3rd Annual

GRADUATE RESEARCH CONFERENCE

AT LAMAR UNIVERSITY®

KEYNOTE ADDRESS

Paula Tacker
LMSW, LCSW intern

Katie Durio
Executive Director, STABLE SPIRIT

SETZER STUDENT CENTER, LAMAR UNIVERSITY
WEDNESDAY, FEBRUARY 12, 2025 • 8:00 AM–5:30 PM

College of Graduate Studies
LAMAR UNIVERSITY

Setzer Student Center, Lamar University

FEBRUARY 12, 2025 • 8:00 AM–5:30 PM

REGISTRATION & OPENING REMARKS

8:00-8:45 **SETZER BALLROOM A** Sign-in, Coffee & Tea

Remarks by Senior Associate Provost Samuel Jator and Associate Dean Robin Latimer

See the alphabetized Abstracts section for full information on poster, paper, and presenter

POSTER SESSIONS

BALLROOM A

8:50-9:35 Diamond Dallas Page Yoga

N. Thomas

9:35-10:10 The Power of Mindful Breathing: A Neuroscience-Based Approach for First-Generation Hispanic College Students

C. Carbajal

10:10-10:45 Investigating the Addition of Nanoparticles on the Melting Temperature of Polyetheretherketone (PEEK)

T. Adisa

10:45-11:20 Perfluorooctanoic Acid Monohydrate (PFOA-H_20) Studied by Molecular Rotational Resonance (MRR) Spectroscopy

R. Gollamudi

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**

Paula Tacker and Katie Durio of Stable Spirit

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**

Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

12:35-1:10 Geospatial Analysis of the Impact of Floods on Water-Borne Diseases in Southeast Texas

R. Shrestha and C. Woods

1:10-1:35 Geospatial Dinosaur Tracking

K. Woods

1:35-2:10 Assessing Volatile Organic Compound Concentration Patterns in the Winter By Using Canister Air Sampling and GC-MS Analysis with EPA TO-15 Method: Influence of Meteorological Factors

S. M. Farhad

BALLROOM A *(CONT.)*

1:35-2:10 **Concurrent Presentation —** Equipping Tomorrow's Educators with Real-World Skills via Port Education and Engaging Activities

A. Sah and M. Singh

2:10-2:45 In the Eye of the Beholder: A Comparative Study of Social Expectations for Women at HBCUs and PWIs

A. Ashley

2:45-3:20 Investigating the Potential of an Amylose/Pectin Composite for Organic Contaminants Remediation

K. Adeoye and P. Bernazzani

3:20-3:55 Zinc Oxide Nanoparticles Impede Reduce the Biosynthetic Production of Ergosterol in Candida albicans

A. Meghani

3:55-4:30 Preliminary Study of Variations in Rainfall Distribution in Southeast Texas

R. Sogbuyi

4:30-5:00 Comparison of Physical Characteristics and Sensory Qualities of Blueberry Muffins Made with All-Purpose Flour and Gluten-Free Flour

M. McClure

5:00-5:30 **AWARDS for BEST POSTERS and PAPERS**

Emcees: Drs. Bahrim and Latimer

PAPERS

NECHES (ROOM 120)

8:50-9:35 Community-Based Movement & Exercise Interventions to Encourage Belonging

J. Lopez (Virtual)

9:40-10:25 Developing an Online Graduate Resource Hub for Mental Health and Resiliency Support within the Texas State University System (TSUS)

M. Brooks and H. Hillyard

10:30-11:15 The Impact of Self-Diagnosis Tools on Mental Health and Wellness Outcomes

E. Spencer

NECHES (ROOM 120) *(CONT.)*

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**
Paula Tacker and Katie Durio of Stable Spirit

12:30-1:30 **LUNCH — Lunch with Counseling Dept., Keynotes, and Guests in Private Dining Room**

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**
Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

1:45-2:30 Spiritual Health and Therapies for Counselors
P. Harris

2:30-3:15 The Health Implications of General Education Placement of Children with Autism Spectrum Disorder
C. Childs

SABINE I (ROOM 123)

8:50-9:35 **Reserved for undergraduate participant prep**

9:40-10:25 **Advanced Undergraduate Paper —** A Comparison of Abdominal Contraction Bracing Method (CBM) and the Glass Cup Bracing Method (GCM)
M. Bellot

10:30-11:15 **Advanced Undergraduate Paper —**Exploring the Implications of Ubuntu as an Ecophilosophy in African Businesses
I. Rothenberger

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**
Paula Tacker and Katie Durio of Stable Spirit

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**
Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

1:30-2:15 Reimagining U.S. History: Faculty Perspectives on Internationalizing the College History Curriculum
C. Wilbur and T. Harvey

Schedule

SABINE II (ROOM 121)

8:55-9:40 Traversing fading memories: A qualitative study on the communicative experience of caregivers of persons with dementia
A. Sherry

9:45-10:30 A Mother's Decision Making on School Placement for a Deaf Child: Narrative Case Study
J. Beaty

10:35-11:20 Artificial Intelligence Enhanced Pedagogy: Examining How Teachers Elevate Their Practice Through Innovative Lesson Design
A. Dennard and D. Borel

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**
Paula Tacker and Katie Durio of Stable Spirit

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**
Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

1:30-2:15 Bayesian Hierarchical Models in Health Insurance Premium Modeling
A. Owoade

TRINITY (ROOM 227)

9:40-10:25 The Effect of Short Chain Fatty Acids on Ethanol Toxicity in SH-SY5Y Cells

J. Jeon

10:30-11:15 Predicting the interference pattern for coherent interaction between two laser beams on a silica surface

R. Bharadwaj

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**

Paula Tacker and Katie Durio of Stable Spirit

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**

Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

1:35-2:20 Effect of Ground Chicken on Taste, Aroma, Texture, and Color of Meatballs

E. Wallace

2:25-3:10 Effect of Cauliflower Rice on Aroma, Flavor, Texture, and Density of Mexican Chicken and Rice

A. McNiece

3:15-4:00 Effect of Skim Milk and Olive Oil on Flavor, Appearance, Texture, Preference, and Viscosity of Pancakes

R. Simnitt

CYPRESS (ROOM 127)

9:20-10:05 Decoding Sentiments: A Comparative Study of Machine Learning, Deep Learning, and Transformer Models on Reddit Data

A. Shrestha

10:10-10:55 Automating Emotion Prediction: Comparative Analysis of Scratch-Built Hybrid Framework for Social Media Emotion Detection and Prediction Using Lexical, POS, and Neural Models Integrated with a Custom Minority Oversampling Framework

S. Dhakal

11:30-12:30 **KEYNOTE ADDRESS — Ballroom A**

Paula Tacker and Katie Durio of Stable Spirit

12:30-1:15 **GRADUATE STUDENT LUNCHEON — 2nd floor bar in Setzer**

Free pizza hosted by Rushi Bandathmakuru for all graduate student participants and presenters. Come and go with lemonade and ice water

Schedule

PORT (ROOM 250)

8:55-9:40 Impact of Water and Steam Injection on NOx and CO Emissions in Gas Turbine Engines

M. Hasan

9:45-11:30 Blending Biocompatible Polymers For Potential Biomedical Applications.

