

Spring 2019

Spring Student Showcase Abstract Book

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SPRING STUDENT SHOWCASE FOR

**RESEARCH
& CREATIVE
INQUIRY**

TUESDAY · 23 APRIL 2019 ·
8 A.M. — 6 P.M.

ABSTRACTS

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**Oral Presentations: Senior Honors Research and Cormier Honors College Students,
9:00AM-10:30PM, Ruffner 115**

Senior Honors Research Presentations

9:00AM – Mary Zell Galen (Faculty Mentor Dr. David Coles), “Response to the Great Vermont Flood of 1927”

On November 3-4, 1927, massive flooding in Vermont decimated the state’s infrastructure, agriculture, and economy. Immediate response and relief efforts were localized, primarily from community and state institutions. In an era prior to national disaster relief programs, national aid was slower to reach Vermont. This research explores the impact and social changes of the flooding response in Vermont. Results suggest that mutual aid from local communities, in conjunction from national attention, ensured Vermont’s recovery, and served as a model for later relief programs developed in the following decade.

9:20AM – Jessica Smith (Faculty Mentor Dr. Timothy Coffey), “Position and Time: Examination of LESS Scores for Division 1 Basketball Players”

The anterior cruciate ligament (ACL) is responsible for limiting the movement of the knee anteriorly. The tearing of this ligament is one of the most prevalent sports related knee injuries to occur in athletics, specifically female athletics. The purpose of this study is to examine possible differences in Landing Error Scoring System (LESS) scores between frontcourt and backcourt NCAA Division 1 basketball players and to measure any changes in LESS scores between the beginning and end of the season. Results determined from preseason data showed no significance and I hypothesize that, due to fatigue, LESS scores will increase for post-season data.

9:40AM – Zachary Morgan (Faculty Mentor Dr. Andrew Yeagley), “Investigating the Binding Energies of Paraben and Paraben Derivatives with the Estrogen Receptor”

Paraben, a compound formerly found in cosmetics, has been found to bind the ER α and increase the risk of breast cancer. In order to better understand how 3, 5-substituted paraben derivatives bind the ER α , Molecular Operating Environment was used to calculate the interaction energy associated with binding

these substrates to the ERa. It was found that substituted paraben molecules exhibit a weaker binding to the ERa, whereas paraben molecules with varying alkyl chains bind stronger to the ERa. However, in comparing molecular and bimolecular docking data, it was determined that there are several phenomena that occur when binding the ERa. The data illustrates these multiple factors but more work is need to identify the strongest link between the computational and experimental data.

Cormier Honors College Presentations

10:00AM – Abigail Pack (Faculty Mentor Dr. Brandon Haffner, ENGL 165) “The Relationship between Rape Culture and Rap Music”

The cause and effect relationship between rape culture and modern day entertainment has been one of the most influential relationships to young people today. With an increase of examples in modern music, this problem is starting to be discussed and changes are finally happening. Many people don't know or haven't recognized it as such a huge issue but now with the recent creation of many different organizations, knowledge is starting to be spread.

Oral Presentations: PRISM, 9:00AM-12:30PM, Ruffner 116 Perspectives on Research in Science and Mathematics

9:00AM – Brianna LaFratta (Faculty Mentor: Dr. Maxwell Hennings), “An Analysis of Neurogenesis in a Mouse Model of Chemotherapy-Related Cognitive Impairment”

The goal of this PRISM experiment is to systematically assess levels of neurogenesis (formation of new neurons) within the brains of rodents treated with chemotherapeutic agents. The results of the current study will explore an underlying cellular mechanism associated with chemotherapy-related cognitive impairment within the brain and facilitate the development of preventative treatments for cancer patients undergoing chemotherapy.

9:15AM – Joshua Walker (Faculty Mentor: Dr. Benjamin Topham), “Chemical control of single molecule electronics”

Single-molecule devices are being investigated as components for electronics. Computational chemistry will be used to calculate electronic current through single molecules functioning as various devices including switches and diodes. Chemical modifications will be used to optimize device performance.

9:30AM – Meghan Hall (Faculty Mentor: Dr. Erin Shanle), “Investigating the effects of cancer mutations on the activity of p300”

Histone acetylation causes chromatin to be packed loosely, which increases gene expression. The p300 protein is an important factor in gene expression due to its ability to bind acetylation through its bromodomain and catalytic core domain. P300 is often mutated in cancer cells. In this project, the effects of p300 core mutations on catalytic activity will be explored using CRISPR-Cas9 to target specific locations on the genome of human cancer cells. P300 core mutations will be made through site directed mutagenesis, guide RNA sequences will be developed, and RNA levels of the neighboring genes will be analyzed.

9:45AM – Briana Scott (Faculty Mentor: Dr. Dale Beach), “Exposing the Hidden Genetic Character of Non-Model Organisms”

DNA sequencing methods and biology techniques can allow DNA to be decoded and used to better understand the function of a cell, the physiology of a cell, and also to establish the “‘serial codes’ needed to taxonomically categorize an organism. Targeted DNA sequencing can be used to determine the genetic

variation and the unique cellular properties for non-model organisms. Can the genetic information and genomes of non-model organisms be characterized and compared to other living species? This research project can help to establish the genetic variation and function that are within the genomes of identified non-model organisms that can later be used to diversify and characterize these organisms.

10:00AM – Caitlin Harris (Faculty Mentor: Dr. Erin Shanle), “Investigating the effects of cancer mutations on the MRN complex in yeast”

When DNA is damaged by ultraviolet light or exposure to certain chemicals, the MRN (Mre11-Rad50-Nbs1) complex begins the repair process by identifying a double stranded break and initiating a cascade of responses. Mutations in members of this complex are associated with higher cancer risk, but the array of mutations observed in human tumors have not been individually tested for negative effects on the DNA repair process. This complex is highly conserved in yeast and human cells suggesting that yeast could be used to rapidly screen cancer mutations. During the summer of 2018, several Mre11 cancer mutations were tested for effects on DNA repair in yeast. This summer, additional Mre11 mutations will be screened and these studies will be expanded to include Rad50 mutations. Collectively, this work will provide a better understanding of the effects of MRN cancer mutations using a screening method in yeast cells.

10:15AM –Catherine Swinsky (Faculty Mentor: Dr. Brandon Jackson), “Shake a tail feather: finding the function of bird tails in slow flight”

While there is available research on bird flight at cruising speeds, there is limited research on bird tail pulses during slow flight. The purpose of this study is to find the function of bird tails during slow flight including taking off, landing, and slow-flight competitions. This summer I will be recording bird flight with high speed cameras to analyze their tail biomechanics through mathematical models.

10:30AM – Justin Moore (Faculty Mentor: Dr. Julian Dymacek), “Extended Applications of Distributed Non-Negative Matrix Factorization”

There have been many different slight alterations to the basic formula of Nonnegative Matrix Factorization, each with their own purposes, goals, and intended data sets. The research question we have is “is there a form of pattern matching NMF that can be applied universally to all data sets?” If such a form exists, it can

create a universal standard for any instance where applicable data set categorization can be applied, without any extra need for worrying about how to properly parse the data.

10:45AM – Corri Calandra (Faculty Mentor: Dr. Jonathan White), “Synthesis of a cancer-targeting, choline-appended Pt anticancer therapeutic and characterization of its DNA target binding”

Platinum-based drugs have been a mainstay of anticancer chemotherapy treatments since the late 1970s. An inherent problem of this class of drug is their general toxicity towards healthy cells, which limits dosages. New strategies of platinum delivery that target cancerous tissue are needed. We propose to synthesize and investigate a novel platinum complex that has been conjugated to a choline-based metabolite. Choline is required for the synthesis of cell membranes, and almost all cancers exhibit enhanced choline uptake and metabolic turnover. We will investigate platinum binding to DNA in vitro and cellular toxicity in yeast. We anticipate enhanced Pt-choline binding to DNA and increased uptake of Pt-choline in choline-addicted cells, leading to possibly greater specificity and enhanced therapeutic activity towards cancerous cells.

11:00AM – Brady Knight (Faculty Mentor: Dr. Thomas Wears), “The Geometry of Curves in Surfaces in 3-dimensional Lie Groups”

In 3-dimensional lie groups, we are looking at the curvature of a surface given a parameterized space. We ask the question, “Can we find a “mate” curve for such a surface if we know the curvature of the surface?” Our plans for the summer are to use already established knowledge of the geometry of curves in surfaces to determine if a “mate” curve is possible to find and what exactly this “mate” curve is or may be.

11:15AM – Sarah Elsagr (Faculty Mentor: Dr. Sarah Porter), “Spectroscopic and Chemometric Analysis of Petroleum Products for Forensic, Environmental, and Industrial Applications”

Analyzing petroleum products, like gasoline, from an environmental and forensic aspect is an important area in analytical chemistry. Gas chromatography-mass spectroscopy (GC-MS), and x-ray fluorescence(XRF), will be used with chemometric data analysis methods to confirm and prove our method. The method tested will confirm that it is the same or better than the method used before.

11:30AM – Alexis Wayland (Faculty Mentor: Dr. Troy Purdom), “Hyaluronic Acid Expression and Overtraining”

We will be researching the effect of Hyaluronic Acid (HA) on athletes throughout their season. Does Hyaluronic Acid produced from overtraining decrease an athlete's function, and put them at a higher risk for injury? I think that we are going to find that athletes over train, resulting in more injuries nearing the end of the season due to an increase in HA in the muscles. Athletes and HA have not been researched together very frequently, so our research will incorporate the importance of training, HA, recovery, and injuries within the athletic field.

11:45AM – Charlotte Pfamatter (Faculty Mentor: Dr. Kathy Gee), “Evaluating Control and Mitigation Techniques for Mosquitoes in Rainwater Harvesting Systems”

In areas where rainwater harvesting systems are established for potable and non-potable uses, it is common that they are underutilized, creating large vessels of standing water. This results in an increased attraction from mosquitoes to the area. The presence of mosquitoes inside rainwater harvesting systems pose a public health concern due to their tendencies to carry pathogenic diseases. Previously, 65 rainwater harvesting systems around Virginia and North Carolina have been assessed to determine the quantity and species of mosquitoes present. The goal of this study is to evaluate three techniques that could potentially decrease the presence of mosquitoes in rainwater harvesting systems. A before and after design will be used to enumerate the quantity of larval for the treatments. The results from this research can potentially be presented to rainwater harvesting system owners in order to better mitigate the presence of mosquitoes and increase public safety.

12:00PM – Curran Atkinson (Faculty Mentor: Dr. Kathy Gee), “Best Treatment for Mosquito Larvae in Rainwater Harvesting Systems”

Rainwater Harvesting Systems (RWHS) also known as rain barrels have slowly grown in popularity over time due to the rise with local and commercial environmental conservation efforts. Many people use these systems to water gardens, wash cars or pets, and many other various purposes. However, RWHS can be an ideal environment for mosquitoes to breed when left unattended. The goal of this experiment is to determine what is the best treatment to mitigate mosquito larvae present in RWHS. Three treatments will be used: larvicide, a device to prevent entry into the barrel, and dumping the water out at regular intervals. Adult trapping is needed to prove the effectiveness of the treatments employed by measuring the before and after

populations of adult mosquitoes. This presentation will analyze the population of adult mosquitoes present in relation to the larvae present at the test sites through adult trapping.

Oral Presentations: GAND 105 Students, 9:00AM-12:00PM, Bedford 209

Faculty Mentors: Dr. Wade Lough and Dr. Keith Cummings

Project: The Story of an Everyday Object

9:00AM- Kaitlyn White, Sarah Via, Phoebe Bills, Ethan Solga, “Comics”

Comics thought to be a recent development in art and communication, though in truth they have a deep history that dates to ancient Greece. Their impact stretches across the globe as they’ve become a widely adaptable method of storytelling. Our project will explore this in further detail. Our goal of this project was to use our skills in research and design to educate the audience on the complexity of comics, without simplifying or erasing any aspect of their history or societal importance. We decided to demonstrate the evolution of comics in a clear form of two storyboards, a concept map, and a timeline. We will also give a verbal presentation of all the necessary information about comics.

9:20AM- Jessica Barker, Ann Summers, Rajah Allen-Cooper, Tayla Breeden “Camera”

The camera is a tool that most people use every day and take for granted. The history and evolution of the camera is quite rich and complex. From the very first camera up to present time the camera has impacted society in many different ways. The goal of this project is to research and create a project that will inform and educate the audience about the complex evolution and impacts of the camera. We intend to inform the audience, and break down the complexity of the camera by creating a concept map, a timeline, an essay, and two posters or two storyboards.

9:40AM- The credit card is an everyday item. For good or ill, most of us have at least one. Credit cards started with the Diner’s Club card in 1950. But what led to the modern credit card? Our story begins at the invention of money and leads to credit networks, resulting in the modern day credit card. Our group will complete a concept map and a timeline showing the credit card’s lineage. We will complete a essays based on the timeline, and we will either create two posters or storyboards promoting an exhibition for the story of the credit card.arah Scott, Kaila Owens, Jacob Wasson, Jerian Brooks, “Credit Card”

10:00AM- Sydney Taylor, Brittany Davis, Ella Goodman, Crimson Johnson, Emily Cutliff, “Dolls”

Dolls have been a product of various cultures and societies dating back to around 2000 BCE, and have an extensive list of alternative uses other than a typical toy. The Everyday Object Project will allow the viewer to understand the depth of the common doll’s history, and its functions around the world. Purpose: provide insightful information about the history of the doll, and its related uses and purposes. Result: to show the diverse history of dolls through a concept map, timeline, essay, and two posters to promote an exhibition of the history of dolls.

10:20AM- Lauran Pitrone, Ran Tingen, Tillie Trudeau, Jaren Hollandsworth, “Cell Phones”

In 1994, the "Simon Personal Communicator" was released as the first "smartphone;" featuring a touchscreen and applications for news, stocks, and maps as well as fax and email. It's few features made us wonder what technologies came before it and how the modern cell phone came to be. Our purpose in research is to showcase our findings in ways that can be easily understood. We will tell the "story" of our everyday object, the cell phone, in the form of a concept map, timeline, and essay as well as promote an exhibition about our object through poster designs and storyboards.

10:40AM- Jaelon Hairston, Zachary Westbrook, Sierra Walz, Kai Allen, Solian Stromberg-Brusco, “Alarm Clock”

Alarm clocks are a present day common household item, but not many people know how they came about. Alarm clocks have more extensive history than most people think, dating all the way back to 3000 BCE.

11:00AM- Katherine Cameron, Stephen Bowen, Keelyn Haarhoff, Danielle Macvaugh, “Dishwashers”

Our group and class of GAND 105 were assigned to research an object that were assigned to use. My group were given the objective of researching dishwashers and making a presentation, concept map, timeline, posters, and storyboards based on the history and impact of a dishwasher.

11:20AM- Jordan Maes, Karina Montegross, Kristina Moralez, Christopher Hartley, “Dictionaries”
Dictionaries have been around throughout the centuries and have been a wealth of knowledge for linguistics, but how far do they go back and how did evolve to what they are today? Our teams’ purpose is to show case the history of the dictionary and divulge the creation of one of the worlds most undervalued books. We will showcase the history behind the dictionary in a clear graphical and verbal manner through a concept map, timeline, an essay, and two storyboards or two posters promoting the social consequences of the dictionaries.

Oral Presentations: BIOL 455 Students, 9:00AM-10:00AM, Martinelli Board Room

Faculty Mentor: Dr. Sujan Henkanaththegebara

Project: Invasive Species Biology

9:00AM- Saveya Patterson, Sarah Kamen, Erica Harris, Hartley Thacker, “Invasive Species: The Cunning Killers”

Invasive species pose major ecological, economical, and social implications in the contemporary world. We discuss what invasive species are and what they do by presenting examples from all over the world. A better understanding of invasive species would help to manage them effectively and to minimize their negative impacts.

9:20AM- Alex Anderson, Rana Haboush, Angelica Romero, “Behind the scenes; how invasive species impact native species, ecosystems, and us”

Humans are a major vector of invasive species through their intentional and unintentional actions. Various ecological incidents have occurred due to human negligence. This presentation will cover the mechanisms of invasions caused by humans.

9:40AM- Taylor Clements, Aryana DiPippa, Sam Kane, Tiffany Yun, “The Future of Invasive Species”

Each year, invasive species invade new areas around the world and take over native species and create economic issues. We discuss management implications on how to control invasive species as well as how invasive species may play a unique role in novel ecosystems. By reducing the risk of releasing these invasive organisms into the new environments, we can control the spread of these invading species and deal with the problem more appropriately.

Oral Presentations: BIOL 251 Students, 9:00AM-10:00AM, Martinelli Board Room

Faculty Mentor: Dr. Sujan Henkanaththegegara

10:00AM- Chriss Fish, Hunter Ratliff, Braxton Harrup, Troy Clift, “Utilizing Macroinvertebrate Assemblages as a Proxy for Water Quality”

Many environmental agencies have used macroinvertebrate assemblages in order to conduct fast water quality assessments. This project aims to use these simple techniques--outlined by the United States Environmental Protection Agency--in order to extrapolate water quality within the Buffalo Creek and Grosse Creek watershed. Any significant difference between the two will then be used to compare how different land use practices contribute to overall water quality.

10:25AM- Ian Castelow, Carrie Reaver, Ali Bello, “Effects of Physical and Chemical Parameters on Temporary Pool Communities in Lancer Park”

Temporary pools are natural bodies of water that experience intermittent dry periods and are host to diverse aquatic communities. As chemical and physical parameters change from winter to spring, an important breeding and developmental period for many aquatic species, the species abundance and biodiversity supported by temporary pools may be subject to significant change as well. Observing such aquatic community changes

10:50AM- Natalie McNeal, Caroline Fornili, Jayla Beechaum, Isai Perez, “The Life-history and ecology of *Procambarus acutus* at Lancer Park in Farmville, Virginia”

The life history of an organism consists of three main elements: the pattern of development and growth, the life span, and the timing and quantity of reproduction (Krohne, D., 204.) *Procambarus acutus acutus* is an arthropod found around Farmville, VA. There will be a significant difference in crayfish populations in response to water depth (deep vs shallow) in Lancer Park Pond in Farmville, Virginia. It is expected that there will be more crayfish in deep water than shallow water. We conducted a field survey to determine and

observe the distribution of crayfish among both habitats using two techniques involving minnow traps and sediment collection.

11:15AM- Hunter Croom, Hunter Vaughan, Diego Sifuentes, Stuart Ehrlich, “Differences of community composition of small terrestrial organisms between grassland and forest in Lancer Park”

Different environments host varying species, each species fills a niche in their respective environment, a healthy ecosystem usually contains a large abundance of different species. Our goal is to find survey and study the terrestrial communities that inhabit Farmville’s buffalo creek floodplain to better understand the health of the ecosystem, both the grasslands and the dense forests that make up that environment. We expect to find a higher abundance of terrestrial life communities as forests tend to support higher abundances of terrestrial life when compared to other environments.

11:40AM- Thomas Hoke, Summer Kirby, Rian Blakesley, Elijah Maney, Antonio Robertson, “Daily Activity Patterns of Avian Communities in Lancer Park”

We will be studying if the time of day and weather conditions affect the species richness and community structure of birds at the Lancer Park feeders. Previous studies looking into the effects of time of day have shown that birds tend to feed more in the evenings and mornings. The most favorable weather conditions in similar studies were warm temperatures and low wind conditions. We expect our conclusions to reflect these patterns, with the community structure at the feeders being predominately a mix of white-throated sparrows, song sparrows, northern cardinals, and mourning doves.

Theater Presentations: THEA 488 Students, 9:00AM-11:00AM, CSTAC Lab Theater

Faculty Mentor: Dr. Ronda Scarrow

9:00AM- Everett Carneal, Meg Coughlin Abigail Deguzman, Madison Harold, Brooke McGowan, Courtney Overton, Devon Tinius, Jenny Roegner, Payton Vernier “Facebook-Friend or Enemy”
Our research will take a deeper look into how the inception of Facebook has changed us as Americans. From the initial launch of Facebook until now, the population of users has shifted generationally. Many benefits have come from this social media site, such as family members reconnecting, or the ability to mark yourself safe during an emergency situation or disaster. Unfortunately, Facebook has been labeled a breeding ground for cyberbullying and catfishing. The social media icon has also been viewed as a site where personal information is exposed and sometimes abused. Americans have been affected by this social media network.

9:45AM- Morgan Bunn, Mariem Bennerzouk, Kinley Johnson, Kaitlyn Watson, Danielle Moore, Camryn Carter, “Off of the Pages and Onto the Stage”
Our research will determine the effectiveness of reading a children’s story to a group of elementary students when compared to adding dramatic interpretation through theatre arts. The findings will be based on student engagement, student behavior, and student comprehension. Our research will show that a story presented through a theatrical performance is of best practices for the 21st century learner.

10:15AM- Taylor Smith, Taylor Morgan, Samantha Parrish, Natalie Smith, Lindsey Belt, Kathryn King, Emily Dratzer, Emili Finn, Dequana Moore, Booke Harris, “Creativity in the Classroom”
Creativity in the classroom is a pedagogical method which brings learning to life. Our research will show putting away the worksheets and encouraging creativity promotes a higher order of thinking. Creativity through the arts allows the student to put pictures, music/singing, performance, and/or dance/ movement to the lesson.

10:45AM- Madelyn Lazorchak, Kelcy Chance, Brittaney Bonner, “The Arts and Learning”

When students are involved with their learning they are more likely to retain information and make connections in their learning. Having the opportunity to work with elementary students and put theory into practice shows that student engagement is essential in the learning process.

Research Posters: English 165, 9:30AM-12:30PM, Greenwood Library 209 A/B

Faculty Mentor: Dr. Scott McDarmont

Project: English 165 Research Projects

Britney Beverly, Phoebe Bills, Stephen Bowen, Tayla Breeden, Allison Brown, Austin Buisset, Jim Carroll, William Carter, Christian Conner, Danielle Eskow, Macy Franchebois, Aleeya Gibson, Tyler Glanzman, Haley Gordon, Kylie Green, Jaelon Hairston, Bethany Holzknecht, Bri Huff, Jeremy Jaquier, Victoria Kinker, Taylor Lazzeroni, Jonas Long, Leah Lowe, Abby Mills, Taylor Moffett, Stella Morris, Miranda Mozingo, Nick O'Keeffe, Kaila Owens, Samuel Perry, Mads Pfeiffer, Jessica Roop, Paxton Rountree, Abbyrose Schlotterer, Aubrie Shelton, Jacob Simon, Olivia Skinner, Christina Smith, Macesin Smith, Haley Stables, Matt Steel, Addison Steeley, Ryan Taylor, Alyssa Thomas, Danielle Thomas, Tyler Thomas, James Tierney, Zara Tirrell, Sierra Walz, Liam Wells, Ethan Wentze, Evan Whittey

**Oral Presentations: Visual Arts Senior Students, 11:00AM-12:30PM, LCVA
Longwood Center for the Visual Arts**

11:00AM: Nicole E. Taylor, “Women’s Health”

11:10AM: Jennifer Raven, “Pretty, Ugly”

11:20AM: Hope Irvin, “The Old Sketchbook Project”

Posters: Athletic Training, Psychology, Sociology, Biology, Political Science, Prince Edward High School, 9:00-10:00 A.M., Blackwell Ballroom

Poster Numbers: 1 - 15: Biology 250 (Faculty mentors: Dr. Consuelo Alvarez and Dr. Erin Shanle)

- Jada Motta, Brian White, “A survey of yeasts in the exudates of Longwood trees”

The project is based on yeast, a model organism, and its isolation from tree sap in order to characterize it morphologically and genetically. It aims to support the hypothesis that native yeast species common to Virginia dendrology are the same species found on Longwood campus. Expected outcomes are the identification of yeast species native to trees found in Virginia.

- Kathryn Hedrick, Jessica Belcher, “The Presence of Different Species of Yeast on Raspberries”

Fruits grow many different species of yeast. Raspberries were selected to be mashed, diluted, and tested for growth of yeast. The yeast undergo genetic and biochemical testing to identify the specific strain of yeast.

