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Adeniyi, Precious; Osoba, Damilola

Development of LaAces Payload for Light Intensity Study

Objectives:

- Develop scientific weather balloon payload to measure ambient and UV light intensity, internal and external temperature and humidity up to 30.5 km
- Analyze light intensity, altitude, and atmospheric data correlations
- Build lightweight, durable system with sensors, GPS, and SD storage

Borel, Alyssa; Dupre, Ava

Target Ethnicity and Perceived Similarity on Blame Attributions for Rape

This study aims to examine how ethnicity impacts perceptions of blame in a rape case. Past research has found that when a perpetrator is part of a person's ingroup, they attribute less blame and call for a less severe punishment than an outgroup member for the same event (Halabi et al., 2015). One study found that attitudes towards offenders belonging to an ethnic minority were more negative than those who belong to an ethnic majority, and individuals less similar to participants were blamed significantly more (Rozmann & Levy, 2019). It was also found that when people can identify with a victim, they perceive an act of violence against them as more senseless than if the victim is dissimilar (Lodewijkx et al., 2005). This study hypothesizes that individuals are more likely to assign blame to victims and perpetrators of a different ethnic identity than their own. Furthermore, we predict that these effects will be moderated by similarity to the victim or perpetrator.

275 college students (65% women; 35% men) were asked to read one of two vignette conditions presented as a news article from 2010; An American reporter (female) raped by an Iraqi citizen (male), or an Iraqi citizen (female) raped by an American reporter (male). Participants then completed Likert-style questions to assess their similarity to the victim (3 items, $\alpha = .77$), similarity to the perpetrator (3 items, $\alpha = .83$), victim blame (6 items, $\alpha = .83$), and perpetrator blame (4 items, $\alpha = 83$).

Linear regression analyses were performed to test the effects of ethnicity condition, perceptions of similarity to the victim (Model 1) or similarity to the perpetrator (Model 2), and their interaction on victim blame (Model 1) or perpetrator blame (Model 2). Model 1 was significant ($R^2 = .12$); perceived victim similarity predicted victim blame ($b=-.48$, $p<.001$), as did ethnicity condition ($b=.44$, $p<.001$), but the interaction effect was not significant. Unexpectedly, victim blame was higher when the victim was portrayed as an American (and the perpetrator as an Iraqi) compared to when the victim was portrayed as Iraqi (and the perpetrator as American) In Model 2 ($R^2 = .24$), perceived perpetrator similarity predicted perpetrator blame ($b=-.76$, $p<.001$), but ethnicity condition and the interaction term were not significant.

This study contributes to existing research that found that individuals who perceive greater similarity to victims assign less victim blame (Rozmann & Levy, 2019). However, ethnicity conditions did not significantly influence perpetrator blame, indicating that solely belonging to a different ethnic group is not enough to alter judgments of responsibility without also having perceived personal connections. This study is important in highlighting that perceived similarity, rather than ethnicity alone, shapes judgements of blame.

Boteler, Dax

To What Extent Do Social Media "Likes" Influence People's Beliefs about False News

Reliance on social media for our news continues to rise with 53% of U.S. adults getting their news information either "sometimes" or "often" from social media (Aubin & Liedke 2025). With this ever-increasing reliance, much attention has been paid to the credibility of the information posted online (Lazer et al., 2018); (Pennycook and Rand 2021). The widespread misinformation of the 2016 election marked a major shift toward the research of "fake news", adopting President Trump's popularization of the term. Since then, the prevalence of fake news has only become more apparent from the political misinformation in the 2020 election to the widespread health misinformation during the Covid-19 Pandemic. Further exciting the problem is how pervasive fake news is. Numerous studies have shown that misinformation spreads farther and more rapidly than true information and is often prevalent among the highest trending posts for certain online topics, especially those that are political or health-related (see systematic review in Suarez-Lledo & Alvarez-Galves 2021); (Vosoughi et al., 2018); (Yeung et al., 2022). This has led to many studies investigating the underlying factors contributing to the spread of misinformation, including environmental, emotional, and individual factors. However, very few investigate whether social media metrics (e.g., likes, comments, shares, etc.) could be influences (Avram et al., 2020). Studies indicate that people use prior decisions made by others before them as information to influence their own decisions (Banerjee 1992); (Bikhchandani et al., 1992). Avram et al., 2020 supports that social engagement from prior users may play this role as a signal of credibility, finding participants more likely to like and share questionable content and less likely to fact check. However, while social engagement has been shown to influence shareability, studies have shown that sharing is not equivalent to belief (Pennycook et al. 2021); (Pennycook & Rand 2021). Therefore, the question of whether social engagement influences belief in misinformation is still yet to be answered. It is this gap in the fake news literature that we aim to fill by investigating the extent to which *social media likes* interact with the *misinformation effect* – the retention of false post-event information in replacement of the original memory. We follow the three-phase misinformation effect paradigm to replicate the eyewitness testimony suggestion studies of the past (see review in Loftus 2019). Participants watched a video of a simulated robbery, followed by viewing mock X posts (some possessing either a high or low like count and either containing misinformation or neutral information). They then completed a memory test to assess the accuracy of their recall. We are still in data collection but plan to measure our 2 (*Information Type*: misinformation/neutral) x 2 (*Like Count*: high/low) design, using a repeated measures, within-factors ANOVA and Tukey's Honest Significant Difference (HSD) test. Our primary hypotheses are: 1.) a negative main effect of misinformation

exposure on memory accuracy, i.e., the misinformation effect and 2.) a dependence of the misinformation effect's strength on the size of the like count, demonstrating an interaction between the misinformation level and like count group. The findings of this study can give great insight into understanding the extent to which the interface models of current social media feeds influence people's beliefs, potentially illuminating solutions through future changes in the way information is presented on social media.

Brown, Konye

Trauma Data: Raising Awareness of a Cornerstone of Trauma Care

This project emphasizes Louisiana's need for improvement in trauma data infrastructures across the state. By mapping fatal and non-fatal injury rates in Louisiana and highlighting the workforce gaps in trauma data related fields, this research conveys how incomplete data sets inhibits equitable trauma care, resource allocation, and preventative medicine measures. Improving trauma data systems is one of the first steps in improving trauma care and equity across Louisiana's diverse regions.

Cheramie, Bailey; Touchet, Cameron; Rios, Caleb; Moon, Yoojin; Osman, Sara; Beck, Faith

Speaking of Death: Positive and Negative Associations of Death-Related Language

Researchers argue that people from various cultural backgrounds avoid using literal, death-related words such as “death” and “dying” (Biseko, 2024; Crespo-Fernandez, 2011; Herat, 2014). Instead, people from these cultures tend to use figurative language, such as “passed away,” when situations require them to talk or write about death. Avoidance of literal, death-related language is often explained as a consequence of the anxiety elicited by thoughts of death.

This argument is supported by studies showing that literal, death-related words induce negative emotions in individuals (Han et al., 2010) and that more positive language is generated by individuals faced with the task of reflecting on their own death (Kashdan et al., 2014). Our question, then, is whether there is evidence within language use itself that literal, death-related words are actually more negative in valence than other types of words.

We used data collected from the Corpus of Contemporary American English (Davies, 2008-), allowing us to explore linguistic patterns in naturally occurring language. We focused on the antonym pairs alive-dead, life-death, live-die, living-dying, and lively-deadly and conducted two analyses: one looking at the content words (i.e., nouns, verbs, adjectives, and adverbs) that appeared most frequently around uses of these target words (i.e., collocation analysis) and one looking at the words surrounding 100 randomly selected uses of these target words (i.e., context analysis).

Linguistic Inquiry and Word Count (LIWC-22) software was used to search for words indicating positive and negative tones. The collocates analysis showed that life-related collocates were more positive in tone (M=14.00) compared to their death-related counterparts (M=2.5; $t(399)=2.50$, $p<.001$). Even though life-related words were more likely to have positive collocates, some death-related words had their own positive collocates. The opposite effect was found when analyzing negative tone: Death-related collocates had a more negative tone (M = 14.50) compared to their life-related counterparts (M=2.50, $t(399)=4.40$, $p<.001$). Even though death-related words were more likely to have negative collocates, life-related words also had their own negative collocates. The context analysis also revealed significant differences in positive tone, $t(999)=3.99$, $p<.001$, with life-related words surrounded by contexts containing more positive tone words (M=2.06) compared to negative tone words (M=2.94), and negative

tone, $t(999)=4.24$, $p<.001$, with death-related words surrounded by contexts containing more negative tone words ($M=2.10$) compared to positive tone words ($M=1.32$).

