Francis Marion University

9th Annual Research and Exhibition Day 2023

A Celebration of Student Scholarship Across Disciplines

ABSTRACT BOOK

Friday, April 14th, 2023
12:30 – 4:30 PM
Honors Center Lobby & Atrium

#1 – Possible Effects of Slavery on the Lymphatic and Musculoskeletal Systems†
Student Presenters: Jarrod Woodland & Collin Brown
Advisor: Shayna Wrighten (Biology)
Presentation Time: 1:00-1:30
Abstract: We are looking to investigate possible effects on the lymphatic and musculoskeletal system of living in the Hewn Timber Cabins. We are also looking to correlate possible differences or similarities between current day health affects lower socioeconomic status individuals to those who are slaves, particularly in the Hewn Timber Cabins. We predict that there are similarities that could lead to malfunctions in these two major body systems.

#2 – Physiology in the Cabins†
Student Presenters: Shelly Smith Mays & Bailey Mitchell
Advisor: Shayna Wrighten (Biology)
Presentation Time: 3:30-4:00
Abstract: The cabins on Francis Marion University campus were once slave cabins owned by a plantation and later as slavery was abolished, they became the home of African American sharecroppers. The purpose of this project is to examine and compare the digestive and cardiovascular systems of someone living in the cabins to a middle-class person living today. The lifestyles and resources of the inhabitants of the cabins back then compared to a middle-class person living in the Pee Dee Region today are quite different; thus, causing differences in digestive and cardiovascular systems. The project is a poem that compares these two systems, with alternating lines from the two perspectives to compare and contrast. A collage of pictures taken at the cabins on campus along with quotes from the poem has been put on display to further enhance the impact of the poem and enable the viewer to visualize the perspective of someone living in the cabins. The poem and visuals will provide the viewer with a better understanding of the differing digestive and cardiovascular systems.

#3 – Impact of Living in the Cabins on Human Physiology†
Student Presenters: Marlen Gonzalez & Angelina Jayapuram
Advisor: Shayna Wrighten (Biology)
Presentation Time: 2:30-3:00
Abstract: Living in the cabins has an extreme impact on the body. Physiologically, the nervous system and muscular systems are the two systems which are the most affected. Previous research found that living in extreme weather conditions of heat or cold can impact the brain and alter the cognitive function and also lead to mental retardation. Living during these times had a huge impact on muscle development, due to inadequate nutrition, hard labor, and unsanitary conditions. Hard labor also resulted in muscle pain, sprain, and fractures which led to early death. Through this poster, we want people to understand the privilege that they have in living with all the facilities they need at their home. Lifestyle in the cabins was much more difficult because people had to learn how to survive, adapt, and evolve with the limited resources they had.

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#4 – Body Systems: Then vs. Now†
Student Presenters: Landen Owens & Jacob Mouzon
Advisor: Shayna Wrighten (Biology)
Presentation Time: 3:30-4:00
Abstract: The cabins located on the FMU property date back to slave times, where more than a century ago they housed slaves that worked the plantation that was here. Living in these cabins would take a toll on the human body in many ways varying on the outside environment. This exhibition explores how the immune and musculoskeletal system of someone living in the cabins would differ from someone in today's upper class. We researched the average health of an upper-class citizen and compared that to the average health of slaves living in the cabins. In conclusion the malnutrition in slaves caused low muscle mass affecting their physical movement as well as homeostasis in the body. The poor sleep and work conditions would have increased the chances of disease and lowered the overall quality of life.

#5 – Inter-professional Collaboration and Barriers within Title I Elementary Schools in South Carolina*
Student Presenters: Callie Barrett, Caitlin Jones, Summer Hamlett, & Carleen Moore
Advisor: Afua Agyapong (Speech Language Pathology)
Presentation Time: 12:30-1:30
Abstract: American Speech-Language-Hearing Association (ASHA) encourages inter-professional practice. A key population that speech-language pathologists (SLPs) work with is school-age children. However, this is not always possible in all settings due to several possible barriers. The present study sought to determine whether inter-professional collaboration is implemented between teachers and speech-language pathologists within Title I schools in South Carolina and to identify the barriers that affect inter-professional collaboration between teachers and speech-language pathologists within Title I elementary schools in South Carolina.