- Hannah Dodson, Briana Scott “Isolation from a non-organic potato”

Yeast was extracted from a section of potato and then allowed three days to grow on a yeast media plate. After growth, the yeast was counted, streaked, and isolated. The yeast was then characterized with morphology and the DNA is compared genetically to other organisms within the environment.

- Cullan Wadsworth, Alec Abdalah, “Identifying Species of Yeast in Plums”

A sample is being taken from a red plum and a species of yeast is trying to be isolated from it. The type of yeast that exists in the plum is trying to be determined. This will be compared to other fruits to see if they share the same type of yeast.

- Alexis Kesterson, Julie Fahy, “Isolation of Yeast from Potatoes”

- Sophie Kidd, Alexis Nester, “Isolating Environmental Yeasts from Post-Rain Puddle Water”

A water sample was collected from a puddle located on a highly trafficked side walk of Longwood University, Farmville, Virginia. The sample was diluted with distilled water and transferred to yeast agar

plates for colonization of yeast and to later be characterized by morphology and abundance, and the resulting yeast colonies were used to perform a DNA screen. The goal of this project is to determine what yeasts are in this puddle at Longwood University's campus and to determine whether these yeasts are harmful to pedestrians as well as other organisms.

- Ashley Coddington, Matthew Jones, Jacob Jennings, “Investigating microbial diversity at Lancer Park”
The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Elizabeth Putzig, Morgan Lucas, “Comparing microbial diversity across Lancer Park”
The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Rebecca Aylor, Ivy Shifflett, Brionna Woolridge, “Comparing microbial diversity across Lancer Park”
The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Griffin Mayo, Charlotte Pfammatter, “Comparing microbial diversity across Lancer Park”
The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Coleman Behne, Antonio Robertson, “Comparing microbial diversity across Lancer Park”

The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Jessica Moore, Makayla Starman, “Comparing microbial diversity across Lancer Park”

The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

- Chloe Finlay, “Comparing microbial diversity across Lancer Park”

The goal of this class project is to compare the microbial diversity across Lancer Park and identify species of bacteria using molecular methods. We have successfully measured differences in diversity across sites and amplified 16s rRNA gene sequences using the polymerase chain reaction.

Poster Numbers: 18 - 40: Prince Edward County High School Students (Faculty Mentors: Dr. Amorette Barber (Longwood University), Dr. Michael Wolyniak (Hampden-Sydney College), Mrs. Sarah Fulcher, Ms. Amber Collins, and Ms. Torian Jones (Prince Edward County High School))

- Matthew Bates, Ryan Garrett, Antonio Parran, Kenneth Toney, “The effect that a drainage pipe has on water quality”

- Anasia Booker, Nakyla Davis, Amir Gordon, Brianna Perkins, “The effect of distance from the drainage pipe on water quality”

- Hunner Boshier, Jahiem Farrow, Cody Wooten, “Water quality improves farther away from the drainage pipe”

- Wyatt Edwards, Javin Ford, Jose Garcia, Deontray Woodson, “The effect of depth on water quality”

- Abbigail Moore, Lynae Pearl, Zanayiah Threatt, “The effect of depth on water quality”

- Allyson Lucas, Matthew Swanson, Breanna Verschaeve, Saad Khan, Charlie Swanson, Logan Tobias, “Identification of fecal coliform through indicator organisms in local waterways”

- Laniya Green, Chaniya Parker, Mattison Kinne, Jake Simon, Daven Langhorne, “Investigating Microbial Diversity in Prince Edward County Waterways”
- Viviana Rios, Emily Sansalone, Joseph Raymond, Tim Slater, “Identifying bacteria that correlate with fecal coliform in local waterways”
- Christopher Long, Nathan Hamilton, Meera Mishra, Caleb Camp, Mason Kinne, Alia Walker, “Identifying total coliform bacteria in Prince Edward High School waterways”
- Meghan Williams and Lacy Lopez, “The effect of climate on microbial diversity”
- Ellis Jones and Hannah Reamer, “The effect of sediment composition on a local waterway”
- Jalynn Hicks and Madison Lehman, “The effect of warmer temperature on microbial growth in water”
- Clare Callhoun and MacKenzie Morris, “Microbial testing reveals *Enterococcus* in Prince Edward Waterways”
- Ethan Tobias, Ryan Garrett, and Antonio Parran, “The effect of distance from the source on microbial growth”
- Nia Lee and Sabrina Davis, “*Citrobacter* vs. *Klebsiella* at different locations of local creek”
- TJ Williams, Travare Patterson, Breana Sealey, Jatiah Porter, “Water quality difference between locations in the Prince Edward water way stream”
- Jake Nix, Deovan Johnson, Demurie Banks, Ty'vontray Brooks, “What team CD found in Prince Edward waterway”
- Travon Johnson, Zaaheim Robinson, Jason Marsh, Da'shya Scott, Ke'Mya Rux, “Contrasting conductivity; Investigating water quality from different locations in the Prince Edward waterway”
- Bret Purser, Clay Stanley, Preston Sutton, Camryn Newcomb, “The TRUTH about our water: Examining the water quality of the Prince Edward County Waterways”
- Josh Huddleston, Austin Davis, Morgan Smith, Daiavon Richardson, “Analyzing the dissolved solids of the Prince Edward Waterways”

Poster Numbers: 41 - 50: Psychology 461 (Faculty Mentors: Dr. Sarai Blincoe and Dr. Stephanie Buchert)

- Ashley Johnson, Connor Munn, “Changing Attitudes towards Sexual Minorities”

The goal of this study is to see if brief exposure to a homosexual individual will decrease attitudes of homophobia. Exposure to minority groups has been shown to decrease attitudes of stigma towards them. We hypothesize that participants in the gay and bisexual conditions will have improved attitudes towards homosexual individuals.

- Sydney-Ann Cash, Alyssa Fitzwater, Sara Stephens “Hire or No Hire? The Effect of Name Presentation on the Likelihood of Hiring”

Name presentation on resumes can affect how a potential employer perceives the candidate. The current study uses three different name presentations with equivalent qualifications on the resume to assess the likelihood of being hired. By using a resume that includes a full name, abbreviated name, or no name at all, we predict that the resume presenting the full name will most likely be hired. Potential applicants and employers can use this information within the hiring process.

- Taylor Titi, Brandy Tharpe, “The Effect of Sugar on Taste Preference”

Does the absence of sugar affect taste preference? Participants completed a sensory evaluation questionnaire after consuming a food item that contained either sugar or sugar-free ingredients. The researchers propose that participants will not have a significant preference between sugar and sugar-free food items. This research hopes to affect how consumers view food products and the biases of sugar versus sugar-free food items.

- Kennedy Mihailoff, Samantha Solomon, Michael Swiney, “To Catch a Cyberbully”

Cyberbullying is a heavily researched phenomenon; however, there is little known of cyberbullying behavior in regard to the elderly. The number of elderly internet and social media users has increased in recent years leading to the need for exploration in this specific demographic. We are exploring whether the perception of cyberbullying is dependent on either victim age (young or old) or aggressor age (young or

old). The intent of this research is to shed light on an under represented group associated with cyberbullying and could aid social media moderators in their efforts to report cyberbullying.

- Clayton Hoffmeister, Ryan Johnson, Haley Tucker, “The Effects of Smell on Math Achievement”

We have found in past research, that certain smells help reduce test anxiety. Therefore, we wanted to study if certain smells, such as lavender and mint, will affect math achievement. We will gather participants for a within groups study and have them smell different scents before taking a math assessment. We are expecting the smell of lavender to increase test scores more than the smell of mint and water, and mint to have a greater effect than water.

- Teagan Cassity, Leah Howard, “The effect of interacting with different types of animals on stress levels”

Past research has shown that the presence of animals helps to reduce stress. The present study investigates which type of domestic animal (dog or guinea pig) best reduces stress during a difficult counting task. We hypothesize that the presence of the dog will reduce more stress than the presence of the guinea pig, and that the presence of the guinea pig will reduce more stress than having no animal present. The results of this study could help to determine how the presence of an animal can prevent or reduce stress during common, difficult situations such as job interviews.

- Amelia Czopek, Jessica Guevara, Cassidy Rollins, “Celebrity Brands: Do People Really Buy Them?”

The purpose of this experiment is to discover if a brand owned by a celebrity has the same increase in buying intentions and attitudes as when a celebrity is sponsoring a product or brand. The participants saw a photograph of Ryan Reynolds posing with a bottle of alcohol. The experimental group saw the words "owned by Ryan Reynolds" on the photograph while the control group photo did not include words. Afterwards the participants answered a questionnaire about their buying intentions and attitudes towards the product. This will show if a celebrity has an influence on consumer behavior beyond sponsorship.

- Victoria Higginbottom, Allison Marrin, “The effect of relationship type on perceived seriousness of violence”

Past research has shown that the perception of seriousness differs among relationship types in regard to violence. Our research focuses on the question does the relationship type effect the perceived seriousness of violence? Our purpose is to research domestic violence among different relationship types that have not previously been compared. This research includes all female intimate partner relationship and non-intimate partner relationships (roommate, sibling). Our potential conclusions is that domestic violence will be perceived as most serious among intimate partners, followed by siblings, and perceived as the least serious among roommates with similar results regarding victim responsibility.

Poster Numbers: 51- 74: Sociology 461 (Faculty Mentor: Dr. Jake Milne)

- Samantha Heaney, Abby Lichty “Policy Analysis of Title IX”

We describe the policy, discuss issues with the policy, as well as offer solutions to fix the policy and how to go about doing so

- Sophie Zarski, “Affordable Housing in the United States”

This project is to give an extensive background of a few affordable housing policies in The United States. I go into detail regarding what the policies are, who they affect, and how they are working. I critique them and I also come up with some of my own solutions regarding affordable housing. Besides presenting a few policies, I also go into the long history of the problem of poverty and affordable housing in The United States. I will present the history of where affordable housing has been needed most and where it is currently needed the most. The main purpose of my project is to explain the current policies for affordable housing and to discuss the problems of poverty as it relates to affordable housing. It is essential to my project to review which policies are successful and why or why not. This way we can come up with a few solutions for affordable housing. The purpose of my project is to also go over why affordable housing is so important, what leads to the need for affordable housing, and the problems that are associated with poverty.

- Tyler Chadduck, Courtney White, “Rapid and Extensive Response to September 11, 2001: A Review of the USA PATRIOT ACT”

The USA PATRIOT Act was signed into law only 18 days after the tragedies of 9-11. The purpose of our paper is to review the policy to better understand the ramifications it had and critique different parts of the act. By critiquing the USA PATRIOT Act, we can offer solutions or improvements to some of the issues.

- Rosemary Ilang, “Role Conflict and the elite Student-Athletes”

The purpose of this study is to find out how student-athlete manage their time as student-athletes and students as well. This will be measured by using how role conflict can come in play for everything they do in class and in sports as well. Questions such as, did a majority of the student athletes express role conflict. Female student-athletes generally experienced more role conflict than male student athletes. However, male student-athletes participating in the revenue sport of basketball experienced more role conflict than female student-athletes

- James Robertson, “Can Bullying Predict Substance Abuse”

Bullying is a large problem in the United States and can be a predictor of several different mental and physical problems in individuals. This research project focuses on adolescent bullying victimization and if it can predict later substance abuse in the victim's adult years.

- Helena Carter, Berkeley Elliot, “Age and Attitudes towards Corporal Punishment”

We are conducting research surrounding how one's age cohort affects their attitude towards using corporal punishment on children as a corrective tool within the family.

- Autumn Hollingsworth, Emily Roach, “Separation of Church and State in Public Schools”

This policy analysis is based on the separation of church and state in public schools. The clause that we directly examine is the Free Exercise Clause. The paper addresses the effectiveness of this policy.

- Kathryn Miller, Annie Boros, "Policy Analysis: Title IX"

Ultimately, the goal of Title IX is to prohibit discrimination on the basis of sex in any education program or activity that is federally funded. The goal of this paper is to analyze the effectiveness of the policy's goals in relation to athletics with the actual results, while highlighting the shortcomings of the policy. Although Title IX has provided more opportunities for women in athletics, gender disparities still persist. A reformation of the policy and truly meaningful enforcement can overtime assist in cultivating an environment equally conducive to male and female opportunities in athletics.

- Tamera Edley, "Much Ado about the Family Violence Prevention and Services Act"

The Family Violence Prevention and Services Act (FVPSA) was administered in 1984 to domestic violence and child abuse. Some problems with policy includes more recognition of domestic violence than child abuse, no programs for LGBT survivors, unmet requests for services, etc. The purpose of this project is to enhance ideas of how to make this policy more reliable. Some options for this policy can be to create more programs for sex offenders and perpetrators, for LGBT members, and for children who were physically or sexually abused.

- Vanozzio Phillips, "The Employment Non-Discrimination Act"

The Employment Non-Discrimination Act is a proposed law in the United States Congress that would prohibit discrimination in hiring and employment based on sexual orientation or gender identity by employers with at least fifteen employees. The ENDA has been introduced in every Congress since 1994, with the expectation of 109th. My purpose is to propound information and ideas that support this proposed law and the benefits it provides to workplaces and the LGBTQ+ workers. The ENDA has not become law as of December 2018.

- Amanda Griffiths, "The Family and Medical Leave Act of 1993: Impacts and Analysis"

This project analyzes the impacts, organization, and issues of The Family and Medical Leave Act. The act is analyzed, problems with the act are stated, then potential solutions are given.

- Eli Mercado, Christopher Boydston, "Perception of cheating in sports"

We researched the different perceptions on cheating by people of different ages and whether they become more accepting and or less accepting and why.

- Jamesha Watson, Kayla Barner, "The Fair Housing Act: A Policy Analysis"

The Fair Housing Act was passed in 1968 and prohibits discrimination against people based on race, color, religion, sex, familial status, national origin, and disability in most housing situations. However, this policy has been poorly implemented throughout the years. This policy analysis looks at the history, the problems, and how the Fair Housing Act can be improved.

- Jordan Clark, Sydney Gay, "Is Social Disorganization Still Applicable in Today's Society"

We are conducting a policy analysis on FERPA and how it is being implemented. The purpose of this project is to see how well FERPA is working in the school systems. Overall, we will conclude if there needs to be adjustments to the policy or if it needs to be reconstructed.

- Tracy Davis, Kira Rivers, "FERPA"

This analysis of the sexual education policies within the United States examines how different sexual education curriculums, Abstinence-only and Comprehensive, are administered across different states. Policy goals, implementation, effectiveness and proposed solutions to the critiques of the current policies are assessed and evaluated. Outside countries' implementation strategies and procedures are used to alternatively enhance and support the current sexual education policy. Lastly, only one alternative will be chosen for each policy, to help implement a new curriculum which will be more effective in delaying sexual initiation and reducing rates of teen pregnancies and STI's.

- Jada Clark, Dorinda Fields, "State Sex Education Policies: Comprehensive and Abstinence Education"

Our presentation is about the current United States Drug Control Policy. We wanted to know if the policy would be better if it incorporates ideas from other countries, such as Portugal and the Netherlands. Within our project we will discuss our current policy, along with Portugal's and the Netherlands' policies and tie

them into the United States. We will also give ways to make the United States policy better than will show effective improvement for all individuals.

- Sarah Kaufman, “A Change for the National Drug Control Policy”

Relocating can be both a negative and positive experience. Previous research has argued that many factors play into the experiences of relocating. Some of these factors include the existence of social support and financial situation. It is argued that these experiences have a dependency on perception of the individual. The purpose to this research is to look deeper into how the experience of relocating affects relationships. At the conclusion of this project, it’s expected that age and gender will be significant factors in how individuals handle relocation. It is hypothesized that relationships will be positively correlated with number of relocations.

- Haven Hogan, “The Effects of Relocation on Relationships, Adjustment, and Coping”

The purpose of this project to is evaluate the Health Insurance Portability and Accountability Act, critiquing it’s flaws and benefits, assessing its effectiveness to the American people, and comparing it to similar international policies.

- Lauren Atkins, “The Health Insurance Portability and Accountability Act”

I am studying, to see if there are any correlations between socio demographics and the usage of prescribed anti- anxiety and anti- depressant medications among college students.

- Victoria LeFevre, “Correlations between socio demographics and the usage of prescribed anti- anxiety and anti- depressant medications among college students”

I chose to research whether being involved on campus has an effect on whether or not they stay or leave the university. My research question is Does campus involvement and campus retention have a correlation? My hypothesis is Students who are involved on campus are less likely to leave the university than students who are not involved.

- William Shiels, “Campus Involvement and Campus Retention: Does it Correlate?”

Showcasing Medicaid Policy effectiveness, and providing methods of Improving Medicaid, the conclusion should contain methods of improvement and how to implement them successfully in multiple states other than Virginia.

- Caitlin Rife, Catherine Elfers, “Medicaid Policy Analysis”

Our goal with our research is to provide an extensive overview of the policy, its limitations and what it provides for school systems across the country. We acknowledge all prior research, what scholars have found and what is commonly present when this policy is implemented. Further, we study policies used in other countries to compare and contrast the key objectives of IDEA. Lastly, we explain how we would implement the same policy if we could amend it.

- Megan Hurley, Meghan Simmons, “Comparative Policy Analysis”

30 states still currently have the death penalty in their states, even though not all still use it. The non-use or use of the death penalty in each state may come down to the idea of liberal vs conservative views within each state. It has been found that there are issues within fairness and consistency in the death penalty process. There has also been question within what criteria should there be to be able to decide who dies and who shouldn't. There has been a huge question raised over the years on whether it costs less to sentence a person to life imprisonment or the death penalty. New policies need to be formed to discuss these issues further and construct a new policy.

Poster Numbers: 75: Sociology Independent Research (Dr. Virginia Beard)

- Courtney White, “Rising Reason to Concern or Rising Just Concerns: An Analysis of Cults in the 1970s”

My research analyzes the past research on the study of cults or new religious movements. Then analyzes cases concerning cults and their members in the 1970s and then discusses where the research of cults should go in the future.

Poster Numbers: 76- 78: Political Science 461 and 305 (Faculty Mentor: Dr. Scott Cole)

- Kaieshia Cole, “Why Millennial College Students Support Title IX”

Focuses on proposed Title IX Changes by Betsy Devos and the general reasons as to why students support complete fairness within the original title ix guidelines. None of the research is biased or intentional of harming students; only reflecting the current situation in the government’s proposed definition of title ix and why it’s upsetting college students. Along with that, examining and reporting results of how informed college students are about this policy and how much they care about it.

- Joseph Hyman, “Why Foreign Aid Doesn’t Work”

This research was a case study of Kenyan healthcare and its relationship to foreign aid. It analyzes the sources of foreign aid, how Kenya receives it, how it is distributed to its citizens, and whether or not it is effective.

- Megan Garret, “An Overview of the Determinants of Decreased Voter Participation in College Students”

Poster Numbers: 79- 81: Athletic Training 470 (Faculty mentor: Dr. Meg Thompson)

- Samantha Wangner, “Phys Ed Perceived Importance of Concussion Ed/Training & RTL”

The purpose of this study was to assess Virginia’s (VA) physical educators’ knowledge, use, level of comfort, and their perceived importance of concussion education and/or training and return-to-learn (RTL) policies. There were 91 respondents to the survey, however only 58 participant data were utilized for data analysis. Participants were equally represented by gender of 53.4% males (n=31) and 46.6% females (n=27). Overall, physical educators’ knowledge of concussions and RTL policies needs to be improved. Findings indicate that concussion education and/or training and RTL policies are not implemented or applied in the classroom setting by all physical educators.

- Tara Tate, “Physical Educators Comfort of Concussion Education Training”

This study inspects Virginia physical educators’ knowledge, usage, comfort, and perceived importance of return to learn policies. A survey was disseminated and data was analyzed. This section of the study

focusses on physical educators' comfort with understanding their state's and school-specific RTL policy. Results yielded statistical and clinical significance between comfort and usage of concussion training, and comfort and knowledge scores. The results raise attention to what can have a negative effect on comfort levels. To increase comfort with concussion understanding and management, physical educators should increase their knowledge of the subject and schools should make concussion education training mandatory.

- Jenna Pierson, Lindsey Stokes, "Physical Educators' Knowledge on Concussion Training, Education, and Return to Learn Policies"

This research examines physical educators in the state of Virginia and their perceptions of different aspects of concussions and return to learn policies. The study used explores the knowledge, use, comfort level, and perceived importance of the sample through a survey. Within the results and discussion section, the main focus is comparing the participants' overall knowledge score to the other sections of the survey as well as a variety of literature to answer the research questions provided. Results showed there were some concerns within the knowledge section of the survey that need to be addressed in the future during concussion trainings. In conclusion, there needs to be more emphasis and structure on concussion knowledge during concussion trainings for physical educators as well as other faculty members.

Posters: Biology, Art, History, Psychology, Criminology, Nursing, Therapeutic Recreation, 10:15-11:15 A.M., Blackwell Ballroom

Poster Numbers: 1- 3: Art/Biology 395 (Faculty mentor: Dr. Mark Fink)

- Morgan Pearce, Nicole Copenhaver, “The Dangers of Balloons”

Millions of balloons are released every year in the United States. Each of these balloons ends up either in on land making it increasingly easy for animals to eat and/or be entangled in balloons and their attached strings. The final project will consist of a canvas with mud stenciling of multiple animals all wrapped in balloons and floating into the sky. The balloons in the piece will be created using recycled balloons. We hope that our project will bring awareness of the dangers to wildlife that come from releasing balloons.

- Rana Haboush, Angelica Romero, Taylor Mattison, “Climate Change Impacts”

Climate change is complex, but it's vital that we, the human population, fully understand exactly what climate change means. For our research project we have decided to create a series of multiple prints depicting the possible impacts climate change will have on the world. Our goal with this project is to raise awareness on how climate change will negatively affect not only us, but everything around us, if we continue to do nothing to stop it.

- Jessica Newcomb, Derek Jones, “The Evaluation of Single Use Plastics”

Single use plastics have become one of the most prevalent areas of discussion among environmental activists and concerned citizens alike. With huge threats being posed on wildlife, and recently even humankind, it is clear something must be done. In this review we aim to understand the social and economic mismanagement of single use plastics, as well as unearth the global consequences that will affect every living being. Outcomes for the poster would be to educate the Longwood community on the severity of the plastic epidemic, and serve as a call to action through raised awareness.

Poster Numbers: 4- 8: Biology 360 (Faculty mentor: Dr. Adam Franssen)

- James Gallagher, Jessica Mick, Adrianna Dogget, “Critical period of asymmetrical wing development in overcrowded populations of *Drosophila*”

We are testing the emergence of asymmetry in overcrowded Fruit Fly populations. This is proven to cause asymmetry, so we are testing when. We may discover a critical period where asymmetry develops.

- Kathryn Bates, Abigail Harris, Tabitha Lenhart, “Behavioral Responses of *Drosophila melanogaster* Reared in Varying Crowding and Sucrose Levels”

This poster will include data regarding the behavior of *Drosophila* after they have been exposed to varying conditions such as high sucrose or high crowding environments. The behavioral responses will be measured using a choice chamber where the fruit flies will have the ability to choose which stimulus they desire.

- Caroline Carter, Shanyia Chandler, Talbot Thames “Using *Drosophila melanogaster* fluctuating asymmetry to identify the effect of excessive sucrose intake”

It has been shown that there is both a genetic and environmental component to the development of type II diabetes in humans. Human asymmetry has been used to identify at risk individuals through finger print analysis. We used *Drosophila melanogaster* as a model species to identify if sucrose intake could lead to asymmetrical development of organisms. *Drosophila melanogaster* were exposed to varying levels of sugar intake during development, and wing veins were measured to determine the fluctuating asymmetry found in 2 generations of offspring. We found through this process that sucrose exposure caused levels of asymmetry that correlated to the level of sucrose the developing organisms were exposed to.