We found empirical evidence that death-related language appears more often in negative contexts than life-related language. Interestingly, more fine-grained analyses revealed that the positive collocates associated with death-related language were most often used to refer to a person who died and the positive aspects of their life and positive feelings we still experience when thinking about them. The negative collocates associated with life-related language were most often used to indicate that someone's life might be in danger. Of particular interest in the context data is that the frequency of occurrence across death-related and life-related words was quite small, with average frequencies across contexts differing by less than one word, suggesting that these differences in valence might be more subtle than suggested by previous literature.

Clavelle III, Frank

Designing for Connection: Reimagining Campus Architecture as an Active Agent in Student Mental Health

According to the American Phycological Association (APA), in “Nearly every metric, student mental health is worsening. During the 2020-2021 school year, more than 60% of college students met the criteria for at least one mental health problem.” The rising prevalence of mental health challenges among university students has prompted urgent conversations about how educational environments can better support their psychological well-being. While counseling and wellness programs are common interventions, the design of the physical campus is often overlooked. Prior scholarship has noted that architectural design can significantly impact and enhance students’ ability to manage stress, depression, and social isolation. This research is motivated by the belief that campus design can be a powerful and preventative tool for addressing students' mental health concerns.

This study explores how the architectural design features in the university campus can positively influence students’ mental well-being and social connection at the University of Louisiana at Lafayette. Specifically, it asks: (1) Which built environment features, such as natural lighting, biophilic elements, or flexible spaces, most effectively reduce stress and anxiety? (2) To what extent do environmental elements influence perceptions of social connection? (3) How do students’ interactions with classrooms, study areas, and outdoor spaces affect cognitive and emotional functioning?

The research uses a mixed-method approach combining quantitative and qualitative data. Surveys are distributed to university students in all colleges of all classifications to assess their experiences in various campus environments, focusing on mental wellness, stress levels, and perceived environmental quality. In-depth interviews among selected faculty and staff explore their perception of students’ emotional responses to specific spaces.

The initial analysis of 144 survey responses indicates that around 95% of students believe the physical environment plays a significant role in supporting their mental health, particularly in relation to stress and social isolation. Despite this recognition, only 25% of respondents agreed that the current architectural design and layout of campus buildings adequately promote mental well-being. Additionally, half of respondents reported utilizing outdoor green spaces enhances their comfort, followed by communal areas, such as the library (29%).

The study will highlight the importance of reimagining university architecture not only as a backdrop for academic life but as an active agent in student health. By integrating emotional architecture and green design principles, campuses can become

environments that support well-being, resilience, and a deeper connection to place and community. The findings aim to guide architects, campus planners, and university leaders in making evidence-based design decisions that promote mental health and sustainability simultaneously. All the data will be used to create and install a design piece that reflects and brings light to this national problem.

Comeaux, Matthew; Segura, Devin

Zumiez

Aim - To perform a 10 year profitability analysis of Zumiez using 6 profitability indicators.

Research Design- archival data analysis from company websites Google Finance and Yahoo Finance.

Case Study Approach- a single case study of Zumiez, a publicly traded sports apparel company in Washington

Profitability Indicators:

- Return on Assets (ROA) = Net Income/Total Assets x 100
- Return on Capital (ROC) = EBIT/Capital Employed
- Return on Equity (ROE) = Net Income/Equity
- Net Profit Margin (NPM) = Net Profit/Total Revenue x 100
- Earnings before Interest, Taxes, & Depreciations (EBITD)

Gross Profit Margin (GPM) = (Revenue – Cost of Goods Sold)/ Revenue

Da Silva Neto, Eurico Cosme

Beyond the "Black Box": Analyzing SUNO AI's Practical Utility and Copyright Challenges for Professional Musicians

Generative Artificial Intelligence (AI) platforms like SUNO AI are rapidly emerging as powerful tools for music creation. However, their practical application and impact on professional musicians, particularly within specific cultural genres, remain largely unexamined. This presentation investigates the capabilities, limitations, and critical challenges posed by SUNO AI as a collaborative tool in music composition. Drawing from the preliminary findings of the "Lovin' Louisiana" qualitative case study, this research employs a two-part methodology: (1) a critical platform analysis of SUNO AI's interface, speed, and user policies, and (2) a qualitative framework involving professional musicians in the creation of Louisiana cultural music. The analysis reveals significant barriers to professional adoption. First, the platform is at the center of a complex and unresolved copyright landscape, highlighted by ongoing lawsuits from major labels (RIAA). This raises critical questions about ownership, even for users of the paid "pro" version. Second, and most critically for performers, SUNO AI functions as a "black box." It delivers a finished audio product with remarkable speed (e.g., a two-minute song in 20 seconds) but fails to provide any form of musical notation, score, or performance guide. This research concludes that while SUNO AI is a powerful content generator, this functional gap creates a fundamental disconnect from traditional musicianship and adaptation. For generative AI to move from a novelty to a true collaborative partner, it must evolve to address the practical needs of musicians regarding creative control, legal clarity, and the ability to reproduce and orchestrate AI-generated material for live performance.

Dupre, Ava

Analysis of the Evolution of Deepfakes and Internet Victimization: A Literature Review

In recent years, a growth of media has shed light on a complex issue when addressing sexual victimization: The rise of “Deepfakes,” or pornographic, AI-generated content that manipulates the likeness of (often unsuspecting) real people. It is accessible to the average internet user with a few clicks of a keyboard and can be weaponized in numerous contexts. This literature review examines articles regarding the technology’s global impact, the disproportionate victimization of women and girls, lack of legislation surrounding AI, and proposals to attempt to regulate deepfake creation and consumption. We will also explore how the advancement, accessibility, and popularity of GANs (Generative Adversarial Networks) presents an intricate dilemma in the realm of evolving artificial intelligence. Although the research on the implications of this technology is limited, this review involves an intersection of multiple disciplines: law, computer science, sociology, and psychology. Citizens and experts alike call for changes in the regulation and responsibility of companies, social media platforms, and governmental entities to reduce the generation and dissemination of this harmful media. With this project, we also hope to inform and educate as this issue continues to develop.

Edwards, Shelton

Accounting for the Wild: Integrating Exotic Animal Valuation into Zoo Pricing Models

Valuation of income producing assets has served as a strong component of financial reporting for decades. One exception to this rule is non-profit organizations, specifically zoos. As of current, zoos are not required to determine the value of their zoo animals and report them in their financial statements due to the fact that these animals are not sold in a legal marketplace. This study will research the valuation of zoo animals in multiple aspects and determine whether or not including a value would be useful for zoos in their pricing strategies. This research matters as it will contribute to both increasing awareness of how much zoo animals actually do for the economy as well as improving quality of financial statements that will allow them better transparency for donors and other public users. I will research the top zoos in the United States and analyze different aspects of their operations such as average annual attendance, main source of funding, exotic animals exhibited, and ticket price. A survey will also be conducted asking families of several income levels about their perspective on zoos, and which animals determine the demand for each zoo.

Fontenot, Lance; Petry, Kolby; Colomb, Hayes

ADCS, The Art of Controlling Satellites

One of the most critical aspects of satellite design is control of the orientation. Orientation of a satellite refers to the specific direction a satellite is facing in space. For satellites to function properly, they must constantly know their orientation and be capable of adjusting it. This responsibility belongs to the ADCS system. An Attitude Determination and Control System (ADCS) is a complex subsystem that determines, measures, and controls the satellite's orientation. For CubeSats (a miniature satellite built with standardized measurements) this is particularly challenging due to limitations in power, size, hardware capability, and budget. Developing a precise and efficient ADCS is essential for maintaining reliable communication links, ensuring accuracy in pointing toward Earth or other mission targets, and keeping movement operations within a strictly limited power budget. The ADCS can be developed using student-designed and fabricated hardware, significantly reducing costs while providing hands-on experience in satellite engineering. The current design employs two different types of actuators working together to physically control the satellite, along with multiple types of sensors that determine its orientation. A control algorithm commands and manages the entire system. The goal of an ADCS project is to create a fully functional, modular system to be used in future satellite missions.

