

# WILLIAM PENN UNIVERSITY

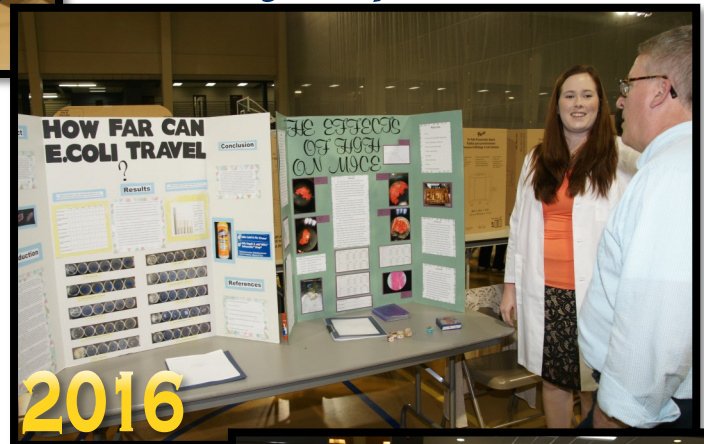
## Student Research & Creative Arts Symposium



2016

Thursday, April 21, 2022

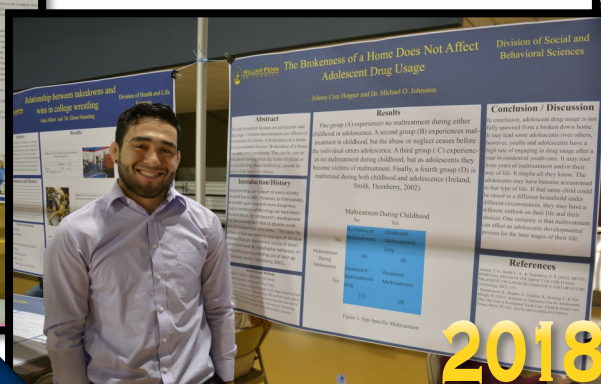
With a rich tradition of academic inquiry,  
the Symposium allows students to  
showcase their academic discoveries  
with the  
campus  
community.



2016



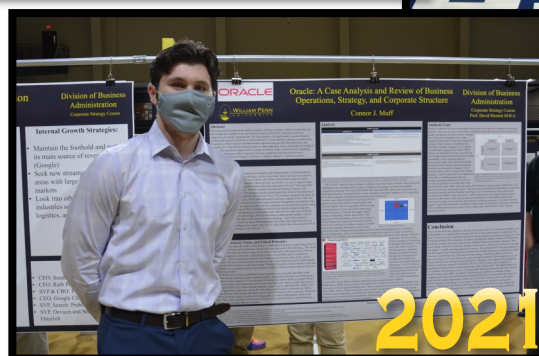
2018



2018



2021



2021



# Symposium Schedule

<b>Podium Session I</b>	<b>Room</b>	<b>Theme</b>	<b>Presenters</b> provide a 10 minute PowerPoint slide program with 5 minute Q & A.	<b>Facilitator</b>
9:45 – 11:00	323 PAC	Miscellaneous Biology and Kinesiology	Mycoremediation of Oil Contaminated Soil - Kristine Jaennette	Glenn Steimling
			Analysis of the Bacterial Load Comparing Cloth and Surgical Masks - Ethan Brown	
			Barefoot running vs running with shoes - Caroline Hoppock	
9:45 – 11:00	324 PAC	Ecology and Wildlife	Is Whitetail Deer Hunting on Mahaska County Public Lands Sustainable? - Bryan Baca	Morgan McClendon
			Habitat selection of the Red-headed Woodpecker at Lake Keomah State Park - Cheyenne Reak	
			Ornate Box Turtle Population Demographics in Response to Sand Prairie Management - Heaven Walker	
			How Temperature Correlates to the Number of Frog Calls - Emily Nichols	
9:45 – 11:00	319 PAC	Biology	Effects of Smartphone Usage on Executive Functions - Benjamin House	Janet Ewart
			The Effects of Vape Juice on Mice – Brenden Phillips	
			Effects of Sucrose and Sucralose on the Growth and Development of Mice - Cheyenne Brock	
			Prenatal Caffeine Exposure Affects Pregnancy in Mice - Ashley Omoregie	
9:45 – 11:00	209 PAC	Exercise Science	Mental Health with College Athletes - Ouriya Maiga	Mauricio Nunez
			Flexibility Benefits Athletic Performance - Sydney Estrada	
			Effect of Carbohydrate Input on Athletic Performance - Corrin Lepper	
			Weightlifting – Yasin Mohammed	

<b>Poster Session</b> 11:15 – 1:30	PAC Courts		As many students as possible. There is room for 120+ posters.	Jim North
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<b>Podium Session II</b>	<b>Room</b>	<b>Theme</b>	<b>Presenters</b> provide a 10 minute PowerPoint slide program with 5 minute Q & A.	<b>Facilitator</b>
1:45 – 3:00	323 PAC	Kinesiology and Life Sciences	Effects of Exercise on Depression - Kaitlyn Richmond	Jennifer Peterson / Jim North
			BPA and Mouse Development – Taylor Washington	
			Music's Mindfulness: A Mosaic Piece – Planet Earth - JohnieJoel Jackson	
1:45 – 3:00	324 PAC	History and Political Science	Henry VIII and Thomas Cromwell: An Assessment of Legitimacy During the English Reformation - Ryan Stone	Brooke Sherrard
			World War II and the Rise and Fall of Fascism - Landon Hansen	
			Still Separate and Still Not Equal: Navigating the Landmark Decision Brown v. Board and its Lingering Disappointments - Mackenzie Roberts	
			Christianity and the Nation of Islam: Approaches to the Oppression of African Americans - Rives Grogan	
			American Disenfranchisement: A Glimpse at Restricted Poll Access for Minor Parties in America - Abigail Karr	

1:45 – 3:00	319 PAC	Biology	Whoot? - Luis Arevalo-Vicente	Pete Eyheralde
			The Effects of Water Pollution Originating in Agricultural Practices - Abigayle Sweet	
			Geese – Aaron Martinez	
			Who's Got the Hops? Wild vs. Commercial - Laney Black	
			How well do bacteria grow under UV light? – Gregory Comstock	

# Applied Technology: Computer Science

## 1. Comparison of Techniques for Different Parts of Deep Q-Network

*Kaung Htet Thar*

Reinforcement learning, a paradigm of machine learning, is where the computer tries to interact with an environment to accomplish certain goals. Deep Q-Network, or DQN, is a technique under reinforcement learning where neural networks are utilized to predict the action the computer should take in a given state. It consists of four main parts: the neural network itself, choosing an action based on the values provided by the neural network, sampling transitions from the replay memory to train the network, and the training. In this paper, some of the techniques for the latter three parts will be compared to each other. For action choice, the techniques compared will be greedy, epsilon greedy, SoftMax, and ResMax. For sampling replay memory, random sampling and prioritized experience replay will be compared. Finally, for training, we will compare standard training, target network, Double DQN, and MellowMax. The comparison will be done using the CartPole environment, where the computer is to balance a pole attached to a cart by moving the cart.

## 2. MyFitness App Development

*Chimezie Okeke*

Since starting college I have wanted to create a web application and apply my learning into something tangible. Creating a web application is a great way to do so as it requires vast knowledge of many fields. Increasing my skills in software design and development are my primary goals of this research project. I will accomplish this by creating an app which is usable and interactive. This “MyFitness” app was a great way to display my learning of web applications. Applying my learning from various classes and learning platforms is one of the main goals of this project. With the help of my systems implementation class and colleagues, I will be able to make this app come to fruition.

# Applied Technology: Math

## 3. Fridrich’s Rubik’s Cube Solver

*Kaung Htet-Thor*

Rubik’s cubes are puzzles that seem very simple but are very complex to solve. Many methods have been developed to solve the Rubik’s cubes, one of them being Fridrich’s Method, also known as the CFOP method. In this paper, the Rubik’s cube will be studied briefly using group theory and permutations. A modified version of the group theory representation for Rubik’s cube developed by Chen will be used when doing so. Then, the CFOP method will be studied step by step using group theory, and finally, a Python program will be developed using the analysis of the CFOP method without relying on any of the existing Rubik’s cube solvers. The final product will be a program which can solve any configuration of a Rubik’s cube using the CFOP method and provide the user with algorithms for each step.

## 4. Plastic Polymer and Environmental Waste Management

*Evelyn Roen*

There are different polymers in the world. With that being said there is a significant amount of plastic waste. Biodegradable plastics would be much more beneficial to the earth. The amount of recycling is increasing at a rate of 1.26 tons per year while landfills are increasing at a rate of 0.77 tons per year. The rise of recycled plastics has increased over time, but so has the amount of landfills.

# Health and Life Sciences: Biology

## 5. Effects of Exercise on Depression

*Kaitlyn Richmond*

Depression is a mental health disorder characterized by psychological, cognitive, and physical symptoms. Common treatments for depression include antidepressant drugs and psychotherapy, however, these treatments have shown to have faults (Nagata, 2020). Thus, there has been an increased interest in the use of exercise as an alternative and complementary treatment option for managing depression (Nagata, 2020). This clinical research study employed the ability of the PHQ-9 to detect depression changes over time and monitor treatment response as both a pre-screening and final measurement tool to determine the effects of exercise on depression (Li, 2018). The comparison between the resulting mean value of the difference of depression scores showed significant differences between the control and exercise groups after 6 weeks of the intervention indicating a greater reduction in depression scores in the exercise group than in the control group. Therefore, it can be concluded that exercise interventions can cause a reduction in the severity of depression status according to PHQ-9 scores and could be considered as an alternative and complementary treatment option for managing depression.

**Keywords:** Depression, Treatment, Exercise, PHQ-9

## 6. Analysis of the Bacterial Load Comparing Cloth and Surgical Masks

*Ethan Brown*

The emergence of Covid-19 has sparked the debate over what the best course of action is to fight against a global pandemic, and since then it has been a hot and heated topic all over the world. One of the solutions that healthcare professionals and world leaders in positions of power have agreed upon is the practice of wearing face masks. As Covid-19 rapidly spread around the globe at the end of 2019 and the beginning of 2020, countries in a wave-like fashion began to implement mask mandates for the population to slow and prevent the spread of droplets via talking, sneezing, and coughing to protect their citizens. Due to these mandates, face masks and coverings have become a major part of the world's ever-growing and developing society.