O. Ogunjobi

AFTERNOON **CLOSED FOR CONFERENCE STAFF USE**

SPECIAL SESSIONS

Have some open spaces in your conference schedule? These are free workshops on a first-come, first-serve basis. Join one to enhance your knowledge and skills

SEA RIM (ROOM 229)

10:15-11:15 **Developing a Graduate-level Literature Review**

Dr. Elizabeth Sanders, Assistant Professor, REI Interim Dept. Head

becomes much easier once you have taken in Dr. Sanders' techniques and strategies. Come and get the best information from our REI Librarian

3:30-4:30 **Looking for a Job with a Graduate Student/ Computer Scientist**

Rushi Bandathmakuru, Graduate Assistant COGS

You do not want to miss this. Rushi will show you how to combine online tactics with simple technology tools to network with individuals in companies you want to work for. Bring your laptops if you want to work alongside Rushi.

Investigating the Potential of an Amylose/Pectin Composite for Organic Contaminants Remediation

Adeoye, Kayode and Professor Paul Bernazzani. Poster. Department of Chemistry and Biochemistry.

The environmental impact of pollutants such as heavy metals, organic dyes, and industrial waste has prompted the development of advanced materials capable of detecting and removing contaminants efficiently. Biopolymer-based composites of polysaccharides have been shown to bind to heavy metals and could offer a sustainable method for the remediation of organic contaminants. In this study, we explore the potential of a composite material composed of amylose, a linear polysaccharide derived from starch, and pectin, a heteropolysaccharide found in plant cell walls, for the adsorption of environmental organic contaminants. This study investigated the thermal stability of amylose and pectin polymers, crucial components in plant-based materials, using (DSC). This work was partially funded by grants from the Welch Research Foundation (Departmental V-0004) and the Lamar University Department of Chemistry and Biochemistry.

Investigating the Addition of Nanoparticles on the Melting Temperature of Polyetheretherketone (PEEK)

Adisa, Temitope. Poster. Chemistry and Biochemistry.

The evolution of next-generation semiconductors requires packaging materials that not only endure extreme temperatures but also promote long-term wellness and sustainability in technological systems. Polyether ether ketone (PEEK), a high-performance thermoplastic, stands out for its remarkable thermal stability and its potential to enhance the resilience of high-temperature applications. This study investigates the integration of titanium dioxide (TiO_2) nanoparticles into PEEK, aiming to improve thermal properties while fostering safer and more reliable material performance. PEEK/TiO_2 composite films were synthesized using an environmentally conscious process involving sulfuric acid and methanol. Thermal analysis via differential scanning calorimetry (DSC) demonstrated that TiO_2 incorporation significantly enhances the melting temperature and thermal stability of PEEK, making it an ideal candidate for applications requiring both durability and efficiency. By enabling robust material solutions, these advancements contribute to the well-being of industries and society through sustainable innovation and enhanced safety in critical applications.

In the Eye of the Beholder: A Comparative Study of Social Expectations for Women at HBCUs and PWIs

Ashley, Ashleeya. Poster. College of Education - Mental Health Clinical Counseling Program.

Beauty Standards at Historically Black Colleges and Universities (HBCU's) have evolved over time, especially with the most recent increase of fashion trends across social media. These newly developed beauty standards are heavily impacting the lives of women attending which can cause an increase in stress. This fails to consider the present stresses such as completing coursework, maintaining proper GPAs, and making connections (to name a few). These social pressures may be playing a role in decreasing the wellness (mental health, self-esteem, confidence, etc.) of an individual. The purpose of this study is to uncover the potential correlation between beauty standards and societal pressures on mental health and stresses placed on college women when comparing PWI (Predominantly White Institutions) and HBCU campuses. In addition, the study attempts to gather tips and techniques to aid in reducing the effects of this issue.

A Mother's Decision Making on School Placement for a Deaf Child: Narrative Case Study

Beaty, Jessica. Paper. MS, CED College of Fine Arts & Communication, Ed D. Deaf Studies & Deaf Education.

*Hearing mothers of deaf children have many decisions to make regarding their child's education. This qualitative single instrumental case study explores the experiences of two mothers. Through semi-structured interviews, the mothers were asked about the educational decisions they made for their deaf child and how they navigated the emotional practical challenges during the process. A content analysis identified four themes: 1) the significant impact of professionals in guiding the decisions; 2) a strong preference for spoken language over sign language; 3) the decisions evolved depending on the situation; 4) the process was emotional for them and the family. The findings are discussed and compared to current research, with implications for improving support systems and communication between professionals and families in deaf education. Keywords: **deaf education, parental decision making, early childhood education, Regional Day School Program for the Deaf (Texas), qualitative research, case study**. Through the interviews with the mothers, the researcher specifically asked what they did to take care of themselves as they were navigating this unique parenting process. The answers varied indicating the emotional and mental stress that is placed on them during the educational decision process impacts their overall wellness. An analysis of the interview responses and anecdotal memos revealed additional areas where the mothers needed support to enhance their wellness. By bringing awareness to this issue, a collaboration between fields could develop programs and systems to better support this group of mothers.*

ABSTRACTS OF POSTERS & PRESENTATIONS

A Comparison of Abdominal Contraction Bracing Method (CBM) and the Glass Cup Bracing Method (GCM)

Bellot, Michael H Kinesiology, College of Education, Lamar University. Advanced Undergraduate Paper. Sponsors: Drs. Shannon Jordan and Daniel Chilek.