#6 – Teacher Self-Efficacy and Inclusive Experience*
Student Presenter: Meghan Marriott
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: The concept of inclusive education for students with disabilities within the general education curriculum is not a new one. In South Carolina, the move toward inclusion has been the expectation for several years but is far from complete. Data collected from this project will assist in regaining pre-COVID momentum toward real and meaningful inclusive practices.

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#7 – The Lamar Incident: How Three Buses Changed Integration in South Carolina
Student Presenter: Lakin Hannah
Advisor: Erica Edwards (History)
Presentation Time: 1:00-1:30
Abstract: On March 3, 1970, a group of over 150 white citizens overturned school buses carrying African American students from Spaulding High School to Lamar High School in order to federally integrate. This research paper allows for others to be informed on the violence that African American students faced as they were trying to integrate public schools all over the South, even 15 years after the monumental 1955 Brown v Board of Education Supreme Court decision. Using oral histories and a multitude of primary sources, this paper give voices to those who were affected by this event but have had not one previously. This paper also brings to light the inequality that still exists today with the push for school choice for public school students and how this process can socioeconomically and racially divide public schools even now.

#8 – The Effects of Exposure to Great Pee Dee River Contaminants in Fathead Minnows (*Pimephales promelas*)
Student Presenters: Emily Llewellyn, Summer Bailey, Rikhya Ford, & Angelina Jayapuram
Advisor: Elizabeth Jones (Biology)
Presentation Time: 2:30-3:00
Abstract: The Great Pee Dee (GPD), is known to be a heavily contaminated river system, however effects of GPD contaminants on fish are unclear. Previous work has documented high contaminant loads in tissues of GPD fish; these loads have been associated with a suite of impaired health indicators including poor gonad differentiation and widespread tissue pathology. Therefore, we hypothesize that GPD contaminants represent a barrier to fish repopulation and may have an adverse effect on development of fish embryos. To test this hypothesis we exposed *Pimephales promelas* larvae (24 hours post hatch) to one of two treatments: clean water or GPD water. Water was changed every 24 hours. We then monitored larval survival and growth for four weeks. We examined the transcriptional effects of GPD exposure by performing qPCR on two genes known to be altered by contaminant exposure: CYP1A and VTG. These data will lend insight into the barriers to population recruitment in the GPD, and will provide valuable information to wildlife managers responsible for fish stocking programs.

#9 – Conservation Element and Solution Element Method (CESE) Applied to Euler Equations
Student Presenter: Morgan McCaskill
Advisor: Daniel Brauss (Mathematics)
Presentation Time: 3:30-4:00
Abstract: We review the conservation element solution element (CESE) method with respect to scalar and vector differential equations that are used to model engineering processes and natural phenomena. We discuss the application of the method to the Euler equations and a shock tube problem with respect to work done by Sin-Chung Chang. We present Python code and results of the algorithm's application and discuss future work.

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#10 – FBA and BIP Data Collection: A Study of Special Educator Satisfaction*
Student Presenter: LeAnna Jacobs
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: An important component of FBAs and BIPs is behavioral data collection. The purpose of this study was to examine special education teacher satisfaction in response to a cost-free behavior data collection measure. The data collection measure was created in Microsoft Excel utilizing teacher responses to an initial satisfactory survey. The measure included 6 weeks of ABC data collection sheets as well as 6 weeks of frequency data collection sheets that were created using methods documented by Morris, Deochand, and Peterson (2018). This study asked participants (n=9) to use the data collection measure for four weeks before completing a follow-up survey documenting their satisfaction with the measure. Satisfaction will be measured by comparing each participant's initial and follow-up surveys using a small n design.