Foulkes, Lauren

Morphometric Variation of the Aortic Arch

Objective: This study aimed to examine how demographic characteristics and aortic arch (AA) type influence the angulation of the AA's three major branches: the brachiocephalic trunk (BCT), left common carotid artery (LCC), and left subclavian artery (LSC). Given that age and the angle at which the three arteries branch from the AA are associated with procedural challenges, better characterization of AA morphology may support improved surgical planning.

Materials and Methods: 35 formalin-phenol embalmed cadaveric specimens aged 61 to 105 years were dissected and classified into Type I, II, or III arches using Madhwal et al's (2008) method [1]. Take-off angle was measured using a goniometer, and statistical comparisons across arch types were performed using one-way ANOVA with Tukey's post-hoc tests. Relationships between demographic factors and arterial morphology were analyzed using Pearson correlations and linear regression models.

Results: The BCT showed the most obtuse branching angle (M = 93.03°), while the LCC was most acute (M = 62.69°). Type I AA was most prevalent in the sample (54.29%). Take-off angle of all three arteries decreased from Type I to Type III, with significant differences found across AA types. LCC and LSC take-off angle was significantly associated with age ($p < 0.001$).

Conclusion: Variations in arterial angulation by AA type, along with demographic influences on morphology, may have important implications for endovascular access and risk assessment. These findings support increased integration of AA morphology into preoperative assessments and highlight the need for further investigation in larger, more diverse populations.

Keywords: aortic arch, arterial morphology, take-off angle, cadaveric study, endovascular surgery.

Francois, Sydney

Counting Configurations: Exploring the Combinatorial Complexity of Kalah

This research investigates the number of unique board configurations that can occur in Kalah, a two-player strategy game that belongs to the Mancala family. Although Kalah is a relatively simple game, the moves that a player makes can create remarkably complex configurations that can affect their ability to win. Understanding how many distinct board configurations are possible can give us valuable insight into the game's combinatorial structure. In this study, a configuration is defined as the complete layout of the board after a player's turn has ended. Specifically noting the number of seeds in each pit. Configurations where the game has come to an end are excluded, as they represent non-playable positions. By defining a configuration, it allows for a systematic and consistent counting method.

Traditionally, the board has six pits per player and 4 seeds per pit which produces a very large number of potential configurations. Since it can be time consuming to find patterns through a decision tree of the traditional board, I have decided to start my research by analyzing a smaller scale model. The board I have been using only has three pits per player and 2 seeds per pit. I have noticed the smaller model reveals key patterns and structural restrictions in how valid configurations evolve and eventually terminate the game. From these observations, the goal is to develop a generalized expression or predictive model that is capable of estimating the total number of unique configurations in the standard version of Kalah. By characterizing Kalah's configuration complexity, this research can contribute to broader discussions in combinatorial game theory, mathematical modeling, and computational complexity. The insights from this project could aid in studying other strategy games and in finding mathematical ways to model complex decision-making systems.

Glass, Maren; Dupre, Paris; Guidry, Aidan; Vernon; Cambias, Isa

College Students' Ability to Identify Racial-Ethnic Microaggressions in Workplace Scenarios

Racial microaggressions are "brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color" (Sue et al., 2007, p. 271). Being targeted by racial microaggressions is associated with negative mental health outcomes (e.g., Hall & Fields, 2012). Their presence in the workplace can negatively affect employee performance and job satisfaction (Firi & Baryeh, 2024; Hunter, 2011). To reduce racial microaggressions in the workplace, employees need to first identify them; however, there are at least three different types of microaggressions described in the literature: Microinvalidations, microinsults, and microassaults (Sue et al., 2007). Given this complexity, we wondered whether college students, who are preparing for the workforce, are familiar with microaggressions and able to identify different types in various workplace scenarios.

Data was collected from 111 college students (72% females; 56% White). Participants were asked about their familiarity with the term "microaggressions." Those unfamiliar were presented with the term's definition. Everyone then responded to a semantic differential scale, assessing their understanding of microaggressions along eight dimensions: bad-good, unpleasant-pleasant, disrespectful-respectful, degrading-empowering, indirect-direct, accidental-intentional, biased-unbiased, and harmful-harmless. Participants were then presented with six comic strips depicting workplace scenarios involving a White person (i.e., majority status) in a position of power talking to a person of color (i.e., minority status). Half the scenarios depicted pleasant interactions, and half depicted verbal microaggressions with one example of each type.

Participants rated the extent to which they thought what the person in power said was a microaggression. Participants, whatever their majority-minority status, were somewhat familiar with microaggressions but could not provide an example; however, 22% reported never hearing the term. A mixed-design ANOVA was used to look for differences across the adjective pair ratings as well as for any impact that term familiarity and minority status might have on these ratings.

There was a main effect of adjective pair ($p < .001$) with participants thinking of microaggressions as unpleasant, degrading, disrespectful, and bad. There were subtle, but significant, differences in ratings depending on participants' familiarity with the term ($p = .026$). The same mixed-design ANOVA was used to analyze microaggression

ratings across the different scenarios, revealing a significant effect of scenario type ($p < .001$), with participants less sure that microinvalidations and microinsults are microaggressions and more confident that microassaults are. Participants with majority status, regardless of their familiarity, were generally unsure whether a microaggression occurred, but participants with minority status and higher familiarity were more likely to indicate the presence of microaggressions as compared to those who were unfamiliar.

Given college students' limited knowledge of microaggressions, employers should consider implementing training focused on identifying microaggressions, especially microinsults and microinvalidations. Our findings support this recommendation: When college students reported familiarity with the term "microaggressions," they were more inclined to rate them as bad, unpleasant, disrespectful, degrading, biased, and harmful and more open to the possibility that they might be indirect or accidental.

Griffin, Christian-Paris; Evans, Aibel

Stress-induced Cytokine Activity and White Matter Integrity in Children and Adolescents with Chromosome 22q11.2 Deletion Syndrome (22q11.2DS): A Preliminary Study of a Population at Ultra-High Risk for Schizophrenia

Background: Chromosome 22q11.2 deletion syndrome (22q11.2DS) is a developmental disorder with serious medical, behavioral, and psychological problems including a 30-fold increased risk of schizophrenia in adulthood and risk of immune dysfunction. Elevated inflammation is associated with increased risk of schizophrenia in patients without 22q11.2DS. Thus, identification of key inflammatory markers and brain development could be a valuable endophenotypic biomarker of schizophrenia risk in children with 22q11.2DS well before they develop psychosis. The aim of this study was to examine pro-inflammatory cytokines associated with white matter damage over time. In DTI, higher radial (RD) and mean diffusivity (MD) with lower fractional anisotropy (FA) indicate compromised white-matter microstructure that is typically consistent with myelin disruption and poorer fiber organization. We hypothesized that those with 22q11.2DS would have elevated inflammatory markers in relation MRI diffusion tensor imaging (DTI) indicators of potential white matter damage. **Methods:** We collected blood samples from children with 22q11.2DS and age-matched typically developing (TD) controls following a 45-minute MRI, DTI, and fMRI scanning session which was a natural stressor. From blood we measured Il-17α, IL-1α, Eotaxin, IL-6, TNFα, and Fractalkine using a Magpix Immunoassay Multi-plex Kit. From the DTI data, we calculated fractional anisotropy (FA), mean diffusivity (MA), and radial diffusivity (RD) values of major white matter tracts using Freesurfer 7.0, FSL and ProbtrackX. **Results:** TNFα levels were higher in the 22q11.2DS group versus the