- Makayla Davis, Oyindamola Olayinka, Brianna LaFratta, “The relationship between Sucrose levels and Fruit fly symmetry”

Fruit flies in higher sucrose environments have been found to have less variance when measuring symmetry. However, there has not been research that shows the effect of graduated doses of sucrose on

fruit fly symmetry. This experiment aims to determine whether various sucrose levels will affect the development of fruit fly symmetry with the use of a symmetry curve. We hypothesize that the fruit flies in the highest sucrose environments will be more symmetrical.

- Michael Anderson, Debbie Pitt, Earl Long, “The effects of varying sucrose levels on fluctuating asymmetry of crowded *D.melanogaster* population”

Past research has shown that high crowding in a population leads to an increased fluctuating asymmetry. This project attempts to show that the level of available sucrose will affect the fluctuating asymmetry. A high level of sucrose should have a reductive effect on the frequency of asymmetry. Results discussed.

Poster Numbers: 9- 10: Biology 473 (Faculty mentor: Dr. Brandon Jackson)

- Oyindamola Olayinka, Brandon Hastings, Madison Rea, Samuel Kane “Testing the escape performance of zebrafish in various age groups”

The c-start of zebrafish has been studied in order to understand how they use it to escape from danger. In this study, we are testing for the differences in the ability for the zebrafish to use the C-start at various ages. We hypothesize that the younger zebrafish will be better at using the c-start compared to the older fish.

- Catherine Swinsky, Kayla Cooksey, Uzma Gunter, Zachary Sergi “Biomechanics of Bird Tails in Flight”

Research in regards to the biomechanics of flight in birds have been predominantly conducted on the wings resulting in a strong understanding of their contribution to locomotion dynamics in flight. However in comparison to wings, the exact functions of a bird’s tail and its influence on flight have not been studied in depth. The aim of this study is to observe how the tail operates during takeoff and landing movements of wild birds using high speed camera footage.

Poster Numbers: 18 - 25: Criminology 461 (Faculty Mentor: Dr. Virginia Beard)

- Alyssa Buffington, Joseph Robertson, Taylor Evans, “Impact of Race, Income, & Sex on the Frequency of Police Stops in a Public Area”

The objective of this research is to examine the impact of race, income, and sex on the frequency of police stops in a public area.

- Brianda Chavis, Melanie Smith, “Street Stops in a 12 Month Period as a Function of Race and Sex Factors”

The objective of this research is to examine the impact of race and sex on the amount of street stops experienced in a 12 month period.

- Abigail Vaughn, Suban Farah, Benjamin Lambert, “Views Toward Police Response: Age, Race, and Geographical Location”

The objective of this research is to examine the impact of race, age, and geographical location on the satisfaction of police response. Using data from the Police.Public Contact Survey, 2015 a binary logistic regression analysis will be performed.

- Ryan Spivey, Tyler Williams, Brianna Booker, “The Impact of Sociodemographics On Views Towards Police Stops”

The objective of this research is to examine the impact of race, sex, and urban and non-urban residencies views on the legitimacy of traffic stops. Using data from the Police Public Contact Survey, 2015 a binary logistic regression analysis will be performed.

- William Russell, Brandon Whitmire, Denzel Speed, “The controversy behind motor vehicle police stops and sociodemographic characteristics in the United States”

The objective of this research is to examine the impact of race, hispanic origin, and location on the amount of times individuals were stopped while driving within the last 12 months. Using data from the Police Public Contact Survey, 2015 a binary logistic regression analysis will be preformed

- Gregory Ramsey, Heidi Karweik, Molly Craig, “The Impact of Race, Sex, and Urban/Non-Urban Residency on Perceptions on Excessive Actions During Police Stop”

Our Research question asks individuals, Did you feel that the actions taken by the police officer during the stop were excessive? Using data from the Police-Public Contract Survey, 2015 a binary logistic regression analysis will be performed.

- Brett Sablack, Nicholas Hylton, Zoe Frank, “The Effects of Population Density, Race, and Sex on Perception of Police Behavior During Contact”

This research will examine the impact of population density, employment, and sex on the individual's perception of police behavior during contact. Using data from the Police Public Contact Survey, 2018, a binary logistic regression analysis will be performed.

Poster Numbers: 26 - 50: History 461 (Faculty mentors: Dr. David Coles and Dr. Steven Isaac)

- Savannah Dyer, “The Significance of the Defense of Bastogne”

This presentation looks at how the defense of Bastogne during World War II halted the German's last off and effectively brought the end of the war closer.

- Amanda Topping, “The Influence of Jacksonian Democracy on the Art of Lilly Martin Spencer”

The age of Jackson brought about more opportunities for poor white men which made other minority groups think that a more egalitarian society could be possible. This idea of egalitarianism can be found in the paintings of Lilly Martin Spencer as she elevated the domestic sphere through her work.

- Sydney Hughes, “Differences in Policies Surrounding World War II and Vietnam War”

The United States has always prided itself on being one big “melting pot” of cultures and ethnicities. However, legislation surrounding immigration proves otherwise. My argument is that during times of war, the United States has been more lax in immigration legislation. I plan to show this through the immigration legislation passed during the eras of World War II and the Vietnam War, both of which passed legislation to improve the workforce and population of the United States.

- Jennifer Melton, "The Origins of the Cold War"

After the end of World War II, the United States and the Soviet Union became engaged in a worldwide conflict known as the Cold War. The Cold War developed due to the miscommunication between the two powers before, during, and after World War II. Overall, this research paper proves that many of the known causes of the Cold War were themselves caused by miscommunication.

- Tyler Culbertson, "British-Confederate Diplomacy"

A historical exploration of the major factors that contributed to the failed diplomatic relations between Great Britain and the Confederate States of America during the American Civil War

- Catharine Billings, "Witchcraft in Scotland During the Renaissance"

During the Renaissance era, witches played many different roles in their communities. Some were healers revered by their communities, others were seen as malevolent individuals who became scapegoats for problems. Whether "good" or "evil" witches could be persecuted nonetheless. Ultimately, their role was whatever their community wanted them to be.

- Matthew Roos, "The French-Israeli Alliance in the 1950s"

The presentation is looking at the informal alliance between France and Israel in the 1950s. The question is "What were the characteristics of the French-Israeli alliance and did it affect the relationship between Israel and the United States?" The conclusion is that "The Israeli-French alliance was built on an arms trading relationship that both the French and Israelis benefited from the alliance in various aspects while complicating the relationship between the United States and Israel during the 1950s."

- Katherine Loden, "Allies in a Revolution"

My topic will be focused in the American Revolution and will concentrate on the allies that came to the colonies' aid. This will include France, Spain, the Dutch Netherlands, and Russia (as part of the League of Armed Neutrality). My research question is: What motivated the countries of France, Spain,

Russia, and the Dutch Netherlands to become involved in the American Revolution? After conducting some research, I can conclude that it was the desire for revenge, obligations within various treaties, and the opportunity to increase trade that motivated the countries of France, Spain, Russia, and the Dutch Netherlands to become involved in the war between the American colonies and Great Britain.

- Eliza Glancy, "The Regressive Reign of Mary Tudor"

I have analyzed Tudor religious policy with a focus on Mary Tudor. My initial research question was: What challenges faced by Mary Tudor, in regards to religious policy, were most critical during her reign? While Mary I faced many challenges during her reign as the first Queen Regnant of England, the most critical were the denominational differences and conflict, the xenophobic sentiment towards her marriage, the attempted amalgamation of church and state through indoctrination of the Protestant clergy, and the rebellions and executions of Protestants in England.

- Gregory Buckner, "Britain's Role in the Falklands War"

Research Topic: Britain's role in the Falklands War

Research Question: Was the Falklands War caused by Britain's unwillingness to give up a colonial possession and the country's strong response to the crisis?

Tentative Thesis: The Falklands War was caused by Britain's diplomatic reluctance and ineptitude to surrender its imperial legacy of the Falklands to an over-eager Argentina.

- Celia Kenney, "American Indian Boarding Schools"

How Boarding schools negatively affected the American Indian Students that attended by diminishing their culture.

- James Cristoph, "Nazi Germany's Approach to Air Warfare and the Battle of Britain"

This poster asks why the German Luftwaffe was ill-equipped to handle a strategic bombing campaign against Britain. It argues that Germany's doctrine on aerial warfare emphasized tactical warfare over strategic warfare, and that Germany's aircraft were built around this philosophy from the start. It will

provide evidence that German aircraft held serious design flaws which severely limited the Luftwaffe's capabilities at the strategic level, and present greater detail on how the British were able to use those flaws against the Germans.

- John Garrett, "Discourse on the Ukrainian Famine"

The Ukrainian Famine, or as some may argue the Holodomor, occurred in the Ukraine roughly between 1932-33. Historians tend to agree that there were two primary factors that contributed to the famine; natural causes such as abnormal weather and drought, as well as man-made factors; such as governmental policies like Stalin's collectivization plan. This soon to be made poster and its corresponding essay will give a discourse on these two factors; by providing a view sympathetic to the Soviet Union's perspective on the event.

- Rachel Hazelwood, "The Triangle Shirtwaist Factory Fire"

The Triangle Shirtwaist Factory Fire occurred in 1911 and changed the way that factories were allowed to be run. Because of the lack of safety laws, the owners of the Factory were allowed to trap the employees inside the building. This led to the death of many workers when the fire broke out. Despite the outrage surrounding the fire, the owners were not found guilty of manslaughter. In this poster I will show why they should have been found guilty of manslaughter, if not murder.

- Sara Reese, "Battle of Saratoga"

My research question for this project is Was the battle of Saratoga the turning point battle for the American Revolution? The battle of Saratoga is a turning point battle because this battle caused the French to send aid to help the Patriots. The French sent aid and troops and helped the Patriots defeat the British at Yorktown. This caused the Patriots to win the revolution and gain Independence.

- Alan Creager, "Our Turn to Strike: Fleet Admiral Ernest J. King and his influence on Allied strategy in the Pacific"

Ernest King played an indispensable role in the Allied victory in the Pacific war. Making full use of his keen strategic intellect and pragmatism, King saw to it that the U.S. Navy seized the initiative from the Japanese as quickly as possible after Pearl Harbor and then began pushing them back with ever-increasing force. King made maximum use of men and materiel allocated to the Pacific and ensured the Pacific was never neglected at any time, even if Europe was given first priority.

- Tim Stein, "Nat Turner's Rebellion"

The explanation of Nat Turner's Rebellion and if it was significant in the outcome to shortening the use of slaves

- William White, "East Coastal Pirates in the North America and the Caribbean"

18th century pirates for years have been over simplified or over romanticized; but in reality, pirates during colonial period were a complex group of people, who had their own understandings of law and order, had differing views on how gender and race worked on their ships, while also maintaining a system of funding that allowed wages to be divided up based on skill and job. My question research question will be, what were pirates really like during this period? and Should be continue to think of pirates had one single group of people, when there were hundreds of different captains and ships that had their own views and opinions about how to a pirate?

- Brielle Hargrove, "The Riddah Wars"

In my presentation, my research will show how the campaign of these military (The Riddah Wars) affected the Islamic religion/practice. My research question is "How did these wars shape Islamic Culture? " I conclude that these wars is why there is a divide in the religion such as Shiites and Sunnis.

- William DeBoeser, "Catalan Independence for Regional Autonomy"

My presentation will be on the Catalan Independence movement of today and how it is comparable to the other instances in the past in which the Catalan region of Spain has revolted against the Spanish central government. After analyzing the Reaper's War, the Spanish Civil War, and the Spanish War of

Succession my paper aims to prove that Catalonia has been reaching for regional autonomy for the better part of a thousand years and that their reasons and goals have remained about the same even today.

- Ian Mansfield, “Concerning the French Directory and the Passive Citizen”

How did the Directory of the French Revolution allow pre-revolutionary rhetoric to return to France? The period's social and political instability of France can be attributed to the Directory's reactionary shift after the radical era, among its failure to stabilize. This research is dedicated to uncovering the shortcomings of the Directory period of the French Revolution (1795-1799) which lead to Napoleon's famous coup.

- Zach York, “Cuban missile crisis”

Giving a historiographical account of the Cuban Missile crisis through the decades

- Cheyanne Woodard, “The Survival of the Enslaved Black Woman”

The presentation is about the survival of enslaved black women from the sexual assault of their masters in the Antebellum south. The purpose of this research is to inform the viewer of the sexual assaults that enslaved black women endured and by the hands of their masters in the Antebellum south. And how they overcame these assault for the survival and freedom for them and their children.

- Louis C. Gould III, “Prince Edward County decision to close their schools”

On June 26th, 1959, The Prince Edward County Board of Supervisors voted not to fund public schools in the 1959-1960 school year, after eight years of court cases and delays that were related to school desegregation. Prince Edward abandoned public education because the county leaders believed that closing public schools was better than having them be desegregated. The forced closure of Prince Edward County public schools led to a significant loss of public education for lower income whites and black youth during their primary years. Prince Edward County School Board’s decision to not follow desegregation orders in the verdict of *Allen v. County School Board of Prince Edward County*

negatively affected the Prince Edward County community, the quality of public education for black Americans and future generations in the county, even after schools were reopened.

Poster Numbers: 51- 58: Psychology 461 (Faculty Mentors: Dr. Sarai Blincoe and Dr. Stephanie Buchert)

- Deja Harrison, Deja Mitchell, “Technology Use and its Influence on Conformity”

Previous research has indicated that people conform to the ideas of others when in groups, however, there has been little to no previous research on the influence of technology on conformity rates. We will be looking at the influence of technology on a person’s likeliness to conform in a group setting. We predict that people who are given a chance to change their answers through a technological platform will conform at higher rates compared to those who are given the chance to change their answers without technology. This would indicate that technology plays a role in decision making.

- Austin Funk, Samara Gall, Megan Hlavaty, “The Effects of Cell Phones on Gameplay Enjoyment and Frustration”

Past research has shown that cell phones reduce the quality of face-to-face social interactions. This study looks specifically at how cell phones affect the quality of playing a prompt-response card game with others. Participants played a card game and completed a survey measuring gameplay enjoyment and frustration. We predict the gameplay enjoyment will be lowest and frustration highest when a cell phone is being used compared to when it is within view or not visible. This could have implications for the impact of cell phones on games in general.

- Sarah Hughes, Cameron Pelletier, Taylor Carrington, “The Effects of Gender and Facial Expression on the Perception of Personality Traits”

In the present study, we will look at the effects of gender and facial expressions on the perception of the Big Five personality traits of agreeableness and conscientiousness. Participants will view an image of a male or female. In each session, the facial expression will be manipulated to be happy or neutral. Participants will rate the image on a 24 question survey. We predict females to be rated higher on

conscientiousness and agreeableness. Additionally, the images with happy expression will seem more favorable to participants. This will support our hypothesis that females are looked at more positively, regardless of expression.

- Madison Hill, Leonie Verstraete, "The effects of perception of "breathable air" on stress"

This study investigates the effects of perception of "breathable air" on stress. Participants were told that the room contained more, average, or less than average air. Their heartrate and psychological stress were measured after writing about a personal stressful situation. We anticipate that participants in the less than average air room, will report higher amount of stress. If people are aware that they attribute their anxiety to external variables, then they might regain internal control.

- Asia Christmas, LeAnne Harris, Erica Lampe, "The Effect of Note Taking Strategies and Gender on Word Recognition"

With the advancement of technology, there has been a change in notetaking strategies within the male and female population of college students. The present study will examine the effects of notetaking strategies and gender on word recognition. Participants will either handwrite, type or just read a random set of words. The study we will conduct will test if there is a significant difference between notetaking strategies and number of words recognized between males and females. We predict that females that handwrite the given set of words will recognize more words in the post test than males or females who type or just read the words. Professors have stated in class that the reason they do not allow laptops in the classroom is because handwriting notes helps retain information better, we wanted to study whether that statement is true.

- Ciarra Joyner, Hailey Richter, "Disgust and its Effects on Anticipation"

Our purpose of this study is to discover what types of disgust will cause the most anticipation. In this study participants will measure their heart rate using a blood pressure cuff and rate the types of disgust using a Likert scale. There have been previous studies on anticipation but there have not been many on the effects of disgust on anticipation. Our Independent Variable is disgust with four levels: medical

disgust, food disgust, moral disgust, and neutral disgust. Our two Dependent Variables are heart rate and the Likert scale. We predict that participant 's heart rate will increase and they will rate the type of disgust as higher when shown a medical disgust photo than when shown a moral, food, or neutral disgust photo.

- Brittney Branch, Javier Syndor, “Do Aversive Stimuli Influence Consumer Behavior”

The purpose of this study is to examine how aversive stimuli influences consumer behavior. Previous research has highlighted the idea of people being affected by media exposure and whether there is a strong emotional appeal for the message. The participants viewed either a video with a negative message, a video with a positive message, or no video at all. We hypothesize that the individuals who viewed the negative video will develop a negative perception of McDonalds compared to the other two groups. With this research, we will showcase how media is able to influence consumer behavior.

Poster Numbers: 59 - 74: Nursing 230 (Faculty Mentors: Prof. Theresa Kennon and Dr. Pamela Crowder)

- Cameron Mann, Cheyenne Brown, Lauren Richardson, Kalie Creasy, Taylor Keeler, “The benefits of Hand Washing Over Using Foam Sanitizer”

We will be reviewing the benefits of hand washing with soap and water rather than using foam sanitizer in a clinical setting. Most hospitals have foam hand sanitizer dispensers in each room and it is required to “foam in and out” when entering and exiting patient rooms. We will be researching the benefits of foam sanitizers are and why this is required rather than traditional hand washing with soap and water.

- Megan Tate, Tiffany Carter, Ashton Seifert, “Medical errors related to sleep deprivation and longer shift lengths”

It is commonly known that nurses tend to work long hours, which in turn can lead to the issue of sleep deprivation. We will be researching the evidence to support that the longer shifts and sleep deprivation

contribute to higher incidence of medical errors, and nursing burnout. We expect the longer the shift of nurses and the more sleep deprived nurses are, the higher the possibility that a medical error can occur. Potential conclusions or broader outcomes include, a greater risk of bad outcomes for patients, nurses wanting to work less and retire earlier, and the possibility of shift constraints.

- Jimmy McDonnell, Kelly Jeter, Courtney Frazier, “Pressure Ulcers”

During this research project, we are investigating if repositioning an immobile patient every two hours would reduce the risk of pressure ulcers forming. Pressure ulcers are caused by increased pressure or friction on bony prominences and are most likely found on immobile patients. Pressure ulcers are a major infection risk for the patient and a huge cost factor for the hospital. When the patient is immobile it becomes the nurses’ job to identify the risk of pressure ulcers and help prevent them from occurring. With constant repositioning every two hours, these factors could be reduced or stopped all together.

- Logan Callahan, Sarah Saunders, Karissa Bright, “Evaluating Patient Mobility”

A major practice that may be overlooked in the nursing field is how to move patients. Since nurses care for a diverse patient group, some patients may have limited to no mobility. In these cases, the nursing team must decide how to move the patient to provide care while still maintaining a safe environment. The purpose of this project is to evaluate current evidence on the safest ways to move and ambulate patients, while still maintaining the effectiveness that must be present in the medical environment. Hopefully, through this research, effective and safe ambulating practices can be determined.

- Maureen Dalton, Kasey Brill, Carolina Leone, Hannah Van Hoose, “Depression Screening in Adolescents”

This project looks at the evidence and effects regarding the implementation of major depression screenings as a routine part of adolescence yearly physicals at the primary care level. Implementation of such screenings would include education on signs and symptoms of depression and a patient health questionnaire related to depression. A study published by The Journal of Pediatric Nursing found that implementation of depression screening protocol is beneficial in identifying major depressive disorders

(MDD) in adolescents (Bhatta, Champion, Young, Loika, 2018). The study asserts that due to the high prevalence of depressive disorders in adolescents today, it is beneficial to implement the screening to decrease morbidity and mortality related to such diseases (Bhatta, Champion, Young, Loika, 2018). In our research we examine multiple studies and the effects they would have if implemented on the entire US population.

- Hannah-Grace Hickman, Brianna Webb, Jill Martin, Lindsey Walker, “Effects of Non-Pharmacological Interventions on Migraines”

Our group is interested to see the differences in levels of pain when presented with non-pharmaceutical pain alleviation methods such as massage, applying cold compress, and distraction. We will be doing research on the effect of non-pharmaceutical pain alleviation methods on migraines. Our research question is: Do non-pharmaceutical pain alleviation methods work in alleviating the pain of a migraine? A conclusion of the project would be that non-pharmaceutical pain alleviation is less effective on migraines than medication, however still effective with overall pain elimination.

- Emma Sanford, Cailynn Anderson, Emily Roberts, Kaitlyn Yasnowsky, “Nursing Discrepancies in Cultural Care”

Past and current research has shown disparities among culture groups of different color, ethnicity, sexual orientation, etc. This leads to issues such as unequal treatment of patient needs, preferences, and treatment outcomes. The past results of this social dilemma in healthcare will be researched to understand the effectiveness of current research in preventing these occurrences. After analyzing the results of current treatment, potential alternative solutions or adjustments to the current solutions will be discussed in improving disparities among the different culture groups.

- Sara Jane Anderson, Molly Mancini, Shannon Lyons, Landen Horton, “Best Wound Care Practices”
Believe it or not, years ago, wound care was only completed utilizing sterile technique. That means that even for a slight laceration a patient had to wear a mask and a nurse has to wear a mask and sterile gloves. This was to ensure that the wound had minimal contact with possible pathogenic

microorganisms. Evidence-based practice confirmed that using sterile technique made no difference compared to using clean technique when completing wound care. This research made the old accepted techniques of wound care obsolete and created new, more efficient practices that nurse are able to utilize today.

- Hannah Arnold, Amanda King, Sarah Spencer, Taylor Tyree, “Impacts of Copper Linens on Infection Control”

Patient safety is of the utmost importance in the nursing profession, specifically minimizing the risk of infection for patients in the clinical setting. A common problem in the clinical setting is microbial organisms. These problems pose a great risk to the safety and health of all patients and staff in a hospital. There are several different reservoirs for infection in a hospital, including cleaning patient linens. Therefore, there is a need for extra precautions when it comes to patient’s bed linens. Copper has been used in multiple clinical settings to combat this issue because of its natural antimicrobial properties.

- Crystal Rosenbaum, Cameron Roblewsky, Mary Waldrop, Taylor-Erin Evitts, “A complementary medical approach to treating chronic pain”

Chronic pain affects over three million people in the United States and is defined as any pain that last more than twelve weeks to years. We want to evaluate the effectiveness of therapeutic pain management versus traditional pain management. Some examples of alternative pain management techniques include acupuncture, exercise, and nutritional adjustments. We hope to draw conclusions on which pain management technique is more beneficial for the patient.

- Ashley Webb, Jessica Overby, Karlie Walter, Ashlyn Hall, Meghan Griffin, “The Effect of TED Stockings on Circulation and Blood Clotting”

Circulatory issues can stem from many disease that cause blood clots specifically in the legs, adding compression is known to help reduce blood clotting. The goal of this research project is to better understand the purpose and effectiveness of TED stocking on circulation and blood clotting and

whether it is still an effective practice. The outcome of this research project is to improve our practice through the use of TED stockings for circulation and blood clotting.

- Kaitlin Harris, Kaitlyn Huff, Katie Loomis, Madelyn Descutner, “Check for Latex”

Our research focuses around the benefits and disadvantages to using Latex or non-latex gloves for healthcare professionals and patients.

- Lauren Williams, Savannah Johnson, Lauren Beaudoin, Carrie Sutliff, “The Effects of Music on Dementia Patients”

Music can positively stimulate the brain in a person with dementia. Various studies show that the use of music therapy impacts their memory and cognition in order to maintain quality of life. Because each case is unique, it is hard to pinpoint exactly why patients are responding to this type of therapy. Music is able to evoke memories by bringing the emotions felt by the listener and relating them to a previous event or events in their life.

