Abstracts-
Grambling State University

Oral Presentations

A Smart Solution Using AI Technique for Preventing Theft at the Stores Self-Check
Jhada Carmel
Faculty mentor: Dr. Prasanthi Sreekumari

Self-checkout kiosks are common at many retail stores. It's becoming an important part of many different businesses due to the benefits such as low overhead costs, increase revenue and productivity, better use of space, social distancing and enhance customer experience. For customers, it is a great alternative option for expediting their checkout process other than paying at a standard checkout lane. However, over the years, stores' self-checkout stations have been the key to making shoplifting easy. The number of shoplifters has dramatically grown hundreds of fraudsters at different shops commit theft crimes by scanning one pricey product with the label of another with a much lower price on the self-checkout system. They avoid being identified in this manner since, in principle, they are making a transaction like any other consumer. However, a series of robberies in the stores have expanded across the United States, putting the chain's status in jeopardy. In this project, we introduce a new method using Artificial Intelligence (AI) technique for preventing shoplifting using the tactic "Switcheroo" at the store's self-checkout stations.

Oral session 2F

Does My Skin Threaten You? Effect of Skin Tone on Incarceration Outcomes
Diamond Cook & Dymond Wilson
Faculty mentor: Dr. Karletta White-Langhorn

Research shows exposure to discrimination for darker skinned Blacks significantly affects the social and psychological well-being of adolescents, but the link between these effects and the continued exposure to discrimination experienced by darker-skinned Blacks later in the life course has rarely been examined. This study aims to fill that gap by exploring the relationship between skin tone and criminal justice outcomes, in particular, the likelihood of ever being incarcerated, age at first incarceration, and the amount of time spent in prison over one's life course.

Oral session 3D

Princess University–A Service-Learning Project established by a Queen
Keli Copes

Princess University was established in October 2022 by Kelli Copes, the 69th Miss Grambling State University. The purpose of the event was to host an etiquette clinic for young girls in the community. Fifty (50) spaces were available and all 50 were filled within two hours of the announcement of the etiquette clinic. The clinic was for girls ages 4-10 and proved to be rewarding for Miss Grambling, her princesses, and the parents. Participants were rewarded for their participation with gifts and entry to the Grambling State University vs. Florida A&M football game.

Oral session 2C

"Stepping Stones"-Improving the Operational Systems of a Child Care Center through Service-Learning
Alesia Jackson & Chase Cosey

Students selected a local business, Stepping Stones Childcare Center to transform and improve the operational systems. The students observed the operations of the center with the intent of developing ways to enhance the efficiency and effectiveness of the center's operations. The students took the information that they learned in their class and after observing the operations of the business developed a plan for improvement. Various measures for improvement were recommended. They included, the adoption of technology, improvement to processes and

employee training and development. These recommendations should lead to improved customer satisfaction, increased revenue, and enhanced profitability.

Oral session 2E

Becoming Water Wise-Conserving our Most Valuable Resource

De'Vante Martin, Aaron Younger, & Anaiya Green
Faculty mentor: Dr. Ellen D. Smiley and Dr. Rory L. Bedford

Water is one of our most valuable resources on earth. It is used by every person on the planet and is necessary for life. Because it is readily available and accessible, people tend to think that water is plentiful and will never run out. However, according to the EPA, "the U.S. population has doubled over the past 50 years, while our thirst for water has tripled. With at least 40 states anticipating water shortages by 2024, the need to conserve water is critical." University students used social media and other media forms to raise awareness about the importance of Water Conservation. Members of Gambling State University's Earl Lester Cole Honors College provided a training session for members of the Louisiana Scholars College of Northwestern State University regarding water conservation. They formed a partnership to educate and raise awareness about the necessity for water conservation.

Oral session 2E

ChatGPT: How the AI Tool is Challenging the Way Students Communicate

Lungile Ntuli
Faculty mentor: Dr. Prasanthi Sreekumari

For years, user-friendly technological tools have become the norm for scholars around the world to enhance their learning experience. This became more evident during the COVID-19 pandemic when the world's academic institutions were forced to resort to online learning methods. ChatGPT has become a brand-new way for users to generate human-like responses to text inputs in a vernacular manner within minutes, and as a result, has been heavily utilized by students across the US. Despite its convenience and time-saving attributes, the AI tool has raised many ethical red flags among high school and university faculty that fear motivation and lack of retention of knowledge could affect the quality of learning within schools. In this project, we discussed the positive and negative influences ChatGPT poses towards academic circles, as well as ask an appropriate question for today's climate; how do we regulate the use of high-performing and accessible educational apps while maintaining academic integrity in the classroom?