TD controls ($p = 0.049$) but there were no significant differences between groups on the levels of any of the other cytokines (ps > 0.05). In 22q11.2DS, higher TNFα related to greater global white-matter RD (r = 0.35, $p = 0.0016$) and MD (r = 0.32, $p = 0.0041$). In TD, higher Eotaxin related to higher RD (r = 0.36, $p < 0.001$), higher MD (r = 0.24, $p = 0.016$), and lower FA (r = −0.28, $p = 0.0038$). Combining 22q11.2DS and TD groups revealed that TNFα was positively associated with RD (r = 0.20, $p = 0.0061$) and MD (r = 0.19, $p = 0.0105$). Reported measures survived FDR correction. **Discussion:** TNFα was elevated in 22q11.2DS and tracked with greater RD and MD in overall white matter, suggestive of inflammation related changes in myelin integrity. In TD youth, Eotaxin related to higher RD and MD and lower FA, suggesting a relationship between stress mediated inflammation affecting white matter. Importantly, this is a preliminary study using a very modest sample size. Nevertheless, several findings remained significant after FDR correction, highlighting TNFα as a promising biomarker of white-matter integrity loss in 22q11.2DS. **Conclusion:** In this sample of children, and particularly in

the 22q11.2DS group, elevated TNFα correlated with higher RD and MD with reduced FA. This suggests that increased inflammatory signaling is linked to compromised white matter microstructure. The next step is a better-powered longitudinal study with tract-specific DTI and concurrent, objective stress measures.

Gros, Breanna

Title: Evaluating Hydrocarbon Effects on Extracellular Polysaccharide Production and Bacterial Growth in *Vibrio vulnificus*

Vibrio vulnificus, a Gram-negative pathogen endemic to the Gulf of Mexico, frequently colonizes tar balls rich in non-volatile hydrocarbons like *n*-hexadecane (*n*-C16). To evaluate hydrocarbon effects on bacterial physiology and persistence, expression of *brpD* (extracellular polysaccharide [EPS] biosynthesis) and *alkB* (alkane degradation) was measured by RT-qPCR, and growth influence was assessed via curve analysis. Exposure to 2.5% *n*-C16 reduced *brpD* and *alkB* gene expression by ~25–30%, indicating stress-responsive repression or altered carbon metabolism. In nutrient-rich medium with *n*-C16, significant inhibition was observed at 4 h in the wild-type strain (p = 0.02), suggesting early EPS-mediated hydrocarbon interaction. A delayed effect in the EPS-deficient strain became significant at 24 h (p = 0.03), supporting a role for EPS in facilitating access to hydrocarbons under nutrient-depleted conditions. In nutrient-limited artificial seawater, EPS-deficient cells trended toward earlier inhibition ($p \approx 0.07$), further implicating EPS in adaptive resource acquisition. Neither strain grew upon inoculation into minimal media with *n*-C16 as the sole carbon source, though dextrose controls supported growth, indicating *n*-C16 metabolism is not constitutive. However, the presence of *alkB*, transcriptional shifts, and delayed growth effects align with inducible, environmentally regulated hydrocarbon metabolism. These findings suggest that EPS influences hydrocarbon interaction and stress response in a context-dependent manner in *V. vulnificus*. Future work will use transcriptomic and metabolomic analyses to identify conditions that enable adaptive alkane degradation and support pathogen persistence in polluted marine environments.

Guillory, Riley

Fabrication Strategies for Conductive Hydrogel-Based Wearable Sensors

This project proposes a literature-driven design for a non-invasive wearable sensor that uses a dual-network conductive hydrogel as its active sensing material. The goal of this work is to outline a fabrication strategy informed by current research on conductive polymers and hydrogel-based sensors. The proposed sensor design incorporates a chitosan-based hydrogel matrix for structural stability and biocompatibility, combined with a conductive polymer such as poly(3,4-ethylenedioxythiophene) (PEDOT) or poly(vinyl alcohol) (PVA) to enable electrical responsiveness. Conductive MXene nanoparticles are incorporated to enhance mechanical strength, electroconductivity, and long-term stability. To fabricate the hydrogel component, digital light processing (DLP) 3D printing and electrospinning will be used to achieve precise geometry and fibrous reinforcement within the sensor. The literature review supporting this proposal highlights how these techniques have been applied in recent scaffold and hydrogel systems to control structure, porosity, and conductivity. The outcome is a conceptual roadmap detailing materials selection, fabrication steps, and testing plans for future experimental validation. Future work will focus on evaluating mechanical robustness, conductivity, and self-healing properties once prototypes are produced. This design proposal represents an early-stage framework for developing flexible, conductive hydrogel-based wearable sensors guided by current literature and fabrication experience.

Guillot, Ali

Integrative Analysis of Cannabidiol (CBD)Mechanisms: Linking Maternal Mouse Neurobiology and Offspring Development to Computational Protein Structure Modeling

Cannabidiol (CBD), a major non-psychoactive compound from *Cannabis sativa*, interacts with many molecular targets that influence neurotransmission, stress regulation, and behavior. Despite its widespread use, the mechanisms of how CBD alters brain function during pregnancy are unknown. CBD's ability to act on both central and peripheral systems makes it an important compound for studying how maternal exposure may influence offspring neurodevelopment. In this project, I integrate behavioral neuroscience and computational protein modeling to better understand how CBD's molecular interactions might relate to anxiety-related outcomes observed in a maternal exposure model.

In BIOL 410, I work under Austin Foreman, M.S. Thesis Candidate, assisting with his maternal CBD exposure experiment in mice, which investigates how exposure influences offspring anxiety and hippocampal CB1 receptor expression. In CHEM 362, I use Triangular Spatial Relationship (TSR) modeling on the LONI supercomputer to analyze 3-D binding-site geometry of CBD-bound proteins, including CB1, CB2, TRPV2, and 5-HT1A. The integration of these demonstrates at a molecular-level how CBD's structural flexibility may allow its diverse physiological and behavioral effects.

Hambrice, Katie

Geospatial Analysis of Disparities in Access to Long-Acting Reversible Contraceptives (LARCs)

Equal access to reproductive healthcare is crucial to improving public health, but many women, especially those residing in rural and low-income communities, continue to face

challenges in accessing contraception. Long-acting reversible contraceptives (LARCs), such as intrauterine devices (IUDs) and subdermal implants, are among the most effective methods of preventing unintended pregnancy, but they are disproportionately available across Louisiana. This study, supported by the TExBioMed Summer Institute, applies public health informatics to identify and visualize geographic and demographic disparities in LARC provider availability across the state.

Datasets from existing public sources, including PolicyMap, the Louisiana Department of Health, and the U.S. Census Bureau, were gathered. Using RStudio, PolicyMap, and Datawrapper, spatial and demographic measures were combined to produce a set of choropleth maps. Provider-to-population ratios, Medicaid enrollment rates, and rurality by parish were calculated for these maps. Three interactive maps, which were made accessible through a QR code, were developed to publicly share the findings and allow for interaction with healthcare providers, policymakers, and community stakeholders.

Results indicate significant geographic clustering of LARC providers in urban parishes such as Orleans, East Baton Rouge, Lafayette, and Shreveport, with notable provider shortages in more rural parishes throughout northern and central Louisiana. Several high-need areas exhibit low provider density despite high concentrations of Medicaid-eligible people, reflecting a mismatch between service availability and population need. Such inequities highlight how both geography and socioeconomic status intersect to define disparities in reproductive healthcare access.

The study demonstrates how geospatial informatics can be a valuable resource in healthcare gap identification and informing data-driven policy interventions. Policy recommendations based on this analysis involve expanding provider networks within underserved areas, creating mobile or telehealth-based reproductive services, and encouraging providers to provide more accessible LARC methods to rural communities.

By integrating publicly available datasets, spatial analysis, and interactive visualization, this project offers a replicable framework for mapping healthcare disparities and informing equitable resource allocation. Ultimately, this project underscores the imperative to harness public health informatics for the purposes of promoting reproductive autonomy, accessibility, and equity for all women of Louisiana.

Holt, Haylee

When Seconds Matter: Improving Emergency Medical Response for Children with Rare Diseases

Rare diseases in pediatric patients remain critically underrepresented in emergency medicine research, despite their potential for rapid, life-threatening deterioration.