Anterior contraction of the core muscles as a form of bracing and creating spinal stiffness has existed for centuries and likely dates to the time of the Greeks, the first culture in recorded history to truly realize the importance of physical fitness. This method of bracing, which I will refer to as the Abdominal Contraction Bracing Method (CBM), has been widely accepted and used when it comes to nearly any form of lifting. This method is one of the first methods a person will learn when they enter the world of physical fitness regarding core stability and spinal stiffness and has been used for so long that it is typically uncontested. While contracting the Rectus Abdominus and Transverse Abdominus muscles will create good levels of core tension and spinal stiffness the muscles only have themselves to brace against and not a strong internal factor. The CBM only braces on the anterior and lateral portion of the core and not the entirety. This leaves the posterior area of the core essentially unprotected during physical fitness training. By stabilizing via a multi-step global core contraction method, the Glass Cup Abdominal Bracing Method (GCM), the core muscles can create superior contractile forces as compared to the CBM. The GCM, by generating strong Intra-Abdominal Pressure (IAP) via inhaling in specific mannerisms and contracting the Anterior (Rectus Abdominus), Lateral (Transverse Abdominus, External Oblique, & Internal Oblique), and Posterior (Quadratus Lumborum) group core muscles against the IAP, a cylindrical wall of tension is created around the entirety of the Core Muscle Complex. In theory, GCM generates more electrical activity in the contracted muscles than CBM does yielding a greater contractile force and stability.

Predicting the interference pattern for coherent interaction between two laser beams on a silica surface

Bharadwaj, Rishi. Paper. Electrical Engineering.

We modify the reflectivity of a silica crown glass prism through coherent interference of two 532 nm linearly polarized diode lasers: a weak probe and a stronger coupling laser. The coupler is oriented perpendicular to the surface and polarized parallel to the plane of incidence, while the probe is oriented at 45 degrees with respect to the surface. The laser-surface interaction is assisted by a capacitor voltage which creates an isotropic energy background. The probe beam is first attenuated using a combination of polarizers and then it passes through a beamsplitter, which splits the beam between the optical detector and monitoring branch. This allows to calibrate the probe signal in real time, as the experiment lasts several hours. The weak probe laser is incident on a 2 mm spot on a crown glass surface, where it interacts with the much brighter and wider coupling laser beam. A polarizer is positioned to separate the parallel and perpendicular components of the reflectance. We determine the normalized value of the parallel component of the reflectance to identify the Brewster angle with precision. Furthermore, using a theoretical model based on coherent interference, we can predict the maxima and minima with remarkable accuracy for small voltages (< 2.3 volts) and low orders of interference (< 3). This theoretical model has limitations at higher voltages, due to the extra energy imparted to the surface dipoles, and for higher orders of interference, as they fall outside the small-angle approximation range and are located on the steep parabolic wings of the parallel normalized reflectance. The reflection of the weaker probe is inhibited at lower voltages, whereas this inhibition is minimal at higher voltages. This phenomenon is characteristic of an optoelectronic switch.

Developing an Online Graduate Resource Hub for Mental Health and Resiliency Support within the Texas State University System (TSUS)

Brooks, Michelle and Harold Hillyard. Paper. Clinical Mental Health Counseling, College of Education, Lamar University.

Graduate students experience disproportionately high rates of mental health issues, including anxiety and depression, often driven by academic pressures, financial strains, and social isolation. Self-stigma may prevent them from seeking professional help. To date, no online support system exists to address these barriers that is unique to graduate students. This proposal outlines the development of an Online Graduate Resource Hub for the Texas State University System (TSUS), a centralized digital platform offering evidence-based mental health resources. A poster presentation using a display screen/presentation board with graphics such as charts and graphs will be utilized. Objectives: Enhance accessibility to mental health tools tailored to graduate students, Provide interventions such as internet-based cognitive behavioral tools and assessments delivered through interactive modules. Foster community support and reduce stigma. Reduce stress and promote resilience. A needs assessment will be conducted using surveys and focus groups. The platform will be developed in collaboration with mental health professionals and IT specialists, featuring user-friendly tools such as internet-based guided mindfulness exercises and academic progress trackers. Following a pilot launch with a subset of TSUS graduate programs, feedback will guide further refinement. The hub is anticipated to increase accessibility to mental health resources, reduce stress and anxiety, and improve resilience among graduate students. By offering 24/7 access to tailored support, the platform addresses barriers like stigma, financial concerns, and time constraints. This initiative is expected to enhance retention and academic success while providing a scalable model for other university systems. By integrating accessible, evidence-based tools, the Online Graduate Resource Hub will support the well-being and success of TSUS graduate students, addressing their unique challenges in a sustainable, impactful manner.

The Power of Mindful Breathing: A Neuroscience-Based Approach for First-Generation Hispanic College Students

Carbajal, Carlos. Poster. College of Education and Human Development, Master of Education in Clinical Mental Health Counseling.

First-generation Hispanic college students often encounter unique challenges, such as navigating unfamiliar academic systems, financial pressures, and limited access to relatable mentors. These stressors can trigger chronic anxiety, impair self-regulation, and hinder academic success. Research suggests that mindful breathing—a mindfulness-based intervention (MBI)—is a practical and accessible tool for managing stress and improving emotional well-being. From a neuroscientific perspective, mindful breathing activates the parasympathetic nervous system, reduces amygdala hyperactivity, and enhances prefrontal cortex functioning, promoting resilience and cognitive clarity. This poster presents a targeted literature review of studies exploring the benefits of mindful breathing for stress reduction and its potential applications for first-generation Hispanic students. Several scholarly articles and texts were analyzed to identify gaps in the research and assess how mindful breathing can be tailored to meet this population's cultural and contextual needs. Specific stressors, such as navigating academia and cultural identity challenges, will be highlighted alongside the demonstrated physiological and psychological effects of mindful breathing. The poster will visually illustrate the impact of stress on brain function and the neurological mechanisms activated by mindful breathing through detailed infographics and brain diagrams. Attendees will also be able to participate in a brief guided mindful breathing exercise designed to reduce stress and enhance focus. This project aims to bridge the gap between neuroscience, culturally relevant interventions, and mental health support for first-generation Hispanic college students, offering a scalable model for fostering resilience in higher education.

The Health Implications of General Education Placement of Children with Autism Spectrum Disorder

Childs, Crystal. Paper. Clinical Mental Health Counseling, Lamar University.