- Bailey Dallas, Searra Richardson, Emily Arrington, Sydney Mitchell, “Best Preventive Care for Pressure Wounds”

Pressure wounds are common among geriatric, obese, and immobile patients. Pressure wounds are categorized in four stages ranging from reddening of the skin to deterioration of the bone. It is up to the nurse to use preventive care to protect against pressure wounds, which can include using wedges, mattresses, and positioning of the patient. This paper discusses different types of preventative care for pressure wounds. The research will be able to show what preventative care is best for each individualized patient, based on their risk factors.

Poster Numbers: 75 - 84: Therapeutic Recreation/HARK (Faculty Mentors: Dr. Susan Lynch and Dr. Kristen Whitely)

- Samantha Routzahn, “Effects of Adventure Therapy versus Support Groups on Emotional Stability for Veterans with PTSD Transitioning into civilian Life”

My research is question asks if "Veterans with PTSD transitioning to civilian life who participate in up to one week of adventure therapy versus support groups improves emotional stability throughout the community reintegration process". Adventure therapy is a therapeutic initiative that combines outdoor adventure activities (e.g., hiking, canoeing, etc.) with facilitated therapeutic group process sessions that engages participants cognitively, affectively, and behaviorally. PTSD is a mental health condition that many veterans may experience after service. These symptoms can last for an extended period and may include flashbacks, severe anxiety, and uncontrollable thoughts about the event. Due to military stigma against mental health, most cases of PTSD tend to go un- treated, leading to a unsuccessful reintegration process. Adventure therapy is a nontraditional therapy that appeals to veterans interests, while helping reduce their PTSD symptoms, and meet others with PTSD who are experiencing similar things. The results of getting veterans involved in adventure therapy included improvements in social functioning, life outlook, self-confidence, & well-being. As well as a reduction in mental health symptomatology & emotional suppression.

- Ashton Bishop, Casey LeMaster, "Individuals in adult day services with chronic pain who attend a yoga program, will experience increased leisure participation when compared to those who use medication alone to manage pain."

Chronic Low Back Pain, commonly referred to as LBP, is a global health problem and one of the leading causes of disability among working age adults. The opioid crisis that our healthcare system is currently experiencing is significantly influenced by the use of opioids as treatment in pain management. Yoga is one of the most commonly accepted complementary approaches used for pain management. / that individuals in adult day services with chronic pain who attend a yoga program, will experience increased leisure participation when compared to those who use medication alone. / This research yields the evidence needed to support yoga as an effective intervention for LBP.

- Miki Martin, "Building Social Skills and Slaying Dragons: A Study of the Effects of Tabletop RPG Therapy on Adolescents with Autism Spectrum Disorder"

Researchers have begun to study the effects of using Tabletop Role Playing Games (RPG) for therapeutic methods, aptly called Tabletop RPG Therapy. The current literature we have regarding the practice is yielding positive findings for a large majority of populations, but specifically for this study the focus was adolescents with Autism Spectrum Disorder (ASD).

For this study it is predicted that when compared to life skills grouped through traditional recreational therapy, modifying and implementing social intelligence-oriented tabletop rpg therapy with adolescents with autism spectrum disorder will have greater chances of success obtaining life skills.

- Maya El-Jor, Alexis Pullin, “Leisure Education and Psychoeducational Interventions used for adolescents with Self-harm Behaviors and Suicidal Ideations”

Our idea was to compare leisure education with psychoeducational interventions to improve healthy leisure participation in adolescents with suicidal ideations or self-harm behaviors. We found that psychoeducational interventions impacted adolescents more than leisure education based programs because psychoeducational interventions help them understand and reduce the root cause of their problems.

- Morgan Scarce, “Effects of Horticultural Therapy in Long Term Care Facilities on Behavioral and Psychological Symptoms of Dementia”

In my presentation I examined the effects of horticultural therapy on older adults with dementia living in long term care facilities. Horticultural therapy is defined as the utilization of plants in a therapeutic manner to reach specific goals. It is known that older adults with dementia living in long term care facilities have symptoms such as agitation, sleep disturbances, and decrease in well-being or purpose. It is been proven through my research that horticultural therapy is an effective activity, when facilitated by a certified horticultural therapist, in reducing the symptoms aforementioned by sunlight exposure and opportunities to care and tend to living things.

- Joanna Dafin, Claire Venn, “Humor Therapy to Alleviate Depression”

Humor Therapy is the facilitation of activities that trigger laughter ranging from funny videos to laughter yoga. Our PICO statement is, “For Adults on an inpatient mental health unit, participation in Humor Therapy groups will experience alleviated depression at a greater rate than those who participate in psychotherapy alone.”

- Haley Seefeldt, Cheyenne Bryant, “Aquatic Intervention for Children with Cerebral Palsy: The overlooked domain”

School-aged children with CP who participate in aquatic therapeutic intervention vs land-based activities alone will have increased socialization and social acceptance.

Aquatic intervention has been known to be physically beneficial for children with cerebral palsy. However, research has been done for the social domain as well proving that it is a beneficial intervention in improving socialization and social acceptance for children with cerebral palsy.

- Scott Simmons, Emily Fischer, “An Evidence Based Protocol for the Use of Mindfulness for Young Adults with Eating Disorders”

Our project consists of the evidence based protocols of mindfulness based interventions. Essentially, mindfulness focuses on being in a state of the present, not allowing your mind to wander. Also, we conducted our research through a professional interview and peer reviewed literatures so we were able to find the proper and appropriate protocols to conduct a mindfulness based intervention in a community based setting.

- Kasey Laign, Mariah Ingegner, “Improving Quality of Life for Older Adults with Arthritis”

The purpose of this paper is to inform individuals that aquatic intervention is beneficial for individuals fifty and over with arthritis by increasing their quality of life. With the use of aquatic intervention, individuals will be able to experience the benefits that are gained from this type of intervention.

Posters: Cormier Honors College for Citizen Scholars and Independent Research Students, 11:30-12:30 P.M., Blackwell Ballroom

Poster Number: 16 - 17 (Electronic): Independent Research and Cormier Honors College

- Savannah Dyer (Faculty Mentor: Dr. Elif Guler), “Women Police Officer's Rhetorical Strategies to Establish Authority in Law Enforcement”

Female police officers are still seen as a mystery in law enforcement. This research looks into the rhetorical strategies used to establish authority as well as conducting interviews with former and current officers to determine the strategies used.

- Elizabeth Bradley (Faculty Mentor: Dr. Barbara Newton, HIST 370), “IAN for My Future Classroom”

Since my goal is to become a middle school history teacher, I figured it fitting to create a tool that I could use in my classroom in the future. My goal was to create an InterActive Notebook that would cover the SOLs for a grade of my choosing, as it would get me more familiar with the SOLs that I will likely end up teaching.

Poster Numbers: 18 - 58: Cormier Honors for College Citizen Scholars

- Elizabeth Bradley (Faculty Mentor: Dr. Ronda Scarrow, THEA 448), “Multiple Intelligences, Multiple Methods, Multiple Arts”

This presentation will look back on research that I conducted as I participated in theatrical performances for elementary students at Prince Edward County Elementary School with my Theatre class. This research supports using theatre in the classroom to tap into Gardner's Theory of Multiple Intelligences, in which everyone has one or more categories that they are naturally more proficient in than others.

- Brianna Cervante, Erin Axeman (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “Comparison of Yeast Growth on Strawberries and Raspberries”

Yeast is found on the skin of multiple fruits. The purpose of this experiment is to compare yeast growth on two types of berries, strawberries and raspberries. The potential outcome of this experiment would be that

strawberries have a larger surface area allowing for more variety of yeast found than compared to raspberries.

- Nicole Barclay, Stephanie Willis (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “The Morphological and Biochemical Characterization of Yeast Growth on Berries”

Strawberries, blueberries and raspberries were acquired from a local grocery store and refrigerated for 6 days before they were crushed using a mortar and pestle, then diluted with distilled water in order to isolate yeast which was plated on Yeast Extract, Peptone, Dextrose (YPD) + Streptomycin + Penicillin-G. The isolated yeast strains were then used for multiple assays including a polymerase chain reaction (PCR) to obtain DNA sequence in a follow up reaction. Other assays allowed for the characterization of yeast according to morphological and biochemical properties.

- Carrie Reaver, Joshua Walker (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “Comparing Yeast Occurrence and Diversity in Prince Edward County Public Waters”

Marine habitats contain diverse and abundant yeast strands that can be isolated and characterized. Sample yeast from bodies of water in Prince Edward County were isolated and characterized by morphology, genetic analysis, and a biochemical assay. Observing differences in the abundance and composition of yeast in these water sources may give insight into the types of environmental and human influences acting upon our public water sources.

- Angelina Sherba, Layne Fadely, Cameron Toddy (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “Yeast Isolation and DNA Extraction from Soil Samples in Farmville, Virginia”

Yeast is a unicellular organism known for surviving under various environmental factors, such as extreme heat or extreme cold (Franca, Seasonal and altitudinal changes of culturable bacterial and yeast diversity in Alpine forest soils). The point of this experiment is to determine whether strands found in soil in Farmville will be genetically and morphological different than strands found in other parts of the world. This should be true due to different climates and environmental factors and the yeast having to adapt to their habitats.

- Kirsten Bauer, Sage Church (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “Yeast Presence in Farmville Waterways”

Yeast is a unicellular eukaryotic organism which exists naturally in the environment; however, in many locations, the specific species have not been thoroughly studied. Prior research has shown that the yeast species *Rhodotorula* is commonly found in many freshwater systems similar to the ones present in Farmville. This research aimed to identify yeast species present in Gross Creek and in the Storm Water Retention Pond on Longwood University's Campus in order to compare them with previous findings in the literature and to each other.

- Arjhane White, Jevaun Thaxton (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “Yeast Growth on a Longwood University Tree”

Yeast is a eukaryotic fungus that can be found in nature and it can be observed for its various properties. To see if yeast prefers to inhabit areas close to the ground, an experiment was designed that entailed extracting yeast samples from different levels on a tree at Longwood University. There is likely a correlation between the amount of yeast each sample yields and how close the sampling area on the tree was close to the ground.

- Cecily Hayek, Abigail Pack (Faculty Mentor: Dr. Consuelo Alvarez, BIOL 250), “The Analysis of Yeast in Soil of the High Bridge Trail”

Different forms of yeast are able to thrive in forests across the world because of the environment and nutrients that naturally occur within them. If soil is collected from the High Bridge Trail in Farmville Virginia, then it will contain several different types of yeast, including but not exclusively:

Dothideomycetes, *Saccharomycetes*, and *Cryptococcus podzolicus*. The number of colonies found within the sample could be an indicator as to how healthy the forest environment truly is.

- Kelsey Thornton (Faculty Mentor: Dr. Wade Znosko, BIOL 303) “A Direct Comparison between the Morphology of Organisms to Illustrate Evolutionary Trends”

Several aspects of evolution can be elucidated by examining variations in morphology of different organisms. To determine evolutionary trends, three different organisms were dissected: an aquatic organism

(Dogfish shark), a terrestrial mammal (Domestic cat), and a bird (Pigeon.) In each organism, multiple systems, including the skeletal, integument, muscular, respiratory, and digestive, were examined and compared. Examining similarities and differences of the morphology between these three organisms, conclusions can be made about broad evolutionary patterns and how they derived.

- Kathryn Kosiorek, Cecilie Elliott, Megan Bland (Faculty Mentor: Dr. Amorette Barber, BIOL 404), “Ability of Flavonoids to Mimic the Estrogen Receptor to Drive Myeloid Derived Suppressor Cell Differentiation”

Flavonoids are natural compounds found in dietary elements such as soy, grains, and vegetables that have the potential to bind to the estrogen receptor. Activation of the estrogen receptor drives myeloid derived suppressor cell (MDSC) accumulation, cells that increase during cancer, inflammation, and infection. In this study, we are investigating specific flavonoids, such as epigallocatechin-3-gallate (EGCG), kaempferol, naringenin, daidzein, and genistein, for their ability to mimic estrogen. After examination, we expect that MDSC differentiation will decrease upon treatment of the chosen flavonoids, leading to reduced carcinogenic effects.

- Alyssa Oppedisano (Faculty Mentor: Dr. Jonathan White, BIOL 412), “RNA World Hypothesis”

The “RNA world hypothesis” was discovered in 1962 by Alexander Rich. It’s the idea that RNA molecules began to self-replicate before the evolution of DNA, which is also to say that life began with RNA. Over time this hypothesis has accumulated a lot of strong evidence making it more accepted in the world of science. The purpose of my project is to see if the RNA hypothesis best supports the beginning of life or if there are any other hypothesis that would be more feasible. Potential future directions include other experiments that can support or argue the RNA world hypothesis.

- Ciara Houlihan (Faculty Mentor: Dr. Ann Cralidis, CSDS 460), “A Look into the Research of Chronic Traumatic Encephalopathy”

My presentation will be focused on reviewing the current research that is being conducted on Chronic Traumatic Encephalopathy (CTE). CTE is a progressive neurodegenerative disorder that occurs to repeated

head trauma. I will be going over the CTE medical facts and how it progresses in an individual, what research has been conducted (and currently being conducted), and what treatment is available to those who have CTE.

- Sarah Saunders (Faculty Mentor: Dr. Adam Blincoe, CURIO), “The Philosophical Argument of Physician-assisted Suicide”

Physician-assisted suicide is the practice of a physician taking measures, such as prescribing a medication, which will ultimately result in a patient’s death. Often, physician-assisted suicide is justified as a practice to maintain a person’s dignity. However, some opponents, specifically J.D. Velleman, believe that a patient’s dignity is the reason they cannot be allowed to commit suicide. To address this challenge, I will focus on the distinctly human ability to make meaning. This will allow me to justify the practice of physician-assisted suicide, while retaining the strengths of the dignity centered approach.

- Megan Garrett (Faculty Mentor: Dr. Tom Plahovinsak, ECON 411), “The Hidden Unemployed: A Study of Discouraged Workers in the United States”

Within the past decade, the United States have seen a steady decline in unemployment rates. This study examines the theory of the discouraged working population and offers an analysis of the issue on a nationwide and local level. The study also offers potential policy measures to address the growing issue.

- Danyelle Henderson (Faculty Mentor: Dr. Dorothy Suskind, EDUC 487), “Lessons in Critical Pedagogy”
Critical pedagogy is a philosophy of education that is often seen as making teaching an inherently political act. It is removing the neutrality of teaching from the classroom and often having to face and discuss important controversial topics. After reading "Between the World and Me" by Ta-Nehisi Coates, "Pushout: The Criminalization of Black Girls in Schools" by Monique W. Morris, and "The Trouble With Black Boys:...And Other Reflections on Race, Equity, and the Future of Public Education" by Pedro Noguera, I will present common lessons and themes from these texts and their importance in the classroom community as it relates to critical pedagogy.

- Emma Carroll (Faculty Mentor: Dr. David Magill, ENGL 215), “Overcoming Sonny's Blues”

James Baldwin ‘s Sonny ‘s Blues is a captivating short story which follows the lives of two African American brothers in Harlem, New York and the many hardships Sonny and his brother faced during this time. The story recalls how these unfortunate events grew animosity between them, eventually separating them physically and emotionally. Baldwin describes the falling out of the two brothers, as well as how they were reunited through the magic of music, acting as a symbol for all other African Americans in the 1950’s. This poster will analyze the importance of finding commonalities among the brothers and understanding each other in order to grow and become more unified in a time where segregation so fiercely ruled.

- Alaina Bierman, Gavin Edwards, Sofia Perez (Faculty Mentor: Dr. Chris McGee, ENGL 380), “Reading Like A Kid”

Our research focuses on three universally challenged yet revered children's authors: Shel Silverstein, J.K. Rowling, and Maurice Sendak. We familiarized ourselves with controversial topics in children’s literature by reading “Wild Things! Acts of Mischief in Children ‘s Literature” by Betsy Bird, Julie Danielson, and Peter Sieruta in order to understand what normally sparks censorship attempts. We delved into why and how books by our chosen authors were challenged, and what aspects of their work sparked the most controversy.

- Shalise Meadows (Faculty Mentor: Dr. Gena Southall, ENGL 483), “Missed Opportunities in Kindergarten Writing Instruction”

In kindergarten, students take their first step in becoming writers. They learn so many things that will guide their experience with writing for years to come. The writing instruction provided should result in a positive writing experience. Oftentimes, there are many missed opportunities in a classroom. As a pre-service teacher currently placed in a kindergarten classroom, I want to present about the missed opportunities I see. After observing in the classroom and researching different instructional practices, I imagine that I will find that exposing children to varied writing experiences will have a greater impact on their writing.

- Arleigh Wood (Faculty Mentor: Dr. David Magill, ENGL 490), “The Bluest Eye: How Racism Led to Insecurity and Inadequacy”

During the Great Depression, blacks faced more ramifications than whites in the area of socioeconomics and politics. These feelings of inferiority led African Americans wanting a sense of “whiteness” to feel worthy. Toni Morrison uses her book to describe how racial inequality leads to self-destructive behavior and decisions by defining whiteness as cleanliness and blackness as impure. Morrison uses *The Bluest Eye* to critique the negative influence that the concept of whiteness had on African American life through lack of self-worth and care.

- Samuel Morgan (Faculty Mentor: Dr. Kathy Gee, ENSC 380 “Cod Fishing in the Atlantic”)

My poster is a summary of a research paper in my class. The purpose of this poster is to summarize the situation of the threatened cod species, explain the laws and treaties that led to the fisheries' collapse, and to conduct an analysis on whether current efforts to restore the fisheries are working. Potential conclusions might be my own proposed regulatory conditions to restore cod fisheries in the Atlantic Ocean.

- Jesse Plichta Kellar (Faculty Mentor: Dr. Sarah Varela, GERM 330) “The impact of castles in Germany from medieval times to the present day”

The presentation examines the impact castles have had on Germany both in the past and today. Although much of the work was/will be done in German, the poster will be in English. This project specifically focuses on Charlottenburg, Marburg, Katz, Maus, and Neuwenstein castles.

- Pamela Ridpath (Faculty Mentor: Dr. David Geraghty, HIST 300), “Integrating Technology into the History Classroom”

This project will review the different ways that history teachers out in the field have adapted their teaching style to accommodate for the presence of technology in the classroom. It will also look at how the presence of technology has altered the focus of history education because of the very nature of having all information at your fingertips, and how teachers have found a balance of teaching content versus skills.

- Hannah Moonis (Faculty Mentor: Dr. David Geraghty, HIST 300), “Challenges Facing Social Science Teachers in Middle and Secondary Schools”

This project will be exploring the challenges faced by social sciences teachers in the middle and secondary schools. These challenges include lack of support for teaching social sciences and the lean towards mathematics and science, as well as lack of resources. Through interviews with current teachers, it is possible to receive a first-hand account of these challenges. This project will also research ways in which these challenges can be answered and how improvement can be brought to teaching social sciences in the middle and secondary schools.

- Danyelle Henderson (Faculty Mentor: Dr. Larissa Ferguson, HIST 320), “Teaching Hard History”
Schools and teachers tend to shy away from hard historical topics such as slavery and its partner-in-crime white supremacy. How can teachers accurately portray and discuss the actions, meanings, and lifelong effects of these policies like slavery and Jim Crow laws? The purpose of my project is to compile and learn about why these topics are not taught thoroughly (such as only focusing on the "good" before the "bad"), and best practices for avoiding "surface-level" teaching and inaccurately portraying the severity of these topics.

- Tanna Turner (Faculty Mentor: Dr. Amanda Blaisdell, HLTH 314), “Perception of Love and Beauty: A Case Study on College Students with Exceptionalities”
I want to know if media (TV, social media apps, ect) has an influence on the students in the Longwood Life program. Longwood Life is a program designed for students with various exceptionalities who desire to obtain a college degree. I am looking for each students’ perception of love (romantic love) and beauty. I have chosen to use the Self-Esteem Enhancement Theory to base my survey questions off of along with adaptations of various love and beauty ranking scales. My research will be interviewing each student and compiling my findings into a cases study. For the outcome of my study, I think each student will have their own unique view of love and beauty. I predict the students will use similar media platforms and that the social media will have an impact on each students’ perception of love and beauty.

- Alexis Tisdale (Faculty Mentor: Dr. Linda Lau, ISCS 373), “OpenSAP: Managing Business Enterprise Systems Intelligently”

My honors enhancement for Database Management are two additional online courses offered by a German-based Enterprise Management company. These courses will allow me to understand Intelligent Enterprise Systems, as well as design, code, and build cloud-native SAP S/4HANA extensions that can actually be used in an SAP system. After the completion of the courses I will have a better understanding of Intelligent Enterprise, as well as knowledge on how to develop and code Enterprise extensions.

- Madison Cutten (Faculty Mentor: Dr. Nikki Hall-Atkinson, KINS 412), “Examining the Cost Effectiveness of Faculty and Staff Wellness Programs on Health Expenditure”

Employee workplace wellness programs go beyond simply improving physical health and fitness. Research has shown that providing employee wellness programs can increase the overall morale and productivity in staff, while also reducing the overall cost of health expenditure for the company or institution. The purpose of my research is to demonstrate how wellness programs can be implemented into a university setting to improve the overall health and budget of the institution and its faculty and staff. The results of my research will hopefully provide considerations for Longwood University in future faculty and staff wellness program endeavors.

- Victoria Allen (Faculty Mentor: Dr. Linda Wright, MARK 480), “Honda and Ford in the Media”

Social media is one of the largest forms of advertising companies use today. This research will consist of a content analysis of the social media marketing strategy between Honda Vehicles and Ford Vehicles. The Marketing Mix will be used to determine the strengths and weaknesses of each company in regards to their use of Twitter and Instagram.

- Kelly Almeida (Faculty Mentor: Dr. Hua Meng, MARK 481), “Emerging into a Global Market: Costco in Ireland”

As globalization continues to trend, many companies have made strategic decisions to go abroad. We investigate how Costco would successfully expand into Ireland. First, we will examine Ireland’s general climate, including the economy, culture, investment attractiveness, and Ireland-U.S. relations. Then, we will analyze the retailing industry in Ireland and make decisions such as what target segments, positioning

strategy, and entry mode Costco should choose. Lastly, we will make an implementation plan for Costco in Ireland including product, price, place, and promotion. As a result, we would like to gain insight to properly addressing global marketing strategies.

- Hannah Prem (Faculty Mentor: Dr. Linda Wright, MARK 482), “Marketing to Millennials”

I am conducting research to better my understanding of the current status of marketing to millennials and college students. I will host a class wide open forum for students to share their own opinions and personal experiences. With the feedback from the discussion, I will create an online survey that will be distributed to students at Longwood University. After my survey, I will analyze the results and draw conclusions about marketing to millennials.

- Madison Hommey (Faculty Mentor: Dr. Virginia Lewis, MATH 313), “Scratch Programming Game for Students Learning to Count Money”

I will be presenting a game I am creating on the Scratch Programming for Teens site. This game and others I can create may be used in the classroom setting and will help students learn in a fun and interactive way. I want to implement this program in my future classroom and also teach my students how to use it to spark students' interest in programming and computer science. I also want to learn from this how I can best use the program by having an actual class play my game.

- Montana Nelson (Faculty Mentor: Dr. David Niethamer, Music), “The Alexander Technique in Musician Lives”

The Alexander Technique was created to help those with repeated strain or injury from daily tasks. The technique is particularly helpful for actors and musicians since their trade requires daily strain on certain muscles. The purpose of the project is to study the technique and share the research with my music colleagues so that we can all practice our art without strain or injury. The potential outcomes would be to better understand how the body ‘s muscles work in regards to playing instruments and singing and how to use those muscles in a way that is more natural.

- Crystal Rosenbaum, Cameron Roblewsky (Faculty Mentor: Mrs. Jo Ann Davis, NURS 225), “The hidden drug: Sugar”

College is a time where students first learn to make food choices for themselves; this is a critical period in developing healthy eating patterns. Many students understand that sugar is sweet but may not know the long term effects sugar can have on the body. The effect of added sugars on college students related to energy levels and sleep patterns along with their focus on school work. By informing college student about added sugars and the daily maximum intake these students will be able to make smarter choices about their diet.