Current U.S. emergency medical services (EMS) protocols and formularies are primarily designed for “typical” emergencies and often exclude interventions for rare conditions — for example, the absence of hydrocortisone sodium succinate (Solu-Cortef) in adrenal crisis protocols. This study asks: How can EMS protocols and digital tools be improved to ensure timely, life-saving care for pediatric patients with rare diseases?

To address this question, researchers conduct a structured review of EMS protocols, policy documents, and published case reports to examine how protocol gaps, policy ambiguity, and provider hesitation impact prehospital care. Three hypotheses guide this work: (H1) EMS formularies rarely permit field administration of disease-specific medications; (H2) unclear policies and fear of legal liability restrict EMS staff and caregivers from delivering timely care; and (H3) standardized digital tools, such as automated dispatch alerts or wearable IDs, may reduce treatment delays and improve outcomes.

Expected findings include evidence that protocol flexibility and digital notification systems could improve response times and patient outcomes. These results will be discussed in the context of policy change, EMS training, and caregiver empowerment to strengthen rare-disease emergency care.

Hunt, Kendrick; Williams, Wynn

The Relationship Between Ethnic Identity and Perceived Attractiveness Among African American College Students

This study investigates the relationship between facial features, ethnic identity, and perceived attractiveness. To accomplish this investigation, participants completed an

attraction evaluation task and the Multigroup Ethnic Identity Measure (MEIM). The attraction evaluation task required participants to view images of Black female faces from the Chicago Face Database and rate the faces on attraction on a scale from 1- 4. The MEIM measured participants' sense of belonging and connection to their ethnic or cultural group. It was hypothesized that skin tone, nose width, and lip thickness would be related to perceived attractiveness. This relationship was also expected to be modulated by ethnic identity.

Karki, Suyog

Building Web Apps Using Natural Language Prompts with Lovable AI

This project explores how to build and publish full-stack web applications using Lovable, an AI tool that transforms plain language prompts into functioning websites. Lovable

supports popular web development platforms, including React, TypeScript, Tailwind CSS, PostgreSQL, and more. It integrates smoothly with version control systems like GitHub. The requirements for using Lovable are quite straightforward. All users need is a web browser, an internet connection, a Google account to sign up for Lovable, and access to GitHub. There is no need for coding skills or software installation.

For this presentation, we experimented with Lovable to create and deploy several demo web applications. For example, we used prompts to design webpages for an art gallery and a digital book library. Additionally, we successfully developed a web app to display a directory. The process begins with typing a prompt that describes the app idea. Next, we utilize a built-in chat feature to make adjustments or add functionalities. Lovable then generates the complete project code, organized in folders similar to a typical developer project.

Lovable simplifies the process of publishing projects directly from the platform with just one click, providing users with a live link to share. Additionally, users have the option to deploy their projects on their own hosting spaces. In our experiment, we tested manual deployment using Firebase Hosting. This involved cloning the project from GitHub, running it locally, building it, and then pushing it online. By trying both methods, we gained insights into how AI-generated projects integrate with real-world development workflows.

We encountered some challenges, such as fixing file structure issues, understanding build steps, and setting up access permissions for GitHub repositories. These challenges highlighted the limitations of AI tools and the areas where human input is still essential.

In this presentation, we will take a step further by offering a live demonstration of how to use Lovable to create a simple web app from start to finish. This hands-on demo will showcase what Lovable looks like, how it functions, and how the final code can be deployed.

Overall, our project demonstrates that AI tools like Lovable can empower more people, especially those without a coding background, to build and share real web applications. It lowers the barrier to learning software development, accelerates the design process, and opens up new opportunities for teaching or prototyping ideas. In the future, we aim to explore how effectively this tool can be used to build more complex applications and how it can be integrated into classrooms or workshops.

Kemper, Kaitlyn

Evaluating Flood Exposure and Resilience of Public Buildings in Coastal Louisiana

This research focuses on the flood exposure and resilience of public buildings in coastal Louisiana. Public buildings are essential community assets, yet many remain at risk from environmental hazards. In the past, Louisiana has experienced multiple instances of irreversible damage caused by extreme weather events, particularly flooding. Schools, libraries, and other public buildings that serve as government facilities within these parishes are especially vulnerable. These public buildings, located in parishes such as St. Tammany, Terrebonne, Lafayette, St. Mary, and Jefferson, identified in the Louisiana State Mitigation Plan, are vital to the residents who depend on them, and without proper preventive measures, they will continue to face recurring risks and structural vulnerabilities.

This research aims to examine these risks and explore how the resilience of public buildings in flood-prone zones can be enhanced through specific design strategies. By applying existing knowledge and developing new strategies, we can help prevent environmental and economic damage while promoting long-term resilience.

An assessment will be conducted to better understand hazard mitigation plans and identify opportunities to improve the protection and resilience of public buildings in certain areas that are vulnerable to flood-related risks. This will include site analysis and evaluations of exterior design features, informed by comparative policy frameworks. The objectives of this study are to examine how location, ground level, and access routes affect building flood exposure; to assess exterior features such as entry elevations, façade materials, and protections for openings; and to develop design strategies guided by Louisiana’s hazard mitigation plans and building codes, as well as best practices from other flood-prone coastal regions.

The research methods will include spatial analysis using GIS to overlay FEMA flood maps with public building locations, as well as qualitative analysis of local planning documents to identify resilience strategies and relevant building code requirements. In addition, I will conduct comparative research to identify flood-resilient design approaches from other U.S. and international coastal regions. The study will synthesize findings into annotated diagrams, risk assessment summaries, and precedent-based design strategies such as elevated entries, protected openings, and improved site grading.

Expected outcomes include a comprehensive public building assessment report and a set of design guidelines that link architectural strategies to policy frameworks. These guidelines will feature material studies, recommendations for updated building codes

tailored to evolving flood risks, and practical design strategies to strengthen community resilience. Ultimately, this research will highlight the urgent need for systematic assessments of how site and exterior design can be adapted to reinforce local resilience in vulnerable coastal regions.

Kumar, Darshan; Dauphiney, Chad; Tran, Duy

Experimental Smart Ground-Station Grid

Conventional ground stations or networks of ground stations working with LEOSAT(s) and/or CubeSat(s) do not offer sufficient flexibility or globally scalable transparent coordination of communications, instrumentation, and/or functional or physical actuation at satellites or ground stations to fully exploit these systems so as to operate practically, experimental missions anywhere on Earth, or to achieve highly desirable globally scalable experimentation missions in general. Fortunately, UL Lafayette researchers have invented the ESG-Grid to overcome these limitations. The ESG-Grid is an Internet-cloud coordinated network of one or more LEOSAT(s)/CubeSat(s) combined with a plurality of Terrestrial Participant Devices (TPDs) (i.e. simple portable or mobile smartphone-based ground stations, or same functionality installed in automobiles, boats, planes, drones, tanks, missiles and/or instrumented robots to name a few) where the collective resources and functionality of both satellites and TPDs may be coordinated to achieve novel capabilities, including choreographed and highly economical, automated, transparent, and globally scalable exploration, instrumentation, and experimentation missions, in orbit or anywhere on Earth.

Currently, ESG-Grid is being developed by a team of undergraduate students who are developing and implementing the ESG-Grid via building the LoRa packet schema, RF ground-stations, and the web app utilized to communicate and view information to and from the satellites in orbit. The undergraduate team consists of an embedded system, front-end, back-end, cyber security, operations, and management team. The team expects to have a minimal viable product (MVP) by December of 2025 and hopes to complete their “Phase I” plans by May of 2026. In the MVP, the team plans to be able to receive communication from a mock satellite, decode packets, upload the information to the backend servers, and display the information to logged-in users on the front-end application. The ESG-Grid will also be used as an educational outreach platform where teachers will be able to create lesson plans around satellite information and can receive live data from active mission via lite ground-stations located at their schools.