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by deficits in verbal and nonverbal communication, leading to social impairments and restricted, repetitive patterns of behavior, interests, or activities. Laws and regulations require students with special needs to be placed in the least restrictive environment, often general education classrooms. However, for some children with autism, a general education classroom may not be suitable. As the rate of autism grows, there are not enough special education classrooms, resulting in more autistic children being placed in general education classrooms, even when it is not appropriate. Children with ASD may exhibit behaviors called stims, such as flapping their hands, calling out, or repetitive hand movements, which can be disruptive to the classroom. Teachers need to be aware of autism stims and other symptoms or behaviors and know how to handle these situations to promote autonomy and well-being, but teachers in general education classrooms are often not qualified or trained to meet the special needs of children with autism. Neurotypical students, often referred to as "normal" students, are not educated about autism when children with ASD are placed in their classroom and therefore do not know the expectations or how to act around children that are different from themselves or former classmates. Neurotypical students need to be taught about autism to reduce the stigma associated with it. The qualifications of the teachers and the education of the students will greatly influence the well-being of a child with autism in a general education classroom. This research paper will review the research on general education teachers and how their qualifications affect the well-being of children with autism.

Artificial Intelligence Enhanced Pedagogy: Examining How Teachers Elevate Their Practice Through Innovative Lesson Design

Dennard, Amanda and Professor Daryl Ann Borel. Paper. Center for Doctoral Studies, Educational Leadership. College of Education and Human Development, Lamar University.

Artificial intelligence (AI) tools are revolutionizing the classroom experience, offering personalized tutoring, adaptive course materials, and assessments tailored to diverse learning styles (Kadaruddin, 2023). Such technologies augment educators' capabilities and alleviate their burdens, freeing time and energy to focus on helping students grow (Noy & Zhang, 2023). As generative AI becomes more integrated into education, this phenomenological study examined how AI tools influence teachers' abilities to create dynamic, differentiated, and effective lesson plans at a school district in southeast Texas. The study identified the perceived benefits and challenges of using AI in lesson design through individual interviews with teachers who use AI in their teaching practices. Key findings showed that AI enhances accessibility, idea generation, professionalism, and efficiency while boosting teachers' confidence, self-efficacy, and content knowledge. However, the study also uncovered concerns about ethical issues such as data privacy, AI reliability, and the risk of cheating. The thematic analysis of interviews revealed the transformative potential of AI in education, offering insights into its role in assessment, differentiation, and fostering innovative teaching practices. The results provided practical applications for educational leaders aiming to leverage AI in curriculum development and teacher support.

ABSTRACTS OF POSTERS & PRESENTATIONS

Automating Emotion Prediction: Comparative Analysis of Scratch-Built Hybrid Framework for Social Media Emotion Detection and Prediction Using Lexical, POS, and Neural Models Integrated with a Custom Minority Oversampling Framework

Dhakal, Sambeg. Paper. Computer Science.

Emotions are the colors of human experience, different colors having different meanings making human life colorful. By recognizing and respecting the spectrum of feelings, we foster empathy and strengthen our bonds. The secret to compassion, communication, and inner peace can be found in understanding emotions. So, our research focuses on determining the most effective method of predicting people's emotions when resources are restricted. It entails figuring out people's feelings based on the content they share on social media. Social Media have emerged as a powerful tool that facilitates real-time information sharing, so social media has been a popular medium for expressing emotions. Although assessing emotions via text may not be as effective as face-to-face communication, it is a simple method to gather information about their feelings in large quantities without having to interact directly, which saves a great deal of time and money. People express their sentiments about specific events or activities either individually or collectively, which enables us to ascertain how they feel about them. Like this, COVID-19 is a recent event, a pandemic that caused chaos and generated a lot of discussion worldwide. Because people were experiencing a range of emotions at the time, this occurrence is the subject of our work. Public Tweets from the US during the COVID era are part of our data and our study looks for the most effective method of predicting emotions with little to no human intervention. To achieve it, multiple frameworks have been created from scratch and compared, including lexical-based, POS rule-based, and sophisticated machine learning and data science methods like neural networks and oversampling techniques. We look for an efficient and successful framework for text data analysis that might be applied in the future when emotion analysis is required for improved service or to foresee mental health problems in advance.

Assessing Volatile Organic Compound Concentration Patterns in the Winter By Using Canister Air Sampling and GC-MS Analysis with EPA TO-15 Method: Influence of Meteorological Factors.

Farhad, S. M. Poster.

Monitoring ambient air quality is essential for understanding the distribution and health impacts of volatile organic compounds (VOCs) in urban and industrial settings. This study employs the EPA TO-15 method for air sampling using canisters and subsequent VOC analysis via gas chromatography-mass spectrometry (GC-MS). We conducted regular air sampling at designated sites in the winter, with each sample analyzed to quantify VOC concentrations, aiming to correlate these with meteorological variables, including temperature, wind speed, wind direction, and cloud coverage. Preliminary data analysis revealed notable VOC concentration fluctuations, with trends indicating significant dependence on the monitored meteorological conditions. For instance, higher temperatures and specific wind directions appear to correlate with elevated VOC levels, suggesting the influence of atmospheric dispersion and dilution patterns. Furthermore, periods of high wind speed exhibited a tendency to disperse VOCs, leading to decreased concentrations, whereas low wind speeds and specific wind directions often facilitated accumulation in certain areas. Cloud coverage also showed potential effects on VOC levels, potentially due to its impact on photolysis rates and atmospheric mixing. This research provides insights into the complex interplay between VOC distributions and meteorological factors, supporting the development of predictive models for VOC exposure risks. Understanding these relationships can aid in designing targeted strategies for air quality management and public health protection in VOC-impacted areas.

Perfluorooctanoic Acid Monohydrate (PFOA-H20) Studied by Molecular Rotational Resonance (MRR) Spectroscopy

Gollamudi, Ramya. Poster. Chemistry/Biochemistry.

Perfluorooctanoic acid (PFOA), a synthetic compound with strong carbon-fluorine bonds and a carboxylic acid terminal group, poses significant risks to both public health and the environment. This study investigates the use of a BrightSpec broadband MRR spectrometer, operating in the 2–8 GHz range, as a new technique for fast detection and analysis of PFOA monohydrate. The resulting spectrum reveals well-resolved rotational signatures, highlighting MRR's high sensitivity to molecular conformations. With the aid of quantum chemistry calculations and established spectroscopic models, one conformer is assigned and confirmed by matching the experimentally observed MRR patterns with those simulated using experimental fit parameters. This work demonstrates the potential of MRR spectroscopy as a powerful tool for detecting and characterizing PFOA in aqueous environments. Furthermore, it provides valuable insights into the molecular structure and hydration behavior of PFOA, which are critical for understanding its environmental fate and impact.

Spiritual Health and Therapies for Counselors

Harris, Dr. Patricia Faculty in School Counseling. Paper.