- Ibrahim Kante (Faculty Mentor: Dr. Scott Cole, POSC 305), “Why Has the Democratic Republic Of The Congo Outsourced Its Responsibility to Educate Its People? A Study on How the Inefficiency of the Civil Service Hinders The Capacity Of the State”

The Congolese State has been struggling to achieve most of its Millennium Development Goals (MDGs) and failed to establish control in many areas of public life. This has led to a disengagement of the state which has yielded its responsibility to educate its own people. In this respect, we have seen a multitude of actors engaging in what can be coined as a “negotiated” or “hybrid” system. The first part of this research will try to uncover the failures of the civil service and its responsibility in the hindrance of the state capacity. Given the extractive and predatory nature of the Congolese bureaucracy uncovered in the literature on the topic, we will focus on how it has (and continues to) contributed to the state’s inability to control its education system. The second part of this paper will serve as a deliberation of different approaches to solve this issue, namely their advantages and shortcomings, and assess the most feasible solution in the context of the DRC.

- Haley Schultz (Faculty Mentor: Dr. Lee Bidwell, SOCL 351), “Increasing Parent Child Involvement at a Domestic Violence Shelter Utilizing Family Fun Times Activities”

Trauma, such as witnessing and experiencing family violence, has deep and lasting effects on parents and children. By developing programs that adequately recognize trauma, parent-child attachment and involvement can be facilitated. For this project, I developed fun and engaging activities that parents at Madeline’s House, the local battered women’s shelter, could do with their child to facilitate safe, stable,

nurturing relationships. The purpose of this presentation is to describe the process, considerations, and unique challenges involved in developing parent-child involvement activities for use at a battered women's shelter. Ultimately, family fun activities can promote healthy coping mechanisms in families.

- Kathryn Brandon, Kacie Reusser (Faculty Mentor: Dr. Aftab Khan, SPED 389) "The Effects of Sensory Integration Therapy on Students with Autism Spectrum Disorder"

The use of sensory integration in classrooms that have students with special needs, especially students with autism spectrum disorder have been increasing in recent years. Different kinds of sensory stimulation can be beneficial for students who have autism spectrum disorder. Students who have autism may struggle with noise, tactile, taste, or visual sensory sensitivities. We believe that having sensory integration therapy techniques implemented in the classroom would help students with disabilities by increasing their focus and reduce stemming in the classroom. We intend to review and analyze published research articles in the field and based on our findings, we intend to gain a deeper understanding on how to implement this therapy technique in the classroom to have maximum student success.

- Abigail Mescher, Breanna Smalley (Faculty Mentor: Dr. Aftab Khan, SPED 389), "The effects of music therapy on children with autism"

The use of music has long since been an everyday occurrence for many different individuals in a variety of ways. Research has shown that it has the ability to influence emotions, create atmospheres and affect decision making. In recent years, music therapy has been used in classrooms to impact the behavior of individuals with disabilities. We are curious to know the effects that music therapy has specifically on those with autism. We believe that the impact of music therapy will be positive due to the calming and influential nature of music where individuals with autism typically have a very wide and open range of emotions. We intend to review and analyze published research articles to discover more. After completing this research we will provide future directions and recommendations.

- Madison Stafford, Brooke Harris (Faculty Mentor: Dr. Aftab Khan, SPED 389), "The impact of Special Olympics on students with disabilities"

Special Olympics is the world's largest sports organization for individuals with intellectual disabilities and physical. Since its founding, the Special Olympic World Games has alternated between summer and winter games, in two-year cycles. Programs today are free to more than 5.7 million athletes in 172 countries. The organization offers year-round training and competition in 32 summer and winter sports. With this being such a widespread organization, we hope to find the effects of involvement on its intellectually and physically disabled participants. We suspect that the effects on these athletes will be an increase in their level of confidence, an increase in their feeling of inclusion, and a general increase in improvement in all other aspects of their lives.

- Evelin Salazar (Faculty Mentor: Dr. Susan Lynch, RECR 303), “Breast Cancer Intervention Therapeutic Recreation”

For my enhancement of this course I will be doing a project on the interventions that Recreational Therapist give to breast cancer patients who have just gone through a mastectomy. This is a surgery that removes all breast tissue from both breasts to treat or prevent breast cancer. For my project I will be focusing on interventions made for women with a bilateral mastectomy this means that both breasts have been removed. The interventions will focus on the impact that this has on women, specifically on body image, relationships, and psychological impacts. I will be contacting UNC Chapel Hill’s Recreational Therapist and asking them what kind of interventions they give to women who just got a double mastectomy.

- Maegan Gregory (Faculty Mentor: Dr. Justin Contat, ECON 309), “Can Yield Curves Predict Recessions?”

Yield curves give information about the relationship between the maturity dates and interest rates for assets like bonds. Because yield curves give information about future expected interest rates, it is thought that they can be used to help predict changes in inflation and GDP. A relatively flat yield curve suggests that future short-term interest rates are expected to fall, because the economy is more likely to enter a recession. In this project, we investigate whether changes in the shape of the yield curve for High Quality Corporate Bonds can predict the start of a recession.

- Jordan Berkompas (Faculty Mentor: Dr. Robert Marmostein, CMSC 362), “Utilizing Databases to Predict House Prices”

This project applies database theory and practices to a data science project taken from kaggle.com. A data set of more than 1000 houses with over 70 attributes was analyzed to find the attributes that influence the final sale price the most.

- Abigail Harris, Kathryn Bates, Tabitha Lenhart (Faculty Mentor: Dr. Adam Franssen, BIOL 360), “Behavioral Effects of *Drosophila melanogaster* Reared at Varying Sucrose or Crowding Levels in Effect of Wing Asymmetry”

We will investigate how *Drosophila melanogaster*'s behavior has changed after being raised in differing levels of sucrose and overcrowding.

- Nathan Sikora (Faculty Mentor: Prof Jessi Znosko, ANTH 495), “Human Experience of Illness through Metaphorical Comparison”

It is common for human accounts of illness to be explained by comparison to one idea or another in metaphor, an example being the immune system portrayed as an army. For the purposes of this class, illness narratives have been collected by interview and analyzed to delineate the recurring ideas as well as the cultural similarities in their descriptions of illness involving metaphor. The purpose of this research is to identify these metaphors that have been commonly noted in the past and expand on those that are prevalent now.

- Danielle Hess (Faculty Mentor: Dr. Xun Bian, FINA 451), “Financial Status of Students”

Most college students are not able to adequately handle their finances. My project dives deep into what the students are not able to handle and if they are setting themselves up for success in the future. I will be researching the types of expenses a typical student has, as well as their saving patterns.

- Jamie Wagner, Abigail Johnson, Victoria Shirey and Amber Gordon (Faculty Mentor: Dr. Shannon Salley, CSDS 314)

Poster Numbers: 60 - 78: Independent Research

- Kaitlyn McCleese (Faculty Mentor: Dr. Deborah Durham), “The Influence of Culture on Sleep Paralysis Experiences”

Sleep Paralysis is a parasomnia caused by an interruption of the REM sleep cycle that results in the temporary paralysis of the body sometimes accompanied by visual and auditory hallucinations. In my research, I have interviewed several subjects that have experienced sleep paralysis to analyze data from an anthropological standpoint, focusing on how culture influences not only what they perceive to be happening to them, but also how they interpret it. Sleep paralysis is an independent sleep disorder that occurs worldwide and has been interpreted throughout history by different cultures through folklore, showing a concrete sociocultural influence.

- Aaron Burstein, Garrett Reese, Harrison Runion (Faculty Mentor: Dr. Lacy Klinger), “Psycho-Physical Acting in the Musical Theatre Audition”

The purpose of our research is to explore combining the psychophysical acting techniques of Michael Chekhov with vocal techniques acquired through the musical theatre minor to improve overall technique, especially audition skills. At the Southeastern Theatre Conference (SETC) there will be a plethora of workshops offered that relate specifically to our research.

- Ashley Johnson (Faculty Mentor: Dr. Timothy Ritzert), “Addressing Mental Health Stigma: Evaluation of an Intervention”

This study evaluated a mental health stigma reduction intervention simulating contact between stigmatized and non-stigmatized groups. This contact-based intervention involved viewing film created by a person with borderline personality disorder (BPD). A control group watched a movie clip about BPD. Both groups read mental health educational information and completed the Community Attitudes toward the Mentally Ill scale before and after the intervention. It was predicted that the contact intervention would produce greater stigma reduction. A repeated measures ANOVA did not support the hypothesis $F(2, 114) = 2.48, p = .088$. Results will be discussed in the context of addressing stigma.

- Dillon Tennis (Faculty Mentor: Dr. Chris Labosier), “Is there and Urban Heat Island (UHI) in Farmville, Virginia?”

Urban heat islands (UHI) are characterized as urban or metropolitan areas that are significantly warmer than the surrounding rural areas. The urban landscape, with low albedo surfaces, heat-generating infrastructure, and decreased evapotranspiration, results in local energy budget changes and contributes to the formation of UHIs. The purpose of this project is to employ high spatiotemporal temperature and locational data to map the UHI in Farmville, Virginia. Mobile transects and fixed-point locations are used to collect temperature data. Results suggest specific locations of increased (and decreased) temperatures allowing urban planners to address those locations with the addition of shade vegetation.

- Adam Gyori (Faculty Mentor: Dr. Chris Labosier), “Thermal Safety of Children's Outdoor Play Equipment”

As the world gradually warms due to climate change, evidence has arisen pertaining to the lack of correctly constructed play spaces. With outdoor play areas being a common place for children to gather, this puts them at a high risk for them to suffer from issues such as heat exhaustion. Children, with their incomplete heat regulation systems and speech limitations, have a more difficult time adjusting to the increase in heat. Given this vulnerability, design of parks, playgrounds, and other play spaces is critical. This presentation provides a brief overview of children’s outdoor play spaces.

- Elle Richardson, Andrea Soles (Faculty Mentor: Dr. Amorette Barber), “Enhancing the anti-tumor efficacy of chimeric antigen receptor-expressing T cells with naturally occurring plant stilbenes”

Despite advances in treatment options, cancer remains the second leading cause of death in the United States. Many therapies use immune cells, specifically T cells, for cancer therapy. A current focus of cancer research is the development of combination therapies that enhance anti-tumor efficacy of T cells without increasing harmful side effects. Recently, a family of naturally occurring plant compounds called stilbenes have been shown to enhance T cell function. Therefore, we tested if stilbenes enhanced T cell function in breast cancer. Addition of resveratrol, a stilbene found in berries, grapes, peanuts, and other plants,

decreased proliferation, enhanced tumor cell killing, and increased secretion of proinflammatory cytokines from T cells. Hence, combination of resveratrol and T cells may enhance anti-tumor immune responses.

- Haley Bresnahan, Adrianna Doggett (Faculty Mentor: Dr. Consuelo Alvarez), “Detecting Genetic Modifications in Common Household Foods in Farmville, VA”

Groceries samples coming from local markets were tested using polymerase chain reaction (PCR) with genetically modified organisms (GMO) specific primers to detect genetic modification. The purpose of this experiment is to bring knowledge to the public. This study lets local consumers know that produce and processed foods bought in grocery stores have genetic modifications. The data found is important to report because the FDA does not require that businesses disclose that they genetically modify their products, but consumers eat these products every day and there is still not certain if there are long-term repercussions to consuming Genetically Modified Organisms.

- Madison Trebour (Faculty Mentor: Dr. Jo Morrison), “Physiological Demands of Hard Shoe and Soft Shoe Irish Dancing: A Pilot Study”

Purpose: Irish Step Dance is characterized by maintaining an upright posture and primarily moving the lower extremities. The purpose of this study was to characterize the cardiorespiratory demands of female recreational Irish dancers. Methods: Seven female dancers (35.8 ± 9.6 y; 166.6 ± 7.5 cm; 79.1 ± 13.1 kg) volunteered for HR monitoring during three separate 45 min classes (n=16 measurements). Results: The mean HR for a class session was 128 ± 14 bpm (69.7 ± 9.3 %HRmax). The mean maximal HR achieved in class was 184 ± 10 bpm (93.9 ± 8.7 %HRmax).

Conclusions: The class data suggest that Irish dance classes are a moderate intensity activity with vigorous intensity intervals.

- Troy Clift (Faculty Mentor: Dr. Dina Leech), “Using High Frequency Sensor Data to Monitor Organic Matter Fluxes To A Coastal Stream”

Dead zones in the Chesapeake Bay are often attributed to nutrient runoff, but recent studies suggest that inputs of terrestrially derived dissolved organic matter (DOM) also stimulates bacterial growth. We used

high frequency data collected by a YSI multiparameter sonde, coupled with local weather station data, to better understand the relationship between DOM inputs and water quality in Aimes Creek, a brackish tributary of the Potomac River, in Westmoreland County, VA. Preliminary analyses of the dataset indicate an inverse relationship between precipitation, salinity, and DOM. We are now examining connections to DOM loading with dissolved oxygen, pH, and algal production.

- TJ Baumgart (Faculty Mentor: Dr. Dave Carkenord), “Extroversion and Problem Solving”

This study examined the relationship between the personality trait of extroversion and problem solving in pairs. Participants first took a personality test that measured their degree of extroversion or introversion. Based on the scores, participants were placed into pairs consisting of either: two extroverts, two introverts, or one extrovert and one introvert. The pairs attempted to solve a puzzle. The hypothesis is that the introvert/extrovert pair will solve the puzzle the fastest with the fewest number of steps.

- Christine Rindfleisch (Faculty Mentor: Dr. Naomi Johnson), “#WhyIDidntReport: Reasons Given for Not Reporting Sexual Violence”

- Regan Standlick (Faculty Mentor: Dr. David Magill), “Men's portrayal in Society and How it Affects Their Mental Health”

I am going to look at how men are portrayed in society and understand how it can affect the mental health. I want to show aspects of heterosexual men being allowed to be feminine.

- Lauren Johnson (Faculty Mentor: Dr. Benjamin Topham), “Energy level pinning in single molecule electronic devices” (*INCITE Award winner: Natural Sciences)

Molecular electronics is the use of single molecules as electronic devices. A major goal of molecular electronics is to be able to use chemistry to control electronic current through a molecule. Recent evidence suggests that this ability depends not only on the energy levels of the molecule but also on how the molecule is connected to the rest of the electrical circuit through the electrodes. The effect of electronically

decoupling the molecule from the electrodes using different connecting groups was investigated in single molecule diodes and switches.

- Bethany Adams (Faculty Mentor: Dr. Andrew Yeagley), “Investigation of 3,5 Substituted Paraben Antagonistic Effects in AF-2 Conformational Changes via Substituted Bisphenol Probes”

In practice, antagonistic xenoestrogen compounds have been used as drugs to treat cancer. Antagonists of estrogen receptors have a high affinity for the receptor and prevent rearrangement of the AF-2 binding domain. Substituted parabens have proven to act as antagonists but do not bear the characteristics of these previously known antagonists. In order to confirm the mechanism of action, probes will be synthesized using a Wittig reaction, and their binding energies will be determined by TR-FRET. Antagonism is expected to arise from similar disruption in the role of H12 in the AF-2 ligand binding domain albeit due to different binding interactions.

-Garrett Reese (Faculty Mentor: Dr. Lacy Klinger), “Psycho-Physical Acting in the Musical Theatre Audition”

The purpose of our research is to explore combining the psychophysical acting techniques of Michael Chekhov with vocal techniques acquired through the musical theatre minor to improve overall technique, especially audition skills. At the Southeastern Theatre Conference (SETC) there will be a plethora of workshops offered that relate specifically to our research.

Oral Presentations: BIOL 473, ENGL 305, and Independent Research, 1:45-4:00PM, Ruffner 116

1:45PM – Colin Dominick, Juliana Gordon, Michael Anderson, Theodore Gutches (Faculty mentor: Dr. Brandon Jackson, BIOL 473), “Identifying imbalances in jumping through asymmetric loading”

The effects of asymmetric loading have not been previously studied in humans. We hypothesize that asymmetrical loading will cause muscular and postural changes in subjects that will negatively impact overall jump performance.

2:00PM – Kaitlyn Crow (Faculty mentor: Dr. Mary Carroll-Hackett), “Comparing Earthquakes to Sex: A Poetic Exploration of the Female Body, Sexuality, and Power”

The exploration, voicing, and honoring of women’s sexuality, and the ownership of women over their own bodies, is a central aspect of political and social tensions in contemporary culture. In this project, I asked how those issues have been represented in creative poetry from the 20th and 21st century. Through close readings of over twenty poets, I compiled tools to work on my own craft and create a poetry chapbook of my own, which features poems written during the project that address women’s sexuality and bodies, and create a space for my peers to enter the conversation beside me.

2:15PM – William Kish (Faculty mentor: Dr. Sujana Henkanathgedara) "The Diversity and Distribution of Spiders (Arachnida: Araneae) along an Urban Gradient"

With the rapid expansion of human population, the impacts of urbanization generally cause loss of native species diversity. Overall, little attention has been given to explore how urban development affects the diversity and abundance of arthropods including spiders. Through field sampling in the Lancer Park Floodplain, the diversity of spiders was determined along an urban gradient. Using the intermediate disturbance hypothesis, it can be predicted that habitats of intermediate disturbance will have the highest diversity compared to the little or no disturbance habitats.

2:30PM – Brandon Hastings (Faculty mentor: Dr. Brandon Jackson), “Analyzing flight patterns and behavior of dragonflies engaged in aerial territory battles”

It has previously been determined that dragonflies who occupy the most suitable territory within a habitat have a higher muscle capacity than those who occupy poor territories. This study seeks to examine the maneuverability in dragonflies that are engaged in aerial territory battles and investigate the link between muscle capacity and maneuverability in dragonflies. This will be accomplished by comparing the winners and losers of these battles based on properties such as velocity, acceleration, and turning radius. Conclusions from this study can be applied to a range of fields including ecology, biomechanics and robotics.

2:45PM – Travis Bresnahan (Faculty mentor: Dr. Robert Marmorstein), “An Investigation into Data Remanence”

Modern digital security relies on the principle that memory is volatile and gets erased when a program finished or the computer shuts down. Data remanence is a phenomenon where data does not get erased and lingers beyond normal procedures such as a shutdown. Previous research has shown that data remanence can be created DRAM is cooled to extremely low temperatures. In this project, we are exploring whether or not cooling is necessary to produce this result.

3:00PM – Karyn Keane (Faculty mentor: Dr. Elif Guler, ENGL 305) "Care, No Matter What: Planned Parenthood’s Rhetorical"

Despite its significant reproductive healthcare resources, The Planned Parenthood Federation of America, Inc. (PP) faces tense debates and harsh criticism from most of the conservative politicians and citizen groups. In response, the organization uses a variety of rhetorical techniques to defend itself against the attacks that aim to cut the federal funding. Using Hoffman and Ford ‘s framework for analyzing organizational rhetoric, this presentation will examine PP ‘s rhetoric that addresses the widely varying needs and motivations of those who receive services at PP locations and, by extension, expands the organization ‘s reputation as “providers of holistic healthcare ‘.

3:15PM – Alyssa Pacheco, Sara Robertson (Faculty mentor: Dr. Ian Danielsen), “The Kinship Care Debate: Is New Necessarily Better? A review of protective factors and risk factors in traditional versus contemporary policy approaches to child welfare”

The researchers explore traditional foster care placement in comparison to kinship care within the foster care system. The data presented and analyzed is a review of the existing research literature regarding protective factors and risk factors for each policy approach. While kinship care and foster care each offer both strong and weak elements, the researchers will debate each of these practices, including a “middle ground” policy approach that incorporates practices from both.

3:35PM – Matthew Bowman (Faculty mentor: Dr. Benjamin Campbell), “Impact that Teacher’s Degree Level and Years of Teaching Experience Have on the Concept Model”

Veteran and novice teachers were compared to each other to determine the impact that teachers’ degree level and years of teaching experience have on the complexity of their concept models. Interviews were conducted with 13 secondary science teachers, whose backgrounds were different, and a variety of questions were asked during these interviews. Each interviewee also completed a concept model that was related to their discipline. It is predicted that teachers with a higher degree level and years of teaching experience; will have demonstrated advanced complexity on their concept model.

Oral Presentations: International Studies 495 and Spanish 350, 1:45-4:00PM, Ruffner 115

Faculty Mentor: Dr. Renee Gutierrez

1:45PM – Abigail Bonilla (INST 495), “Immigration Journeys to the USA”

In my presentation I will discuss the research I have conducted by interviewing personal people on how they got to America. I will be comparing and contrasting journeys from back then to modern day.

2:00PM – Ibrahim Maday (INST 495), “Guns, Gangs, and the Border: Overlapping Extensions of Power”

Comparing infiltration and corruptness of Mexico and U.S

2:15PM – Chaniece Williams (INST 495), “Debating Immigration: Political Tropes in the Echo Chamber of Social Media”

The purpose of this research is to understand political tropes about immigration in the Echo Chamber of Social Media. An Echo Chamber is “an environment in which a person encounters only beliefs or opinions that coincide with their own” (Dictionary.com). By analyzing the political tropes on social media in the past years on immigration, I have predicted that people only align themselves with information about immigration based on their personal beliefs on the topic. I believe this presentation will interest individuals that are interested in immigration because it is a well-discussed topic in the United States today.

2:30PM – Lacie Ellithorpe (INST 495), “‘Will I Be Damaged?’: Effects of Being in a Mixed-Status Family”

Being a member of a mixed status family has various negative effects on the children. Educational conflictions make up a large portion of these affects. The purpose is to propose continuing education requirements to elementary school personnel in Richmond, Va. The continuing education will be to inform those involved with students of the hardships on mixed status families and what they can do to better support their students. Potentially, the staff will be better educated on what it is like to be the child of an undocumented immigrant and students in this population will have higher success rates based on better accommodations.

2:50PM – Cameron Roblewsky, Matthew Waterman, Danielle Weirup, Noemi Guzman (SPAN 350), “Boom: la explosion de la literatura latino americana”

Típicamente, se dice que las obras del Boom latinoamericano se caracterizan como cuentos fracturados. Pero, esta característica no es el factor determinante del periodo. Hay diferentes obras que muestran otros rasgos importantes que llevaron esta literatura al mundo. Destacaremos los problemas políticos y sociales--como la corrupción y la opresión de la mujer--que aparecen en las obras de los años 60 y 70.

3:05PM – Kateleen Concepcion, Rebekah Steven Morales, April Escobar (SPAN 350), “El Pos Boom, Como Pensaban en los 1970s-80s”

We are going to be talking about the Post Boom era in the 1970’s-80’s. Our discussion is going to include information pertaining to the difference in literature during this time period and how the Boom era affected the style of literature that came after. Along with the literature we will also go over what influenced the era, culture and society, and language of the Post Boom. One of the authors that would be analyzed to see the aspects of that era in the writing is Rosario Ferrer and her short story La muñeca menor (The Youngest Doll).

3:20PM – Genevra Mullis, Stephany Tropiano, Rita Ewald, Miranda Gomez (SPAN 350), “El Romanticismo no es Romantico”

Vamos a hablar sobre el romanticismo, y los temas de la política, la identidad cultural, y los conflictos de la sociedad.

Oral Presentations: Biology 251, 1:45-3:30PM, Martinelli Board room

Faculty Mentor: Dr. Mary Lehman

1:45PM – Adonel Grubb, Ryan Massey, Brionna Woolridge, “Can soaking seeds in aspirin help plants to overcome stress?”

Little is known about the ability of plants to acclimate to stress from chemicals found in the environment. This study investigated the effects of first exposing cucumber seeds to salicylic acid and acetylsalicylic acid (aspirin) and later exposing the seedlings to similar chemical stresses. Effects on both early and later seedling growth were assessed. The potential to acclimate plants through pre-soaking of seeds would provide a method for agricultural crops to resist adverse effects of chemicals produced by invasive weeds.