Landry, Samuel

Exploring GeoAI Capabilities for Timely and Accurate Post Hurricane Damage Assessment

Geographic Information System (GIS) Artificial Intelligence (GeoAI), is a powerful tool that enhances the interpretation, analytics, and scalability of spatial data processing by analyzing large and complex geospatial datasets. GeoAI helps geospatial analysts streamline workflows, automate analyses, and increase productivity across various applications. Within GeoAI, machine learning and deep learning (ML and DL) are concepts that determine how AI will perceive and use the data provided to derive meaningful outputs. However, these models require substantial amounts of data and time to train. To reduce the amount of data needed to train a model, Pre-trained deep learning models can be used. Pre-trained AI models are ML or DL models that are already trained on large datasets that can be implemented in a GIS environment to address workflows such as hurricane damage assessments. The objective of this presentation is to showcase the significance of GeoAI in damage assessment classification and detection in south Louisiana. Using a deep learning architecture *SegUNet* in *ENVI* 6.0, post-Ida damage assessment was conducted. The AI model was tasked with locating and extracting blue tarps around Lafourche Parish. The accuracy within the verification was 99%. After performing “ground truthing” the model successfully detected most if not all blue tarps within the extents, however a considerable amount of false positives were also extracted. Within *ArcGIS Pro*, various image analyst tools were used to eliminate the mis-labelled outputs, as well as converting the raster output into a vector to produce an exact count of blue tarps detected. In addition, pretrained models such as the building footprint extraction, and vessel detection deep learning models were used. Post hurricane damage was assessed by comparing residential and commercial building footprints pre and post Hurricane Ida along with the outputs from the trained model. The next step in this project includes creating a more full scale damage assessment including different levels of damage. This includes tasking the AI model with detecting four levels of damage in increasing order as “Roof Damage (Blue Tarp), Exposed Roof Damage, Structural Damage, and Rubble (Total loss). We are in the process of developing accuracy metrics for both pre-trained and trained GeoAI models. The goal of this research is to provide insurance companies with fast but reliable damage assessments to expedite the process of insurance claims and reduce the effect of progressive damage to homeowners. The results from this ongoing project will be presented.

Leach, Zodah

Cognitive Resilience in Danio rerio: Methylene Blue as a Potential Antagonist to Stress-Induced Spatial Memory Deficits

No abstract provided.

Lewis, Luke

From Sea to Sand: Amphibious Infantry in the Battle of Wake Island

In 1941 the Japanese Empire stood almost fully mobilized for war; within a span of 48 hours they had launched a crippling attack on the U.S. naval base of Pearl Harbor, taken most of the Marines stationed in China prisoner and begun their assault on the small American airfield of Wake Island. The Battle of Wake Island would become the first ground battle fought by Americans of World War II which alongside Pearl Harbor would fully pull the United States into the war. The Battle of Wake Island demonstrates the capabilities of the two amphibious infantry units that fought at Wake Island, the 2nd Maizuru of the Special Naval Landing Force (SNLF) and the 1st Defense Battalion of the United States Marine Corps, setting the precedent of violence which would become characteristic of the Pacific theater of war. The Battle of Wake Island is a great example that demonstrates how the origins, training, and existence of these American and Japanese Infantry forces in the larger military apparatus affect the battlefield at the beginning of the war.

Lyons, Bryona; Hills, Trinitee

The relationship among facial features and perceived attractiveness of African-American males

This study investigates the relationship between facial features and perceived attractiveness in African American males. To accomplish this investigation, participants completed an attraction evaluation task. The attraction evaluation task required participants to view images of Black male faces from the Chicago Face Database and rate the faces on attraction on a scale from 1- 4. It was hypothesized that skin tone, nose width, and lip thickness would be related to perceived attractiveness. Results showed supporting evidence that skin tone and nose width were related to attractiveness. Faces with darker skin tones and wider noses were rated as less attractive. These results show the relationship between societal norms and ‘beauty’ standards.

Martinez, Keegan

The Impact of Gender Essentialism in Relation to Women in Ecology

Ecofeminism, as defined by Greta Gaard, draws on the combined fields of ecology, feminism, and socialism to display the oppression of marginalized groups as synonymous with the oppression of the natural world. Since the 1980's, 1990's, and into the new millennium, Ecofeminism has faced immense scrutiny as mainstream feminists and ecologists alike have accused ecofeminists of perpetuating ideas of gender essentialism. Ecofeminists and their goals, as ever changing as they might be, face the question of whether their different disciplines and varied theories are rooted in essentialist doctrine. I argue in the affirmative that essentialism, commonly defined in this context as the inherent connection between women and nature, has permeated ecofeminist thought, and it has proven to be a disservice to female ecologists. Ecofeminism should not focus on the dualism between women and nature, as neither women nor men share an inherent genetic connection with nature itself. Extensive evidence exists in both scholarly articles and scholar reviewed statistics which outline the increase in epistemic objectification female ecologists have faced up until 2010. Due to the essentialist ideas, which are emitted from some ecofeminist theorists, female ecologists struggle to receive the same respect and value outside of the information they possess in comparison to their male counterparts. I offer an analysis of this discourse and the effects it has had on females in the field of ecology by expounding on the different disciplines and theories ecofeminism encapsulates as well as explicating the issues that rise out of essentialism and its relation to ecofeminism.

Perkins, Geremiah; Mehaffey, Jesse

Utilizing Spicules in Sediment Samples to Further Define Species Richness of Freshwater Sponge Populations in Louisiana

The Louisiana Freshwater Sponge Project (LFSP) is a longitudinal study designed to document the diversity of freshwater sponges across the state. The study compares the current sponge populations with those reported by Michael Poirrier in 1969. Sponge specimens are identified through morphological analysis of spicules present in the sponge body and/or gemmules, supplemented by COI and ITS gene sequencing for molecular confirmation. This research examines the utility of isolating and identifying spicules in sediment to further define species richness within Louisiana. Fifty sites throughout Louisiana were analyzed using a modified version of Lukowiak's protocol for marine sponges. A total of 500 grams of sediment was collected from multiple points at each site. It was then dried and processed through a series of chemical treatments to eliminate both organic and inorganic materials, isolating silica-based particles, including sponge spicules. These particles were subsequently examined using light microscopy. In the absence of live specimens, sediment analysis can provide morphological evidence of sponge presence, indicating a higher species richness than is documented solely through specimen collection. This approach not only corroborates the presence of observed live sponges but also extends the documented species richness at many sites. Sediment analysis thus represents a valuable tool for comprehensive biodiversity assessments. It enables verification of species presence in the absence of observable sponge bodies and mitigates limitations associated with seasonal sampling constraints.

Provost, Reese

Delineating the Effects of Glycosuria on Klebsiella Pneuomiae Metabolism

The research being done focuses on the bacterium *Klebsiella pneumoniae* and its involvement in urinary tract infection. This species has seen recent trends in hospital related urinary tract infections. The specific strain being researched TOP52, and how its metabolism and virulence changes in diabetic human urine, or under glycemic conditions. Research in our lab includes inoculating human urine and urine treated with glucose with *K. pneumoniae* for certain intervals of time and infecting diabetic and non-diabetic mice with bacteria and counting colony growth and immune cell count in the bladder, spleen, and kidneys. My own personal aim with the effects of glycosuria on *K. Pneumoniae* is how the condition affects the bacterium's metabolism, specifically glycolysis, gluconeogenesis, amino acid uptake, and amino acid synthesis. This can be measured by the use of Reverse Transcriptase-quantitative Polymerase Chain Reaction (RT-qPCR). This experiment involves the extraction of RNA from the bacterium in a normal and diabetic urine environment and make complementary DNA from the extracted RNA. This DNA would then be amplified to determine how much these genes are expressed in comparison to *K. pneumoniae* grown in a standard growth medium. The aim of the experiment, as previously stated, is to differentiate what nutrients and metabolic pathways are favored or repressed while in a glucose-rich environment. Our hypothesis is that given the nutrient-rich environment, the bacteria will become more virulent. My own hypothesis is that the bacterium will display higher expression of genes involved in glycolysis and amino acid uptake and suppress gene expression of gluconeogenic genes.

