedick

Leah Whitehead

Mentor: Rhoni Maxwell-Rader

The Validity of Sensory Integration Disorder: Its Beliefs, Research, Treatment, and Foundations of Ideological Differences

This presentation discusses the debate in healthcare over the usage of "Sensory Processing Disorder," as whether or not the diagnosis is valid currently remains questionable. Following a description of each side's understanding, a comprehensive analysis of research is provided, and the

differences in research types are discussed. The research will show two varying foundational belief systems between the opposing sides, thus leading into a review of the differences and consequences. Finally, the treatment through occupational therapy and its effectiveness are provided, a conclusion is made, and my personal opinion (as a future occupational therapist) is explained.

Kristi Wilkinson, Brian Wilkinson, & Fares Kasem

Mentor: Chris Meade

Does Area X Contain Striatum and Pallidum-like Neurons in the Basal Ganglia of Male Zebra Finch Brains?

Area X is a brain region unique to male songbirds and is surrounded by a region of nervous tissue homologous to the mammalian basal ganglia. The aim of these studies is to elucidate whether this Area X is a mixture of two basal ganglia structures, the globus pallidus and striatum. It is believed that due to parallels in the production of song in songbirds and speech in humans we can stand to gain knowledge on how humans learn language by studying the brain circuitry in songbirds. Our experiments intend to determine if the neurons of area X are pallidum and/or striatal in nature through the use of immunohistochemical labelling and double labelling of Area X neurons for chemical markers of striatum and globus pallidus.

6A UNC 214

Moderator: Pablo Salinas & Gianna Anderson

Savannah Nelson, Myla Netral, Jennah Wright, Edy Johnson, Melissa Ashton, & Laken White

Mentor: Pablo Salinas

Cultural Production Surrounding Hispanic Women (Part 2)

In this panel presentation, we will commemorate the various Hispanic women's rights and sacrifices they have made for the betterment of their cultures and societies. Through a survey of Hispanic women in contemporary literature and film, we will cover women's bravery in revolutionary times, the plight in the Indian-Guatemalan War, folklore (Legend of La Llorona), the fight for gender equality under dictatorship and the birth of International Day for the Elimination of Violence against Women.

Heath Unger

Mentor: Leila Lomashvili

Solar Energy and Its Impact on the United States' Economy

The paper titled "Solar Energy and Its Impact on the United States' Economy" represents a report of the theoretical and empirical research conducted on the economic and environmental effects of the renewable energy source such as solar panels on the United States' economy. The paper uses a variety of scholarly articles and empirical research such as the survey conducted among SSU students for deeper understanding of the pros and cons of this energy source. After presenting the results of the survey and the summaries of the scholarly articles, the paper includes the synthesis of these sources which elucidates the upsides of the resource as well as its downsides due to its high costs that makes it less affordable on a wider scale in today's economy.

Alyssa VonUehm

Mentor: James Reneau

Cloud Infrastructure Changes at Shawnee State University

I will be speaking on the current ongoing implementation of the complete Oracle Cloud Suite at Shawnee State University. I intend to first define and explain some basic concepts about cloud infrastructure and why it is the next best step in information systems management for the university to take. Next, I will speak on the implementation goals and conversion process, the improvements which are being made across our platforms, the businesses which we have been working in tandem with to accomplish this, and finally the hopeful end result of a well-executed conversion to the new cloud infrastructure provided by Oracle. All of this information is obtained from Oracle's website, from those coordinating the conversion, and finally from those individuals which I have interviewed.

James Manchester

Mentor: Nicolas Meriwether

Ethics and Technology

In a recent conference in Dubai, Elon Musk made some comments about the technological singularity. Indeed, the obliteration of the distinction between man and machine is something humanity will be capable of in the near future, but this doesn't necessarily mean that the singularity is something we should embrace. Consequentialist ethical systems seem to revel in our upcoming fusion with technology, but when the issue is examined within other ethical paradigms pertinent

issues are raised. The speaker wishes to present an outline of this problem with the utilization of the thought from thinkers such as Alasdair MacIntyre, Martin Heidegger, Charles Taylor and others.

Jess Patrick

Mentor: Dan Johnson

Who Made Pi?

The Presentation focuses on proving the existence of God the creator with the following argument. 1) If mathematics is a system that exists naturally, then a higher power creator must exist to create mathematics. 2) If there are mathematical elements and they are not created by human kind, then mathematics is a system that exists naturally. 3) The number pi is a constant number that naturally appears in the calculation of circles. 4) If the number pi is a constant number that naturally appears in the calculation of circles, then there are mathematical elements and they are not created by human kind. Conclusion: A higher power creator must exist to create mathematics.