A brief introduction to spiritual therapy for counselors and a discussion of the support it can provide.

Impact of Water and Steam Injection on NOx and CO Emissions in Gas Turbine Engines

Hasan, Md. Munif. Paper. Mechanical Engineering.

Water and steam injection technologies are commonly used in gas turbine engines to reduce nitrogen oxide (NOx) emissions, a significant factor in air pollution and damage to the environment. These technologies efficiently reduce thermal NOx generation by reducing combustion temperatures. Nonetheless, this reduction frequently entails trade-offs, including elevated carbon monoxide (CO) emissions and possible effects on turbine performance. This study analyzes the effects of water and steam injection on NOx and CO emissions in gas turbines under various operating situations, including fluctuations in load, fuel-air equality ratios, and injection rates. Experimental data and computational fluid dynamics (CFD) simulations were employed to examine the combustion behavior under various injection conditions. Key parameters, including water-to-fuel and steam-to-fuel ratios, were refined in order to find an optimal equilibrium between NOx reduction and CO minimization. The findings show that although steam and water injection both greatly cut NOx emissions, their decreased combustion efficiency at lower temperatures can result in increased CO levels. The study focuses on the impact of injection techniques on flame stability, efficiency, and power output. The results yield significant insights into the relationship between emission control and turbine performance, presenting practical recommendations for enhancing water and steam injection in gas turbines. This research recommends the advancement of cleaner, more efficient gas turbine technology that can comply with tough environmental standards. Future applications of this research involve the incorporation of these technologies into hybrid systems and their ***modification*** *for other fuels like hydrogen or ammonia, supporting sustainable energy solutions..*

The Effect of Short Chain Fatty Acids on Ethanol Toxicity in SH-SY5Y Cells

Jeon, Jiyoon. Paper. Biology Department, Lamar University. Sponsor: Ashwini Kucknoor.

Ethanol toxicity poses significant risks to liver function and the central nervous system (CNS), contributing to inflammation and neuronal damage. Acute binge drinking or chronic ethanol consumption disrupts cell membrane, induces oxidative stress, and activates glial cells, exacerbating neuroinflammation and neurodegenerative diseases (NDDs). Short-chain fatty acids (SCFAs), including acetate, propionate, and butyrate, are metabolites produced by gut microbiota from dietary fibers and have been shown to reduce neuroinflammation, support blood-brain barrier integrity, and modulate immune responses. Butyrate, in particular, inhibits microglial activation and reduces neuroinflammation. Preliminary results show that ethanol treatment alters the expression of immune receptors on the human neuroblastoma cell line, SH-SY5Y. Ethanol exposure increased the expression of TLR8, a receptor involved in pro-inflammatory responses, and FFAR4, a receptor associated with the regulation of inflammation and lipid metabolism. Conversely, GPR84, an orphan receptor, was decreased following ethanol exposure. SCFA treatment reversed some of these changes and demonstrated neuroprotective effects in a dose-dependent manner, suggesting their potential to modulate immune receptor activity in neuroinflammatory contexts. These findings suggest that while SCFAs can alleviate ethanol-induced inflammation, they are not a standalone solution as excessive alcohol consumption reduces SCFA-producing gut microbes and increases systemic inflammation. A combined approach of reducing alcohol intake and maintaining a fiber-rich diet to promote SCFA production is essential for mitigating ethanol's toxic effects. This research highlights the potential for targeting SCFA pathways via immune receptors and metabolic receptors to develop novel therapeutic strategies for NDDs.

Community-Based Movement & Exercise Interventions to Encourage Belonging

Lopez, Julia. Virtual paper. Clinical Mental Health Counseling, Lamar University.

Loneliness is recognized as a significant contributor to mental health challenges, exacerbating conditions such as depression and anxiety. Group movement practices—including yoga, structured exercise, and breathwork—have demonstrated potential as effective interventions for fostering connection and reducing emotional distress. This paper explores the application of movement-based practices within group counseling and peer support settings, focusing on movement's ability to enhance mental health outcomes through the synergy of abiological and psychological approaches. The paper will synthesize existing research, highlighting the benefits of movement-based interventions in reducing loneliness and promoting a sense of belonging. Case studies and examples will illustrate how these practices have been successfully incorporated into clinical and community settings to address mental health needs. Building on this foundation, the paper will propose a research study to further evaluate these interventions. The study will compare outcomes between movement-integrated group interventions and traditional, non-movement-based group approaches. Key metrics will include changes in depression, anxiety, and loneliness, as measured by the PHQ-9, GAD-7, and self-reported feelings of social connectedness. By examining these interventions individually and in comparison, the study seeks to provide actionable insights for practitioners in clinical and community settings. The presentation will conclude with practical recommendations for integrating movement into group counseling and community peer support programs. Emphasis will be placed on implementation strategies for clinical counselors, peer support leaders, and community organizers working with adults in both in-person and virtual environments. This research contributes to the theme of Wellness by addressing the growing issue of loneliness and offering innovative, evidence-based solutions for mental health improvement through community engagement and movement.

ABSTRACTS OF POSTERS & PRESENTATIONS

Comparison of Physical Characteristics and Sensory Qualities of Blueberry Muffins Made with All-Purpose Flour and Gluten-Free Flour.

McClure, Micayla. Poster. Didactic Program in Dietetics Nutrition Certificate.

This study aimed to compare the physical characteristics and sensory qualities of blueberry muffins made with all-purpose flour (control) and gluten-free all-purpose baking flour (experimental) to create a product suitable for individuals with celiac disease. Objective measurements revealed that gluten-free muffins were slightly lighter than the control muffins, with a denser and crumblier texture. Sensory evaluation showed that the control muffins were rated higher in texture and flavor, consistent with research highlighting the challenges of gluten-free baking. The gluten-free muffins exhibited distinct flavor notes due to alternative starches but still received generally positive ratings. This research aligns with the session topic by addressing the development of gluten-free baked goods, offering insights into creating acceptable products for individuals with dietary restrictions. While the study demonstrates that gluten-free flour can effectively substitute all-purpose flour, modifications to enhance texture and flavor could improve consumer acceptance. The poster presentation will convey findings visually and interactively. Photographs of both muffin types will showcase physical differences. Tables summarize objective measurements such as weight and texture, while graphs compare sensory evaluation scores for texture, flavor, and overall preference. Visual aids will emphasize key data points to engage viewers effectively.

Effect of Cauliflower Rice on Aroma, Flavor, Texture, and Density of Mexican Chicken and Rice

McNiece, Amanda. Paper. Master of Science, Nutrition.