2:10PM – Katie Hedrick, Jess Moore, Jason Seagraves, Josh Walker, “Effects of Human Activity on Abundance and Diversity of Soil Microfauna Populations in Prince Edward County”

Small animals that live in soil (microfauna) play an important role in decomposition and contribute to plant growth. Microfauna populations are impacted by a myriad of factors that determine their abundance and diversity. The influence of human activity was studied by comparing microfauna from soil collected on a hiking trail with soil from the adjacent undisturbed forest. Different layers of soil (topsoil and subsoil) were analyzed for diversity and abundance of microfauna populations. The highest abundance and diversity were found in the topsoil of the undisturbed forest area with little or no human activity.

2:35PM – Hannah Meyls, Lindsay Moore, Bailey Teague, Arjahne White, “Bird Feeding Preferences: Seed or Suet?”

There is growing interest in attracting wild birds to backyard feeders. The ability to determine food preferences from observations is complicated by varying types of feeders used to provide the food. This study used uniform feeder types to determine preferences between bird seed and suet cakes. Different species and their number of visits were recorded. Results suggest that a larger number of bird species prefer seed than suet, but that previously reported preferences for suet may have failed to recognize some species that will readily feed on suet if supplied in an acceptable type of feeder.

3:00PM – Graylin Dalton, Olivia Parisi, Mitchell Sharry, “Effects of Distance from Water Sources on Moss Density and Diversity”

There is a potential tradeoff for moss growing near direct water sources. Moving water can expose mineral-rich soil but also disrupt or damage the growing moss. The objective of this study was to determine how growing near to or away from a woodland stream affects the density and diversity of mosses. The species present and relative amount of each moss species in plots close to and at a distance from three local streams were compared. The distribution patterns of some moss species may be influenced by distance from the stream bank.

Oral Presentations: GAND Senior and Junior Design Students, 1:45-5:00 PM, Bedford 209

Faculty Mentor: Dr. Wade Lough and Dr. Christopher Register

1:45PM: Haley Tebo, “CompostED”

Food waste is a large pollutant that most people unknowingly contribute to. Involving educational communities with knowledge of composting as a way to recycle food waste is a way to cultivate more sustainable practices. The aim of this project is to research and design a campaign that would provide these materials to schools. The resulting designs persuade people to care about recycling their food and inform them about how to do so.

2:00PM: Alex Feller, “Destrate Productions”

My presentation is on a website and campaign about helping new design students learn all of the equipment available to them. They are able to learn through video tutorials on the website. Other universities are able to partner with the company to get their equipment digitized for their students.

2:15PM: Kamarin Bradley, “DIGILab”

The DIGILab offers various technologies such as 3D printers, led laser cutters, sewing machines and much more. It gives a non-traditional style of learning for students with diverse learning styles. I wanted to bring awareness to the various technologies available within the DIGILab, its uses and the benefits of instructional technology. It aids the idea that Instructional technology can enhance the students’ learning experiences and create an educational yet creative atmosphere in the classroom. My overall goal is to see an increase of students utilizing the DIGILab. The end goal being that students and faculty gain a common knowledge of an available resource.

2:30PM: Ronnie Vance, “Head First”

My project is an attempt to make a dangerous sport safer by means of a graphic design campaign informing people on important helmet knowledge.

2:45PM: Jeremiah Gilmer, “FishRight Education Campaign”

Not every young person has someone to teach them how to fish. Some kids may have access to waterways and try to fish, but this often leads to the development of bad habits that can harm the environment. The goal of my project is to provide these kids with an information source so that they can fish responsibly. I designed a series of works that create an education campaign that can help kids fish responsibly.

3:00PM: Courtney Driscoll, “Simply Communicate”

Simply Communicate is an interactive workshop that helps eliminate the uncomfortable feeling people may get when trying to interact with a person who has a cognitive, intellectual, or developmental disability. The workshop starts out with a short lecture/video, then moves to an activity where you actually interact with a person. This workshop is geared to help provide a safe setting to relieve fears.

3:15PM: Laura Gottschalk, “Allergy Survival Kit”

Current and prospective college students, with common and uncommon food allergies, struggle to find allergy-free food options on a university meal plan. By providing students a plan to have control over the foods they consume, allergy-free students will no longer suffer. My project shows there are practical measures that can be taken to help students with significant food allergies remain on a university meal plan, enjoy the conveniences offered, and remain allergy-free.

3:30PM: Rachel English, “Bees Matter.”

For almost a decade the disappearance of bees has been a prevalent issue both within the United States, as well as abroad. While this fact is recognized by most individuals, what people are unaware of are the consequences that will follow if the matter continues to remain unaddressed. Many environmental issues seem too overwhelming and complex for one individual to have any impact upon. However, for my senior project, I focused primarily on how people, specifically households, can affect change through small, yet influential steps in their own backyards. By designing a cohesive and visually appealing campaign, I have provided them with the tools to positively impact this issue, and hope to instill the value and importance of bees.

3:45PM: Aiden Waddell, "Senior Project"

I do not believe the graphic design world is as mainstream as it could be. My project's aim was to bring the design world into the mainstream through the use of technology. I am creating an application to be used as a collaboration service for designers; bringing designers together under one central hub of creativity and teamwork.

4:00PM: Samantha Jones, "The Kitty Cause"

Declawing cats is a practice that endangers the health of the cat:

litter box avoidance due to litter box substrates causing pain in their paws,

biting and aggression because the cat can no longer use claws to protect itself,

arthritis and crippling as the cat 's gait changes following declawing. The aim of my project is to research

and assemble a campaign to make cat owners aware of the dangers of declawing. Design a persuasive visual

and verbal argument to cat owners against declawing their cats and make that argument visually and verbally in a series of designs.

4:15PM: Devin Fields, "College-Map"

1. Background of my project

There are many sources that provide information on the college admissions process, however they are scattered across different outlets which makes obtaining them difficult to obtain for students.

2. Purpose of the Project

The aim of my project is to design and construct a workshop allowing information on the college admission process to be available to students in one centralized location.

3. Potential Results of the Project

To create a workshop detailing the college admissions process that can be used year after year to continue educating students.

4:30PM: Benjamin Sullivan, "Sleep On It"

Sleep is as important as eating and breathing and is a necessity for everyone. Getting the seven hours you need helps to keep the body active and awake and away from the causes and effects of sleep deprivation. It is not about getting more sleep, but proper sleep. The goal for my project is to help people become more aware of the causes and effects of sleep deprivation on the body and mind and how to naturally get proper sleep. I want to design and layout specific information about sleep for the viewer to absorb and use in their everyday lives to achieve a good night's sleep.

4:45PM: Rachel Hanson, "Unbox Graphic Design"

Graphic design is a lesser known career path, especially for middle to high school age kids. Few schools have courses specialized in teaching graphic design so kids usually grow up knowing nothing about it even though it is seen on a daily basis. For my project I aim to teach kids the basics of graphic design in a creative and interactive manner. Design an informational and interactive kit that can intrigue and inform kids on elements of design at an introductory level.

Oral Presentations: Visual Arts Student, 3:00-5:00 PM, Stevens 107

Faculty Mentor: Dr. Michael Mergen

Naajamah Jones- Comfort Zones

Theater workshop: Theater Students 1:45-2:45 PM, CSTAC Lab Theater

Faculty Mentor: Dr. Lacy Klinger

Mary Jo Corley, Matthew Howard, Movement Techniques to Prepare and Actor

**Music Presentations: 1:45PM-4:30PM, Wygal Music Building
Molnar Recital Hall**

Music 219- Introduction to Recording Techniques; Faculty Mentor: Dr. Roland Karnatz

1:45PM- 2:15 PM

Amber Both, "Christmas Gone Wrong"

Zach Fortune, "Monday Morning"

Josh Golub, "Paradise Undone"

Abby Joiner, "Nursery After Hours"

Pierce Johnson, "A Coconut Disaster"

Chad Ukrop, "Nostalgic Sunset"

Hannah Wolverton, "Save it for a Rainy Day"

Independent Projects

2:20-2:30 PM

Sam Taylor- State of Decay

- i. Indeterminacy
- ii. Florescent Blindness

Mya Chambers- Jule Suite

Music 281 – Sophomore Promotional Exam Demonstrations

2:30 – 4:00 PM

Caleb Bright

Abigail Joyner

Mya Chambers

Zach Fortune

Posters: Biology, Integrated Environmental Science, Special Education, Health, Physical Education, Kinesiology, and English 1:45-2:45PM, Blackwell Ballroom

Poster Numbers 1- 15: Biology 326 (Faculty Mentor: Dr. Dale Beach) and Molecular and Cellular Biology (Faculty Mentor: Dr. Michael Wolyniak (Hampden-Sydney College)

- Caitlin Harris, Marcia Lanasa, “Better Gene, Better Beer”

In order to improve flocculation in brewing yeast the partial FLO11 gene will be investigated in various yeast strains, in collaboration with 3rd Street Brewer David Steeves. To detect sequence variations among five different brewing strains, the partial FLO11 gene will be targeted through PCR. The Chico and German ale strains are expected to have the most variation in the partial FLO11 gene among all five strains due to their extreme high and low flocculation rates. Investigating the variations in the partial FLO11 gene will allow for future gene modification to customize flocculation during the brewing process.

- Morgan Tasseff, Matthew Bowman, Maurice Manchester, “Comparison of gene YAP1 within different brewing yeast strains”

Sequence techniques will be used to identify genomic variants in yeast strains from David Steeves, Master Brewer, at Third Street Brewing Company to help identify gene present that might improve flocculation cycles while brewing. The YAP1 gene is known to respond to oxidative stress to alter flocculation. The YAP1 gene from each strain will be sequenced to identify mutations. Predicted variance between each yeast strain is likely to affect flocculation rates.

- Grace Freeman, Emily McCartney, Cynthia Castillo, “Best in SHO1: Improved Brewing”

The flavor and aroma of beer is influenced by the yeast used to brew it. After collaborating with David Steeves, a brewer at Third Street Brewing in Farmville, we began to question how we could customize the yeast strains used for brewing to develop a more desirable product. To begin, we needed to find variations between a number of yeast strains used at the brewery. Using the Polymerase Chain Reaction (PCR) method, we targeted the SHO1 gene, sequenced the gene, and used the sequence to compare yeast varieties. Sequence variants detected in SHO1 gene will likely demonstrate different flocculation characteristics.

- Brandi Joyner, Haley Bresnahan, Sarah Dooley, “No Stale Ale -- Analyzing the Sequence of SPT10 in Different Brewing Strains”

Brewing strains have specific roles in the taste and aroma of beer. Understanding the variations within genomes of brewing yeasts will allow possible improvement in the fermentation process of beer using genetic modifications. With the collaboration of Brewmaster, David Steeves, at 3rd St. Brewery Farmville Va, our goal was to further understand the gene SPT10, and improve flocculation in brewing. Using PCR and Sanger Sequencing, SPT10 was sequenced to compare the different brewing strains. Sequence variations are likely to affect flocculation.

- Natalie Wood, Ryan Servis, “What the HEK2 is Flocculation?”

Yeast flocculation has been long known, to brewers, to play a major role in brewing. After our collaboration with master brewer David Steeves at 3rd Street brewing, further analysis needs to be done for the improvement of genes involved in flocculation. Due to its prevalence in the FLO pathways, protein HEK2 was selected for isolation using PCR for sequencing. We compared the obtained sequences of HEK2 amongst each other and to an established database. We expect to find variation in sequence between the yeast strains resulting in differing domain functions.

-David Fluharty and Matthew Moody, “Decreasing flocculation of Chico yeast through Flo1 gene protein truncation”

- Cole Burton and Michael Moody, “Decreasing fusel alcohol production at higher fermentation temperatures by protein truncation of the BAT2 gene for the French Saison yeast strain”

- Shaun Everson and Timothy Bryant, “Modification of the FLO1/YOR140W gene for the purpose of increases flocculation in *Saccharomyces cerevisiae*”

- Blake Martin and David Bushhouse, “Increasing flocculation of *S. cerevisiae* by the insertion of glucose-dependent ADH2 promoter for the FLO5 gene”

- Harrison Whaley and Damian Martinez, “Decrease of FLO5's unit-a repeat region to decrease the rate of flocculation in *S. cerevisiae*”
- Eric Bowen and Hunter Weiland, “Increasing the rate of flocculation of *S. cerevisiae* by insertion of a FLO1 gene and truncation of EMP47”
- Lucio Maestrello and Cory Allgood, “Overexpression of the FLO5 and FLO8 genes in the German Ale *S. cerevisiae* strain to increase flocculation”
- Ryan Tomlin and Jared Dunlap, “The effects of FLO5 gene deletion on flocculation in Chico strain yeast”
- Hudson Elmore and Anton Kheirani, “The effects of PEP gene deletion on fermentation temperature change and ester production in *S. cerevisiae* strains”

Poster Numbers 18- 23: Biology 404 (Faculty Mentor: Dr. Amorette Barber)

- Taylor Clements, Erica Harris, Emery Chittenden, Tessa Dewalt, “The role of Capsaicin and [6]-Gingerol in preventing cancer through altering immunity”
Phytoestrogens, Capsaicin and [6]-Gingerol have a very similar structure to estrogen. In this study we aim to see whether or not these phytoestrogens mimic estrogen and cause suppression of the immune response. This is important in the understanding the role of estrogen and phytoestrogens in cancer prevention.
- Morgan Tasseff, Maurice Manchester, Zachary Long, “Effects of methylparaben and propylparaben on estrogen receptors”
Influxes of estrogen can be influenced through outside forces such as foods, drugs, and plastics. Endocrine disrupting chemicals (EDCs) are commonly known for mimicking estrogen within the human body and causing cancer such as ovarian and breast. Chemicals that have been classified as Xenoestrogens are

chemically produced EDCs that are commonly used within commercial deodorants and shaving creams. Methylparaben (MPB) and propylparaben (PPB), are xenoestrogen chemicals, that might compete with estrogen to estrogen receptors and cause cancer. Conclusions should determine that methylparaben and propylparaben have little to no effect on estrogen receptors and rarely leads to cancer.

- Lyndi Earnshaw, Caitlin Harris, Rayven Brown, Jessica Savas, “The effect of ethyl and butyl parabens to mimic estrogen to alter differentiation of myeloid derived suppressor cells”

Estrogens have been proven to increase estrogenic activity seen in some cancers. Our research aims to elucidate the effects of xenoestrogens, specifically parabens, on the same oncogenic mechanisms. To compare the effects of ethyl and butyl parabens to natural estrogen, T cell activation and proliferation was measured after exposure to each compound. Understanding the potential effects of parabens as estrogen agonists would allow for safer regulations for use in common food and health products.

- Elle Richardson, Taylor Alvey, Jada Russell, Arleigh Wood, “Do Phytoestrogens in the Hops Plant Have the Ability to Signal Myeloid-Derived Suppressor Cells and Drive Cancer Progression?”

It has been shown in previous studies that estrogen signaling can increase the mobilization of myeloid derived suppressor cells which in turn can create a more aggressive tumor microenvironment. We wish to test if phytoestrogens in the Hops plant drive cancer progression through this mechanism. Understanding whether phytoestrogens such as the ones found in Hops bind and activate the estrogen receptor could provide us with key insight on how cancer can be driven by myeloid-derived suppressor cells.

- Amanda Moses, Uzma Gunter, Tiffany Yun, Sandra Ghali, “Methyl and Butyl-parabens initiate myeloid derived suppressor cells”

Xenoestrogens are man-made molecules that are capable of mimicking oestrogens and are found commonly in plastics, beauty and cleaning products, and pesticides. More specifically, parabens like Methyl and Butyl-parabens are both recognized in having endocrine disrupting effects. We believe that both Methyl and Butyl-parabens induce high endocrine disrupting activity and therefore expect to observe an increase in activity of myeloid derived suppressor cells which inhibit immune responses in cancer. We predict that the

effects exhibited on cancer cells by methyl and butyl-parabens are significantly different. ved suppressor cell activity”

- Kathryn Kosiorek, Cecilie Elliott, Megan Bland, “Ability of Flavonoids to Mimic the Estrogen Receptor to Drive Myeloid Derived Suppressor Cell Differentiation”

Flavonoids are natural compounds found in dietary elements such as soy, grains, and vegetables that have the potential to bind to the estrogen receptor. Activation of the estrogen receptor drives myeloid derived suppressor cell (MDSC) accumulation, cells that increase during cancer, inflammation, and infection. In this study, we are investigating specific flavonoids, such as epigallocatechin-3-gallate (EGCG), kaempferol, naringenin, daidzein, and genistein, for their ability to mimic estrogen. After examination, we expect that MDSC differentiation will decrease upon treatment of the chosen flavonoids, leading to reduced carcinogenic effects.

Poster Numbers 25- 45: Health 325 (Faculty Mentor: Dr. Amanda Blaisdell)

- Andrew Clinton, “Kidney Cancer and Type 2 Diabetes prevention”

Type 2 diabetes and kidney cancer are diseases with similar causes. One of the common risk factors that both these disease is smoking tobacco. With smoking tobacco, you are twice at risk at getting kidney cancer and people who smoke are 40 to 60 percent more likely to get Type 2 diabetes. My interventions would be a group counseling program, recommend regular doctor visits, and developing habits to quit smoking. The goal of this program is to modify harmful lifestyle factors that contribute to both diseases.

- Andrew Clinton, “Biking to Beat Obesity”

The problem that I am looking into is that Virginia currently ranks 36 with children ages 10-17. The group I plan to focus is on will be the ages 10 to 13 in Farmville. These ages are when child is going through the most development. Especially in an area as Farmville where obesity is one of the top ten concerns of the community. I want to start a biking program where the objective is to change the kids to have more of an active life style to prevent obesity from ever occurring.

- Cody Weinberger, “Hypertension and Type 2 Diabetes”

Two major comorbidities are hypertension and type 2 diabetes. Almost 75 million Americans have hypertension and over 30 million Americans currently have type 2 diabetes. American adults are at a very high risk of developing these diseases due to a poor diet and a lack of physical activity. There are many different ways to prevent these conditions from developing. Major ways of preventing these comorbidities are eating a balanced diet, exercising regularly, and seeing your doctor regularly.

- Sophia DeFeo, “Ulcerative Colitis and Colorectal Cancer”

The risk of colorectal cancer for any patient with ulcerative colitis is known to be elevated, and is estimated to be 2% after 10 years, 8% after 20 years and 18% after 30 years. Risk factors include irritable bowel syndrome, diabetes, older age, obesity, and African American race. Prevention for this disease would include maintaining a healthy diet, visiting the gastroenterologist, joining a support group, getting ongoing treatments like Remicade, and keeping a food log for trigger foods. This prevention plan would be in place to encourage a healthy and happy life while living with these disease.

- Devon Johnson, “The Teal Ribbon Project”

Approximately 22,600 women will receive a new diagnosis of ovarian cancer and approximately 14,000 women will die from ovarian cancer in the United States. Most women with ovarian torsion are young (between 9-30 years of age) and 20% of the cases occur in pregnant women. This program is designed for young women to prevent and treat complication associated with ovarian cancer and ovarian torsion. This prevention plan will include increased screenings, awareness of signs and symptoms, and to build a relationship with their care provider/s. The overall goal of this treatment plan is to minimize discomfort associated with abdominal pain and other symptoms associated with ovarian cancer and torsion.

- Tyler Zier, “Cardiovascular Disease and Arthritis”

Around 84 million Americans have some form of cardiovascular disease, which is America’s leading health problem. About 54 million adults have arthritis, and is the leading cause of disability among adults.

Cardiovascular disease and rheumatoid arthritis share risk factors that include family history, obesity, and smoking. The individuals most likely to develop these diseases are those over the age of 65. Primary prevention includes diet and exercise. Secondary prevention includes weight management, and lifestyle changes to control the disease. Tertiary prevention would include managing medications and daily exercises and rehab to slow the disease progression. Smoking, obesity, and exercise are shared risk factors addressed in the prevention plan. This treatment plan helps to improve quality of life.

- Joelle Harthun, “Prevention Plans for Stomach Cancer and Chronic Atrophic Gastritis”

About every 1 in 95 males will develop stomach cancer. 50% of the world population has chronic atrophic gastritis. Those most at risk for atrophic gastritis include the Hispanics, individuals of Asian descent, and African American men over the age of 55. To lower your risk of developing these diseases, consume less preservatives, exercise regularly, and avoid tobacco use. To decrease the severity of these conditions, one can utilize a personal trainer, nutritionist, or vitamins. In advanced stages, those may turn to chemotherapy, radiation, or surgery. Shared modifiable risk factors include obesity, smoking, and alcohol consumption.

- Carie Sutliff, “Decrease Blood Pressure and Increase Bone Density”

There are more than 3 million cases of hypertension and more than 10 million cases of osteoporosis per year in the US. Women have a 33.2% higher risk to get hypertension once diagnosed with osteoporosis. There are many different preventions for both diseases, such as maintaining a healthy weight, increasing physical activity, consuming higher amounts of vitamin D and calcium, and following medication plans as prescribed by their physician. The goal of this program is to improve patient health by modifying lifestyle factors that make the disease more severe and negatively impact quality of life.

- Nick Hessler “Cirrhosis and Liver Cancer”

Forty thousand adults in the United States are living with liver cancer. One of the leading causes of liver cancer is cirrhosis of the liver. Cirrhosis of the liver is found in over 4.9 million Americans in the United States. Risk factors for these comorbidities are unhealthy diet, lack of exercise, and diabetes. Nutritional advising through surveys about individuals’ diets and flyers about nutritional facts included with exercise

advertising. Regular doctor visits with a primary care physician and specialists for specific screenings to identify any abnormalities. If cancer is a concern individuals will receive flyers on common cancer treatments.

- Gabrielle Huerta, “You've Got to Be Kidney-ing Me, I Have Heart Disease?”

Approximately 73,000 men and women will be diagnosed with kidney cancer in 2019. Coronary heart disease is responsible for approximately 790,000 heart attacks in adults each year, making it the greatest cause of mortality in the United States. These diseases are associated with each other. Risk factors include age, smoking, obesity, and high blood pressure. A prevention plan for these diseases would include encouraging quitting smoking, maintaining a healthy weight, managing prescribed medications, efforts to reduce high blood pressure, and counseling. This program addresses lifestyle factors to decrease risk and improve quality of life.

- Ashley Ellixson, “Coronary Heart Disease vs. Asthma”

One in every four deaths in America results from a heart problem. In 2007, 3,447 adults and children combined die from asthma. Adults between the ages of 19 and 40 are at greatest risk. Two most influential risk factors would be smoking and obesity. To lower your risk of contracting these diseases. People should stop smoking, increase physical activity, eat healthier, make regular visits to the doctor, and try group therapy to overcome the stress associated with these comorbidities. Lifestyle is the greatest shared risk factor of these diseases and is the focus of this program.

- Kyle Weston, “Chronic Kidney Disease and Diabetic Retinopathy”

High blood pressure and diabetes are the main causes of chronic kidney disease (CKD). Major risk factors for CKD include having diabetes, high blood pressure, and a family history with CKD. Further damage to the kidneys can create concern for other parts of body such as the eyes such as diabetic retinopathy, which can occur when diabetes and high blood pressure are not managed well. The main concern for both diseases are unhealthy lifestyle factors that increase complications. Patients will need to check their blood sugar levels at least five times per day, exercise daily for more than one hour and continue to take medication or

insulin as prescribed by their doctor. This program will help patients manage high blood pressure and diabetes when following a strict lifestyle change schedule.

- Haleigh Nichols, “Cancer's Side Effect That You Can't See”

It is estimated that about 1 in 8 of women will develop breast cancer, with up 40% of those patients being affected by depression. At risk populations for both diseases are women who have a family history and who drink or smoke. A prevention plan to reduce the likelihood of developing these diseases or the diseases getting worse would include early screenings for both diseases, treatments such as chemo or radiation, and improve health by changing diet and reducing alcohol and nicotine intake. This program encourages patients and those at risk to see their doctor regularly, follow prescribed treatments, and modify harmful lifestyle factors.