James Asher

Mentor: Nicolas Meriwether

The Ethics of Mobile Games

How does the mobile video game market get such a devoted player base? The mobile market uses several techniques in their game designs to form habits that borderline on addiction. James Asher talks about these techniques, how they are used, and the psychology experiments the models are based on. He also will talk about similar ethical situations in other industries and how the United States and other countries have handled these situations.

Cara Dillon

Mentor: Brian Richards

That is So Edgy: Effects of Psychological Reactance on Media Consumption

Why do people enjoy edgy entertainment? Popular entertainment is replete with deviant themes. For example, television programs such as *Breaking Bad* depict anti-heroes engaging in organized crime, and rap musicians like Lil' Wayne also glamorize a range of illegal behavior. Given that most people do not engage in organized crime, the success of such entertainment might be viewed as surprising, since more value oriented media could be consumed. Across three studies (one in progress) we tested the hypothesis that psychological reactance—a state whereby one feels compelled to assert their autonomy in the face of limitations to their freedom—could be part of the appeal of edgy entertainment. We thought that the ability to live vicariously through anti-heroes might be a safe and psychologically soothing experience when one is experiencing high levels of psychological reactance. Hence, psychological reactance is part of the reason why people seek out edgy entertainment per our hypothesis.

Kelley Fesemyer, Danielle DeCandia, Courtney Bush, Kelsie Johns, & Katie Obringer

Mentor: Christine Raber

Working with People with Dementia: Occupational Therapy Practice Patterns in the United States

This study examined self-reported practice patterns of occupational therapy practitioners when working with persons with dementia. An online survey developed for this study was presented to a purposive sample of practitioners in a five state Midwestern region of the United States. Six hundred and ninety-one practitioners responded to the survey. Descriptive statistics were used to analyze survey responses. To further describe therapist use of conceptual practice models, particularly the Model of Human Occupation, six therapists responded to the invitation to participate in a semi-structured telephone interview, to better understand the role of theory occupational therapy process with this population. Qualitative data from the survey and interviews was analyzed using content analysis. Reported practices were compared to existing occupational therapy practice guidelines for working with persons with dementia in order to describe and identify common patterns of practice and interventions currently used by occupational therapy practitioners working with persons with dementia.

Kelsey Brammer

Mentor: Leila Lomashvili

Why America Needs Stricter Gun Policies

The persuasive paper "Why America Needs Stricter Gun Policies" uses a problem-solution approach to recent epidemics of gun violence by drawing on the statistics and vivid narratives of massive shootings and calling for a change in gun laws that allow gun purchase without comprehensive background checks. The essay very strongly appeals to the readers' pathos by providing heart-wrenching statistics of the cases of massive shootings such as Newport, CT and it also appeals to logos by proposing the steps on how and why gun control legislation should become stricter for criminals and the like. The paper uses not just domestic statistics to prove its main points but also alludes to the experience of Canada and Australia on how they managed to reduce gun violence by stricter gun laws. The paper has a very persuasive appeal including those who have power and authority to change gun laws.

Sabrina Callaway & Abigail Henke

Mentor: Sarah Minter

To Take the Bait or Not: An Investigation of Feeding Preferences in *Peromyscus* Mice.

While Sherman traps have been demonstrated as effective live traps for rodents, there is not a consensus on optimal baits for specific species. Bait selection influences capture success. Food preference studies, routinely conducted in laboratories, largely ignore environmental parameters. Our study seeks to determine if *Peromyscus* mice exhibit a preference between baits when offered choices in the field. We hypothesized that *Peromyscus* spp. will exhibit a preference for one bait type over another, when offered both simultaneously. To test our hypothesis, individual *Peromyscus* were collected and marked at a site in Scioto County. Microsites of mouse activity were identified and paired bait stations were installed. At each station chick feeders offering either protein or carbohydrate rich baits were installed. Game cameras at each station capture rates of mammal visitation to feeders, thereby allowing to observe behavior with minimal interference. As the experiment will require twelve weeks, preliminary results are presented.

Jasmine Currie

Mentor: Tess Midkiff

Food Insecurity on College Campuses

The presentation will review the research over food insecurity and its direct effects on college campuses. In addition, the impacts of food insecurity on college students will be discussed.

Tyler Parrett & Matthew Boll

Mentor: Adam Miller

Shawnee Miniature: 3D Printing Campus

We will explore the benefits of 3D printing in the world of architecture. We will also explain our methods about how we modeled the Shawnee State campus and brought it to life using a 3D printer.

Madison Osborne & Aleah Clark

Mentor: Catherine Bailey

Enteral Tube Feeding Protocol

Delivery of nourishment via an enteral tube is the preferred method to meet nutritional needs if a patient is unable to swallow or consume nutrients orally. Presenters will discuss their scholarly endeavor to locate, review, and summarize the published evidence regarding nursing management of enteral tube feedings and compare with contemporary clinical practice.