Mexican Chicken and Rice is an easy, one-pot dish with Mexican flavors, a favorite in Texas. It is typically prepared with chicken, tomatoes, seasonings and refined white rice as the carbohydrate source. This study aimed to determine the effectiveness of cauliflower rice compared to white rice on aroma, flavor, texture, and density of Mexican Chicken and Rice. Only the carbohydrate source was altered in the original recipe. A sensory test was used to measure aroma, flavor, and texture. The physical property of density of the two recipes was measured using a scale for the mass and the water displacement method for the volume readings. The original recipe with white rice had better sensory rating results than the experimental recipe with cauliflower rice but the cauliflower rice did rate in the positive side of testing. The original recipe also had a higher density than the experimental cauliflower rice recipe. The overall result of the study indicated a positive acceptance of cauliflower rice although the recipe may need to be slightly adjusted in the amount of liquid when the cauliflower is used. The use of cauliflower in place of white rice may have a beneficial influence on overall carbohydrate intake and blood glucose levels for people with diabetes and for the whole population.

Zinc Oxide Nanoparticles Impede Reduce the Biosynthetic Production of Ergosterol in Candida albicans

Meghani, Anusha Shahzeb. Poster. Department of Chemistry and Biochemistry, Lamar University. Mentor: T. Thuy Minh Nguyen.

Candida albicans is a pathogenic organism that is found in the gastrointestinal tract and mouth of about half of the healthy adult population. Under certain circumstances, it can become pathogenic leading to the development of antifungal drugs. These drugs target the ergosterol biosynthetic pathway, but drug resistance is becoming a problem. Our goal is to seek to understand this pathway better to establish different drug targets. Candida a. cells were grown in the presence of ZnO nanoparticles, a known sterol pathway inhibitor, and the lipid composition of the cells was evaluated using gas chromatography. Results show at a minimum concentration of ZnO, a significant change in the sterol composition occurs.

Blending Biocompatible Polymers For Potential Biomedical Applications

Ogunjobi, Olatunji. Presentation. College of Arts and Sciences, Chemistry.

Bayesian Hierarchical Models in Health Insurance Premium Modeling

Owoade, Adebayo. Kuh Nko'o Toh Lawrence Jr. Paper. Mathematics. MS in Computational and Quantitative Methods.

Health insurance premium determination is a complex process influenced by various factors, including past loss size, number of losses, and the population at risk. This study addresses the development of a probabilistic framework for health insurance pricing, ensuring premiums adequately cover expenses, medical costs, and yield profits. The size of losses and the number of losses are considered mutually independent random variables, reflecting the inherent uncertainties of the loss process. Premium calculations account for individual factors such as age, health history, deductible size, and chosen health plan. To enhance predictive accuracy and provide actionable insights, this paper employs Bayesian hierarchical models, integrating individual and group-level predictors, such as demographics, health status, and geographic location. By leveraging Bayesian approaches, prior distributions improve model interpretability and ensure credible predictions. Data from Kaggle on health insurance policyholders serves as the foundation for this analysis, enabling the exploration of key drivers of premium pricing. Results indicate that Bayesian models outperform traditional methods by improving the understanding of the probabilistic nature of health insurance risks. The study highlights significant predictors, such as age and BMI, underscoring their impact on premium determination. These insights are critical for actuaries and policymakers in crafting fair and sustainable premium structures. Bayesian modeling not only enhances the precision of premium predictions but also provides a robust framework for incorporating diverse data sources and uncertainties, ensuring a more equitable health insurance system.

Exploring the Implications of Ubuntu as an Ecophilosophy in African Businesses

Rothenberger, Ian. Paper. College of Arts and Sciences: Environmental Science, Sponsor: Dr. Amy Smith. B.S. Advanced Undergraduate Paper.

In a world where younger generations are gripping with the fact that our planet is becoming less and less hospitable for life, human impact on the environment becomes a more pressing issue with each passing day. While many sources investigate the complex biogeochemical factors of the Anthropocene (human caused mass extinction), this paper seeks to explore the possibility of a moral foundation for environmental preservation by analyzing the impacts that Ubuntu, an African consolidated philosophy, may have in warranting an epistemological call to action in response to unsustainable, profit-seeking actions to promote environmental and spiritual wellness. This paper accomplishes its goal by analyzing environmental case studies related to private, for-profit ventures using a consolidated framework of Ubuntu to determine both its applicability in the situation and to what extent, if any, Ubuntu influenced the outcome. The Systematic Quantitative Assessment Technique (SQAT) method is used to identify, compile, and summarize literature on the topic by searching databases for certain keywords and matching relevance based on a combination of keyword matches and comparing results to papers already used in the field. The analysis indicates that Ubuntu shows great promise in its moral obligation of people and business entities to protect the environment. Furthermore, the very nature of Ubuntu is to promote the wellness of people as defined by their actions in relation to the spiritual, physical, environmental, and ancestral realms.

Equipping Tomorrow's Educators with Real-World Skills via Port Education and Engaging Activities

Sah, Avinash & Professor Mamta Singh. Paper. Dept of Mechanical Engineering, Department of C & I.

This research shows that teaching future educators about ports can help them bring maritime awareness and sustainability into their classrooms. Using pre-mid-post assessments and exploratory learning activities, the study evaluated their understanding and confidence in these areas. Ports are a big part of global trade and the economy, offering real-life examples to inspire students. The study looked at how teachers improved through surveys, group discussions, and classroom observations. Results showed that teachers gained a better understanding of how ports work, their environmental impact, and sustainable practices. They also felt more confident and learned to create fun and meaningful lessons that connect students to real-world issues. This helps students see the importance of sustainability and their role in a connected world.

ABSTRACTS OF POSTERS & PRESENTATIONS

Transversing fading memories: A qualitative study on the communicative experience of caregivers of persons with dementia

Sherry, Arpitha. Paper. Speech-Language Pathology, Fine Arts and Communication. Faculty Mentor: Karen Whisenhunt.