- Ieuan Phillips, “Heart Failure and Renal Insufficiency”

Approximately 5.7 million adults in the United States have heart failure. Of those adults with heart failure, 10% suffer from renal insufficiency. Many prevention methods can be followed, such as, living a healthy lifestyle, monitoring blood pressure and taking prescribed medication. The goal of this program is to improve the patient's overall health by modifying negative lifestyle factors that make the disease more severe and preventing these diseases from even occurring.

- Sara Jane Anderson, “The Suffocating Similarities between COPD and Esophageal Cancer”

More than 6% of the US population suffers with chronic obstructive pulmonary disease (COPD).

Approximately 17,650 adults will be diagnosed with esophageal cancer in 2019. The populations at the greatest risk for these diseases are those with exposure to tobacco smoke. One of the biggest risk factors for COPD and esophageal cancer is tobacco use. Some other risk factors include environmental hazards, age, and obesity. Interventions will include: educational programs to emphasize the danger of smoking, providing protective respiratory equipment to workers who are exposed to dust and chemicals, and providing resources to help smokers quit and influence non-smokers not to start. These interventions will

prevent contaminants and toxins from entering the respiratory system and helping people manage these diseases.

- Sarah Banks, “Combating Comorbidities”

Scientists are linking Alzheimer's disease, one of the most common types of dementia with type 2 diabetes. According to the Alzheimer's association more than 6 million people in the United States are unaware that they have diabetes. Alzheimer's is the 7th leading cause of death in the United States currently. My prevention plan for these comorbidities is to educate middle age to older adults about eating healthy and exercising. I would also offer diabetes screening for those who are at an increased risk. Finally, I would offer resources those who have diabetes as well as dementia.

- Benjamin Brody, “Comorbidity: Diabetes and Depression”

It is twice as likely for Diabetes and Depression to occur together than alone. The outcomes of the two conditions are worsened by each other; therefore, battling diabetes and depression is a major health challenge. Although there are effective screening tools in the healthcare field today, depression is commonly missed in people with diabetes. In the case of depression, changes in blood sugar levels have been linked directly to anger, anxiety, sadness, frustration, and overall wellbeing. Both psychological interventions and antidepressants are effective in treating depressive symptoms in people with diabetes. A comorbidity diagnosis between depression and diabetes is to be expected with mental illness and diabetes affecting about 10% of the world's population. This presentation will provide background knowledge in in both conditions and a prevention and treatment plan for the comorbid conditions.

- Victoria Higginbottom, “Pancreatic Cancer and Type 1 Diabetes”

Diabetes and pancreatic cancer can be cormorbid diseases. Approximately 1.25 million Americans have type 1 diabetes. Pancreatic cancer has a 98% mortality rate. The greatest risk to develop diabetes 1 and pancreatic cancer are family history, lifestyle factors and genetics. Some of the greatest shared risk factors of pancreatic cancer and type 1 diabetes are exercise, diet, inadequate screening and environmental

exposures. This intervention plan includes screening often, medications and treatment and strategies for those living with these chronic conditions.

- Abigail Clark, “Female Reproductive Diseases”

About 4,250 people in the United States will die from cervical cancer in 2019. People who have genital herpes are 50% more likely to develop cervical cancer. These risk factors for these diseases include: multiple sexual partners, sex at an early age, and a weakened immune system. A three-tier prevention plan will include condom education, reducing number of sexual partners, taking medication as prescribed and visiting physician regularly, and counseling. Education and reducing risky sexual behaviors addressed in the plan will help to reduce the risk of contracting the diseases.

Poster Numbers 46- 50: Health and Physical Education 466 (Faculty Mentor: Dr. Amanda Blaisdell)

- Ben Brody, “Prince Edward Adults Choosing Health (P.E.A.C.H.)”

Medical costs are not the only thing affected by employee health. A healthy workplace is a more productive workplace. Surprisingly, 80% of health care expenses are caused by modifiable health risks like high cholesterol, cardiovascular disease, etc. Poor lifestyle choices can lead to chronic disease, costing companies more than one trillion dollars lost in strictly productivity. With this being said, promoting and developing healthy lifestyles can really pay off and this is where corporate workplace wellness programs come into play. This presentation explores a potential low intensity weight loss plan that could be implemented into a corporate workplace wellness program.

- Devon Johnson, “The Best Foot Forward Program”

The current homeless rate in the United States is 0.17%, which is roughly about 550,000 homeless individuals that are living on the streets. According to the National Alliance to End Homelessness in 2017, there were 76% of homeless individuals who were sheltered and 24% who were not sheltered; and of that 24%, 979 of those homeless individuals reside in the state of Virginia, leaving 3,049 sheltered individuals (National Alliance to End Homelessness, 2019). The purpose of “The Best Foot Forward Program” is to help homeless individuals obtain the proper business attire for a job interview. During the program,

homeless individuals will be able to attend classes on proper interview skills, resume building techniques, and how to properly dress for interviews. With this intervention, homeless individuals will be able to obtain a job for financial responsibilities that can help them with affordable living. The Best Foot Forward Program goals are to decrease the homeless rate and decrease the unemployment rate in the United States.

- Taylor Nelson, “A Breath of Hope”

In Virginia, the number one leading cause of death for both men and women is lung cancer. In 2018 there were about 5,860 people that were diagnosed and about 3,780 died because of it. In Virginia, the state tax for cigarettes is the second lowest in the nation at only \$0.30, while the national average is \$1.72. A Breath of Hope would be a task force implemented to spread awareness of the increasingly large issue and eventually raise the cigarette tax in Virginia. The idea is that people will not want to pay it and will in turn decide to quit.

- Kyle Weston, “The Rise in Type 2 Diabetes in Black Women”

Black females who are over than age of 65 are more likely to develop type 2 diabetes. This is more likely to have risk factors have being overweight, lack of exercise, poor diet and not managing their diabetes. The purpose of this project is to get black females who recently got a warning for developing type 2 diabetes a reduced chance of developing them permanently.

- Nicholas Hessler, “Hypertension and Nutrition”

In the state of Virginia over 1.9 million individuals suffer from hypertension, also known as high blood pressure, most commonly affecting men and women below the poverty line the most with over 44.5 percent of individuals suffering from high blood pressure. Individuals who suffer from hypertension have higher incidences of medical care cost due to the extra doctor’s appointments, increased medical needs and decreased quality of life. This program attempts to help individuals understand how nutrition impacts their hypertension and how they can help control their hypertension without the need of medication. The goal of this program is for individuals to choose the best nutritional options to control their hypertension.

Poster Numbers 51- 52: Kinesiology 387 (Faculty Mentor: Dr. Troy Purdom)

- Lauren Roten, Jeffrey Farriss, Jonathan Anderson, “The Aerobic Capacity and Demographic Profile of Kinesiology Students”

The American College of Sports Medicine identifies aerobic capacity as the gold standard for fitness/health assessment. Therefore, monitoring aerobic capacity is warranted to stratify health. The test most commonly identified as VO₂max is the preferred method to assess aerobic capacity. PURPOSE: to assess the aerobic capacity and demographics of Kinesiology students.

- Lauren Roten, Jordan Howard, Jacob Giles, “Multi-Frequency Bia to Evaluate Whole Body and Joint Inflammation In Overhead Single Segment Division I Collegiate Athletes”

Multifrequency bioelectrical impedance uses single and multifrequency signals to assess cellular integrity and fluid shifts within the body including intracellular (ICW), extracellular (ECW), and total body water (TBW). In single segment athletes, microtrauma inherent to training have been shown to induce tissue injury and therefore an inflammatory response in the primary segment/joint utilized. PURPOSE: to evaluate whole body and segmental fluid shifts and tissues integrity across the competitive season in single segment Division I athletes.

Poster Numbers 53: Kinesiology 470 (Faculty Mentor: Dr. Laura Jimenez)

- Alexandra Rast, Samantha Thedieck, Kaitlynn Hening, Emily Chisarik, Hannah Sutphin, “Effects of Aluni Nu Pre-Workout (TM) on High Intensity Interval Training Exercise”

This study will look at the heart rate, caloric expenditure, energy levels, and post-exercise satisfaction when completing a High Intensity Interval Training (HIIT) class. The subjects will complete two trials, each consisting of a week, where they will ingest Aluni Nu Pre-Workout prior to the exercise or be fasted prior to exercise. The fasted group will be the control group to compare the data to. The purpose of this study is to find the Effects of Aluni Nu Pre-Workout, Versus Fasting in a High Intensity Interval Training Class. In previous research it has been found that pre-workout increases exercise performance, satisfaction, and energy levels. With this we hope to find similar outcomes in our study.

Poster Numbers 54 - 56: Special Education 389 (Faculty Mentor: Dr. Aftab Khan)

- Dana Zipfel, Leslie Mock, Maria Giarrusso, “Musical Interventions for Emotional and Behavioral Disorders”

Music is often thought of as a worldwide form of entertainment. We are interested in learning the effects music would have on students with Emotional and Behavioral Disorders. We believe that music will be beneficial when calming students to regain their focus to the task. We feel music can be used as an aid in the school system to help students control their aggression. We intend to study this research question by reviewing evidence-based practices and scholarly journals. As a result of our findings, we will determine the steps one should take when using music to assist those with EBD.

- Tanna Turner, Harley Scott, “The Benefits of Wilson Training Program on Students who Struggle with Reading Fluency”

Wilson Language Training is a program for children of all ages who struggle with some aspect of literacy. For our research we are focusing on reading fluency for students in elementary school. We are going to review and analyze three different fluency programs and see the effects each program has on elementary schoolers who have difficulties with reading fluency. The three programs we chose to research are Foundations, Just Words, and Wilson Reading System. Each program targets different aspects of fluency difficulty and provides various options for students to study and practice their fluency skills.

- Lindsey Moody, Shelbie Wells, “Spelling Mastery & Dyslexia”

Spelling Mastery is a well-known program in the public school system that integrates many strategies in order for students to become successful spellers. We are curious to know how Spelling Mastery can benefit those students with Dyslexia. We believe that the presence of Spelling Mastery in the classroom will have a positive impact on those students with Dyslexia. We intend to review research articles in this field to see how Spelling Mastery effects students with Dyslexia. Based on our findings, we intend to provide recommendations and possible future outcomes for this program to accommodate students with Dyslexia.

Poster Numbers 57 - 60: Special Education 489 (Faculty Mentors: Dr. Karen Feathers and Dr. Aftab Khan)

- Dallas Phelps, “Developing Visual Supports for Individuals with Intellectual Disabilities who are Non-Verbal to Enhance Communication in the Home, School, & Community”

Picture exchange communication systems (PECS) are used to help non-verbal individuals more effectively communicate their wants and needs. My research focuses on the use of PECS by an individual who communicates non-verbally; specifically, how the implementation of PECS encourages the number of attempts the individual makes to initiate conversation with a peer. I hypothesize that the implementation of a PECS communication book that has been customized to an individual’s special interests, in addition to training sessions conducted with the parent, will increase the number of the individual's communication attempts in the home, school, and community.

- Lauren Peters, Payton Vernier, “Improving Behavior from the Start: Integrating Social Training Programs into an Inclusive Preschool Classroom”

Preschool is the first interaction into a structured school system that children will receive. It is important for children to acquire the proper foundation in order for them to succeed in higher education. In today’s growing society, many classrooms are becoming inclusive for all students, even those with various disabilities. This in turn requires educators and parents to develop new skills in order to help these children and provide them with the best education. We intend to examine the positive effects of integrating social training programs into preschool classrooms such as Taking Part, Introducing Social Skills to Children. We hypothesize that once integrated, this program and many alike will improve their behavior and social skills. We are prepared to examine accredited research by scholars in order to confidently discuss our findings.

- Megan Smith, Kasie Fowler, “Word Recognition Software Programs and the Effects it has on Exceptional Children”

Verbal language is a tool used in everyday life to communicate and accomplish daily activities. The sheer prevalence of this mode of communication and the exposure to oral language in our everyday lives is a sizable contributor to the efficiency that develops in using this mode of communication. However, writing is not an equally commonplace skill in day-to-day living, especially for children. In some instances,

exceptional children may experience a deficit in their writing skills but have an oral language ability that is higher functioning. We are curious to explore how Word recognition programs can assist these children and aid their academic achievement. We believe that the outcome of using such programs will increase their academic achievement and have a positive impact on the child's education. We intend to review and analyze published research articles regarding this topic of interest. Based on our findings, we intend to prove or disprove our initial beliefs on the matter.

Poster Numbers 61 - 66: Environmental Science 201 (Faculty Mentors: Dr. Ken Fortino and Dr. Dina Leech)

- Graham Brown, Dylan Wegner, Mitch Andrew, "Analyzing the Limiting Nutrient using a Bioassay in Farmville Area Ponds"

In fresh water systems, phosphorus is usually the limiting nutrient in regards to the growth of algal biomass. We hypothesis that phosphorus is the limiting nutrient in Farmville area ponds. We conduct a bioassay in order to find the chlorophyll levels of samples taken from different ponds in Farmville, treated with different nutrient levels.

- Kelsey Lam, Truman Blaha, "Assessment of nitrogen and phosphorus concentrations in the Appomattox River due to agricultural or urban runoff"

Agricultural and urban land use contributes to nutrient loading in waterways. We hypothesized that agricultural runoff would cause higher levels of nitrogen and phosphorus in the Appomattox River compared to other types of land use. We collected 1 L water samples from two different sites in the Appomattox River weekly for a month to test for nitrogen and phosphorus concentrations. This assessment can determine how runoff from land use can effect nutrient levels in waterways.

- Curran Atkinson, Bailey Teague, "An Analysis of Urbanizations effect on Mosquito Habitats"

Anthropogenic activity has led to various alterations within the environment such as infrastructure. These alterations have led to an increase in the potential of habitats ideal for mosquitoes to breed. Mosquitoes require standing water to breed. The goal was to compare mosquito habitats in urban and rural areas. We

sampled three sites each in an urban and rural area. Data collection was conducted using the transit radius method at each site. This has given insight as to which environment is more likely present.

- Jacob Jennings, Andrew Ayer, Graylin Dalton, “Heat Islands and Relationship with Land Use”

We are interested to see if land use contributes to heat islands in towns/ cities. Heat islands are localized increases in air temperature caused by urbanized land use. We will measure various plots and average the temperatures to see how the temperatures vary across the plots in the town of Farmville. We predict that more rural areas will have lower average temperatures than more urban areas.

- Charlotte Pfamatter, Kirsten Bauer, Samuel Morgan, Griffin Mayo, “Comparison of the Toxicity of Standard vs. Eco-Friendly of Detergents”

Many companies are jumping on board with today’s green movement. In an attempt to keep their products relevant and desirable, many detergent companies are coming out with a variety of “ecofriendly” detergents. This study aimed to assess the different impacts of standard versus ecofriendly detergents on algae productivity. It was believed that both detergents would inhibit algal growth, but to what extent was unknown. These results have large implications for greater aquatic systems as algae and other producers play a foundational role in trophic cascades.

- Nathaniel Mylott, Cole Milliron, Olivia Parisi, Madeline Dabies, “Nutrient Runoff Investigation of Farmville”

Eutrophication is the excess richness of nutrients in water ways that causes a higher growth rate of plant life and possible death of animals. We are looking into the eutrophication caused by nutrient runoff on waterways near Longwood campus, and hope to answer what the limiting factor of algae growth is in Farmville. This project could help us learn ways that the Farmville area is contributing to eutrophication.

Poster Numbers 67 - 85: English 400 (Faculty Mentor: Dr. Scott McDarmont)

- Jessica Paquette, “Greenwashing”

- Camryn Rubin, “Inclusion Classrooms”

- Sarah Boehling, “Dyslexia in the Classroom (Teaching students with Dyslexia)”
- Michaela O’Toole, “Inclusion Classrooms”
- Reece Theakston, “Genome Editing”
- Christaan Oliphant, “Marketing/Perception of Cannabinoids in Public Eye”
- Sam James, “Community Corrections”
- Meg Coughlin, “Theatre in the Classroom”
- Chris Belote, “Benefits of Gaming (Health, social, etc.)”
- Jessica Sanfilippo, “Starting a Business”
- Matthew Berry, “Not Abandoning History in the Classroom”
- Bailey Johnson, “ADHD in the Classroom (Teaching students with Attention Deficit Hyperactivity Disorder)”
- Cameron Basham, “The “Forgotten” Middle”
- Autumn Schiavone, “Child Rearing”
- Vanessa Barahona-Hickerson, “Electrical Stimulation for Swallowing Disorders”
- Eric Petrides, “Anti-vaxxers”
- Madeline Davies, “Juvenile Rural Gang Involvement”
- Madison Pinchbeck, “Planned Parenthood”

Posters: Biology, English, Chemistry, Independent Research 3:00-4:00PM, Blackwell Ballroom

Poster Numbers 1-15: Chemistry 302, 351, and 403 (Faculty Mentor: Dr. Sarah Porter)

- Jamie Breunig, “The LC Determination of Capsaicin in Hot Sauces by Liquid Chromatography”

The purpose of this experiment is to measure capsaicin in hot sauce. This will be accomplished by using liquid chromatography.

- Sarah Elsagr, “What Can Be Learned About Conjugated Molecules from Their Uv-Vis Spectra?”

The purpose of this experiment is to learn about conjugated dyes from a UV-Vis spectra. This will be accomplished by using UV-Vis spectroscopy.

- Corri Calandra, “LC Determination of Active Ingredients in Over the Counter Medications”

The purpose of this experiment is to measure active ingredients in over the counter medications. This will be accomplished by using liquid chromatography.

- Bethany Adams, “What Can Be Learned About Conjugated Molecules from Their Uv-Vis Spectra?”

The purpose of this experiment is to learn about conjugated dyes from their UV spectra. This will be accomplished by using UV-Vis spectroscopy.

- Hannah Meyls, “Can we use biological organisms as chemical sensors”

The purpose of this experiment is to use biological organisms as chemical sensors. This will be accomplished by using fluorescence spectroscopy.

- Joshua Walker, “What determines the rate of reaction?”

The purpose of this experiment is to measure the rate law of a heterogeneous reaction. This will be accomplished by measuring gas pressure.

- Bethany Adams, Jamie Breunig, Corri Calandra, Sarah Elsagr, Hannah Meyls, Kelsey Norton, Morgan Tasseff, Joshua Walker, “Chemistry meets art: X-ray fluorescence analysis of art from the LCVA collection”

Art. Chemistry. Done.

- Zachary Morgan, “Investigating the Importance of Argon Gas Bombardment of Au(111) and Ag(111) in Nanoporous Graphene Synthesis”

While advancements have been made in creating effective purification membranes, nanoporous graphene sheets have only been synthesized on Ag(111) and Au(111) that has been purged by argon gas. In this study, we propose to synthesize nanoporous graphene monomers without gas bombardment. This synthesis will involve the following steps (in order): Ullmann coupling, cyclo-dehydrogenation, and dehydrogenative cross coupling. The results from this study will contribute to simplifying the synthesis of making an effective membrane, helping solve the global water crisis.

- Hope Grausgruber, “Enumeration of Escherichia Coli in the James River using Thioglycolic Acid (TGA) CdSe Quantum Dots and Fluorescence Spectroscopy”

Due to Richmond’s old sewer system, unsafe levels of E.coli are likely after heavy rainfall. In this study, water samples taken from the James River will be sampled to determine the level of E.coli present. Data will be collected by the use of a fluorescent spectrometer and thioglycolic acid (TGA) CdSe quantum dots as luminescent makers for E. coli.

- Sarah Goetz, “Nicotine Concentration and Flavor Aldehyde Presence in Juul Device Liquids”

Flavor aldehydes, commonly present in well-known electronic cigarette liquids, and have been found to produce toxic compounds, such as formaldehyde, upon vaporization as well as increase instability of liquids due to common reaction with alcohol based solvents. With the extremely high nicotine concentrations associated with the newer Juul device, greater susceptibility to addiction is probable therefore a greater exposure to toxic formaldehyde is likely. Gas chromatography with mass spectrometry will be used to quantify nicotine concentrations and presence of formaldehyde in Juul liquids.

- Bryan Stewart, “Investigation of a two-dimensional Identification Method for Different Types of Beer via Mathematically Treated UV-Vis Spectra Data Sets”

An investigation into the use of two-dimensional correlation UV-Vis spectroscopy with chemometric analysis for the authentication and discrimination and into the use of UV/Vis with multivariate chemometric analysis of a sample set of beer that is representative of the current United States of America beer market.

Poster Numbers 16 – 17 (Electronic): English 400 (Faculty Mentor: Dr. Elif Guler)

- Charla Faulkner, Abbie Preston, Tracy Davis, “Project Flashlight”

Mental illness has been a rising issue amongst college students. Project Flashlight is committed not only to shining light on this prevalent issue, but also to provide helpful resources to those who need it. Our website and brochure will present testimonies from college students who have experienced mental illnesses as well as inform students about the mental health resources that are freely available to them at Longwood University and nationwide. Our project aims to help people coping with a mental condition to understand that they are not alone and can strengthen their mental health with support from others.

- Sarine Thomas, Jordan Clark, Kyle Sorrell, “Pollution Patrol”

The purpose of our team project, which consists of a website and a brochure, is to be a resource for and to inform college students about pollution and its impact on air, land, and sea. We are advocating for a cleaner environment by educating our readers/viewers in a visually interesting and informative manner so that they can more consciously make their everyday decisions which have implications for the environment. Specifically, we hope that the information provided on the website and the supplemental brochure will push students to make decisions that will reduce pollution and have a positive impact on the environment.

Poster Numbers 18 - 45: Biology 488 (Faculty Mentor: Dr. Amorette Barber)

- Kathryn Kosiorek, “Double Gene Knockout of PDX-1 and HNF1B Leads to the Possibility of a Novel Gene Therapy for Patients with Type 1 Diabetes”

Diabetes Mellitus is a disease characterized by uncontrolled and elevated blood glucose which is the effect of inadequate levels of plasma insulin. Type I diabetes (T1D) ultimately stems from the autoimmune

destruction of beta cells because of defects in the PDX-1 and possibly HNF1B. If both of these genes knocked out together increase the detriment effect of T1D, then a gene therapy can be created using the AAV vectors that not only targets one gene but both at the same time, increasing the strength of the gene therapy and the quality of life for the T1D patient.

- Cecilie Elliott, “CCL21 Protein Leads to Advancements in Understanding Lung Transplant Rejection”
Patients who undergo transplants are immunocompromised, leading to the increased opportunity to develop infection or tumors within the body. Chemokines are quick responders to help fight inflammation during the innate and adaptive immune system. This proposal aims to reduce the rejection in post lung transplant subjects by increasing the amount of CCL21 by injecting the DC/CCL21 vaccination to express T and B cells more efficiently. If the vaccine is effective, it would suppress the rejection rate after transplantation.

- Murriel Grimes, “Punicic acid as a possible supplemental treatment of adolescent Type I Diabetes”
Punicic acid has been shown to help with the management of Type II diabetes. Here, we investigate its effects on the management of Type I diabetes. A potential outcome of this research may be the use of punicic acid as a supplemental treatment for the management of Type I diabetes.

- Taylor Clements, “The role of plastic debris found in the loggerhead sea turtle’s digestive tract and how it effects the reproduction survival rate”

The role of plastic debris found in the loggerhead sea turtle’s digestive tract and how it effects the reproduction survival rate

- Emery Chittenden, “The Role of Genome Mapping in Diagnosing Bipolar Disorder”

Bipolar disorder is more commonly found in people with either one or both parents having a diagnosis of Bipolar Disorder I or Bipolar Disorder II. In this research I aim to see whether the genome of Bipolar Disorder can be mapped and if the genome can be tested to see whether a person who either has or has not had an onset of symptoms has Bipolar Disorder. This is important in being able to see if family members

who have a direct parental linkage to bipolar have the disorder and if so, preventative measures including therapy and education may be started.