This study was conducted in order to study the bacterial loads that grow within face masks after 1 day, 2 days, and 3 days. Another element that was part of this experiment was also comparing the bacterial loads after the specific amount of days between surgical and cloth masks. The goal of this element was to explore which mask would hold onto bacteria more and hopefully explain the physical effects of wearing masks more.

## 7. Whoot?

*Luis Arevalo-Vicente*

Owls, apex predators at night. Known for certain characteristics that allows them to see and kill prey in the middle of the night. In the kingdom animalia owls are classified as *Aves*. In Iowa there are few species which are Barn owl, Eastern Screech Owl, Great horned owl, Barred owl, long eared owl, short eared owl, Northern saw-wet owl, Snowy owl, and Burrowing owl. There are only a few types of owls that resided in Mahaska County where the survey was conducted. Three locations were observed. Lake Keomah is in the Eastern part of the county which is a wood-marshy freshwater ecosystem; Russel Wildlife, which is a grassland-prairie located north of William Penn University in the Northern part of the county, and; Quercus Wilderness Area, a deciduous forest which is south of the other two locations. A population survey was conducted based on the number of calls reciprocated from owls in response to owl calls. The owl population targets were Great Horned owl, Barred owl, and Screech owl. Calls were played for the Barn owl with no response. The conclusion was made that the most common type of owl in Mahaska County is the Screech owl.

## 8. Ornate Box Turtle Population Demographics in Response to Sand Prairie Management

*Heaven Walker*

The fragmentation of natural habitat across Iowa, and other regions in North America has led to the decline, and extirpation of many organisms. Ornate box turtles (*Terrapene ornata ornata*) are a rare, native Iowa reptile that are threatened by continuous habitat fragmentation. The Eddyville Sand Prairie of Wapello County Iowa is one of the few ecosystems in southeast Iowa to have a small population of ornate box turtles. The purpose of this study is to determine the population

demographics of the resident population of *Terrapene ornata ornata* inhabiting the site. To collect specimens, four 100m long drift fences constructed of polypropylene silt fence and wooden stakes were placed in four different sections of the Eddyville Sand Prairie with pit traps at each end. Cover boards were also placed in the area near each drift fence. This study was inconclusive due to failure to capture any specimens of ornate box turtles. By continuing to study ornate box turtle populations at the Eddyville Sand Prairie, conservation efforts on the site can be reviewed and assessed to potentially benefit the success of the ornate box turtles on the property.

## **9. Effects of Smartphone Usage on Executive Functions**

*Benjamin House*

The presence of mobile smartphones and other media technologies in our daily lives has proliferated during the previous decade. At such a remarkably high amount of time spent each day, there are certain to be significant implications for a variety of groups, with a particular concern for adolescents and teens. Some of the most researched areas are the effects of digital media use on attention capacity, cognitive control abilities, and academic performance. The major goals of this study will be to look into the effects of specific uses of smartphones on the three central primary areas of attention span, cognition, and academic performance. This experiment will be conducted on undergraduate students, a sample that commonly has unrestricted access to smartphones throughout their academic hours. Furthermore, it will give insight into how any effects may be influencing the functions so crucial to their academic journey.

## **10. The Effects of Water Pollution Originating in Agricultural Practices**

*Abigayle Sweet*

The effects of water pollution in Iowa can be seen throughout the state via destruction of aquatic life, disease outbreaks, microbial contaminants, algal blooms and simply by looking at the brown waters with a naked eye. The Iowa landscape is predominantly conventional row crop agriculture: annual tillage, monocultures, synthetic fertilizers, and genetically modified herbicide resistant crops. These conventional practices are the leading source of water pollution in Iowa. The Midwest's nutrient loaded cropland runoff bleeds into the rivers and creeks from many states and ultimately combining in the Mississippi River. This contaminated water then travels south to pollute the Gulf of Mexico. Increased levels of nutrients have led to the infamous Gulf hypoxia or dead zone causing mass amounts of harm and death to aquatic life due to decreased oxygen levels in the ocean water. These issues we see within our watersheds in Iowa are not just a local problem, our traditional habits are leading to mass destruction further downstream. If we can control this issue at the root, we can eliminate not only local issues but national issues as well.

However, as interest in sustainable agricultural systems increases, county, state and federal agencies have stepped in to promote conservation practices that reduce nutrients in waterways (ISU, 2019). The role of conservation and sustainable agriculture practices can vastly reduce the amount of harmful nutrients found in water ways via wind and water erosion. These practices include prairie strips, no-till, cover crops, field-edge buffer strips, polycultures, saturated buffers and wood chip bioreactors. Increasing water quality is not the only benefit of these sustainable agriculture practices. These conservation efforts listed above can raise crop yield, produce more nutrient rich crops, sequester carbon and nitrogen into the soil and increase the depth of topsoil.

My objective in this study is to examine the direct effects of planting a winter cover crop after fall harvest on the water chemistry and nutrient load of streams adjacent to agricultural fields. In this study I investigated the following hypotheses:

- Streams adjacent to fields with cover crops will have lower nutrient (nitrogen, phosphorous) loads than streams adjacent to conventional bare soil fields without cover crops.
- Dissolved oxygen levels will be higher in streams adjacent to fields with cover crops.
- pH levels will be higher in streams adjacent to fields with cover crops.

## **11. Whose Got the Hops? Wild vs. Commercial**

*Laney Black*

Most people know that beer has hops in it. What most people don't know is you can find wild hops in most states in America, including Iowa! Wouldn't it be exciting to make your own beer with hops you collected from the wild? The problem with that is you don't know what kind of alpha acid concentrations you're getting with wild hops. Alpha acids are what cause



the bitterness in beers. Do wild hops have a higher alpha acidity or do commercial hops? Which one tastes better? Let's find out!

## **12. Music's Mindfulness: A Mosaic Piece – Planet Earth**

*JohnieJoel Jackson*

Music is a multilingual, diverse cultured combination of harmonics in a symbiotic relationship that resonates to the human mind and heart. Music is a sole commonality in the humanity but could also be its destruction. The mind and heart speak to each other simultaneously, fictionally but in reality, they actually vary in many impulses to the sound of music. Throughout this research I explain how certain memories, exciting or traumatic, are brought back when a certain genre is played. The purpose of this research is to see if music has a positive or negative impact on a person's physical, mental, and emotional wellness? This research will proceed by being inclusive of background and interest factors and determine through various trials of music consisting of different genres and whether or not if it impacts the individual in one or more ways. Results concluded that 92 out of 100 people surveyed in this experiment expressed memory relapse with a positive or negative overall impact from certain genres played. With this data, I proceed to explain how overtime, using more sufficient methods than of how I performed my research, to understand if music is a groundbreaking gateway tactic that allows people to push past their average human limits and reach worldwide racial commonalities of music to better converge society.

## **13. Effects of Sucrose and Sucralose on the Growth and Development of Mice**

*Cheyenne Brock*

Sugar is a disaccharide, which can cause many different effects on the body, even detrimental ones. Sucrose is considered a natural sugar whereas Splenda is considered an Artificial one. Sweeteners are now considered a common alternative for sugar to reduce calories, although they have also been linked to serious issues regarding the internal organs in the body. By using mice, I can focus on the differences between types of sugars in their effect on their body. By encouraging the mice to breed we were able to use the offspring to see the effects on the organs, while keeping the adults to track weight over the course of the experiment. Our results show that with frequent intake of sucralose in general there is increase in weight and liver is more enlarged overall. As a result, it suggests that excessive intake of sweeteners elicits change within the organs and body both weight and function, which can be related to humans in liver structure and function. Which can have relevant consequences for the long-term health of the organism.

## **14. Effect of Carbohydrate Input on Athletic Performance**

*Corrin Lepper*

Volleyball players rely heavily on explosive power for repeated jumping during a game. The volleyball athlete requires large energy stores to maintain their exertion through prolonged exercise. To obtain large energy stores, large quantity of carbohydrate consumption is highly recommended for an athlete. Current practices suggest that carbohydrate intakes during exercise longer than 2 hours, will prevent hypoglycemia, will maintain high rates of carbohydrate oxidation, and increase endurance capacity compared with placebo ingestion (Biorci et al., 2020). Glycogen and glucose are the fundamental energy sources for muscles during exercise. To sustain the contractions of skeletal muscles during intermittent and continuous exercise of varying intensities and durations, active muscle cells require a constant supply of energy in the form of ATP. This ATP is produced by the oxidation of fatty acids from the bloodstream and from triglyceride stores, along with glucose supplied by the bloodstream and glycogen stores (Murray & Rosenbloom, 2018). Glucose is the only carbohydrate that circulates around the body and whose concentration can be measured in the blood. All carbohydrates that are consumed in the diet are converted into glucose. High carbohydrate diets and carbohydrate intake before and during exercise have shown to be beneficial due to increased concentrations of hepatic glycogen and maintenance of blood glucose (Peinado et al., 2013). This study aims to acknowledge if low vs high blood glucose levels affect repeated tested vertical jumps in college-aged women volleyball players. Obtaining blood glucose levels is simple and quick. For this study blood glucose will be the determining factor, rather than glycogen since testing glycogen stores requires a muscle biopsy. Fueling the body properly, especially for a specific sport is principle for optimal sport performance. Athletes prepare immensely before competition and if high blood glucose levels result in higher jump heights this study can improve the volleyball athlete. There have been several studies on if a high-carbohydrate diet affects athletic performance in athletics. A study that had been conducted on male soccer athletes, suggested that different solutions consumed during exercise had an effect on cognitive functions. They also tested blood glucose and blood lactate concentrations. Another study recorded the effects of

nutritional intake on performance in master athletes during an extreme ultra-hike where they reviewed the subject's macronutrients intake and monitored his glycemia as a factor. Although, there have been many studies that relate high carbohydrate diets, carbohydrate solution intake, and blood glucose monitoring to an increase in athletic performance, this present study focuses solely on blood glucose levels and how it may impact jump height. The purpose of this study is to test the women's volleyball teams blood glucose and conclude if it will affect their jump heights.