#11 – Multiculturalism and Caregiver Perspectives of Autism Spectrum Disorder: Impact on Diagnosis and Intervention*
Student Presenters: Reneesha Hopkins, Tae Stepney, Aerial Pridgen, Joan Stone, & Jerusha Johnson
Advisor: Rebekah Wada (Speech Language Pathology)
Presentation Time: 12:30-1:30
Abstract: Researchers investigated whether the race of caregivers impacts their views of Autism Spectrum Disorder (ASD) and if this impacts the diagnosis process, treatments received, and resources provided. An anonymous survey will be presented on social media platforms. Primary caregivers of the child(ren) with ASD residing in North and South Carolina are encouraged to participate in the study. The survey consisted of an informed consent document for all participants, demographic questions, statements related to the myths about ASD, and statements related to facts about ASD. The survey will be tested by professionals proficient in ASD and was piloted in August 2022.

#12 – The Effects of Sodium Lauryl Sulfate on Cytokeratin Gene Expression in *Pimephales promelas*
Student Presenter: Reina McCullough
Advisor: Elizabeth Jones (Biology)
Presentation Time: 1:30-2:00
Abstract: Sodium lauryl sulfate (SLS) is an anionic surfactant found in many household and personal hygiene products such as toothpaste, shampoo, and laundry detergent. Studies conducted on humans found that SLS can cause irritation in the skin, and when combined with warm water it is more irritating. This project aims to investigate the potential dangers SLS has on developing fish by evaluating cytokeratin (KRT1) gene expression in *Pimephales promelas* after exposure to SLS. Larval (24 hours post-hatch) *Pimephales promelas* were exposed to low, medium, and high concentrations of SLS over the first four weeks of their development. Our data lend insight into the toxic effects of SLS on developing fish.

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#13 – The Effects of Positive Affirmations in the Workplace Environment*
Student Presenter: Chandler McIntyre
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: Research suggests that positive affirmations can build powerful connections between teachers and students, reduce health issues, promote self-awareness, and stimulate a productive and constructive work ethic. The purpose of this study is to examine the effects of positive affirmations within the workplace environment.

#14 – Chronic Heat Stress during Vegetative Growth in *Arabidopsis thaliana*: Changes to Vegetative Growth, Stomatal Density, Reproductive Growth, and Gene Regulation
Student Presenter: Jared Ivey
Advisor: Jeremy Rentsch (Biology)
Presentation Time: 1:30-2:00
Abstract: We heat stressed *Arabidopsis thaliana* during vegetative growth to determine downstream impacts on vegetative growth, reproductive growth, stomatal density, and the regulation of key genes involved in heat stress and stomatal development. We find that our heat stress treatment produced significant differences in basal rosette growth, fruit number, and stomatal density. We found significant upregulation of a key gene involved in a plant's response to heat stress, but found no significant difference in expression in the genes that underlie stomatal development and density.

#15 – Using Polydopamine as a Natural Dye for Natural Materials
Student Presenter: Tristan Piatt
Advisor: Kris Varazo (Chemistry)
Presentation Time: 2:30-3:00
Abstract: Polydopamine is a naturally occurring substance, which is similar to eumelanin. We are exploring the use polydopamine in place of commonly used phenylenediamine dyes, which are a potential health concern. We synthesized polydopamine from a pH 8 buffer solution containing dopamine hydrochloride. We dyed three natural materials; cotton, burst bristles, and human hair with polydopamine. We characterized these three materials using Fourier transform infrared. Fourier transform infrared spectra were recorded before and after the dying process.

