Gordon State College

Undergraduate Research Symposium

PROGRAM AND ABSTRACTS

FRIDAY APRIL 22, 2022

PROGRAM OUTLINE

Podium Presentations: 10:30 am – 11:30 am
NAHS 114

Break: 11:30am – 12:00pm

Poster Presentations: 12:00pm – 1:00pm
NAHS 123

Awards Ceremony: 1:30pm
NAHS 123

ACKNOWLEDGMENTS

The Undergraduate Research Symposium Committee would like to thank: President Nooks, Provost Knighton, the judges, and the faculty advisors of our presenters.

The Undergraduate Research Symposium Committee is made up of:
Dr. Amanda Duffus (Chair)
Dr. Alan Burstein
Dr. David Janssen
Dr. John George
Dr. Stephen Powers
Mrs. Melanie Mertz

PODIUM PRESENTATIONS:

NAHS 114

10:30am – 10:50am

Telisa Kelly-Peavy - ***EMERGENCE: STUDENTS UNEARTHING GORDON STATE'S RICH ORAL HISTORY***

10:50am – 11:10am

Emma Mixon - ***LEARNING WHILE HEALING: BEST PRACTICES BASED ON NEUROSCIENCE FOR TEACHING VETERAN STUDENTS IMPACTED BY POST-TRAUMATIC STRESS DISORDER***

11:10am – 11:30am
Chelsea Eagle - ***A BRIEF EVOLUTION OF DIGITAL MARKETING AND WHERE IT IS GOING NEXT***

BREAK: 11:30AM – 12:00PM

POSTER PRESENTATIONS: 12:00pm – 1:00pm

NAHS 123

AWARDS CEREMONY: 1:30PM

NAHS 123

Podium Presentation Abstracts

Emergence: Students Unearthing Gordon State's Rich Oral History

Presenter: Telisa Kelly-Peavy

Advisor: Jessica Traylor

My presentation will focus on the role I played in an Oral History Research Project which explored the Gordon community between the late 1950's and early 1970's, during a period of transition. Gordon's Alumni, and some faculty members were interviewed to elaborate on their experiences during integration. This project consisted of a facilitator and an undergraduate team of students for the purposes of service-learning and research engagement. Each student was trained on how to collect and store Gordon's historical data to present in several ways in the future. I will share my experiences and contributions to the Oral History Project at Gordon State College. Prior to collecting my research, I went through an orientation explaining how to conduct interviews and how to use an interview guide. I was trained on how to obtain consent from an interviewee and how to record data. In addition, I learned how to safeguard and upload the data I collected to a secure team's folder. My next objective was to contact, make a connection, and interview Gordon alumni, Carilyn Ogletree-Lawrence. After collecting and recording the data, I met virtually with my team and facilitator to discuss my findings. The discussion meeting helped me assess if I needed to conduct a follow-up. In my presentation, I will discuss how the data was used to create a documentary that was shared with our campus community. I will also discuss how this project taught me data collecting skills, and how to communicate effectively. Working on this project helped me gain an appreciation for a voice of diversity and why oral history research is relevant. This project revealed a powerful message about racial discrimination and community resilience which lies within Gordon's rich history.

Learning while healing: Best practices based on neuroscience for teaching veteran students impacted by post-traumatic stress disorder

Presenter: Emma Mixon

Advisor: Inez Jones

From the beginning of warfare, veterans have returned home experiencing symptoms of psychiatric and emotional distress. Some had flashbacks of battles, during which they would experience all the same sensory effects of being on the battlefield. Some would simply be "different." Their loved ones could not explain it, but the individual's personality would be altered. Some had recollection events, in which a sound or visual cue would mentally transport them back to war. These episodes can elicit feelings of extreme fear and panic, but usually only last a few moments. However, the emotions awakened by such events can last much longer. We now know that these are manifestations of post-traumatic stress disorder (PTSD) and that this condition can have overarching effects on a person's entire life. PTSD can have a tremendous effect on learning and memory. Taking on any task that requires concentration or attention can be a special challenge for a veteran experiencing such symptoms.

Many veterans come back from assignment and want to continue, or begin, their college career, a noble aspiration that can sometimes be more difficult than the veteran first realizes. There are the obstacles of being a nontraditional student which must be overcome, such as age differences between the veteran and his or her classmates. This can lead to feelings of isolation and an inability to relate to other students. But for the veteran experiencing PTSD, the challenges of navigating the college experience can be much more difficult. With an evidence-based, neuroscience-centered foundation, the end goal of this review is to develop a toolkit from which an instructor with veteran students can pull teaching techniques.

We want to empower instructors and other college and university personnel with skills that are specific to working with veterans. We have made suggestions with regard to the entire learning process, especially considering leniency toward, and encouragement of animal-assisted therapy. Current research suggests that there are strategies that those around the veteran can use to offer support. However much more research needs to be conducted on teaching veteran students suffering from PTSD in a nurturing and supportive environment to encourage their success in a college or university setting. The aim of this review is to augment this area of research.

A brief evolution of digital marketing and where it is going next

Presenter: Chelsea Eagle

Advisor: Alan Burstein

Marketing is an essential part of how a business grows and creates a brand. Throughout the last 20 years marketing has pivoted to create a new avenue in the digital platform in order to function and survive. The digital age has created a new form of marketing that has changed the way marketing has been done and will continue to be done. With the boom of tech companies like Apple and Google marketing began to shift going forward. The digital age has prompted new forms of marketing strategies to develop. Search engine optimization, search engine marketing, social media, and others are the results of new tech companies' imprint on the marketing world. Social Media is now a powerful business tool for creating, maintaining, and the ultimate success or failure of a brand. Two of the most powerful tools are Instagram and TikTok. The onset of these social media giants has done something previously unheard of in the marketing world– put the power of advertising back in the hands of the consumer through Influencers and even the businesses themselves. For some businesses, these outlets can open doors that were never before been possible. Digital marketing has changed the way businesses operate and will continue to evolve and change as we move forward in technological advances.