#### **15. Barefoot running vs running with shoes.**

*Caroline Hoppock*

Foot structure has been demonstrated to be influenced by habitual footwear use, with acute exposure altering foot posture and mechanics. Because the foot is so specialized, these structural/positional alterations may have an impact on function. The goal of this study is to look at the impact of footwear on gait, with a particular focus on studies that compared kinematics, kinetics, and muscle activity when running barefoot versus in typical footwear. Running barefoot allows for more forefoot spread under load, and people who run barefoot have anatomically broader feet. When running barefoot, there are spatial-temporal changes such as shorter step/ stride length and higher cadence. Flatter foot placement, more knee flexion, and a lower peak vertical ground response force at initial contact have all been documented. Peak plantar pressures and pressure impulses are lower in barefoot runners. Footwear particularly affects the kinematics and kinetics of gait acutely and chronically. As you will see in the study The running time difference between wearing shoes and running without shoes on a turf surface within college athletes.

#### **16. Habitat selection of the Red-headed Woodpecker at Lake Keomah State Park**

*Cheyenne Reak*

The purpose of this project is to evaluate Red-headed Woodpecker populations at Lake Keomah. Restoration of Lake Keomah began in the summer of 2017. Restoring the park included bringing it back to its natural state, an Oak Savanna. Red-headed Woodpeckers benefit from an Oak Savanna ecosystem. The question is how much? Two spots were chosen for avian point counts. One spot was in an area where tree restoration had taken place, the other where no restoration had occurred. The hypothesis is that not enough habitat has been restored to show any preference in the woodpecker's selection. The study shows that Red-headed Woodpeckers did prefer the restored area, opposed to the other location.

#### **17. Mycoremediation of Oil Contaminated Soil**

*Kristine Jaennette*

Oil spills and soil contamination have been a growing issue over the past decades. There have been many efforts to find ways to decontaminate soils from oil in the past but are usually costly and can cause more problems to arise. Oyster mushrooms (*Pleurotus ostreatus*) have been found to remediate oil contaminated soils by breaking down the hydrocarbons into simpler carbon compounds that can be used as food for the fungi. In this project I found that used motor oil contaminated soil can be remediated just as quickly as unused motor oil contaminated soil.

#### **18. Flexibility Benefits Athletic Performance**

*Sydney Estrada*

Flexibility is going to be measured in this study to conclude if stretching is more beneficial when performed before or after a proper warmup. Participants between the ages of 18 and 39 were used in this study. This age group is chosen because it keeps the factor of physiology and the decrease of athletic performance out of the question when it comes to aging. The participants in this age group were asked to perform certain stretches on two different days and have them be measured in specific ways. On one day, four different stretches were performed with no prior athletic activity in the day, each stretch was measured and recorded, these stretches were followed by a proper warmup. On the second day of participation, the participants were asked to complete the proper warmup before performing the same stretches that they did the first day of participation. The measurements of the stretches from both days were compared to see when flexibility is noticeable better, or in other words, when the participants appear to be more flexible—when stretches are performed before or after a proper warmup. The results from this study concluded that stretching after a proper warmup allows individuals to be more flexible, which research suggests can benefit athletic performance.



## **19. Is Whitetail Deer Hunting on Mahaska County Public Lands Sustainable?**

*Bryan Baca*

Iowa is home to one of the most abundant whitetail deer populations in the United States with around 400,000 deer to its name (Iowa DNR, 2021). Mahaska County alone hands out up to two any sex deer tags per person, in addition to 475 antlerless deer (female) (Iowa DNR, 2021). This research dives into that quota to see if it is a sustainable amount based on the public land in the area. This research was conducted by manually observing six different public land areas in the county. Each site was visited four different times throughout the research study. Each observation lasted at least an hour during peak deer movement, mornings and evenings. This ensured that sufficient data was collected in each area of interest. This would lead to gathering crucial information to determine if public land deer hunting in Mahaska County is sustainable. Results from the data showed that only two of the six areas observed fell into the healthy range of 5-9.75 deer per km<sup>2</sup>. This means that the majority of the areas studied (4/6) did not have the correct population density to be considered sustainable. This leads to the conclusion that the quota of 475 antlerless deer tags should be lowered in the county. Granted, this research is solely based off a three-month study on a select few public land areas in the county, and the results could vary if the 92% of private land (Iowa DNR) was being considered.

## **20. Prenatal Caffeine Exposure Affects Pregnancy in Mice**

*Ashley Omoregie*

Caffeine is one of the most loved stimulants in America today. 85% of the population consumes at least one caffeinated beverage per day. It is found in a lot of things that we drink unconsciously as part of our everyday life. Things such as getting a cup of coffee or an energy drink before work to stay awake and having a cola soft drink with lunch; all contain caffeine. In this study, I will examine the effects caffeine has on pregnancy. During pregnancy it can take longer for the body to metabolize caffeine. This process is most commonly known as caffeine clearance. Caffeine passes the placental barrier freely.

Using mice, I will base my research on caffeine consumption in two different time frames. The first being the time before pregnancy including caffeine consumption during gestation. Secondly would be only during the period of gestation until birth meaning these specific mice would only start their caffeine consumption when they have been impregnated. Researchers have linked these findings to some miscarriages. In this study we will be looking to see if there are complications such as pre-term birth and low-birth-weight offspring.

## **21. How Temperature Correlates to the Number of Frog Calls**

*Emily Nichols*

Every year one of the first signs of spring is hearing frogs calling near a body of water. Many frog species will burrow themselves deep into the mud underneath the frost line over winter to hibernate and will stay there until the water thaws. They will then dig their way out to start their mating calls in preparation for spring. When it is below freezing in the early spring the frogs will once again burrow to survive the cold. Although, once some of the freeze tolerant species are not able to go back into hibernation once they emerge for spring and can die due to the freezing temperatures.

In Iowa, the first frog calls that you will hear are Spring Peepers (*Pseudacris crucifer*) and Western chorus frogs (*Pseudacris triseriata*) which will begin to start calling at the end of March and early April. They will also start laying their eggs in late March and early April (Whitaker, J. O, 1971). There is an old wife's tale that a frog will look through the ice three times before its officially spring and winter is over. Many people in the Midwest believe in this saying and believe that it is an accurate way of detecting when spring officially begins.

The purpose of this research is to see how the temperature correlates to the amount of frog calls and what species are active. Also, to see if the old wife's tale has any scientific research backing it. It was predicted that frogs would continue to call when the temperature was above freezing and that they would not be active when the water was cold or the temperature outside was below freezing.

## **22. Mental Health with College Athletes**

*Ouriya Maiga*

About 45 million people suffer with mental illness in the US. According to research, exercise can act as a treatment by heightening moods and improving overall mental health. (Kuik, 2019) This is because when moving our bodies, we

increase our endorphins and enkephalins. Endorphins are hormones that diminish pain awareness. Enkephalin act as natural pain killers formed in the brain to conquer pain and can also act as narcotics. Endorphins and enkephalin are two of the bodies naturally producing hormones that aid in making us feel better. Consistent exercise also increases the volume of certain brain regions that leads to improving neuronal health by refining the distribution of oxygen and nutrients.

Despite exercise being a treatment for mental illness, athletes are not immune. There is still pressure to perform with perfection, as well as school load and personal lives. Looking at the statistics, 30% of all college student athletes experience significant symptoms of depression, anxiety or other mental health conditions. Among that group, only 10% seek help. (Kuik, 2019) There are many kinds of mental illnesses. The main four are clinical depression, anxiety disorder, bipolar disorder, and body dysmorphic disorder. Clinical depression is when an individual is in a depressed mood persistently and begins to experience a loss of interest in life. Anxiety disorder is when an individual experiences constant feeling of worry, fear, and anxiety and it begins to affect their daily lives. Bipolar disorder is when an individual experience a wave of positive emotions to an instant depressed mood. Body dysmorphic disorder is when an individual becomes upset about their appearance. More than likely they obsess over a minor or imagined imperfection and they begin to see themselves as less attractive or immensely flawed even if nothing is wrong.

### **23. How well do bacteria grow under UV light?**

Gregory Comstock

Hospitals have always focused on making sure that their patients are taken care of in clean environments. This is to help the patient be able to recover without receiving a hospital acquired infection (HAI) that could worsen their condition. However, due to the constant sanitization, antibiotics, and patients with infections, bacteria have been able to develop resistances to antibiotics. This has made them require different antibiotics to treat them, but it has led to bacteria being able survive in hospitals and cause severe infections in patients.

Methicillin-Resistant *Staphylococcus aureus* (MRSA) is one of many different organisms that the CDC tracks to see the frequency, severity, and even the setting that the infection was contracted in. *Staphylococcus aureus* is normally a benign bacterium that can reside in human noses. In a hospital setting where a patient can be immunocompromised, this organism can cause further infection and worsen their condition.

UV light, at certain wavelengths, is safe to be used around humans without increasing the risk of cancer. I wanted to see how effective UV light is at preventing the growth of *S. aureus* and how effective it is at preventing growth on two common materials found in hospitals.

### **24. The Effects of Vape Juice on Mice**

Brenden Phillips

This study I am testing the effects of vape juice on mice through the water supply the mice drink by diluting it in the water. This study will also include a behavioral analysis of the two different mice groups. With the research I studied on mice ingesting nicotine my hypothesis is that the mice will experience liver and kidney problems or cancerous growths. I hypothesized that the variable group would experience weight differences from the control group because nicotine is an appetite suppressant. In this study, I had two groups of mice a control and a variable group of mice. My variable group of mice were drinking a diluted nicotine solution of 50mg nicotine vape juice diluted in water to make 4mg of the vape juice per 40ml of water. To figure the lethal amount the formula is 3mg/kg. The solution is 2mg under the lethal threshold. This study took place from 8/19/21-4/10/22.

BPA Mice

Taylor Washington

Geese

Aaron Martinez

Weightlifting

Yasin Mohammed

# Business

## 25. PayPal Holdings, Inc.

*Jordan Salato*

PayPal Holdings, Inc. is a technology platform that companies can utilize for digital and mobile payments from consumers and merchants. PayPal reaches over 200 countries and more than 300 million users all over the world; providing users with a secure, easy, and fast payment method. PayPal was founded in December of 1998 in California by Peter Thiel and Max Levchin. Originally started out being called Confinity, however, a merge with Elon Musk's X.com formed the name PayPal. PayPal is committed to democratize financial services for people all over the world.

## 26. Berkshire Hathaway

*Lukas Vaneman*

Berkshire Hathaway is a company that belongs to the biggest 10 companies in the world. The company started as a textile manufacturer. After CEO Warren Buffet started buying other companies and stocks, it became a conglomerate. The company now owns other companies and stocks in insurance, rail transportation, energy generation and distribution, manufacturing, and retailing. The market capitalization had risen to \$498.8 billion in 2020. Berkshire Hathaway owns for example 907,559,761 shares of Apple and a total of 9.3% of Coca Cola.