The aim of this qualitative study is to explore the changing dynamics in the quality of life and communicative relationship between persons with dementia and their caregivers, focusing on how communication influences caregiving dynamics. Progressive dementia symptoms interfere with communication success between people living with dementia and their communication partners. Communication has been identified as an important element of care and is related to quality-of-life factors for both parties. It was observed that there was a dearth of studies in the area of caregiver support and training in terms of the need of adapted communication skills and coping strategies. It is important to understand the implications it has in an SLP's plan of care for a person with dementia and their families, as all the caregivers expressed a lack of training in this area and a need for increased counselling from SLP's to be better prepared in caring for the person with dementia's changing needs, responsibilities and skills. This qualitative study aims to identify key themes in caregiver perceptions of communication and changes to navigating daily life relative to their family member's dementia journey. Findings suggest that caregivers adapt their communication approaches based on the level of cognitive decline, often relying on adaptive communication strategies and emotional support to bridge communication gaps and ease caregiver burden. Additionally, it contributes to the field by highlighting the need for SLP's to tailor their services to include an understanding of the caregiver-PWD's communicative relationship and provide caregiver training and counselling when assessing and managing cognitive-communication disorders, thus providing an opportunity for an improved quality of life.

Decoding Sentiments: A Comparative Study of Machine Learning, Deep Learning, and Transformer Models on Reddit Data

Shrestha, Arjun. Paper. Computer Science.

This research aims to uncover human emotions from written text on social media platforms. By utilizing diverse machine learning, deep learning, and transformer-based methods, the study strives to achieve maximum accuracy in emotion detection. In the future, these findings and models could form the basis for creating advanced autoregressive models for emotion prediction and similar applications. People share their opinions and experiences via social media platforms which have become vital sources of real-time information. Reddit, with its vast and active user base, provides a rich repository of public opinions that can be analyzed to scale the public sentiment. Decoding sentiments using simple text and machine learning models is a novel technique. Large Language Models (LLMs) are widely implemented to assess and interpret emotional context, improve human-computer interaction, and create individualized user experiences. Transformer Model (Roberta) and Deep Learning Neural Network (LSTM) models have been combined to achieve higher accuracy. For example, utilizing the LSTM stack technique Achieved 82% accuracy, while the model without the LSTM stack reached 91% accuracy. NLP techniques such as Stemming, Lemmatization, POS tagging, Bag of Words (BOW), Word2Vec, RoBERTa Tokenizer, and TF-IDF play a crucial role in this study. Additionally, implementing Machine Learning models such as Logistic Regression on Reddit data presents unique challenges and significantly contributes to the impact of this analysis. We compare and evaluate various hybrid and individual large language models to analyze the sentiments to help understand comprehensive impacts. This study provides the foundation for developing future autoregressive models in addition to comparing models to determine the most effective approaches. Moreover, illustrates how sentiment analysis can develop into more effective and significant tools for real-world applications by using strong NLP preprocessing with cutting-edge model evaluation. There has been a lot of Sentiment analysis but in this work, We Compare and contrast various hybrid and individual models to analyze the sentiments of the people using different large language models and different techniques to provide more efficient result. This will help to understand the comprehensive impact.

Geospatial Analysis of the Impact of Floods on Water-Borne Diseases in Southeast Texas

Shrestha, Ronish and Christopher Woods. Geospatial Sciences. Poster.

This study examines the impact of flooding on water-borne disease outbreaks in Southeast Texas. This region is particularly vulnerable to flooding, largely due to intense rainfalls from hurricanes and tropical storms, urban expansion, and low-lying geography. These recurrent floods often increase the risk of water-borne diseases as floodwaters spread contaminants and pathogens from sewers, industrial sites, and agricultural lands. This study utilizes historical flood data, health data, and geospatial analysis to investigate the correlation between flood events and disease outbreaks in the region, focusing on identifying patterns and risks specific to Southeast Texas. The main objectives of this study include 1)to map the spatial patterns and evaluate the spatial correlation of historical flood events and water-borne disease outbreaks in Southeast Texas, 2) to create predictive models that assess the likelihood of water-borne disease outbreaks following flood events, and 3) to develop risk maps identifying high-incidence areas due to flood exposure.

Effect of Skim Milk and Olive Oil on Flavor, Appearance, Texture, Preference, and Viscosity of Pancakes.

Simnitt, Rachel. Paper.

Pancakes are a breakfast staple for Americans. They are often doused with butter and syrup, adding higher fat content and sugar to enhance the flavor of a dish that already contains sugar and fats within the batter recipe. The purpose of this study was to determine the effects of a lower-fat source (swapping skim milk for whole milk and olive oil for butter) on the flavor profile, texture, appearance, and overall preference of a pancake recipe. The fat source was the only change made to the original pancake recipe. All other ingredients, cooking techniques, and serving remained consistent throughout the study. A sensory panel was used to measure objective components of flavor, texture, appearance, and overall preference by rating each on a descriptive score sheet. To measure the physical property of viscosity, the researcher completed a line spread test. It was found that the sensory panel rated the modified recipe with the skim milk and olive oil as the fat source higher for flavor, appearance, and overall preference, however, the texture of the original pancake recipe was scored slightly higher on the score sheet. Viscosity measured with the line spread test indicated that the consistency of the modified pancake batter was more liquid or thinner than the original. The thinner consistency is most likely due to the swap of oil for the original recipe's melted butter.

Preliminary Study of Variations in Rainfall Distribution in Southeast Texas

Sogbuyi, Roseline. Poster. Department of Civil and Environmental Engineering, Lamar University.

This research looks into the wellness of the community by looking into flood data and analyzing the effects of these rain data on the community wellbeing. Variation in rainfall data over a small-gaged area is a subject of interest to hydrology works and spatial analysis. Variations could be a result of various factors such as topography, vegetation, proximity to water bodies, wind direction, seasonal changes or urbanization. Sometimes, it could be as a result of a gage calibration. In this research, daily rainfall accumulation data between January and September 2024 were obtained and compared from two Low-Cost Flood Sensors (LU01 & LU02) within Lamar University which are less than a mile apart. To confirm the accuracy of the rain data obtained from each rain gauge, the data will be compared with data from a weather station nearby (less than a mile) and other rain gauge stations belonging to Lamar University. Variations during individual daily events and over the 9-month periods were observed. It was observed that LU03 experienced more rainfall than LU02. Further research will include possible causes of the variations and likely effects of such variations. The variations will be useful in understanding the advantages, limitations and usability of the Low-Cost Flood Sensors and the accuracy of the rain data in modeling watersheds.

The Impact of Self-Diagnosis Tools on Mental Health and Wellness Outcomes

Spencer, Emily. Paper. Clinical Mental Health Counseling, Lamar University.