Raafey, Abdur

Development of a Self-Healing Polyimide Coating Incorporating Inhibitor-Loaded ZnAl LDH-Nanocontainers for Corrosion Protection in Oil & Gas Environments

Corrosion of steel pipelines and equipment in the oil and gas industry particularly in sour environments containing CO_2 and H_2S continues to be a major and ongoing issue. Traditional coatings often fail due to microcracks, physical damage, or adhesion loss under high temperatures and chemical exposure, resulting in continual deterioration and expensive upkeep. To tackle this, the research aims to create a smart, self-healing polymer coating that offers long-lasting, active protection to steel surfaces in harsh conditions.

This system uses a high-temperature-resistant polyimide (PI) matrix embedded with Zn–Al layered double hydroxide (LDH) nanoparticles loaded with an imidazoline corrosion inhibitor. These LDH nanoparticles serve as nanocontainers, releasing the inhibitor when corrosion starts triggered by localized pH changes or the penetration of chloride or sulfide ions thereby forming a protective barrier that stops further corrosion. The study will focus on synthesizing and modifying the surface of the LDH–inhibitor particles, evenly dispersing them into the polyimide precursor, and developing a stable coating formulation. The goal is to produce a durable, thermally stable, and pH-responsive self-healing coating that significantly prolongs the lifespan of steel structures in oil and gas environments.

Shannon, Amy; Coreil, A

Dissociation Across as Predicted by Maladaptive Verbal Behavior

The current study examined the relationship of rule-governed verbal behavior and anxiety sensitivity to dissociative symptoms. Dissociative symptoms are experienced by nonclinical and clinical populations and remain poorly understood. In clinical populations, dissociative symptoms are associated with poorer prognosis and treatment outcomes. Current treatments designed to address dissociative symptoms in the clinical context tend to rely on the reduction of fear and avoidance of these symptoms. The current study utilized a cross-sectional design of non-clinical participants obtained from online study advertisements. The present study is an applied validation of a proposed contextual behavioral science models for dissociative symptom etiology and maintenance. Hierarchical regression analyses supported hypotheses that schema consistency and Schema Flexibility are, together, stronger predictors of dissociation frequency than anxiety sensitivity, panic symptoms, and trauma status independently. The present study investigates the relationship between flexible and adaptive verbal behavior, tendency to reactivity, and clinical symptom presentations as predictors of dissociation. Behavioral models of dissociation (McEnteggart et al., 2017) suggest that an inability to relate flexibly and adaptively to beliefs about the self and others may be predictive of dissociative symptoms. These models of dissociation will be examined in relation to functional analytic accounts of the etiology and maintenance of anxiety (Forsyth, 2000) and related disorders (posttraumatic stress disorder; Mulick et al., 2011) where dissociation frequently occurs. Interpretation of relationships between observed or self-reported behaviors using the principles of behavior analysis has long been used as a method to account for observations of behavior that are not otherwise easily manipulated (Kohlenberg et al., 1993; Moore, 2013; Wilson & Blackledge, 2000).

Sigurdsson, Sara

Anatomical and Biomechanical Contributors to Hip Injury in Collegiate Athletes

Hip injuries represent a substantial concern in collegiate athletics due to the hip's central role in force transfer, rotational control, stabilization, and locomotion. Female athletes demonstrate distinct biomechanical, anatomical, and hormonal characteristics that may predispose them to greater hip-joint strain, labral pathology, and instability compared to males. Structural variation (e.g. increased acetabular and femoral anteversion), anterior pelvic tilt, ligamentous laxity, and menstrual hormone–related effects on collagen stiffness intersect with sport-specific loading (particularly cutting, pivoting, and endurance demands) to shape sex-differentiated injury risk. This mixed-methods study evaluates hip and lower-extremity injury patterns in NCAA Division I athletes at Nicholls State University (2021–2025), integrating certified athletic-training surveillance with athlete-reported exposure and risk-factor data to contextualize modifiable and non-modifiable contributors. A total of 995 injuries were documented across 15 athletic programs (7 men's, 8 women's). Athlete surveys (n=90) provided data on surface type, running/cutting demands, caloric sufficiency, prior injury history, hip symptoms, and menstrual-cycle–related factors. Descriptive statistics, χ^2 tests, unpaired t-tests, and ANOVA were performed; lower-extremity injury burden was normalized by athlete-exposures (AEs).

Females demonstrated predominance of lower-extremity injuries (57.7%), with hip injuries comprising 12.6%. Males demonstrated 50.3% lower-extremity involvement, with hip injuries comprising 10.0%. Football accounted for 80.6% of men's injuries, while female injuries were dispersed across sports. AE-adjusted incidence was highest in women's cross-country (41.21/100 AEs) and men's football (48.02/100 AEs), reflecting differing volume and impact-based demands. Survey data showed high artificial-turf exposure and repetitive-load profiles in female field and endurance sports. Athletes reporting high running/cutting demands described more lower-extremity symptoms. Overall injury distribution by sex was not significant on χ^2 testing. Hip-injury proportion differences were not significant but trended higher in females (RR≈1.30). AE-normalized injury rates differed significantly across sports (ANOVA $p<0.05$), driven by women's cross-country and men's football. Within-sex analyses demonstrated significant variation in anatomical injury patterns and sport-specific burdens ($p<0.05$), indicating independent mechanical influences in each sex group. Findings align with literature linking sex-specific pelvic morphology, neuromuscular control, ligamentous laxity, menstrual-cycle variation, and energy-availability status to hip vulnerability. The data support sex-informed prevention including eccentric posterior-chain and hip-rotator strengthening, surface and load-specific periodization, and monitoring of menstrual function and energy availability. This translational model links physiology, sport

demands, and surveillance data to inform early screening, targeted conditioning, and evidence-based return-to-play strategies in NCAA athletics.

Singleton, Bailey

Consent within Media Consumption: Sexual Assault Survivors' Perceptions of Content Warnings as Accessibility

Content warnings, a visual or written warning for audiences that media they are consuming will include discussions or depictions of sensitive or explicit content, is a common tool used in our world. Nearly all movies in America must have a label depicting how explicit the depictions within will be and what audiences the film will likely be appropriate for (Motion Picture Association, 2019). Music and video games must also display labels to alert consumers of explicit themes and violence, beginning in 1985 and 1994 respectively (Chastagner, 1999). As media continues to evolve, this practice of making certain audiences are aware of what they are agreeing to consume has continued. Social media sites like Facebook and Instagram filter for sensitive content and place a visual content warning over certain posts that the user has the choice to remove to proceed to the post. Most of these warnings are seen as commonplace and respectful to consumers. However, when content warnings created to support individuals with trauma are discussed, the perception often becomes more critical, both in public opinion and academic research.

Content warnings for topics like sexual assault began to be used in feminist spaces in the 1990s (Sheri, 2024). The goal was to offer individuals who may be triggered by that topic a choice in whether or not to engage with it. There was no standardized labeling system or incentive within these warnings, except for a goal to increase accessibility and informed consent for those who have experienced trauma. It placed the power to decide back into survivors' hands.

There is a still a deficit in understanding what creates an effective, comprehensive content warning for sexual assault, especially from the perspective of the population these warnings were created to support. Instead, academic research seems to be focusing on the general public's reactions to and perceptions of content warnings (e.g., Bridgland et al., 2018).

To remedy this oversight, this research aims to allow self-identified sexual assault survivors to give their perspectives on content warnings. In a world where social media employs content warnings often and over half of American college professors have used them (Kamenetz, 2016), it's important to know how these warnings effect the population it was created to empower.

To better understand and catalogue the perspectives of those who have experienced sexual violence, four to six focus groups of survivors will be held. Each group will include three to five participants and take 1.5 to two hours to complete. At the time of abstract submission, two groups have been completed.

This research aims to use qualitative analyses to understand and catalogue how sexual violence survivors view content warnings: their perceived efficacy and public perception, as well as survivor's' personal preferences. This information has the potential to provide valuable insight for content creators in how to create effective content warnings that support the population it was created for. The hope for this data is to both fill a gap in research and amplify sexual violence survivors' voices.