## 27. Rivian

*Tyler Montalvo*

Rivian is an American electric vehicle producer and automotive technology maker that was founded in 2009. Their current vehicle platform is called the skateboard. They are able to do multiple vehicles under this chassis. They are making a pickup truck that is in production right now, and they will have a new SUV that will be coming out soon. Rivian is also backed by a couple of bigger companies like Ford and Amazon. Amazon has ordered 150,000 electric vans that will be delivered by 2025.

## 28. CVS

*Jackson McLain*

CVS was founded in 1963 by Ralph Hoagland, Sidney and Stanley Goldstein. They are one of the largest retail pharmacy chains in the United States, with over 9,600 stores in the U.S. Their mission is "to improve the lives of those we serve by making innovative and high-quality health and pharmacy services safe, affordable and easy to access."

## 29. Toyota

*Eric Johnson*

While once a spinning mill company in the early 1900's, Toyota is now the world's largest automotive manufacturer in terms of revenue and number of automobiles produced. Headquartered in Japan, Toyota is a multinational corporation that has over 350,000 employees and operations in over 170 countries. Toyota's main focus is to provide high-quality vehicles at an affordable price and to lead the future mobility society through their commitment to innovation and continuous improvement.

## 30. PepsiCo, Inc.

*Cesar Damas*

PepsiCo Inc. is one of the largest American food companies in the world. It excels at many different levels in the business force. They have one of the most recognizable brand names and acquired brands that are in the market today. PepsiCo Inc. the food and beverage industry, is an industry started by "Caleb D. Bradham, a pharmacist in New Bern, North Carolina. Hoping to duplicate the recent success of Coca-Cola, he named his sweet Cola-flavored carbonated beverage Pepsi-Cola in 1898" (PepsiCo, Inc.).

### **31. Lockheed Martin**

*Colton Horak*

Pushing the limits of innovation. Glenn L. Martin and the Lockheed brothers, Allan and Malcolm, had started separate aerospace companies back in 1912. One began in an old church and the other in a garage. The troubling times of the Great Depression and the high levels of production during World War II helped shape these companies. Heavily invested in the defense of the US government and even caught up in scandals, the story of Lockheed Martin is a good one. A merger of two companies in 1995 who's innovation was ahead of their time.

### **32. FedEx**

*Chase Eckley*

FedEx, founded by Frederick Smith, started in 1971 as "Federal Express." Smith's company was based on an idea for a college paper by shipping products in urgent need through the air with planes. Frederick's professor saw the idea as unsustainable financially and received a C-. Today, FedEx is a billion-dollar corporation and is one of the leading companies in its industry.

### **33. Amazon**

*Daeshia Ross*

Amazon is the biggest internet-based company in the world. Amazon started off as a small company selling books online in 1994. Jeff Bezos soon realized that the best way to succeed online was to grow big and fast. Today, the company sells many things from books to groceries to shipping container houses. It has become a one stop shop and has many ambitions for its future.

### **34. Walmart**

*Marleigh Denburger*

In 1962, Sam Walton began with one store and one mission: help people save money so they could live better. Over the years Walmart has gone from one store in Arkansas to a global digital enterprise. Walmart now has 11,523 stores worldwide with 260 million weekly shoppers. Even through the growth, Walmart has kept a similar mission with it now being "Save Money. Live Better."

### **35. Acushnet Holdings Corporation**

*Mateo Varese*

Acushnet Holdings Corporation was founded in 1910 by a graduate of the Massachusetts Institute of Technology, Phillip W. Young and two of his college buddies. The original name of the company was Peabody, Young, & Weeks but then became known as Acushnet Holdings Corporation. In 1932 the company joined the golf ball industry and since that moment they have been at the top of the list for golf products. A couple of big named companies that are within this corporation are Titleist, FootJoy, Vokey Designs, Scotty Cameron, and Pinnacle Golf balls. Acushnet is driven by their focus for helping golfers and bringing the best products that they can to their customers, that is what is most important to them.

### **36. American Airlines**

*Nikole Folasade Opeodu*

On April 15, 1926, Charles Lindbergh flew the first American Airlines flight – carrying U.S. mail from St. Louis, Missouri, to Chicago, Illinois. After 8 years of flying mail routes, it began to form into the trusted airline that it is today. American founder C.R. Smith worked with Donald Douglas, an American aircraft industrialist and engineer, to create the DC-3. This plane changed the entire airline industry, switching revenue sources from mail to passengers. American Airlines commits to providing every citizen of the world with the best service of air travel and the most extensive selection of destinations possible.

### **37. Nike**

*Ryan Dudley*

Nike was founded on January 25, 1964, in Eugene, Oregon. The organization was founded by Phil Knight and Bill Bowerman. Nike's headquarters are in Beaverton Oregon. The current CEO of Nike is John Donahoe, who took the position of CEO of Nike in January of 2020.

### **38. Target**

*Symone Jopp*

With the first store opening in 1962, Target has become one of the biggest general merchandise retailer stores throughout the United States. Under the original name of Dayton Dry Goods Company in 1902, there have been significant changes to the wide range of products they sell that makes them a top contender for retail stores. There are now stores in all 50 states that provide next level shopping for everyone.

### **39. Best Buy**

*Caden McKay*

Best Buy is a consumer electronics retailer with operations in the U.S., Mexico, and Canada. At its locations and online, the company sells a wide variety of items, including mobile phones, digital cameras, video games, and music, as well as home appliances like washing machines and refrigerators. Best Buy was founded by Richard Schulze on August 22, 1966, in Minnesota.

### **40. Ulta Beauty, Inc.**

*Emma Morts*

Ulta Beauty, Inc. is the largest beauty retailer in the United States selling both mass and prestige cosmetics, skin care, hair products, fragrances, along with offering in-store salon services. Ulta Beauty was founded by Richard E. George and Terry Hanson in 1990 and has maintained over three decades of a successful business model. Ulta Beauty offers 25,000+ products with more than 1,250 stores in the United States, making Ulta the main choice for beauty lovers.

### **41. Visa**

*Carson Hawk*

Visa was founded in 1958 to connect people virtually with the first credit card. From hard work and dedication, the company has expanded to debit cards and prepaid cards. Serving more than 200 countries and connecting people to a global economy, buying online has never been easier.

### **42. Costco**

*Haley Gambell*

Costco was founded on July 12, 1976, in Seattle Washington. It was originally serving only small businesses, and Costco found it could achieve far greater buying power by also serving a selected audience of non-business members. The Costco mission is simple by prioritizing keeping costs down and passing the savings on to their members. The company wants their consumers to be able to view the operation as a one stop shop for everything. Costco has found huge success in this concept by effectively maintaining their warehouses as one of the largest and most exclusive product category selections to be found under a single roof.

### **43. Starbucks**

*Julia Hippely*

Starbucks was founded in 1971 in Seattle, Washington. The company was bought by Howard Schultz in the 80s. He helped transform the company from a traditional, local coffeeshop into a global brand. Schultz helped grow the Starbucks brand by expanding what the company offers. This led to the introduction of unique products like Frappuccinos and new

developments in technology such as the normalization of mobile ordering. Today, the company dominates the coffee market and has over 30,000 stores worldwide.

#### **44. Bombas**

*Alicia Russ*

Bombas was founded in 2013 by David Heath and Randy Goldberg. They met while working at a media start-up company and quickly became friends. Bombas was created on the idea that socks are the most in-demand items for homeless individuals. For every sock this company sells, one is donated to homeless shelters. They started out only selling socks but have recently started selling t-shirts. By April 2020, Bombas had donated 35 million pairs of socks.

#### **45. Yum! Brand**

*Rylee Davis*

Yum! Brand is a fast-food corporation that has over 53,000 restaurants in more than 155 countries and territories. They operate different big brands under their corporation including KFC, Pizza Hut, Taco Bell, The Habit Burger Grill, and Wingstreet. The company was formed when Yorkshire merged with Tricon Global Restaurants in 2002 and changed the name to what it is today. Their mission is to build the world's most loved, trusted, and fastest growing restaurant brands in the business.

#### **46. VF Corporation**

*Anthony Torres*

VF Corporation is one of the world's largest apparel, footwear and accessories companies connecting people to the lifestyles, activities and experiences they cherish most through a family of iconic outdoor, active and workwear brands. VF owns brands like Vans, North Face, Timberland, Dickies, Altra, Eastpak, Jansport, and Supreme.

#### **47. Microsoft**

*Jaden Herr*

Microsoft engages in developments and supports of software, services, devices, and solutions. Microsoft is the leading developer in personal-computer software systems. With offices in over 100 different countries, Microsoft operates worldwide offering its products and services across the globe. They also conduct research and development in advanced technologies for future software, hardware, and services. Their mission is to enable people and businesses throughout the world to realize their full potential by creating technology that transforms the way people work, play, and communicate.

#### **48. Tesla**

*Brock Hartley*

In 2003, a group of engineers came to together to form Tesla Incorporated. Tesla wanted to build and prove that electric vehicles can be better for the environment and better than gas powered vehicles. Tesla also manufactures Powerwalls, Powerpacks, and Solar Roofs that are helping people and businesses move towards renewable energy. Tesla is pushing the world to use sustainable energy over fossil fuels, and they believe the faster the better.

#### **49. Walt Disney Company**

*Kenny Bolton III*

The Walt Disney Corporation is a company that was created on October 16th, 1923 with a sole purpose of bringing joy and putting a smile on the face of anyone they could. Through the years the company has had an enormous impact on the entertainment industry, they have also more recently became one of the biggest media companies in the world. The company now has penetrated four business segments as of late including; Media networks, Parks, Experience and Products, and finally Studio Entertainment.

## **50. Boeing Company**

*Jason Beebe*

Boeing Company, the world's largest aerospace company started in 1916 when the American timber merchant William E. Boeing founded Aero Products Company shortly after he and U.S. Navy officer Conrad Westervelt developed a single-engine, two-seat seaplane, the B&W. It later changed its name to Boeing Company in 1917. The Boeing Company originally started making flying boats for the navy in World War I. In the late 1920's Boeing Airplane expanded into airmail services and in 1928, William Boeing formed Boeing Airplane and Transport Corporation to encompass both manufacturing and airline operations. In 1932, under the Air Mail Act, Boeing was required to be divorced from air transport, and a newly incorporated Boeing Airplane Company became one of the three companies to emerge from the dissolution of United Aircraft and Transport.