Oral session 2B

Properties of Colloidal Nanoparticles Synthesized by Laser Ablation in Liquid

Ke-Sean Peter
Faculty mentor: Dr. Haeyeon Yang

Properties of colloidal nanoparticles synthesized by laser ablation in liquid(NPs) are typically synthesized by a chemical method which often requires expertise and heavy use of toxic and hazardous chemicals. This sometimes becomes expensive due to the cost related to chemical hazards and expertise. Laser ablation in liquid (LAL) is a relatively new method to synthesize NPs. We have successfully synthesized colloidal nanoparticles by the LAL method including carbon and metals. We discuss the properties of the carbon NPs that depend on laser intensity, the thickness of liquid layers, liquid temperature, and the kind of liquids. This project is funded by NASA LaSPACE, NASA Marshall Space Flight Center, the NSF PREM program, and NSF-CIMM seed grants.

Oral session 3E

Advancing the Agenda of St. Jude

Jesslyn Reed, Barbara Lewis, Kendall Edison, & Nia Johnson

Grambling State University Department of Kinesiology participated in the Ruston Louisiana St. Jude Radio-Thon sponsored by the Epsilon Sigma Alpha International Zeta Rho Chapter. The mission of St. Jude's Research Hospital is to advance cures, and means of prevention, for pediatric catastrophic diseases through research and treatment. Consistent with the

vision of the founder Danny Thomas, no child is denied treatment based on race, religion or a family's ability to pay. Ms. Barbara Lewis, Assistant Professor in the Department of Kinesiology at Grambling State University and advisor to the KSLS Department Club and her students volunteered to help the organization with the background and frontline work that resulted in the community raising over $90,000 for St. Jude. The students and advisor tell their story of service and the value added as a result of the project.

Oral session 2A

MENtorship–A Service-Learning Project that paves a Path from High School to the University
Garrett Valenzuela Riley, Dr. Rory L. Bedford, & Dr. Ellen D. Smiley

Not all high school graduates choose to pursue a degree. For some students, financial constraints, family obligations, or other reasons may prevent them from attending college. Victory Group, LLC is a nonprofit organization that provides MENtorship programs for high school male students interested in attending Historically Black Colleges or Universities (HBCUs). The program focuses on inner city sophomores and juniors in the Houston, Texas area and helps to pave a path from high school to the university. This service-learning program paired Grambling State University male students with inner city male high school students towards providing guidance and support not only in school but in life. Special huddle sessions were geared towards "Redefining the Minority Male". Students were acquainted with financial literacy, mental health awareness, networking and other important issues.

Oral session 3A

Better Health: The Medical Leap Forward
Shiloh Williams
Faculty mentor: Dr. Prasanthi Sreekumari

The study of computational biology uses various aspects of statistics, machine learning, and big data practices to store copious amounts of medical data. The amalgamation of these processes allows medical professionals to leverage the most advanced and most practical treatments for patients afflicted with a wide array of illnesses, for example, the electrocardiogram (ECH and in German EKG) machine can be used to detect problems pertaining to the heart, such as bradycardia or tachycardia or a heart murmur. What this algorithm will accomplish is a minimally invasive system that can predict the first signs of an illness via stored user data. This system works by capturing visual changes in the user such as pale skin, swollen faces, droopy eyelids, and looking tired. These acute changes may be used to categorize the illness afflicting the user. The algorithm deals with the storing of biomedical information to accurately predict the course of an illness, and the development of an illness. The algorithm functions by using machine learning and cloud storage to compile various pictures of different stages of an illness, and comparing the user to the stored data set to predict if the user is afflicted by a specific ailment.