Steward, Christian

Pathways to Persistence: A Qualitative Study of Programs Supporting Black Men's Success in College -- A Research Study Proposal

This research project dives into the need for structured programs that support minority college students. This also uncovers how the initiatives pushed by these programs contribute to improved grade point averages, retention, and graduation rates. Minority students (specifically African Americans) are already underrepresented at the majority of colleges, excluding historically Black colleges, of course. This lack of representation in the higher education field puts them at a disadvantage before they start. Programs such as the Louisiana Educate Program (LEP), the Collegiate 100, and the Reginald F. Lewis Scholars Program demonstrate how a program these initiatives can potentially transform individual college experiences. While transforming the experience, they address both the academic and environmental needs of minority college students. The Louisiana Educate Program (LEP) is a state-supported initiative designed to increase the participation and success of underrepresented minority students in higher education, with a focus on STEM and other high-demand fields. The program supports students through their academic endeavors, research opportunities, mentoring, housing, scholarships, financial aid, and graduate school preparation. These resources are designed to address systemic barriers in education and help the student break them down. The program also gives students access to undergraduate research and professional development. For their students, the LEP program has a transformative initiative that opens doors to academic and professional success in STEM but also addresses deeper systemic issues by creating spaces that validate and uplift students. The Collegiate 100, an extension of 100 Black Men of America, Inc., as a campus-based student organization on college campuses. The organization focuses on mentoring, academic support, and community involvement for African American college students. Members participate in structured mentoring programs, community service projects, and professional development workshops that prepare them for both academic success and leadership beyond college. Through these activities, participants gain valuable networking opportunities, develop leadership skills, and improve academic performance. Collegiate 100 is a platform for African American college students to serve as leaders and mentors while gaining skills that support their personal, academic, and professional growth. The Reginald F. Lewis Scholars Program further enhances the support model for minority success. This three-year initiative supports Black male students in the University of Louisiana System by combining full financial assistance with academic research, study abroad experiences, and mentorship. The program strengthens leadership skills, enhances research capabilities, provides a study abroad experience, and offers global perspectives while improving retention and graduation rates. Collectively, all of these programs have initiatives that are essential to closing

educational gaps. By addressing systemic barriers through mentorship, financial support, and academic engagement, programs like LEP, the Collegiate 100, and the Reginald F. Lewis Scholars Program empower minority students to achieve academic excellence, graduate at higher rates, and become leaders within their professional and community sphere.

Thai, Thinh; Alles, Alexandria

The Comparative Analysis of Growth and Functional Traits of Native Louisiana Prairie Plants in Stressed and Unstressed Environments

Conservation and restoration efforts depend on identifying plant species' resilience to environmental stress such as intense drought and heat. This study examined growth and functional trait responses of five native Louisiana prairie species—*Baptisia sphaerocarpa*, *Hibiscus lasiocarpos*, *Rudbeckia grandiflora*, *Silphium gracile*, and *Sorghastrum nutans*—under stressed and unstressed conditions. Drought was simulated by limiting water, while heat stress was applied in a controlled greenhouse environment. Measured traits included plant height, total leaf area, and chlorophyll content across developmental stages. Preliminary analyses revealed species-specific responses in plant height under drought stress. *R. grandiflora* and *S. gracile* showed a steady increase in height with age, whereas *H. lasiocarpos* either increased or maintained constant height within drought conditions. *B. sphaerocarpa* remained largely stable, while *S. nutans* exhibited a consistent decline in height as plants aged because of wilting. Similar trends appeared under drought plus heat stress: *H. lasiocarpos*, *R. grandiflora*, and *S. gracile* continued to grow steadily, *B. sphaerocarpa* displayed modest growth with some decreases, and *S. nutans* reversed its trend, increasing in height under combined stress.

Leaf area patterns also varied across treatments. In general, total leaf area tended to be greater under drought plus heat than under drought alone, particularly in *B. sphaerocarpa*, *H. lasiocarpos*, and *R. grandiflora*. *S. gracile* initially followed this pattern but later exhibited a peak and subsequent decline as plants aged. Under drought alone, *R. grandiflora* showed a gradual increase, while *S. gracile* exhibited a sharp rise in leaf area. In contrast, *S. nutans* maintained a nearly constant leaf area in both treatments, suggesting low plasticity in response to environmental stress.

Chlorophyll content responses were more variable. *B. sphaerocarpa* exhibited decreasing chlorophyll content with age across both treatments, whereas *R. grandiflora* and *S. nutans* increased. *H. lasiocarpos* demonstrated a mild decline under drought stress but a slight increase under drought plus heat. *S. gracile* displayed mixed responses under drought and an overall decrease under combined stress.

Overall, each species responded differently to drought and drought plus heat stress across all measured traits. *R. grandiflora*, *S. gracile*, and *H. lasiocarpos* were more consistent in maintaining or increasing height, leaf area, and chlorophyll content under stress, suggesting higher tolerance. *B. sphaerocarpa* and *S. nutans* showed less variation and weaker responses to changing conditions. These differences in functional trait responses indicate that some native Louisiana prairie species may be better suited

for restoration and conservation efforts in environments expected to experience greater drought and heat stress.

Thomas, Daphne

When Words Don’t Come: How Childhood Experiences Shape Voice and Sense

This research considers the connections of memory, speech, and sensory experience. More specifically, it investigates the ways in which, and for what purposes, a person’s childhood experiences, especially those which were intense, emotional, or traumatic, can shape an individual’s speaking voice as well as how they respond to certain scents. In particular, this research studies how participants spoke while recalling memories of scents and aims to identify connections across emotion, speech fluency, and sensory memory. Quadrant findings suggest that the human voice carries subtle physical echoes of personal history and reflects both how the body remembers and how profoundly our experiences shape our communication and perception. It is also anticipated that the research context will support a deeper understanding of the emotional anchors of speech and sense, utilizing awareness of emotional phenomena shaping our individual and collective means of communication for approaches to speech pathology and trauma-informed communication.

Weaver, Silas

Optimism and Perceived Social Support in Gender Minorities: The Role of Minority Stress in LGBTQ+ Quality of Life

Minority stress contributes to quality of life due to its correlation to physical health disparities, increase in addiction and substance use, and decreased optimism. Optimism is crucial in the development of healthy coping skills, positive outlooks about the future, and self-efficacy for responding to negative input, and it is associated with a higher quality of life. The Buffer Hypothesis predicts that social support can be used as a mediator between stressful events and social optimism, decreasing the development of maladaptive coping mechanisms. The proposed work will focus on the correlation between social support and optimism as it pertains to minority stress in college students of various gender identities. Information will be collected through a convenience sample survey, measuring self-efficacy, dispositional optimism, and various components of minority stress. Among the expected outcomes are: (a) gender minority students will have significantly lower levels of perceived social support, self-efficacy, and optimism than cisgender participants, (b) perceived social support will be negatively correlated with optimism in gender minorities, and (c) participants who are both racial and gender minorities will have the lowest levels of optimism and perceived social support. Clinicians can potentially integrate the Minority Stress Model into treatment through the implementation of positive coping mechanisms, regulation of physiological stress symptoms, and support resources for better mental well-being.

Whitman, Scott

Using Optimized Tiling Schemes for Attaining *k*-Coverage in Wireless Sensor Networks

Attaining coverage of a region is one of the main goals of any Wireless Sensor Network (WSN) design. It is known that the placement scheme that uses the fewest sensors to cover the plane is to break up the plane into a regular hexagonal tiling and cover each tile by a sensor in the middle of the tile. A natural way to extend this to *k*-coverage by placing *k* sensors to cover each tile. Prior work in this direction has generally been done by starting with a region in which to place the k sensors, then choosing a tile based on that. Here, we use numerical optimization techniques to find the optional tiling for any polygonal deployment region. This allows for the use of fewer sensors to *k*-cover a region within the same placement constraints. Based on these tiles we use numerical optimization to obtain less restrictive deployment regions that still cover those tiles. Based on these deployment regions we have a conjecture for the best deployment region for sensor density. Our comparisons to prior deployment schemes by area show that our methods provide better sensor densities.