## **51. Intel Corporation**

*Dawson Stout*

Intel Corporation is an American multinational corporation and technology company. It is the world's largest chip manufacturer. Intel focuses on building a better world is our business. Intel's mission is to utilize the power of Moore's Law to bring smart, connected devices to every person on earth while serving as a role model for how companies should operate. Intel is a powerhouse of engineering and technology excellence that empowers solutions to the world's toughest problems while creating the technology of tomorrow. Intel's strategy is a virtuous cycle of innovation—the cloud and the data center, the internet of things, memory and FPGAs all bound together by the goal of greater connectivity and enhanced performance.

## **52. Sikich LLP**

*Joshua Bell*

Sikich is a leading professional services firm specializing in accounting, advisory, technology, and managed services. Sikich currently provides services for 755 clients, most are civic and social organizations, social advocacy organizations, and grantmaking foundations that generate revenue between close to \$250,000 and \$15 million. The firm provides existing staff with trainings, internal mobility options, financial support to take the CPA exam, and the ability to work closely with senior members and professionals so that new members can be trained to fulfil Sikich's expectations, and existing staff have the ability to find promotion within the company. This keeps the culture of the firm as well as individual career lifespan and high retention rates every year. Not only does Sikich focus on taking care of its clients, but it also focuses on taking care of its employees.

## **53. Samsung**

*Jaime Arcila*

Lee Byung-Chull established the company as a grocery selling store on March 1, 1938. He placed a strong emphasis on industrialization in order to help his country's post-war recovery. In 1969, Samsung launched various electronics-focused divisions. It has grown to become one of the most well-known names in technology, producing approximately a fifth of South Korea's total exports.

## **54. Samsung Electronics Co.**

*Rafael Martins*

Samsung Electronics Co is a South Korean multinational electronics corporation. They are one of the world's largest producers of electronic devices, specializing in the production of a wide variety of consumer and industry electronics. Samsung was founded as a grocery trading store on March 1, 1938 in Taegu, Korea by a man named Lee Byung-Chull. After the Korean War, the business was expanded into textiles and industrialization with the goal of helping the company post-war. Samsung first entered the electronics industry in 1969 with black and white televisions being their first products. In the 1990's the company continued its expansion into the global electronics markets. Towards the late 1990's Samsung climbed into the top 5 positions in global market share with products ranging from semiconductors to computer-monitor and LCD screens.



**55. Apple**

*Vincenzo Centrella*

Apple Computer has changed the history of information technology and certainly also the way we are used to relating to technology. It was initially founded by three partners, on April 1, 1976 in a garage: the main minds are Stephen Wozniak and Steve Paul Jobs (more simply known as Steve Jobs) and minority partner Ronald Gerald Wayne.

**56. Netflix**

*Giamarco Centrella*

It was 1997 when NetFlix was born, with a capital F. The idea is to be able to rent a film or video through a site where you can choose a title from the catalog. Initially launched as "Kibble", Netflix is a digital native service, which offered a first alternative to traditional rental, putting in crisis giants like Blockbuster. In fact, within a decade, Blockbuster saw its business collapse, only to declare bankruptcy in 2010 and completely disappear from circulation 3 years later. Netflix believes it can give its customers a constantly updated offer of films and TV series and the number one in the sector.

## History and Political Science

**57. Henry VIII and Thomas Cromwell: An Assessment of Legitimacy During the English Reformation**

*Ryan Stone*

Henry VIII was a master of public opinion, but did he do it alone? According to many scholars, Thomas Cromwell, his chief minister, was the mastermind behind the legend that is Henry VIII. My paper assesses the relationship between the political agenda in England and how it relates to Cromwell. I argue that Cromwell was the real mastermind of controlling public opinion during Henry VIII's rule. In conclusion, the following research suggests that Henry VIII wasn't the mass manipulator history remembers him as.

**58. World War II and the Rise and Fall of Fascism**

*Landon Hansen*

The big picture of World War II is because three major Axis powers wanted to conquer other countries and continue to build their empires. Three major expansionist "Axis" powers—Fascist Italy, Nazi Germany, and Imperial Japan—sought to expand their empires based on ideas about their own superiority to other groups. For that reason, one could date the war in Asia back to 1931, when Japan invaded China. My paper addresses this major issue in World War II with special attention to American involvement in the war and shifting views in America of fascism. In my project, I will also discuss what kind of destruction the war did to humanity and to the economy of each losing power after the war.

**59. Still Separate and Still Not Equal: Navigating the Landmark Decision *Brown v. Board* and its Lingering Disappointments**

*Mackenzie Roberts*

The landmark 1954 decision *Brown v. Board of Education* and its effects on black students' education is a widely debated topic. When discussing this case, there is often a heavy emphasis on the court's striking down of the "separate but equal" doctrine from *Plessy v. Ferguson* (1896). However, the following year the court added that states could desegregate schools with "all deliberate speed," which was interpreted by many as a way to delay integration for years. I argue that the integration of schools following *Brown* was so slow that it gave many states and school districts time to exploit loopholes. Therefore, though this case is often presented as a major accomplishment, the struggle for school integration was not over with the *Brown* decision, and the absence can be felt across the country. In my project I examine the strategies that were employed to subvert the decision's intention and the impact that this had on generations of black and white students up to the present day.

## **60. Christianity and the Nation of Islam: Approaches to the Oppression of African Americans**

*Rives Grogan*

I will be assessing the Nation of Islam and how it had an impact on Malcolm X. I will also be talking about how Christianity had an impact on Martin Luther King Jr. by differentiating and drawing parallels of the types of activists they were. We will discover some similarities between King and Malcolm X and how much their religion and upbringing of oppression had to do with their views. Malcolm X's black nationalism differed from King's dream of complete integration, but we will assess Malcolm's change of belief. Whereas once he did not believe possible the integration of Blacks in America, which is why he proposed a black state, he stood by this until he took his pilgrimage to Mecca and the diversity provided hope for him. The upbringing of X and King was due to the societal treatment of African Americans which played a toll on the mindset of how blacks were "supposed" to treat white people.

## **61. American Disenfranchisement: A Glimpse at Restricted Poll Access for Minor Parties in America**

*Abigail Karr*

When studying American political parties, it is well known that there is a duopoly, Republican and Democrat parties, that run this nation. The question arises as to why no minor party has risen to overtake or challenge the duopoly. The answer lies in the laws that restrict minor parties and individuals who are not affiliated with a party from fully participating in the political realm. This paper will examine the restrictiveness of the states' laws around poll access and other candidate-related regulations. I argue that the laws and regulations are there to hinder the minor parties or non-affiliated candidates while giving clear advantages to the duopoly. The differences in the regulations or laws for the different parties will give a clear picture of who is creating the laws and if they are meant as a hindrance to those not in the duopoly.

# **Sociology**

## **62. Do Mental Health Issues Correlate with Violent Crime?**

*Isaac Knudsen*

This article is about the relationships between mental health issues and violent crime. Violent criminal offenders were surveyed for this study. This article goes over the findings and various theories that explain this correlation between this phenomenon.

## **63. The Effects of Human Trafficking and Sex Work**

*Jayde Tucker*

Extensive research has shown that sex trafficking and sex workers more prone to experience long term effects after surviving a hyena's crime. This illegal activity of sexual exploration and trafficking can result these victims to long-term physical, mental, and emotional damages to these victims, and survivors. Society is another factor in which these effects are constructed by.

## **64. Psychological Differences Between Different Family Structures**

*Kaiden Scott*

All through the world individuals grow up in many different and unique family structures. Individuals can live in homes with two-parents, single-parent, siblings, grandparents, foster homes, etc. This simple variable can influence the individuals living within a certain structure and that can be decision making, psychological, physical, and outlooks. That influence can be positive, negative, or have zero influence and it is important to know that not every individual is affected the same way as others are affected by the same influences.

## **65. The Relationship Between Music Preference and Social Identity Formation**

*Kyndall VerBeek*

Around the world, music has been able to socially impact people because of their own personal experiences that they encountered. In this research proposal, I will see just how music preferences affect human social identity in relation to our demographics. Songs can impact our language, fashion sense, positive and negative feelings, and connect us together with an invisible string. Lyrics and melodies have a strong link to relating our thoughts and actions to societal issues today. These observations lead us to question whether our identity can be formed through music preference and if it reflects our demographic information. A qualitative analysis and empirical research method of this study includes social identity where each participant specifies their age, gender, race/ethnicity, and social status. The listening patterns and genre the participants like and dislike will be measured through a Likert scale. A survey relating social Anticipated findings suggest that our age, gender, and beliefs have the most influential impact on our identity. Social status and ethnicity determine our liking of genres and cultural impact of our social makeup. Future research would need to be completed to fully understand the concept of social status, ethnicity and music preferences. This conclusion points out the importance of social identity and how we perceive the world through music.

## **66. Violence and Poverty in Brooklyn, New York**

*William Finnie III*

Gang violence has been a problem in New York City since the 1980s and 90s and poverty is one the main reasons why it's an issue. Being a kid from Brooklyn, NY sees that poverty can turn people into survivors. I say survivors because you are in a place where you're not a concern to the government. The only time the government cares is if you're breaking a major law or suddenly making a lot of money in that area of poverty. Low-income housing is another problem, bad landlords and house utilities are low. Exterminators barely work tin ow-income houses in Brooklyn. The "projects" is an example of low-income housing and the saying "ghetto neighborhood". The "projects" are one of the worst places to live in Brooklyn due to these living conditions. Crimes are also set in the projects as well due to death in the buildings, arson, drug dealing, etc.

## **67. Gender Stereotypes in Fashion**

*Jose Merced*

Gender stereotyping is the practice of assigning specific meanings and roles to being a man or a woman. All by which only members of their ascribed social group, which is that of a man or woman. Gender stereotyping can also be recognized as the overgeneralization of characteristics, or differences of attributes and of a certain group based on their gender. Gender stereotyping perpetuates the idea that each gender as well as behaviors are binary. Gender stereotyping takes place in a variety of places in society today. Gender stereotyping or gender roles within society means it is how we as men or women, are expected to act, speak, dress, or even how we groom ourselves. This is all supposed to be based on our assigned sex. For instance, women are almost always expected to dress femininely as well as be polite and always mind their manners. Women are also expected to be nurturers and expected to accommodate to their husband or children. While men are expected to be strong, aggressive, and bold. Men within each given society are expected to be providers and protectors.