#16 – Using Visual Representation to Understand Psychoeducational Data*
Student Presenter: Courtney Long
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: This study was conducted to see if pairing verbal communication with visual representation increases the likelihood of stakeholders understanding a pattern of strengths and weaknesses of the student. Questionnaires were given to IEP team members to complete after evaluation results were presented in the meetings. Two different formats were used during the study: 1.) using only verbal communication to explain the testing data and 2.) using verbal communication paired with a visual representation of testing data.

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#17 – Florence Navigator
Student Presenters: Austin Freeman, Roland Vu, Alaina Hudson, Darius Hicks-Terrell, Mace Talbott, & Madeline Severance
Advisor: Padma Rao (Computer Science)
Presentation Time: 12:30-1:00
Abstract: The Florence Navigator app is an innovative solution that provides users with computer-guided driving tours of the Florence area, highlighting specific points of interest (POI) and providing information about each POI via written material, images, and prerecorded audio narrations. The app uses geolocation technology to guide users through the Florence area, ensuring that they don't miss any of the exciting attractions and landmarks along the way.

#18 – An Examination of Moral Decision-Making by Autistic Adolescents*
Student Presenters: Natasha McKnight, Franyeris Mercado, AshLeigh Watts, & Summer Pittman
Advisor: Rebekah Wada (Speech Language Pathology)
Presentation Time: 12:30-1:30
Abstract: This research will identify the ways in which both autistic and typically developing (TD) adolescents use moral decision making skills. An empirical study using absolute and relative moral decision-making will be surveyed to see which decision making schema is used by autistic and TD adolescents. The study will test the theory that adolescents with ASD use absolute moral decision-making over relative decision-making. It will also examine whether adolescents with ASD have higher absolute moral decision-making skills than typically developing adolescents. The survey will provide a reliable perspective by asking "yes, no" questions, giving no bias selections while also assessing "why" to measure absolute and relative moral decision-making.

#19 – Psychoeducational Assessment of Deaf and Hard of Hearing Students*
Student Presenter: Julie Macker
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: Exploring the topic of psychoeducational assessments in the DHOH population is crucial to ensuring accurate diagnoses and placement to promote student success. An examination of current practices amongst school psychologists was conducted almost 50 years ago by Levine (1974) and 30 years ago by Weaver & Bradley (1993). Now that 30 more years have passed, it is time to determine what has changed and what still needs resolved in the evaluation of DHOH students. Research specifically within the state of South Carolina was not found in the review of literature. The purpose of this study was to pilot a survey to determine what is being included in psychoeducational evaluations of DHOH students in South Carolina, which instruments are being chosen for use, and how school psychologists are making these decisions.

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#20 – The Effect of Cellular Differentiation on Adeno-Associated Viral Vector Genome Status
Student Presenters: Farouk Chatila & Jacob Edwards
Advisor: Jennifer Lyles (Biology)
Presentation Time: 1:30-2:00
Abstract: The purpose of this study is to clearly define the status of AAV vector genomes in undifferentiated and differentiated cells and to better understand the transition of vector genome conformation during the process of cellular differentiation. To accomplish this, the status of the AAV vector genome will be investigated in a single cell population—before, during, and after differentiation—using C2C12 cells. These murine myoblasts will be infected with AAV-2 and induced to differentiate into myotubes via serum starvation. Samples will be collected before, during, and after differentiation and analyzed for gene expression (fluorescence microscopy), intracellular vector genome concentration (qPCR), and vector genome status (Southern blot). This study is in the early stages of development; data collection and analysis are ongoing.

#21 – Assessing Learning of Manual Assembly Processes Using Wrist-Worn Inertial Measurement Units
Student Presenters: Kirk Johnson, Nathaniel Smith, & Jerel Dawkins
Advisor: Rahul Renu (Physics and Engineering)
Presentation Time: 3:30-4:00
Abstract: The objective of the research presented here is to study the use of Inertial Measurement Units to assess how consistently a person performs a manual assembly process. In conjunction with this objective, the research also explores the use of two novel metrics to plot learning curves – cycle-to-cycle consistency, and consistency with average.