Oral session 2D

Poster Presentations

Plastics Among Plankton: Plastic Ingestion by Planktivorous Seabirds
Austin Bristo & Hector Douglas

Plastic waste has accumulated to such an extent that some scientists have proposed the current period may come to be classified as the plastic age of the anthropocene epoch. Yet contamination of the ocean by plastics is understudied due to the remoteness of these vast environments. Quantification of plastics contamination is challenging, but it is important to estimate impacts and trends. We developed methods for a time-series analysis at Bering Strait, one of the major geographic constrictions in the global ocean circulation. We selected crested auklets (*Aethia cristatella*) and least auklets (*A. pusilla*) as proxies for marine living resources. These colonial seabirds specialize on zooplankton. We dissected gastrointestinal tracts (GI) of specimens previously collected for research. We evaluated several methods for recovery of plastics (density separation, Fenton reaction, alkaline digestion). We placed series of stainless-steel screens (1 mm to

5 micron) in apparatuses devised from commercial sanitary equipment. Plastics were recovered on all mesh sizes, but more on 100 micron and finer mesh. Preliminary results indicate that more plastics were ingested in 2002 than in 1987. Most plastics were relatively translucent, and auklets may have mistaken some plastics for prey and ingested microplastics incidentally, perhaps in their prey. Our study indicates that plastics that enter the marine environment are being consumed by marine organisms and transferred in food webs. The problem appears to have increased. The intensification of shipping, industrial, and military activity at Bering Strait may worsen this problem.

Poster session 3A

Metagenomic Analysis of Water and Soil in Grambling Louisiana

Thaddisha James
Faculty mentor: Dr. Paul Kim and Dr. Audrey Kim

Metagenomics refers to the sequencing of genetic material from environmental sources. This metagenomic analysis of water and sediment from the Grambling Pond, wastewater from Grambling State University (GSU) and the city of Grambling sewer sheds will deepen our understanding of the local biodiversity, and uncover any antibiotic-resistance genes that are present. We hypothesized that the profiles of microorganisms detected in these varied contexts would be different based on our prior knowledge of microbial ecology. Water and sediment samples from the Grambling City Park Pond and wastewater samples from GSU and Grambling City were collected. DNA was extracted using the ZymoBIOMICS DNA Miniprep Kit or the DNeasy PowerLyzer Power Soil Kit. DNA quality was assessed by UV spectroscopy and DNA concentration was measured using a Qubit assay. Libraries for sequencing were prepared using the Oxford Nanopore Rapid Barcoding Kit. EPI2ME What's in My Pot bioinformatics evaluated 867,885 reads. Bacteria comprised 94% of readings, Eukaryota 5%, and Archaea/viruses <1%. *Escherichia coli* (111,351 reads), *Homo sapiens* (17,189), *Cloacibacterium normanense* (17,128), *Sphaerotilus natans* (6,700), and *E. marmotae* (4,851) were the most abundant species. Most enteric bacteria were identified in the wastewater. EPI2ME Antimicrobial Resistance aligned 1,344 genes to 185 in the Comprehensive Antibiotic Resistance Database. In future studies, antibiotic resistance and public health will be examined.

Poster session 3B

Gateways to Cancer: Pentachlorophenol Orchestration of Inflammatory Proteins in TIB-73 Mouse Liver Cells

Derrick Kee & Ms. Tatum Simmons
Faculty mentor: Dr. Waneene C. Dorsey

Inflammatory response proteins are present in about 40% of human cancers and in chronic arthritis. In particular, inflammatory proteins such as the tumor necrosis factor have been sequestered in gastric- and ovarian cancers, and chronic inflammation. We chose to use the environmental contaminant, pentachlorophenol (PCP) to activate an inflammatory response in our study to identify inflammatory proteins. PCP is an organochlorine fungicide used to prevent termites and other wood-boring insects from damaging wood products. The U.S. Environmental Protection Agency has established PCP as a prevalent human Group B2 cancer-causing agent. We hypothesized the transcriptional activity of inflammatory proteins through p38/MAPK activity. Employing the Western immunoblotting technique, a dose-dependent upregulation of the 54 kDa ATF-2, 38 kDa phosphor-p38, and 25 kDa TNF-α was observed in 4 µg PCP/mL, and 8 µg PCP/mL. The overexpression of phosphor-p38/MAPK increased, and the transcriptional activity of ATF-2 and TNF-α was enhanced. These data suggest that p38/MAPK activity is a fundamental requirement for optimal upregulation of ATF-2 and TNF-α which can be seen in various types of cancer.

Poster session 3B