## **68. Homelessness and Poverty**

*Kevin George*

My research topic is homelessness and poverty within the united states this has been an ongoing problem for decades. There is currently over 50 million us Citizens who are currently experiencing living in poverty and over another 50 million citizens who are living on the streets deeming them homeless. I will be speaking on the causes of poverty how we can go about reducing the number of people who also live in poverty and are currently homeless. There is many ways we can go about being able to better help the ones who deal with homelessness when it comes to certain topics like

## **69. The Effects of Gender Stereotypes**

*Alexis Hoffman*

For my topic I wanted to discuss gender stereotypes and how they affected young adults and if these gender stereotypes were implemented at a young age and if they are still affected by these stereotypes today. By using surveys to collect data would be the most efficient for seeing if they have been stereotyped and still are stereotyped today. Giving surveys to young male and female adults and giving them the same yet different questions to see if they have been categorized or labeled as too masculine or too feminine for both genders. By having them fill in what ethnicity they are and what roles they were given in that household was either the same or different based off what gender they are. The purpose of my study is to see if females have been told that they weren't strong enough or were too masculine for a female. I also want to see if males have been told that they are too feminine for showing emotions or not masculine enough because of how they are built.

## **70. The Link Between Recidivism and Mental Health**

*Matthew Landsperger*

This is my research proposal. The objective of this proposal started with my research questions. My research questions were, how common is recidivism in relation to mental illnesses? My second research question was, do more people with mental illness recidivate more than the non-mentally ill? So many things interest me about the people who are incarcerated and how they got there. The fact of the matter is people live a life of crime and return to the system. Four out of every 10 inmates released from prison return within three years. This number is alarming when considering America has the largest prison population. The population is also alarmingly high in mentally ill inmates with half of one study's population having some form of mental illness like depression anxiety, or ADHD. My research method used to understand the relationship between recidivism and mental illness will be done through a 10-question survey. I'm expecting to find similar results as the other literature I have been reading.

## **71. Child Abuse: The Psychological and Physical Effects**

*Milton Magana*

Child abuse is a social issue that is occurring everyday and will continue if people who are around children don't learn more about it and begin to help prevent more children from being harmed. Child abuse can cause many emotional or physical scars leading to possible psychological illness like depression or anxiety. Mental issues like depression or anxiety can lead to drug abuse or even suicide. We could help prevent an increase of child abuse cases if we become more educated on the topic as a society.

## **72. Mental Health in Law Enforcement**

*Shawn Mason*

In this study, I wanted to evaluate the mental health problems that come with being a law enforcement officer. Mental health is a big problem in society, but it is even worse in law enforcement. More cops commit suicide than are killed in the line of duty. I conducted this research to see real life examples. The goal is to create a solution to slow down the rates of suicide and PTSD.

## **73. Single Parent Homes in Juvenile Delinquency**

*Izabelle Morales*

My studies review and go into detail about family structures, child delinquency, and the effects the two have on each other. My paper goes into detail about an empirical research proposal that will analyze associations between criminal young adults with single parent homes whether that is from divorce, unplanned pregnancy, widows, etc.

#### **74. Psychological Differences Between Different Family Structures**

*Kaiden Scott*

All through the world individuals grow up in many different and unique family structures. Individuals can live in homes with two-parents, single-parent, siblings, grandparents, foster homes, etc. This simple variable can influence the individuals living within a certain structure and that can be decision making, psychological, physical, and outlooks. That influence can be positive, negative, or have zero influence and it is important to know that not every individual is affected the same way as others are affected by the same influences.

#### **75. The Influence of Sports**

*Noah Pierpoint*

My studies review and go into detail about family structures, child delinquency, and the effects the two have on each other. My paper goes into detail about an empirical research proposal that will analyze associations between criminal young adults with single parent homes whether that is from divorce, unplanned pregnancy, widows, etc.

#### **76. Divorce and How People are Affected**

*Jasper Stottlemeyer*

I selected this topic for the soul reason to educate people that divorce has a big impact on people and their family. By using a survey method, I will be able to understand what is going on in people minds when it comes to divorce. This would include how old people are when divorce strikes their family, and or how they felt about the situation. It would also include how old everybody is when they fill out the survey. It will also have a spot to pick with ethnicity you are. I picked this topic because divorce has been in my family, and it took awhile to come to terms with it. So, I have a special place in my heart for this topic.

## **Sport Management**

#### **77. Muscular Strength as a Predictor of ACL Injuries in Athletes**

*Katherine Hunter*

The study reviewed in this paper is intended to discuss the relationship between muscular strength, knee joint laxity, and anterior cruciate ligament (ACL) tears in male and female athletes. Males and females are compared due to the differences in neuromuscular recruitment during sports and bodily development after puberty. Advances in biomechanical studies have revealed women have greater imbalances in lower extremity strength, as well as harmful landing and pivoting patterns during exercise.

A study comparing quadriceps and hamstrings strength among male and female athletes at William Penn University was carried out. An athletic trainer confirmed which anonymous athletes had endured ACL injuries during the season of their lifting maxes. The results were similar to what had been expected and supported the research in this paper. The intention of this study is to create awareness for preventative measures that can be taken to avoid ACL tears in athletes and young adults.

#### **78. A comparison of European soccer leagues**

*William Thyer*

This research paper will compare two major soccer leagues in Europe: the English Premier League, and the Spanish La Liga. Both leagues will be examined to determine which of the two leagues is better to play in as a soccer player. Goals scored between both leagues, points accumulated together for each team and much more will be compared. The findings will also assess the quality of one league to the other. This could be down to better players in that league, coaches' style or philosophy to play soccer improves the goals or chances of goals occurring in each game.

The results did yield a good comparison with different findings between both leagues. But it was interesting to find these statistics and also the factors why one league is better than the other. Coming from Europe and soccer being a big part of my life, it was really enjoyable to find this topic which is close to me. These results can help other soccer coaches and players that have dreams or goals of playing in the European or other leagues around the world.

#### **79. The effects among MLB pitchers after undergoing Tommy John surgery.**

*Tianna Soto*

Baseball is America's past time sport and is very popular today. Baseball has been around for lots of years and is enjoyed by many. Lots of people enjoy watching, playing, and even study this sport. In the year 1974, Tommy John surgery became known, and was a very popular procedure that many baseball players underwent. Many athletes that undergo this procedure change the way they perform on the field, whether it is improving, or dis-improving.

The purpose of this study is to compare the effects this surgery has had on different major league baseball players and their performance pre- and post-injury. Several major league pitchers have shown through their pitching performance a difference when comparing before and after undergoing Tommy John surgery. By analyzing statistics from the season before receiving surgery, to the season coming back from surgery, conclusions can be drawn as to the effectiveness of the procedure. While left-handed pitchers are viewed as different pitchers than right-handed pitchers, statistics will also be examined to determine the difference this surgery has on different dominant handed pitchers.

#### **80. Defense & winning in the Southeastern Conference**

*Turner J. Ellis*

Tackles are one of the most basic concepts to a defense. They can come in different forms such as tackles solo and assist tackles. Solo tackles tend to carry more impact because they can result in a tackle for loss, sack, and forced fumble. Each one of these types of tackles carry a different meaning and hold more value than a regular solo or assist tackle. Sacks are one of the best ways to kill an offenses momentum. A sack will force a negative yard play for the offense while also ending the play resulting in a loss of a down. This can be detrimental for an offense because it is a wasted opportunity to make any type of progress destroying the will for these offensive players.

Through researching how explosive SEC defenses are, and some of the biggest momentum stopping factor, have led to the idea that there are more ways to stop an offense than previously thought. Turnovers are a big giveaway. Defensive turnovers get the ball back to your offense while also taking the wind out of the opposing team. This is nothing new to majority of people who watch football. One finding came from understanding which defensive tactics can complement each other and lead into a great series of events causing mayhem for any offense. One of the most basic and overlooked tactic is tackling. This had a relationship with not just a successful defense, but plenty of other statistics as well.

#### **81. Comparison of NBA rookie performances**

*Mandi Nemire*

The game of basketball is one of the most popular sports played and watched in today's world. It was invented in 1891 at a small college and has grown to be a part of one the biggest professional basketball leagues in the world, the National Basketball Association (NBA). The NBA consists roughly of 529 players including 50 rookies. Player's rookie seasons are known to show how well they will do in the league in the future and their stats tend to be very good. Therefore, one might wonder if rookies stats from this past year are better than the rookies stats from about ten years ago. The significance of this study is to explore the difference in stats between the NBA rookie class of 2020-21 season and the NBA rookie class of 2003-04 season.

There are many statistics in basketball but the most important statistics in this study are how many points, assists, rebounds, and turnovers each player has per game. Several findings were identified between the difference of statistics between the two rookie seasons in the NBA. Results appeared to show that in two of the statistics there is a difference and in the other two statistics there is no difference. This does not mean that two of the statistics are the same, it just means there is no difference.

## **82. Recovery From Arm Injury Among MLB Pitchers**

*Leigha Bailey*

Major League Baseball is the great American game that has been around for decades and become a favorite to those around the world. Baseball is the perfect game to watch with your family and relax. What is not very relaxing is the number of innings a pitcher must go through a season and what it can do to the ligaments in their pitching arms. Although they train for this in the off season and spring season, you never know what can change in a heartbeat. Ligaments can only be pushed to a certain limit, until they give out. The purpose of this study is to research whether MLB pitchers can bounce back from torn ligaments in their arms after surgery to perform the way they did before or if their stats change completely.

Several interesting findings were identified between the right-handed pitchers' stats and the left-handed pitchers' stats. These results can be continuous over the years, but they prove a point to those who watch, play, or coach Major League Baseball. Those who read this study will be able to determine how the surgery can affect their motion when pitching a baseball and if it is worth pushing pitchers to their breaking limit.

## **83. Bench and Squat Records with Men's and Women's Bowling Averages**

*Kaylynn Dunn*

As strange as it may sound, bowlers can benefit from a weight training program. Even though bowling is not considered a strength or power dominant sport compared to football or basketball. But like any sport, bowling requires balance, lower and upper body strength, and a strong core. Which can benefit from a strength training program. At the collegiate level, coaches use periodized weight training programs, meaning they're broken up into three or four phases. Each phase concentrates on development in the workout while aligning with the sports season. While bowlers may benefit from weight training when it comes to the lanes, they're averages may be affected. There are factors that affect their bowling average when weight training is thrown in the picture. Bench press can affect their ball speed, which can affect their game/average. Back squat can benefit the landing leg, when the ball is released, by building strength in the hips and knees. The purpose of this study is to investigate the relationship between bench/squat max records with men's and women's bowling averages. Several interesting findings were identified between men's and women's bench press, back squat records, and total, and how it relates to their bowling average on the lanes. Results when comparing men's and women's bowling averages and their total max records appeared to be consistent with the small population being tested. Bowlers can use this study to determine how to weight train and improve bowling success.