#22 – Recreating Belle Baruch's Equestrian Medals
Student Presenter: Jerel Dawkins
Advisor: Rahul Renu (Physics and Engineering)
Presentation Time: 2:30-3:00
Abstract: Several of Belle Baruch's equestrian medals are on display at Hobcaw Barony. Some of these are in poor condition and need to be preserved. This project involves the reverse engineering (making replica designs and manufacturing replicas) of said medals.

#23 – Improving Workforce Readiness and Capabilities in South Carolina – Year 2
Student Presenters: Nathaniel Smith, Jerel Dawkins, & Kirk Johnson
Advisor: Rahul Renu (Physics and Engineering)
Presentation Time: 2:30-3:00
Abstract: This research aims to provide job seekers an opportunity to upskill themselves while at home. The research has led to the development of a website where job seekers can learn about specific products, their parts, assembly processes, and part functions. Evaluation mechanisms have also been implemented on the website. The goal is to have companies view how job seekers have performed and make better-informed hiring decisions.

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#24 – Does Targeted Counseling Reduce Anxiety Among High Performing Adolescent Students?*
Student Presenter: Melissa Farmer
Advisor: Crystal Hill-Chapman (Psychology)
Presentation Time: 2:00-3:00
Abstract: Fifteen students within the Sophomore and Junior class which fell in the top 25th percentile of their class with a PSAT score of 1080 or higher and a BESS ranking of elevated risk within the Internalizing Risk Index (IRI) were randomly selected to participate in counseling sessions to reduce risk. State Trait Anxiety Inventory (STAI), a psychological inventory consisting of 40 self-report items on a 4-point Likert scale to measure both state anxiety and trait anxiety, was completed by all participants pre and post six-week counseling sessions. The inventory was distributed by teachers of honors classes from each grade level, with Freshmen and Seniors representing the control group. The State Trait Anxiety Inventory will be analyzed for decreased levels of anxiety or depression among the experimental group.

#25 – Making a Splash with High-Altitude Ballooning
Student Presenters: Sherly Garcia-Barrientos, Tanner King, & Patrick Belt
Advisor: Philip Fulmer (Physics and Engineering)
Presentation Time: 2:30-3:00
Abstract: The purpose of this study was to launch a high-altitude balloon to measure and obtain data of several meteorological conditions and high-energy radiological counts as the balloon ascends to the upper troposphere. The payload was constructed out of plywood and square dowels, and was square shaped with four small legs. Each of the corners had triangular platforms that supported the instruments attached to the payload. The balloon was filled with an insufficient amount of helium on the day of the launch. As a result, the balloon deviated greatly from its predicted trajectory which caused a record flight time and a unique recovery. Despite this, usable data was obtained from the instrument package.

#26 – The Effects of COVID-19 on Educational Systems and Pediatric Speech-Language Pathology Services*
Student Presenters: Taylor Harrington, Bailee Matthews, Meagan Gore, Devyn Hamilton, & Alyssa Selembo
Advisor: Afua Agyapong (Speech Language Pathology)
Presentation Time: 12:30-1:30
Abstract: This study sought to analyze the impact of COVID-19 on pediatric children's progress toward meeting therapeutic goals, and to determine whether SLPs in North and South Carolina had to modify their service delivery throughout the COVID-19 pandemic and how they prepared for the transition. A 5-minute survey containing 21 questions was distributed to SLPs practicing in these states, and responses were analyzed descriptively to identify patterns and trends related to the effects of the pandemic on service delivery. Findings showed that the COVID-19 pandemic significantly impacted the SLP profession. The pandemic negatively impacted children's progress in speech and language therapy and also the service delivery mode of SLPs.