The increasing popularity of self-diagnosis tools, such as mental health apps and online quizzes, has made it easier for individuals to assess their mental health symptoms. While these tools may offer some insights, they also raise concerns regarding their accuracy, the potential for misdiagnosis and misinformation, and the risks of delaying appropriate treatment. This research aims to explore the impact of self-diagnosis tools on mental health treatment and their influence on overall wellness. This study will primarily utilize survey-based research to gather data from individuals who have used self-diagnosis tools for mental health assessment. The increasing reliance on digital tools for mental health assessments raises important questions about their role in promoting or hindering true wellness. This research will use survey-based data collection to examine the impact of self-diagnosis tools on mental health, analyzing user perceptions, emotional effects, and the timing of treatment decisions through quantitative data. Descriptive analysis will be utilized to identify patterns and correlations, providing insights into how reliance on these tools influences overall wellness and emphasizing the limitations of self-diagnosis tools in promoting accurate mental health assessments. The findings from this research will highlight the limitations of self-diagnosis tools in accurately assessing mental health and emphasize the importance of professional diagnosis and care in overall wellness. Understanding these tools' potential limitations is crucial for informed decision decisions regarding mental health, which is vital to achieving and maintaining wellness. Understanding how these tools shape decision-making and their effects on treatment outcomes is crucial for promoting informed choices and encouraging the use of professional mental health care, ensuring that individuals receive appropriate support for their well-being.

Diamond Dallas Page Yoga

Thomas, Nelson. Presentation/Demonstration. Clinical Mental Health Program, Lamar University.

The DDP Yoga Program Guide includes a journal for tracking progress. The guide also includes: An introduction and guide to the DDP Yoga fitness program; A 13-week workout grid with beginner, intermediate, and advanced levels; Nutrition plans and recipes. DDP Yoga is a low-impact, full-body workout created by Diamond Dallas Page that combines yoga poses, calisthenics, core strength training, and dynamic resistance. DDP Yoga is designed to promote flexibility, weight loss, and increased strength and muscle tone. DDP Yoga is different from traditional yoga because it uses dynamic resistance, which is a technique that uses your body's muscle tension to add resistance instead of weights. DDP Yoga was developed for athletes who had suffered injuries from high-impact sports. Page wanted to create a type of yoga that was comfortable for "regular" people to do, so he mixed yoga with rehabilitation techniques, resistance training, and cardio.

ABSTRACTS OF POSTERS & PRESENTATIONS

Effect of Ground Chicken on Taste, Aroma, Texture, and Color of Meatballs

Wallace, Elizabeth. Paper. Nutrition, Hospitality and Human Services, Lamar University.

The topic is related to wellness guidance in that it demonstrates the effectiveness of protein replacement in a typical, modern recipe as it relates to health, specifically the potential for reducing cardiovascular disease and obesity. It also supports the acceptability of protein replacement in a tiny sample of everyday households, thus guiding people toward making small changes that can lead to improved wellness. Meatballs are a popular meal protein component, as a snack at football parties, and act as hors d'oeurves at weddings. They are often prepared with ground beef or a combination of beef, pork, or veal as the protein source. The purpose of this study was to determine the effect of ground chicken on the taste, aroma, texture, color, and overall consumer acceptance of meatballs. Only the protein source was altered in the original meatball recipe. A paint swatch color test was carried out to measure the physical property of color. A 9-point Hedonistic Scale was used to measure taste, texture, aroma, and consumer acceptability. Panelists preferred the experimental ground chicken meatballs overall. This suggests that research into the use of ground chicken in place of ground beef, veal, or pork in mass-produced convenience products such as soups and chilis, frozen dinners, and fast-food restaurant meals may be warranted to help combat the ever-rising obesity epidemic and cardiovascular disease.

Reimagining U.S. History: Faculty Perspectives on Internationalizing the College History Curriculum

Wilbur, Christina, Professor Thomas Harvey (Chair, Dept of Ed Leadership). College of Education. Paper.

As community colleges prepare students for a globalized world, the challenge of internationalizing curriculum remains underexplored, particularly in history departments. This qualitative study, guided by Dr. Thomas Harvey, investigated how history faculty at three Texas community colleges perceived internationalization and how their perceptions shaped the content of their history curriculum, uncovering both obstacles and opportunities. Through semi-structured interviews, the study revealed significant differences in how faculty interpret internationalization. Many faculty attempted to place U.S. history within global contexts but faced barriers such as time constraints, resource limitations, and insufficient institutional support. A recurring tension emerges between addressing local community priorities and integrating global perspectives. Key recommendations include expanding professional development, creating centralized repositories of globally-relevant materials, and establishing institutional guidelines to support curriculum internationalization. Enhanced faculty collaboration and stronger support structures are also essential for sustainable implementation. This research offers critical insights for community college administrators, faculty, and policymakers aiming to prepare students for a global workforce while navigating the unique challenges of history education. Additionally, Dr. Harvey will share strategies that facilitated the dissertation process, such as refining research questions, maintaining momentum, enhancing communication, overcoming time management challenges, and addressing research setbacks. By addressing the challenges of dissertation completion, their partnership fostered innovative research and meaningful contributions to the field.

Geospatial Dinosaur Tracking

Woods, Karen. Geology Dept. Poster. Geospatial Dinosaur Tracking.

Trace fossils are the products of an organism interacting with a substrate in an environment, leaving tangible records of the organism's behavior. Ichnology is the study of trace fossils, such as tracks. They are essential because behaviors can be preserved even if the body of the producing organism is not. Dinosaurs first appeared in the Triassic between 243 and 233 million years ago and were a dominant group throughout the Mesozoic era, persisting until the end of the Cretaceous (~66 million years ago). When the trackway is created, it is possible to measure and calculate a series of characteristics related to the animal's size, gait, and travel velocity. This dataset comprises geographic coordinates (latitude and longitude), along with the ichnogenera and ichnospecies of the fossil tracks where applicable. It includes associated data such as the country, state or province, geological formation, stratigraphic member, and geological group, as well as the age of the host rocks, whenever this information can be determined. A new way to study paleontologically essential sites can be achieved through geospatial processes, hence the subdiscipline of geospatial ichnology. These techniques enhance our ability to model spatial relationships and identify patterns within the data, facilitating more robust and insightful conclusions. Spatiotemporal Analyses can allow individuals to visualize the data's spatial values (X, Y) across time (Z). This would enable visualization of the distribution of ichnological sites over time, such as showing changes in ichnogenera over different geological epochs. However, preemptive spatial analyses such as Kernal Density, Inverse Distance Weighted (IDW), and Kriging can help identify which locations and environmental variables are conducive for ichnological preservation. Identifying this information before full-blown spatiotemporal analyses can lead to more effective modeling and accurate spatiotemporal mapping.