## **84. Comparison of PAC-12 & BIG-10 women's volleyball programs**

*Jada Perkins*

Over the years volleyball has changed and continues to get more and more popular as time goes on. Women's Collegiate volleyball has become one of the most competitive, high intensity sports today. The purpose of this study was to see if there was a correlation between the PAC12 and BIG10 volleyball winning percentages and the teams' hitting percentages. Two different conferences includes two different styles of play along with different coaching styles to analyze. The analysis of the efficacy of the technical and tactical conduct in competition, the team as a whole, but also of each player in the hand, in sports games in general, and volleyball in particular is significant.

Understanding what volleyball skills affected winning is a big part of how coaches analyze how successful their program is. Results concluded that a high hitting percentage correlates with a high winning percentage in the PAC12 and BIG10 conferences. Furthermore, a good offense was the main factor that was most likely linked to winning collegiate volleyball games and a high winning %. In this regard, improving hitting percentage effectiveness should be a major priority for elite volleyball coaches.

## **85. Hitting and success in Major League Baseball**

*Haylee Keune*

Baseball originated in the 1870's where they began to watch every player specifically and record statistics for each and every player. This grew into documenting each teams' statistics and the player within these teams. Major League Baseball



is divided into two separate leagues, the American League and the National League. As they are different leagues, they end their season with a competition between the top team from each league and play a World Series Game. The purpose of this study is to compare the relationship between the MLB American League and National League statistics for batting average, homeruns, on-base-percentage, and hits. Baseball has grown heavily since the 1870's, some rules are completely different now and some rules from the beginning can even be illegal to do in present time.

There are results that have been fascinating to examine. The American League and National League statistics are conflicting. The batting average and hits were consistent between the leagues whereas the homeruns and on-base-percentage did not show much regularity when analyzing the results. Players are able to review this study and conclude if they want to increase their hitting statistics to compete with high level players.

## **86. Shooting and success in the NBA**

*CJ Wilson*

The game of basketball is changing more and more everyday with the evolution of the three pointer and the death of the mid-range two pointer. In the NBA, professionals like Stephen Curry, Ray Allen, and Reggie Miller make it look easy to knock down three-pointers with ease. This has led to a trickle-down effect with more 'gunners' than ever in the game. The issue to be examined in this paper is to see if/how three-point shots have a relationship with wins in the NBA. The theory being is that the more consistently a team can make a shot from 'deep' it will cause the defense to adjust and possibly more wins will occur from that change.

The statistics used in this study come from the 2020-2021 NBA regular season games. The first two analyses will compare regular season wins total to team three-point shooting percentages and two-point shooting percentages scored for all NBA teams. Then each team's regular season wins total will be compared to the top scorer's shooting percentage to see what impact a single player's performance has on team success.

## **87. Defense and winning in the Super Bowl**

*DeShaun Davis*

"Defenses win Championships," a quote from University of Alabama Head Football Coach, Paul "Bear" Bryant has defined what most football fans think that it takes to win games like the Super Bowl. Football has been a popular growing sport in America since 1892 and as the sport has grown it has evolved into what it is today. When Bryant said this quote in during the 1980's statistics supported what he was saying. However, in a new era football, NFL teams are proving that you do not always need a top-ranking defense to go along with a top-ranking offense. With strong dynasties like the New England Patriots and Kansas City Chiefs that we have recently been seeing, are offenses now what wins championships or is it still the defenses?

This study will examine whether the quote stated above is accurate for the past 20 Super Bowls. From each of the previous 20 Super Bowls, the yards gained and allowed from both the winning and losing team will be used as data. After collecting this data, it will then be analyzed to see if there is any correlation between having a better offense/defense compared to the other opposing team when it comes to competing at the Super Bowl. Every team from the last 20 Super Bowls have been ranked within the top 25 (average is within the top 10) for both their offenses and defenses. After analyzing this data, the answer of this study will be reached on whether defenses or offenses have more of an impact on chances of winning games.

## **88. Effects of fatigue on dominant vs. non-dominant legs**

*Alex Lobberecht*

Bilateral and unilateral are terms that indicate the differences between single and double leg. Bilateral squats are commonly used in lower body strength training programs, while unilateral squat is primarily used as additional exercise. Both bilateral and unilateral are also used in many rehabilitative techniques and practices to ensure mobility (Eliassen et al., 2018). The goal of this is to present the known evidence of bilateral and unilateral and explain how symptom of malaise and aversion may deflect the impaired performance and function, as well increase of injury.

Random fluctuations can arise during bilateral and unilateral countermovement's and appear in the form of imbalances from one side to other. These show that there is deficiency in strength comparing the left and right leg. Performing a certain task asymmetry is, likely a dominant limb that produces more force and does more work (Hodges et al., 2011). Considering that

every individual is different most of the time each develop a foot preference, so that one can use the limb in way where it becomes manipulated to provide stable postural support in contrast of that the non-dominant leg becomes a support, which decrease the strength in that leg. Another attribute is gait patterns have been studied in basketball and soccer players to determine if playing those specific sports has any influence on gait patterns (Hodges et al., 2011). However, there wasn't enough data to develop an analysis of asymmetric muscle development. Strength imbalances may occur due to many different reason, injury, repeated use in specific sport. So, it is reasonable to conclude that there are differences in contralateral groups in the same muscle or within different limbs.

## **89. The divide between right- and left-handed bowlers**

*Albert Liggins*

Bowling in general can be dated back to Ancient Egypt. In the late 1800's, bowling as a sport became more prominent and regulated. One of the simplest, but fundamental, aspects of bowling is the hand that you throw the ball with. Although factors affecting success in bowling are only theoretical, success on the professional level can be proven in the categories of titles, money earnings, and averages. It has been documented that factors such as oil patterns, lane surfaces, types of oil, along with many other factors can affect the success in the game of bowling. The purpose of this study is to investigate if either right handed bowlers or left handed bowlers have an advantage in this seemingly even sport.

Many interesting findings were identified between right and left handed bowlers in regard to totals in the categories of titles won, money earnings, and average. Results when comparing right handed bowlers and left handed bowlers totals appeared to be consistent regardless of the category being analyzed. Bowlers and the USBC will be able to use the findings when trying to decide how they might want to throw the ball or the USBC when they are making patterns.

## **90. Keys to success in the NFL**

*Alfonso Battle*

Extensive research has been put into how to become the most successful football team as everyone is looking to win the Super Bowl at the championship at the end of the NFL season. This study examined whether or not a passing team or a rushing team holds an effect on winning games. All of the data used is from football stats done during 2011-2021 season. With the data used, H0 was accepted when considering total offense yards; as there were no significant difference found, H1 was also accepted. When analyzing H2 there were some significant findings for the overall teams. This led to a closer look at each team running the ball every year. In the future, further studies examining teams that run the ball more compared to teams who pass the ball more will help success rates in football.

## **91. Statistics and winning in basketball**

*Malyk Thomas*

For just wanting to be an alternate activity for more injury prone football, basketball has become one of the world most watched sports. With this many teams have found their selves to be more successful than others. Although the factor of their success is poorly understood, it appears that success in this sport can be contributed to teams' ability to prevail over their opponents in certain statistics. The propose of this study is to investigate whether or not leading in specific statistics will help teams have a better success rate over their opponents.

Several interesting findings were identified in a team's success rate when compared to points, rebounds, and assists per game. The results when comparing win percentage appear to be consistent regardless of the statistic. Teams will be able to use the findings of this study to determine which statistics they need to work on in order to have a higher chance of success on the sport.

## **92. Statistical analysis of Heart of American Football programs**

*Nicholas (Nikko) Robinson*

American Football has evolved since the late 19th century from traditional offensive schemes such as the ground and pound running attack to the high profile-flashy passing offense of today. Many coaches in the recent evolution of football expanded

their knowledge on ways to distribute the ball across the field during play. Teams with traditional running schemes such as the Wing T and Flexbone saw success in the early ages and are still effective today. Over time college athletes have become more dynamic at certain positions such as the quarterback and wide receiver: passing the ball has transitioned teams into using more explosive passing offensive scheme to distribute the ball to the perimeter and elusive playmakers. A now popular offense is the 'Air Raid Offense' which is a scheme that has five wide receivers for the quarterback to throw to.

The purpose of this study is to examine the relationships between passing yards per attempt to total offense, rushing attempts per game to wins and time of possession to wins among Heart of America Conference football teams. Dynamic offensive schemes such as the Run-Pass-Option (RPO) allow teams to break down opponents using a leverage based, numbers based or pre-snap adjustments to deliver the ball by running or passing across the field according to coach Lucas Lueders of Morningside College. Several interesting findings were identified between Heart of America football teams regarding Passing yards per attempt to total offense, Rushing attempts to Wins and finally Time of Possession to Wins. Results when comparing these factors show consistency within the report. Football coaches at any level, can use the finding of the study to determine what offensive schemes is fit best for their program.

## **Psychology**

### **93. The Effect Depression has on Motivation for Student Athletes**

*Cassandra Bade*

Knowing that the rate for suicide is increasing, the purpose of this study is to find out how many athletes have depression and are lacking motivation in school, their sports, and investigates whether there is a relationship between depression symptoms, motivation, and suicide.

To accomplish this, the study will survey 200 athletes on this topic, focusing on symptoms of depression and feelings of motivation.

### **94. Music's Effect on the Student Brain**

*Nicholas Birely*

This study will be performed to better understand the link between different genres of music and ability to study and perform schoolwork, as well as a personal goal to maximize study time. It is believed that trying to retain information and apply that knowledge may be made easier by listening to music, but what genre allows this to be done most efficiently?

The study will contain participants in the 16 – 25-year-old age range and include those currently enrolled in a school setting. The participants will be given a reading to read and a test to complete, while their test scores and times distracted will be recorded and averaged, then paired with the music that was being listened to.

### **95. African Americans and Their Challenges of Mental Health**

*Deriana Bryant*

This study consists of African Americans and factors that affect their mental health. As far as knowledge and history goes back, African Americans have faced countless tragedies physically and mentally.

Although, some recovery has been made, these minorities still suffer and struggle in today's society when it comes to living and surviving on a daily. They still face numerous battles, and their mental health is a number one battle.