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#27 – Solitude and Psychosis: The Effects of Solitary Confinement
Student Presenter: Jacob Prete
Advisor: Jesse Sargent (Psychology)
Presentation Time: 3:30-4:00
Abstract: This paper focuses on the effects that solitary confinement has on inmates and potential ways to minimize the negative impacts. These effects are looked at as far as an inmate's mental health, physical health, and behavioral impacts. The studies showed a range of harmful impacts caused by being in solitary confinement. Inmates are found to suffer from depression, anxiety, and psychotic symptoms after spending time in confinement. Inmates also experience severe weight loss and develop physical health disorders such as arthritis and diabetes. Being in solitary confinement has also showed not to prevent inmates from acting out again, for more than half of inmates re-offend after being released.

#28 – Efficacy and Effectiveness of Positive Behavior Interventions and Supports at a High School Level*
Student Presenter: Iulia Miclaus
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: This research project investigates the impact of Positive Behavioral Interventions and Supports (PBIS) implementation on discipline referrals in a high school setting within the Aiken County Public School District (ACPSD) over three consecutive school years. The research project hypothesized that PBIS implementation would significantly reduce discipline referrals over three school years. The results indicate that PBIS implementation led to a significant decrease in discipline referrals, with a reduction of 36% in the first year, 11% in the second year, and 14% in the third year. Overall, there was a 51% decrease in discipline referrals when comparing the last year of PBIS implementation to the year prior to implementation.

#29 – Soundscape Analysis with Secondary Students
Student Presenters: Kenneth Hellmig, Madison Smith, Kendra Cod & Sarah Carey
Advisor: Nathan Harness (Biology)
Presentation Time: 3:30-4:00
Abstract: We had high school students at Wilson High School analyze acoustic data to see if there are changes to the soundscape before and during a major construction project. We used audio recorders placed at the Freshwater Ecology Center, and students used R-Studio to make measurements.

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#30 – Small Mammal Survey of Southern 8ths Farm
Student Presenters: Kimberly Baskins, Nakayla Garner, Clayton Tiller, & Morgan Warner
Advisor: Travis Knowles (Biology)
Presentation Time: 1:30-2:00
Abstract: We conducted a small mammal survey in Fall 2022 and Spring 2023 at Southern 8ths Farm, a private conservation property in Chesterfield County, SC. Our purpose was to determine the diversity of small mammal species on the property. We used a series of Sherman live traps that were set for two consecutive nights on multiple weekends, in a variety of habitats, and checked the following morning. In addition to species identification, we collected standard biometric data (size, sex, age class, reproductive condition). We released all specimens at the original capture site. So far, we have documented three different rodent species. We conclude with thoughts on future surveys and research extensions.

#31 – Technology and its Effect on Student Engagement*
Student Presenter: Caleb Jenkins
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: In the last 15 years, classrooms have slowly moved away from traditional paper and pencil learning. At the time, most classrooms are filled with new and innovative technology. These technological advances have presented new obstacles to students learning by creating new distractions. By using evidence from previous papers, personal experience, and teacher interviews, this study will highlight the increase in technology and its adverse effects on student engagement in the classroom. The report will acknowledge that technology has a place in the school but will also highlight how this increase in tech use has limited students' engagement in lessons.

#32 – Eligibility of Specific Learning Disability: Are School Psychologists Consistent across South Carolina?*
Student Presenter: Zoe Jones
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: This research examined the methodology among school psychologists in determining eligibility for Specific Learning Disability (SLD) across the state of South Carolina. While the South Carolina Standards for Evaluation and Eligibility Determination (SC SEED) offers general guidance on determination of eligibility, there is still variation among districts. Specifically, many districts have shifted from discrepancy models to a pattern of strengths and weaknesses (PSW) model. Some districts have also utilized a combination of the two methods. This study presented school psychologists across the state with a survey consisting of 10 hypothetical cases that included students' cognitive scores, achievement scores, and grade level, with the assumption that all other criteria for SLD under the SC SEED had been met. The survey also included specific questions regarding the participant's personal methodology in identifying SLD. Responses for each case will be compared to determine the consistency of a SLD profile among school psychologists in South Carolina.