- Amanda Moses, “Curing Multiple Sclerosis by Genetically Engineering Oligodendrocytes and Treating them with Chemotherapy”

Multiple Sclerosis is an autoimmune degenerative disorder that affects a person’s central nervous system, causing irreversible degeneration. Neither form of the disease (Relapsing-Remitting or Progressive) currently has a cure. Using mice as a study system, their oligodendrocytes will be treated with chemotherapy to forget the M.S and then genetically engineered with healthy versions of the three key myelin producing genes of the CNS. Once the oligodendrocytes are reintroduced, the potential outcome is that the oligodendrocytes will be able to repair, and halt further degeneration, of the myelin sheath in the CNS.

- Andrea Soles, “Is long-term stress related to the development of Graves’ Disease?”

Graves’ disease is an autoimmune disease where the body’s immune system attacks the thyroid and causes the overproduction of thyroid hormone. It also causes hyperthyroidism where the thyroid is essentially in hyperdrive. This study aimed to identify the effects of long-term emotional stress on the development of Graves’ disease. More specifically, it looked to see if this type of stress triggered the overabundance of thyroid-stimulating immunoglobulins (TSIs), the antibodies that attack the thyroid, causing growth and the production of too much thyroid hormone. The expected outcome is that that the participants that have not been officially diagnosed with the disease and experience the symptoms of hyperthyroidism will have elevated levels of T3 and T4; therefore, the overabundance of TSIs. a Soles, “The Connection between Emotional Stress and Developing Grave’s Disease”

- Zack Long, “Identifying the Outcomes of Colloidal Silver Nanoparticles and their Mechanics of Action against the Lysosomes of Gram Positive Bacteria”

There are many opinions of whether taking daily doses of colloidal silver is beneficial or harmful to the human body, but in reality, there is very little research on the safety and effectiveness of these silver

nanoparticles. My specific aim for this study is to find the effects of colloidal silver nanoparticles and their mechanics of action when presented with gram-positive bacteria. This study would be very important because there has still been no true evidence for the effectiveness of colloidal silver, so conducting this experiment on a microscopic level can give us reasoning for the overall positive and negative effects that it can make on the human body.

- Uzma Gunter, "The Use of HeLa derived telomerase on NK Cells in Treatment of Ovarian Cancer"
NK cells are innate immune cells that are essential in the inhibition of metastasis of ovarian cancer cells. However many cancers, including ovarian cancer, are capable of avoiding detection from the immune system through secreting high concentrations of cytokines that inhibit innate immune cells from attacking and killing the cells. In addition to the later, NK cells have a rather short life span which affect their ability to find and destroy tumor cells. Through deriving telomerase from HeLa cells, the key to their immortality, and inserting into Nk cells, their lifespan can be extended improving their use in immunotherapies to more effectively treat ovarian cancers.

- Lyndi Earnshaw, "Postural Orthostatic Tachycardia Syndrome in relation to anxiety and cognitive impairments"
Postural Orthostatic Tachycardia Syndrome (POTS) is a heterogeneous syndrome that is a form of orthostatic intolerance. Symptoms that are caused by POTS are: lightheadedness, dizziness, chest pain, fatigue, heart palpitations, and rapid heart rate. There has been limited research on this syndrome, but there has been some evidence indicating that anxiety can be increased in patients, as well as cognitive impairments such as lower IQ and slower response time as well. Different cognitive tests will be conducted as well as anxiety testing through State-Trait Anxiety Inventory (STAI), on patients with POTS and patients without it.

- Juliana Gordon, "Long-term aerobic exercise can enhance cognition and delay the onset of Alzheimer's disease"

Aerobic exercise programs have been shown to enhance cognition, functional ability, and may be a great, cost efficient therapeutic strategy for patients suffering from Alzheimer's disease. Can a long-term (15-year long) aerobic exercise program be used as a preventative therapeutic strategy to delay or prevent the onset of Alzheimer's disease? Some potential outcomes of this study could be that long-term aerobic exercise effectively delays the onset of Alzheimer's disease in individuals at high risk for developing Alzheimer's disease and that long-term aerobic exercise will enhance cognition, functional ability, and decrease losses in hippocampal volume that occur due to aging.

- Elle Richardson, “Does Beer Enhance T cells to kill Leukemia?”

Approximately every 3 minutes one person in the United States (US) is diagnosed with a blood cancer. In 2017, the first Chimeric Antigen Receptor (CAR) T cell therapy called Kymriah was FDA approved to treat acute lymphoblastic leukemia (ALL). Recently scientists have been studying that certain natural compounds can enhance the efficacy of these CAR-T therapies against cancer. In this project, I suggest the combination of Xanthohumol, a natural compound derived from the Hops plant, and CAR T cells to better treat murine Leukemia.

- Hastings Williamson, “CRISPR/CAS9 Experiments On Human Sperm Cells: Carriers Of The Cystic Fibrosis Delta F508 Mutation”

Medical advances displayed through DMD and the use of CRISPR, provides a starting point for gene therapy in other disorders such as cystic fibrosis. Through the use of implanting CRISPR/Cas-9 into sperm cells, one would be able to insert the correct sequence of DNA and remove the mutated DNA in the sperm before advancement into an embryo. Targeting the phenylalanine at delta F508 in the CFTR protein on chromosome 7, cutting the mutated portion and inserting the non-mutated gene within the sperm would remove the chance of the offspring contracting this disorder.

- Colin Dominick, “The Comparative role of Tail Feathers in American Goldfinches”

The role of tail feathers in flight is not well documented, other than their general role to provide stability and drag. This project aims to compare the role of tail feathers in different types of flight in order to determine

if/how its role changes. I hypothesize that the role of tail tail feathers will vary, especially within the black-box of flight.

- Christina Bell, “Restoring the Population of Keystone Species in the Chesapeake Bay: How the Preservation of Submerged Aquatic Vegetation Can Improve the Blue Crab Population”

Blue Crabs (*Callinectes sapidus*) are a species that is known to live in submerged aquatic vegetation (SAV) as juveniles. In this study we focused on Eelgrass (*Zostera marina*) and Red Algae (*Gracilaria vermiculophylla*). We have reported that juvenile survival increases when they are hidden among these grasses. In this study, we used PVC poles and fishing line to confine the specimens to 30m areas; one of eelgrass, one of red algae, and one of mud. Our results show that the Blue Crabs found on the vegetated plots had a larger body size than those that resided in the mud plots. In fact, after 12-25 hours of tethering, it was discovered that the specimens in the mud plots were less likely to be found in the plots. We believe that this study is evidence for the preservation of the submerged aquatic vegetation found in the Chesapeake Bay.

- Rana Haboush, “Successfulness of live capture eradication efforts of the Golden Eagle on the Channel Island Fox”

The invasive Golden Eagle has had a detrimental effect on the endemic Channel Island Fox population since invaded during the mid -1990s. Vast recovery efforts, such as live capture of the Golden Eagle and Island Fox captive breeding programs have been implemented to save this dying species. The purpose of this project is to determine the successfulness of the recovery efforts implemented, by studying the growth of the Channel Island Fox population. Potential outcomes include a steady growth of the Channel Island Fox population, concluding that the recovery efforts have been successful.

- Ted Gutches, “Von Willebrand Disease: the viability of a technology-based diagnosis modality”

Von Willebrand disease (VWD) is an autosomal inherited bleeding disorder in which a person is deficient, qualitatively and/or quantitatively, in an essential enzyme for the coagulation pathway, von Willebrand factor (VWF). Like many coagulation disorders, the disease is commonly classified into three subtypes that

include varying degrees of severity. More specifically, type 1 is classified as a partial quantitative deficiency in the VWF, type 2 as a qualitative deficiency, and type 3 as a total deficiency. As to be expected, the importance of proper diagnosis and treatment of VWD in a clinical setting, either for surgical precautions or general care, is paramount. Hence the importance of many studies that have recently shown promise in the world of genetic and molecular testing. In the context of VWD, technology is becoming more universal and integrated in the world of diagnostics. This study aims to compare the available technology-based VWD genetic screening modalities to determine a viable methodology for an accurate diagnosis of VWD.

- Caroline Carter, “Microplastic biomagnification within detritivores alters fecundity and survivorship”
Biomagnification of microplastics (plastics of less than 5mm) has been described in many species in the open ocean, but little has been done to understand the effects of that pollutant on the development of the organisms consuming it. Detritivores are highly susceptible to the biomagnification effects due to eating organisms that are higher in the food web, and Green Crab (*Carcinus maenas*) has a diet with high consumption of teleost fishes. These crabs will be exposed to microplastic levels in their food equivalent to those in wild populations, the survivorship of the will be measured for three generations to determine the effect of the microplastics on the fecundity of the offspring. We expect to find that there is decreased fecundity in offspring, and decreased survivorship of offspring of exposed to microplastics, and more significant impacts with increased exposure to microplastics.

- Rex Liggon, “Observing the Cooperation of Varroa Destructor and DNA Virus AmFV in the Onset of Colony Collapse Disorder in Emerging *Apis mellifera*”

The honey bee population is declining from the onset of a disorder known as Colony Collapse Disorder (CCD) which has been associated with climate change, increase use of insecticides, and parasite/viral communication. Much focus has been directed towards the communication between RNA viruses with the honey bee parasite *Varroa destructor* and their relationship to haemolymph levels in emerging worker bees, but their association with DNA viruses has been neglected. The study up for proposal is to closely observe whether parasite burden in combination with reduced haemolymph levels could increase viral replication of DNA virus AmFV in emerging honey worker bees. Since, haemolymph houses the cells and proteins

needed for proper immune response, the predicted outcome is that a significant increase of viral replication will be present in the emerging workers despite the virus mechanisms for replication are DNA based instead of RNA based.

- Meagan St John, “Enhancing a Hepatitis C virus vaccine with Toll-like receptor 3 agonist in a mouse model”

Due to the increasing prevalence of Hepatitis C virus (HCV) infection, and reinfection in the United States, an effective vaccine that induces sterilizing immunity is needed. A previously identified vaccine by Novartis Vaccines and Diagnostics, HCV E1E2, will be adjuvanted with Toll-like receptor 3 agonist, Poly(I:C), and injected into wild-type mice containing HCV homologs. Secretion of cytokines, GM-CSF, IFN- β , TNF- α , IL-2, IL-4, IL-5, IL-10, IL-12 and IL-13, will be measured pre-vaccination, and at two- and sixteen-weeks post vaccination, using CD4+ T Cell Lymphocyte Proliferation Assay (LPA) and expressed as Stimulation Index. An SI greater than or equal to three will be considered a positive response to vaccination. A significant increase in cytokine secretion is expected, higher than that of the vaccine alone.

- Sandra Ghali, “Enhancement of Macrophage Affinity in Response to Antibiotic-Resistant *N. gonorrhoea* Infection”

Antibiotic resistance is a growing concern for medical professionals. Bacterial infections that have been treated with antibiotics have a higher probability of acquiring the gene(s) for resistance. Several studies have been conducted to explore the possibility of reversing antibiotic resistance via bacteriophage or CRISPR gene-editing systems; however, there have been no attempts to categorize, and enhance the immune response to the pathogens. Here, we propose the methods of testing for the interactions of macrophages with *N. gonorrhoea* as well as a method of opsonization/enhancement for the endocytosis of *N. gonorrhoea* by macrophages.

- Angelica Romero, “Modifying the effects of AB-40 and AB-42 proteins in patients with Alzheimer’s disease”

Alzheimer Disease is a neurodegenerative disease, and is now the most common cause of Dementia. The loss of neurons in the cortex of the brain leads to common symptoms of dementia, such as memory loss and disorientation. My question is how can I alter the effects of A β 40 and A β 42 in the cortex of the brain for Alzheimer's Disease patients. Making modifications on these proteins could act as a therapy, or reverse the effects of the proteins by keeping them from progressing.

- Tiffany Yun, "The Effects of Pramipexole and Carbidopa-levodopa on Blocking Abnormal Activity in Gene LRRK2 Which Causes Loss of Dopaminergic Neurons in Parkinson"

Parkinson's disease is a neurodegenerative disorder that causes damage to dopaminergic neurons in the brain that are essential for controlling movement. This study aims to identify the different effects of using Pramipexole and Carbidopa-levodopa on blocking the activity of the mutated gene LRRK2 which is known to result in the loss of dopaminergic neurons in Parkinson. This study could have three potential conclusions where there is a higher rate of success using Pramipexole, Carbidopa-levodopa, or they both have the same effects of treating the symptoms of Parkinson.

- Erica Harris, "The role of genetics with alcoholism and its effects on genes ALDH2, ADH1B, and GABRB1 by causing mutations in the genome"

Alcohol use disorder, an illness described by harmful drinking patterns leading to negative ramifications both emotional and physical, has become more predominantly associated with genetics rather than behavioral. There are many factors that play into alcoholism, some being environmental, heritability, and genetics related. There are two genes believed to be related to alcoholism, ADH1B and ALDH2.

Alcoholism can lead to cirrhosis of the liver, cancer and necrosis. In efforts to understanding the role of genetics and alcoholism, a genome mapping evaluation would allow for researchers to understand the effect of alcoholism and the role of genes ALDH2 and ADH1B, and what mutations may occur to cause such results.

- Samuel Kane, "Studying the Feeding Habits of Red Snappers in the Gulf of Mexico within Artificial Reefs vs. Natural Reefs"

There are various coastal reefs located in the Gulf of Mexico, but due to overpopulation and human interactions, these reefs are slowly being destroyed. Due to the destruction of these natural reefs, natural behaviors and feeding habits within Reef Fish, specific the Red Snapper, are shifting and changing over time. One way to fix these environments and allow the natural reefs to rebuild themselves slowly over time is to introduce new artificial reefs made of substances such as concrete as to not become destroyed. This introduction of artificial reefs should provide plentiful habitats, thus boosting reef fish's feeding habits and behaviors back to normal.

Poster Numbers 46 - 60: English 362 (Faculty Mentor: Dr. David Magill)

- Morgan Bates, "Analysis of the use of gender and bodies in the popular Netflix show, "YOU""

My presentation is an analysis of the use of gender and bodies in the popular Netflix show, "YOU"

- Jessie Sawyer, "Hegemonic Masculinity in The Sons of Anarchy"

This essay explores the parallel between stereotypical masculinity of the traditional man and the anti-hero coming together in congealment, depicted in the Sons of Anarchy "2008. Illustrated through gang affiliated violent criminal activity, hegemonic masculinity reveals the question of what it takes to be a "man". In depicting the film, the hyper masculinity that the theme is centered on is questioned by the main character who struggles to accept his roles as both a violent leader, and a caring father. These two identities cross between traditional and nontraditional representations of manhood, diving hero and anti-hero seen in other characters.

- Kaitlyn Crow, ""Where's the Spunk?": Sexuality as Performance in the Netflix Original Series "Sex Education""

In the Netflix original series Sex Education, a palpable anxiety surrounds a group of high schoolers as they traverse the highs and lows of discovering their sexuality. In this paper, I discuss the characters' experiences with performative sexual actions, individual plots that culminate around an awkward teenage boy, raised in a highly sex-positive household, who can't masturbate, but gives out sex advice to his peers. Using Maura

Kelly's definitions of virginity loss narratives, I discuss how these narratives enter the discussion of sex as performance, and how they contribute to the greater conversation about performance and sexuality.

- Emily Gough, "Pretty as an Insult in Rick Riordan's 'The Lost Hero'"

In my research project I will discuss "pretty as an insult" in Rick Riordan's novel *The Lost Hero*. I will address the members of the Aphrodite cabin, especially focusing on the mean girl who is beautiful, the nice girl who is ugly, and the kind girl who plays down her beauty to be seen as kind. These portrayals are problematic because they state that pretty girls cannot be worthwhile. I will dive into the history of the "pretty girl" being the bad guy in other mediums to highlight how prominent this idea has become in modern media.

- Summer Reardon, "Feminism and Gender in James Cameron's 'Aliens'"

My research paper will examine the conflict between the alien mother in the movie *Aliens* (1986) and the movie's lead character, Ripley. The battle between Ripley and the alien mother symbolizes how women of the 1980s were grappling with their changing roles of motherhood brought about in part by their increased power over their own reproductive health, as well as broadening career options for women. During this time, more women began to take on non-traditional gender roles in the workplace and in society. Ripley's character reflects this the growing wave of feminism, and presaged a more assertive woman, while still demonstrating devotion to her adoptive offspring.

- Katie Kline, "'You Da Man': Performing Masculinity in Disney's *Mulan*"

This project seeks to use topics and terms from ENGL 362 to investigate themes of gender and bodies in a contemporary text. I will examine the ways in which gender and masculinity are often performed, as well as the role of appearance in this performance. I suggest that in Disney's animated film *Mulan*, rather than simply crossdressing and looking the part of a man, the heroine performs masculinity successfully in that she ends up being respected for exhibiting masculine virtues and thus complicates the idea of gender being based in appearance by embodying the virtues needed to be considered masculine.

- Lauren Ashworth, "Expectations of 1950s Teen Dating in 'Grease'"

I plan to explore the different expectations of dating between teenage boys and girls in the 1978 film Grease. Teenage boys, like Danny, are expected to have a tough bravado, and their "coolness" equates their sexual experience. Teenage girls, like Sandy, are expected to be ladylike and protective of their chastity. Rizzo's character, who does not embody these characteristics, is ostracized to show teens how young ladies shouldn't behave. The juxtaposition of Danny's view of dating versus Sandy's view of dating shows the discrepancy and double-standard between the gender expectations of teenage boys and girls.

- Hannah Taylor, "Cross Dressing and Gender Construction as Depicted in Visual Media"

In my presentation, I'll be exploring how gender is constructed by our society by looking closely at how cross dressing and femininity are used in certain visual media, namely the animated television show Princess Jellyfish. Through this, as well as through the works of scholars, we can see that gender expression is something purely constructed, and not necessarily inherent in either sex. This presentation is a project for Dr. Magill's Literature of Diversity class.

- Amber George, "Masculinity in Dead Poets Society"

The 1989 film "Dead Poets Society" tells the story of a group of young boys at an all-male high school during the 1950s. One of the core values of their school is the importance of tradition, and most of the male authority figures encourage the boys to uphold traditional conventions of masculinity. However, the film ultimately challenges toxic masculinity and criticizes the American model of "ideal" masculinity.

- Sara Holdsworth, "Views of Pregnancy in Bird Box"

I will analyze the Netflix original movie "Bird Box" This film takes place in a world that is quickly turning apocalyptic where a pregnant woman must survive and later, help her children survive in this world. The issue of gender studies I will explore is society's perceptions and discrimination of pregnant women, and the relationship between mother and child. The beliefs held in a community about pregnancy are directly related to how a mother raises her child. The protagonist's pregnancy experience and her views about pregnancy shape the way she raises and protects her children in this post-apocalyptic world.

- Samuel Hite, “Gender Roles in “The Simpsons””

The Simpsons has been a mainstay in television lineups for decades. They are the quintessential TV family. For this project, the gender roles in the famous cartoon will be analyzed and showcased.

- Leah Merone, “Feminism in Harry Potter”

Harry Potter, the series that has captured the hearts and minds of a generation, is, on its surface, a simple tale of good and evil. However, there’s a subtle message of female empowerment in the magical world. The project examines the latter half of the series in an attempt to uncover how it tackles gender roles, female agency, and relationships between genders. It notes how the books can be read from a feminist perspective. Feminism within Harry Potter isn’t clear-cut, but the series’ treatment of its women lives up to progressive ideals regarding female empowerment.

- Glenn Spencer, “Masculine Performance”

Y the Last Man has a non-traditional male protagonist in a world where he is the only male left. This tight focus on a single male in a suddenly female-dominated world flips the stereotypical gender script and allows a new perspective to be taken when looking at a male performance. The thesis of my paper will be something along the lines of “Brian K. Vaughn approaches the idea of what it means to be a man with his graphic novel Y the Last Man, his overall conclusion is that men do not have to be the strong stereotypical hero to save the day and I argue that Yorick, the male protagonist, takes on the role of a more stereotypical female protagonist.

Poster Numbers 61- 65: Independent Research

- Carrie Reaver (Faculty Mentor: Dr. Bjoern Ludwar), “Symmetry as an Indicator of Developmental Stability”

Developmental Stability is the ability of an organism to buffer noise in the form of small random perturbations during development. In bilateral animals, such as our model system *Drosophila Melanogaster*, it can be assessed by measuring small, random deviations away from perfect bilateral symmetry, i.e.

Fluctuating Asymmetry. We present data that differences in nutrient availability during development can perturb Developmental Stability, resulting in a less symmetric adult body. These results are important as they open up the possibility to assess individual differences in Developmental Stability with direct implications on the ability to predict individual disease outcomes.

- Taylor Alvey, Cody Hyle, Brianna Cervantes (Faculty Mentor: Dr. Denis Trubitsyn), “The role of mad2 gene expression in elongation of cuboctahedral magnetosome morphology”

Magnetotactic bacteria produce nano-sized magnetic crystals of various species-specific morphologies. The molecular mechanisms determining the shape of the magnetic crystals are poorly understood. Elongated crystals have stronger magnetic response and therefore are more favorable in biotechnological applications. We focus on cloning of the mad2 gene from *Desulfovibrio magneticus* RS-1 that produces elongated crystals into *Magnetospirillum gryphiswaldense* MSR-1 that produces cuboctahedral crystals. We aim to determine if mad2 plays a role in crystal elongation in other species of magnetotactic bacteria.

- Ibrahim Kante (Faculty Mentor: Dr. Phil Cantrell), “The study of precolonial kingship in Sub-Saharan Africa”

In an attempt to understand the impact of the past on the present situation of the country, this study will reveal the complex past of the precolonial history of Rwanda. The case study on Rwanda is interesting because of the variety of interpretations existing about the country’s past and its implications for the future. In this respect, this research first uncovers the reasons behind the lack of consensus about such a controversial history and lays out the literature on the different approaches to understanding Rwandan history. These preliminary findings, then, permitted the careful establishment of a coherent narrative about the history of political centralization during precolonial times. Through the presentation of local traditional institutions, this paper will add to the literature of ancient civilizations by utilizing the Nyiginya Kingdom as a reference point for centralized Kingdom-Statehood in Sub-Saharan Africa.

- Bailey Gadberry, Tessa Dewalt, Tabitha Lenhart (Faculty Mentor: Dr. Sujan Henkanaththege), “Potential Impacts of Hurricanes on Avian Community Diversity and Composition”

Hurricanes are known to cause significant destruction which negatively impacts wildlife populations, communities, and ecosystems. We studied hurricane Irma's effects on the avian diversity, abundance and composition. We gathered pre-and post-hurricane data for twenty locations in Florida using eBird, an online citizen science database. The findings of the study may help to understand the resilience of avian communities to natural disasters and how succession may progress after those events.

Poster Numbers 66 - 83: English 400 (Faculty Mentor: Dr. Scott McDarmont)

- Cameron Pelletier, "Anti-vaccine Debate"
- Essence Mitchell, "Gender Inequality in the Criminal Justice Workplace"
- Samantha Hunter, "Gender Wage Gap"
- Terika Williams, "CRISPR"
- Sarah Banks, "ASL as a Foreign Language Requirement"
- Rayven Brown, "Why Vaccines are Important"
- Cody Bell, "Youth Sport Specialization"
- Hannah Sutphin, "Fad Diets (Ketosis, Paleo, Mediterranean)"
- Brianna Reyes, "'Broken' U.S Criminal Justice System"
- Annika Cline, "Anti-Vaxxers"
- Ryan Flanagan, "Why Music Education is Important"
- Samantha Jenkins, "The Effects of Social Media on Emotions"
- Rebecca Sydnor, "The Influence of Social Media on Businesses"
- Ryan Johnson, "What types of people are drawn to Conspiracy Theories"
- Charlie Fournell-Ferrall, "The Misconceptions and Biases of Drugs and Their Effect on Society"
- Branden Pleasants, "How to start a business"
- Lauren Ratliff, "Artificial Intelligence"
- Caroline Smith, "Vaccines and Autism"