This study will dive deep into minorities' environmental factors that have influenced their mental health attitude, along with the influences society has brought upon them as well.

### **96. Drug & Alcohol Addiction Recovery from a Faith-Based Perspective**

*Jeremy Croteau*

In this group study, we will analyze the effectiveness of faith-based addiction recovery programs designed to recover individuals from a substance or alcohol addiction in comparison to Non-faith-based programs. We will discover the effectiveness through the use of a questionnaire designed to reveal anticipated recovery based upon their individual level of practiced faith.

### **97. Finding a Link Between Aggressive Outbursts and Premenstrual Syndrome in Women**

*Rebecca Damas*

In the US, 75% of women experience PMS. As many as three in four women say they get PMS symptoms at some point in their lifetime. For most women, PMS symptoms are mild. Less than 5% of women of childbearing age get a more severe form of PMS, called premenstrual dysphoric disorder (PMDD). "It affects the health of up to 8% of women and has even been linked to outbursts of violence, but premenstrual dysphoric disorder, or PMDD, is still poorly understood.", (Ro, 2019). Our research aims to find a link between aggression and Premenstrual Syndrome in women. In this research, we conducted a questionnaire throughout a six-month period, to measure the aggression, symptoms, and frequency of PMS through a Five Point Likert Scale.

### **98. The Effects of Playing Violent Video Games**

*William Finnie*

Nearly all teenagers play video games. Games can, and do, show incredibly detailed violence. Video games have come with an implicit assumption that they're probably doing something bad to us. Seventy-seven percent of parents believe media violence, including video games, is contributing to America's culture of violence. But what do we actually know about how violent games affect us?

The current study was produced to further understand what happens to teenagers' stress levels when they play violent video games for a month. Participants will receive a survey asking how many hours do they play video games in a day, which video games do they play, etc., as well as having regular assessment of their stress levels throughout the study.

### **99. How does growing up in the foster care system, due to parental substance abuse, affect your life long-term?**

*Amber Hannan*

The purpose of my study is to see how growing up in the foster care system, due to parental substance abuse, affects individuals in their adult lives.

I want to know if the foster care system properly prepares individuals for their adult lives, and if they provide any substance abuse counseling for individuals with substance abuse in their family history.

### **100. Brain Comparisons of Serial Killers, Individuals with Depression, and Healthy Individuals**

*Cecily Liphardt*

The purpose of this study is to investigate if there is evidence of differences in the brains of the individuals that are serial killers, individuals with depression, and individuals without mental illness or history of depression.

I will do this by gathering data from the William Penn University Wilcox Library as the platform for my peer-reviewed research.

### **101. The Impact of Depression on Brain Structure**

*Kathleen Niles*

Major depressive disorders over long periods of time can cause memory loss. This loss of memory is most perceived to be caused by structural changes in the brain. In this study, MRI and CT scans will be used to determine if there are specific areas of the brain that can be correlated to depression.

Data from this study will compare results of the participants' brain structure finding micrometer differences in sizing, percentage off normal shaping, or millimeter length of portion lit up on the respective imaging.

### **102. The Effects of Childhood Trauma on Brain Development and Structure**

*Lannie Palmer*

Childhood trauma has profound effects on children that can lead to experiences of depression and anxiety in adulthood, as well as a hoard of other mental and physical disorders.

Using MRI data and other information provided by participants, we will investigate whether changes to the brain structure exist with the presence of childhood trauma.

### **103. ADHD's Influence on Academic Performance**

*Larenz Plum*

In the current study, participants with ADHD will be periodically evaluated in order to get a closer look on how their neurological disorder affects them in school.

This study will place an emphasis on high school and college-aged students, who as a group can be evaluated in the same ways.

Evaluation of participants will be done via survey every 4 weeks throughout the completion of the study.

### **104. Nomothetic Factors Affecting The School Shooter**

*Shinead Promnitz*

There is often a great misconception when it comes to the image of a school shooter, they are often seen as an ordinary kid who was just bullied one too many times and was always alone and had no friends. This however is false. Most school shooters faced physical and emotional abuse in early adolescence, this has likely resulted in a physical change in the brain. This study will take research done on physical and emotional abuse and its physical effects on the brain as well as the physical effects of violent video games on the brain. It combines the results of these studies and uses it to explain the link between these topics and the common school shooter.

### **105. The Effect of Nutrition on Mental Health Disorders**

*Lexi Resa*

The purpose of this study is to research the affect nutrition has on mental health. Participants will undergo a change in their diet for a year to measure any perceived changes in their mental health.

Participants will take the CES-D to measure this. Researchers in the study (along with doctors) will monitor the physical health and safety of the participants and intervene when needed. Participants will receive free groceries and have access to dieticians and cooking classes when needed.

Examinations will be done every three months to make sure participants are sticking to the diet and are maintaining their physical health.

### **106. Parental Separation as a Predictor for Depression**

*Levi Strausser*

This study will look to find whether parental separation during the adolescent period of childhood, will predict depression in adulthood. Also, if previously having depression, will the parental separation be different compared to others without prior depression.

There are 100 participants in this study and will be split into groups based on the answer they give from the demographic questions. To measure depression levels, we will be using Beck's Depression Inventory and Yesavage's Depression Screening. The study will last for a total of 3 years and the participants will take the screening and inventory as soon as the study begins, and it will be repeated every 6 months until completion of the study. Each time the scores will be compared with previous scores.

### **107. Successful Therapies for Eating Disorders**

*Cassidy Turner*

I will be conducting a study to find the most effective therapy option for anorexia nervosa and bulimia nervosa. This study is important because anorexia has the deadliest rate of all mental illnesses; and bulimia has the second highest death rate of all eating disorders.

This study will investigate the most promising therapy to help individuals with eating disorders recovery, by analyzing four therapies with 200 individuals with anorexia nervosa or bulimia nervosa.

### **108. The Effects of Screen Time and Sleep: Academic Performance of College Students**

*Kyndall VerBeek*

The purpose of this study is to see if social media influences sleep quality and its effects on academic performance of college students. Four surveys will be needed for this study including the demographics, social media usage, and sleeping habits of the participants. Academic performance will be measured based on the participant's GPA.

College students tend to rely on computers to study for an exam late at night but tend to put their sleep on the back burner. Social media can keep students up all night because of studying or needing a study break. This study will attempt to answer if social media influences our bad sleeping patterns and then reflects our grade point average. Anticipated results show that social media only had an effect on poor sleeping habits, but not on the GPA of college students.

### **109. Mental Health Impacts on College Students during the Covid-19 Pandemic**

*Eva Disbrow*

The goal of this study was to analyze how the COVID-19 pandemic affected college students' mental health while being in isolation in college.

This study will have 800 college students, 18+, fill out several surveys via email asking about their level of depression and anxiety and their perceived sleep quality.

We expect that the study findings will illustrate that the COVID-19 pandemic did in fact have a negative impact on college students' mental health while being isolated from other people.

### **110. Reported Influence of Parental Domestic Violence on Adult Relationships**

*Ariel Henry*

The current study focuses on the effect of witnessing domestic violence on children during their childhood. Get to see what that child feels and how they see things from their perspective when they see their parent abusing or violating the other parent during their childhood.

Focus groups will be used to investigate children to get a better understanding of how did they deal with seeing the things they saw and keep going along with their lives. Questioning the children as to figuring out what made them happy after situations of that matter happen, what was their getaway. The questions also try to see if the parents do they understand the pain and fear they bring in their child's life.

### **111. Does a Serial Killer with the MAO-A Gene Make Them More Likely to Kill Compared to a Serial Killer Without the Gene**

*Lillyan Kuga-Fountain*

The purpose of this study is to examine if the MAO-A gene plays a factor in serial killers and their forms of aggression and violence. The purpose is also to evaluate if the gene makes them more prone to kill because of their aggressive attributes.

In this study I will be using a demographics survey, personality trait scale, and childhood stress survey to gather information about the serial killers involved in the study. I will be observing the serial killers and how they interact with others. I will be watching for their behaviors of aggression and violence, along with what causes those violent outbursts.

### **112. The Impact of Twitter and Instagram on Stress Levels**

*Moeller Justin*

We know that social media can bring a lot of stress to our lives. Our youth tend to suffer from social media created stress most because their brains are not yet fully developed, and they are not informed about the big plot underneath it all (Balta, 2020). The experiment performed is meant to get an inside look at how much time these teenagers use on social media and then find out how different they feel after spending time on different platforms. This can help us conclude on how to negate these effects and determine a reasonable way to use these platforms. Our main goal is to inform the reader on how to go about using social media and how to limit the amount of stress created in some situations.

### **113. Why Aren't We Listening?**

*Carl'Asia Spikes*

This research focuses on medical adherence and why people do or do not medically adhere? What is the cause? Is there a correlation in age? If the doctors and medical providers give medical advice, then younger adults are less likely to adhere because of financial issues, health costs, and internet access. Collecting data for this study will mainly be through surveys. The study will require organized natural groups of people with and without chronic illnesses and in different age groups. Have the different groups complete a survey to see if they do or do not medically adhere and what is their reasoning.

### **114. Mental Pressures Unspoken about in Division 1 Football**

*Rodney Hall*

This study is to help understand what psychological problems can occur to Division 1 football players.

## **Human Services Practicum Service-Learning Placements (minimum 100 hours)**

115.	<i>Cassandra Bade</i>	Inner Peace Counseling
116.	<i>Summer Cassidy</i>	Ottumwa Residential Facility (8th Judicial District)
117.	<i>Bianca Castillo</i>	Mahaska County Sheriff's Department
118.	<i>Soren Graversen</i>	Mahaska County YMCA
119.	<i>Amber Hannan</i>	Crisis Intervention Services
120.	<i>Hannah Hauschildt</i>	Orchard Place
121.	<i>Alexis Hoffman</i>	Peck Child Development Center
122.	<i>Lillyan Kuga-Fountain</i>	Ottumwa Residential Facility (8th Judicial District)
123.	<i>Cassandra McHaney</i>	Mahaska County YMCA
124.	<i>Izabelle Morales</i>	Ottumwa Residential Facility (8th Judicial District)
125.	<i>Lannie Palmer</i>	Grace C. May Advocate Center
126.	<i>Brittney Severson</i>	Ottumwa Residential Facility (8th Judicial District)
127.	<i>Isabell Smith</i>	Crisis Intervention Services
128.	<i>Jayde Tucker</i>	Crisis Intervention Services