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#33 – Professional Lawn Services Website
Student Presenters: Stanislaw Kansiewicz, Jordan Hinson, & Madeline Severance
Advisor: Padma Rao (Computer Science)
Presentation Time: 1:00-1:30
Abstract: Professional Lawn Services Website is a practical expression of the Software Engineering process from requirements to implementation. In this project we employed Scrum methodology, with a UML (Unified Modeling Language) documentation model. The final application relies on a MySQL database with a back end implementing a Java Spring Boot application framework employing an MVC design pattern. Within the Web application we dynamically generated the HTML pages using Thymeleaf. Throughout the development we had the opportunity to explore learning new technologies and implementing them independently as a project team with the support and guidance of our professor. We additionally had the responsibility of maintaining consistent and effective client communication as the project progressed from an idea through implementation to what is now being prepared for deployment.

#34 – The Expedition to Space: Our High-Altitude Balloon Experiment
Student Presenters: Austin Stafford, Ryan Johnson, & Timothy Kareka
Advisor: Philip Fulmer (Physics and Engineering)
Presentation Time: 1:00-1:30
Abstract: The primary aim of the project was to investigate the intricate phenomena associated with a high-altitude balloon launch. Employing a light wooden airframe fashioned into a triangular shape, the payload was launched via weather balloon on the 25th of February, 2023 from Winnsboro, SC. The payload's trajectory spanned over a hundred miles and reached an astonishing maximum altitude of 106,000 feet before gracefully landing just north of Shallotte, NC. The payload was equipped with an array of sensors, including an ultraviolet light sensor, temperature and humidity sensors, and a Geiger counter capable of recording ambient radiation counts. This presentation delves into the details surrounding the launch preparation, payload tracking, data analysis, and payload recovery.

#35 – Utilization of Dysphagia Diet in the Upstate Region of South Carolina*
Student Presenters: Sarah Carney, Sarah Brancheau, Alexandra Diaz, Lauren Walters, Cassidy Crowder, Elizabeth Armenteros, Haley Beasley, Amanda Watson, & Roger Scales
Advisor: Michele Norman (Speech Language Pathology)
Presentation Time: 12:30-1:30
Abstract: This research aims to determine which systems are being utilized in state-funded long-term care (LTC) facilities in the Upstate Region of South Carolina. SLPs in state-funded LTC facilities in the Upstate region of South Carolina were contacted via telephone for study participation. Of the 64 facilities contacted, 14 SLPs responded and agreed to participate. Of the 14 expected, 3 surveys were received. Although SLPs in the Upstate region of South Carolina are currently utilizing various dysphagia diets, all agree that the IDDSI is necessary for best practices. This is commensurate with the finding of the previous study. These findings further support a need for standardization of dysphagia diet systems.

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#36 – Demographics and Prevalence of Bullying in the Middle and Junior High Schools within the Robeson County NC School System*
Student Presenter: Christopher Lowry
Advisor: Antonio Cooper (Psychology)
Presentation Time: 2:00-3:00
Abstract: This descriptive study reports bullying, from a demographic analysis perspective. The Public Schools of Robeson County (PSRC) in North Carolina is largely rural, yet still manages to be quite diverse in its racial and ethnic makeup. Data was collected from eight participating middle and junior high schools and included a total of 102 male and female participants who reported being bullied over the course of November 2022 through February 2023. Grades 5 through the 8 were included in the study, with the highest number of reports of bullying stemming from the 6th grade with 35 students.