Poster Presentation Abstracts

Using the model system of *Ambystoma tigrinum virus* to find genes suitable to examine local adaptation in ranaviruses

Presenter: Dahlia Bao

Advisor: Amanda Duffus

Ranaviruses are emerging infectious diseases that affect fish, reptiles and amphibians at a global scale. There are several species of ranaviruses, however, we have chosen to focus our study on *Ambystoma trigrium virus* (ATV), a virus that is primarily found in the western portion of the USA in salamanders. We have chosen to use ATV because it has been shown to have local adaptations at least 2 loci. Therefore, screening all of the open reading frames for phylogenetic signals of adaptation should reveal more loci that can be used to see if local adaptation is happening will give us insights into what potential genes in other ranaviruses can be used to see if local adaptation is occurring. In this study, we examine the first 5 open reading frames of ATV for phylogenetic signals of local adaptation. Using MEGA X, we reconstructed the phylogenetic trees for each of the 5 loci, using the best-fit nucleotide substitution model and the neighbor joining method of tree building. In the future we plan to compare the trees created here with those for three other loci that are known to show variation due to local adaptation.

Bacterial monitoring in the GSC campus pond for fecal coliforms

Presenters: Michelle Childers & Mireya Parra

Other Collaborators: Calvin Adams & Larkin McDaniel

Advisor: Amanda Duffus

Clean water is important for the health of animals living in or around the water. The temperature can affect the cleanliness of the water because certain bacteria cannot grow in cold environments. Precipitation also affects the cleanliness of water because rain tends to stir up the bacteria throughout the pond and wash in unwanted bacteria from the outside of the pond. The exposure of pollutants to animals can impact their growth, well-being, and behavior. We used the Georgia Adopt-A-Stream methods for bacterial monitoring. We sampled the pond on every second week from August to October 2021, a sample of pond water was taken in a sterile Whir-Pak bag, kept on ice and brought back to the lab. The pond water sample was then subsampled 3 times in the lab, where the subsamples were plated on PetriFilm plates (3M). The plated water samples were placed in an incubator at 35°C for 24hrs. Then the number of fecal coliforms were counted across the three plates and averaged. We also plated out a control using distilled water held under the same conditions. We found that the air temperature during the day the samples were taken does not appear to affect fecal coliform count. However, if there was a precipitation event(s) in the previous week, it tended to result in higher fecal coliform counts. The GSC pond has high levels of fecal coliforms, much higher than the Environmental Protection Agency (EPA) recommends.

Effect of California's product ban on sustainable use conservation of American alligators

Presenter: Isabelle Kramer

Advisor: Alan Burstein

American Alligators are an iconic image of America. Through the years their population has waxed and waned, and in the late 1960's, they faced the possibility of extinction. Alligators were introduced to the endangered species list, and nationwide management plan was made for their recovery. Strict rules were made and California went so far as to pass penal code to ban all alligator products entering the state. The California law was passed with a sunset clause, with implementation not immediate, but rather to be revisited in accordance with alligator population. In the last decade, alligator populations have soared due to careful management by US Fish and Wildlife, states, and landowner efforts.These efforts are part of sustainable use conservation, which is an ongoing process which has developed diverse uses for alligators to maintain the health of their population. Despite the success of sustainable use conservation, in 2019, California passed the Penal Code 653o which has banned any alligator products from entering their state. By doing so, it ignores the sustainable use conservation process which has been ongoing for almost six decades. Furthermore, the ban also has a major economic effect on states like Louisiana where there is a large industry surrounding alligator hunting and farming.

Power of analogy: Easier way of understanding enzyme mechanism, chymotrypsin

Presenters: Leilani Thrash, Alexandria Steinhauer & Kensley Philemond

Advisor: Cathy Lee

Understanding enzyme mechanism in an introductory biochemistry class can be very challenging to an entry level undergraduate student. At Gordon state college, students enrolled in biochemistry class in Spring 2022, were introduced to use an analogy/story for understanding Chymotrypsin, an enzyme that cleaves peptide bonds of protein substrates by binding to a critical serine residue in the active site of an enzyme. Chymotrysinogen is the zymogen (inactive form) of Chymotrypsin that is released from the pancreas. This enzyme digests proteins by peptide bond cleavage through the catalytic triad (Serine, Histidine, and Aspartate) on the active site of the enzyme. Analogies/stories can be used to comprehend difficult biological concepts and figures easier. Analogies allow students to make comparisons between the story and the concept to gain better clarification and understanding. Our objective is that given an analogy that students can better relate to, they are able to make the connections from the story to the actual mechanism itself. We hypothesize that given an understandable analogy; this will allow students to comprehend the difficult Chymotrypsin concept in a much easy and fun way. Students were first introduced the concept of the catalysis of peptide bond hydrolysis by Chymotrypsin using the text figures and then an analogy/story were added. Students understanding was surveyed on how the analogy impacted their understanding of the mechanism. Our preliminary results suggested that ninety percent of the students were able to comprehend the enzyme mechanism Chymotrypsin much better after reading the story/analogy; and ninety percent of the students found that after reading the story/analogy their understanding of the active Serine improved.