#37 – COVID-19 Case Surveillance on a University Campus
Student Presenter: Jarrod Woodland
Advisor: Jennifer Lyles (Biology)
Presentation Time: 12:30-1:00
Abstract: Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). While Francis Marion University (FMU)—consisting of nearly 5,000 students, faculty, and staff—has implemented many protective measures to maintain a safe learning environment on campus, case surveillance would further contribute to this mission by providing important information regarding the landscape of COVID-19 at FMU. Therefore, this study aims to implement case surveillance on campus by administering a survey to consenting individuals being tested for SARS-CoV-2 at the FMU Student Health Center. Data collected includes demographic information, vaccination status, symptoms, previous infection, underlying medical conditions, known exposures, residence, personal behaviors, social activities, and COVID-19 clinical diagnosis.

#38 – COVID-19 Case Surveillance on a University Campus
Student Presenter: James Creel
Advisor: Jessica Burke (Sociology)
Presentation Time: 1:30-2:00
Abstract: Mental health care is an underutilized service in the medical field. The reasons for this may stem from a lack of access, or more interestingly, stigma about mental health. Looking through the lens of sociological processes and theories such as socialization and the looking-glass self, an individual may learn these stigmas from significant others in their life, namely their family, peers, and religion/religious leaders. This study aims to look at this formation of stigma surrounding both mental health and its respective field of healthcare and theorize as to where this stigma is learned from, looking primarily at parents, peers, and an individual's religion. A 40-question survey was constructed and sent out to potential participants in the lower coastal region of South Carolina as well as Francis Marion University in order to measure the influence that these factors have on an individual's own perception of mental health.

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#39 – MTSS and its Effect on Students in Least Restrictive Environment*
Student Presenter: Nicole Adams
Advisor: Crystal Hill-Chapman (Psychology)
Presentation Time: 2:00-3:00
Abstract: This research focuses on how Multi-Tiered Systems of Support (MTSS) within the school system makes an impact on the Least Restrictive Environment in special education. As students progress through the different tiers of support for MTSS, the focus is on whether students can be successful and gain equal access to education, and if it reduces the amount of time that a child is removed from the general education setting and into a special education classroom to get specialized instruction. It focuses on whether students education needs can be met in tier 2 or tier 3 instruction instead of being removed from the general education classroom.

#40 – Layton-Anderson Clerical Entry System (LACES)
Student Presenters: Daniel Dixon, Gary Holland, Michael Knight, & Zachary Seiss
Advisor: Ken Araujo (Computer Science)
Presentation Time: 3:30-4:00
Abstract: The Layton-Anderson Clerical Entry System is an application used for data entry and storage of various records for the Layton-Anderson funeral home. Its purpose is to provide a modern system for storing client data, managing pending balances for funeral services, providing concise service reports and finance bills for the customer, and keeping track of funeral dates or appointments based on data entered. Functionality is separated into three main pages; Calendar, Management, and Finances. Data is managed on a cloud server, so worries of storing it in-house are circumvented, and are reliably protected by the parent company. This system was developed as an upgrade for the funeral home, as they are still using a traditional filing system, including numerous paper reports and copies sorted into various filing cabinets.

#41 – The Catastrophic Effects of a Slave's Diet†
Student Presenters: Arianna Williams & Scarlett Gilmore
Advisor: Shayna Wrighten (Biology)
Presentation Time: 12:30-1:00
Abstract: In order for slaves to maintain livelihood, their daily struggle was that of malnutrition. This impacted the way that slaves were able to function and caused their bodies' muscular system to diminish. Considering the limited supply of food, there were numerous times the young children suffered more effects of malnutrition than their mothers. The lack of nutrition can lead to a decline in muscle function as a result of the limited food intake. This decline and changes in muscle mass suggest that altered nutrient intake has an important impact independent of the effects on muscle mass (Saunders, 2010). We will display slavery and its relationship with malnutrition within young children and the elderly during these times in contrast to the diets of the elderly and youth today. In comparison to a healthy individual of today's standard, the ability of the digestive and musculoskeletal systems to operate properly during the 1620s until the 1860s was severely reduced.

† indicates a "What the Cabins Mean to Me" Project
* indicates project by graduate student(s)