



LINDENWOOD SHOWCASE 2025



**Thursday, April 24, 2025
8:00-5:00**

The winner of this year's logo contest was *Owen Paintner*, an undergraduate student from the College of Arts and Humanities – congratulations Owen!

Snapshot of the Day

8:00–9:00	Coffee and Pastries and Opening Remarks Dunseth Auditorium Harmon Hall
9:00–11:00	Maker Space Open House
9:00–12:00	Faculty Professional Development Sessions, Faculty Oral Presentations/Panels, and Faculty Poster Presentations Harmon Hall
11:50–12:15	Lunch Harmon Hall
12:15–1:00	ORCA Panel Dunseth Auditorium Harmon Hall
1:15–2:00	Student Poster Session 1 LARC Lobby
2:00–2:45	Student Oral Presentations LARC
2:45–3:30	Student Poster Session 2 LARC Second Floor Balcony
3:30–4:15	Student Oral Presentations LARC
7:00	Black and Gold Awards and Dance Recital

To Register Through the Lindenwood Learning Academy: [Home](#) / [The Homepage](#).

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Faculty Professional Development Sessions (9:00-11:50)

Room: 234 Harmon Hall

Time: 9:00-9:50

Community Connections: Building Meaningful Service Learning from the Ground Up

Presenter(s): *Robyne Elder (facilitator), Academic Affairs; Wendi Price, Service Learning; Michiko Nohara-LeClair, Psychology; Gokhan Egilmez, Management; Aleisha Mulnix, Development Officer at Presbyterian Children's Home and Services*

Summary: This panel features faculty colleagues who have successfully integrated service learning into their courses across diverse disciplines. They'll share their real-world experiences in finding community partners, designing assignments that benefit both students and community organizations, and navigating common logistical challenges along the way. Join us to hear honest accounts of what works (and what doesn't) as you consider how service learning might enhance your own teaching and your students' educational experiences.

Room: 136 Harmon Hall

Time: 9:00-9:50

Compass Points: Faculty Perspectives on Navigating the Advising Journey

Presenter(s): *Kevin Manley (facilitator), Academic Affairs; Colleen Biri, Psychology; Renee Porter, Management; Mitch Nasser, Educational Leadership; Marcus Smith, History*

Summary: This interactive panel brings together faculty advisors from all four colleges to share their insights on creating meaningful mentoring relationships that inspire student success. Participants will discover practical strategies for navigating common advising challenges and a few techniques that transform routine advising into transformative mentoring experiences.

Room: 231 Harmon Hall

Time: 9:00-9:50

Ed Tech Mini-Sessions 1: Canvas Setups--Leveraging Templates to Create a Cohesive Learning Experience and Enhanced Gradebook Setups

Presenter(s): *Kaitlyn Maxwell, Learning Design; Johanna Elkana, Learning Design*

Summary: Creating cohesion across a program can be achieved in many ways. One of those ways is in the creation of functional templates that still allow for flexibility in teaching styles. See an example of a real template and learn what worked – and what didn't! NOTE: this is part one of the session. Tired of counting up points and mathing it out to weight your assignments and exams? Us, too! Learn how to make the gradebook work for you using setup tools already built in to Canvas. NOTE: this is part one of the session.

Room: *229 Harmon Hall*

Time: *9:00-9:50*

Heart of the Pride: Fostering Online Community

Presenter(s): *Michael Fetters, Learning Design; Heather Sandy, Learning Design & Technology*

Summary: Engage your learners with one another through intentional design with discussion boards. Brainstorm different prompts and ways to get more discussion in discussion boards.

Room: *217 Harmon Hall*

Time: *9:00-9:50*

Scholarship of Teaching & Learning (SoTL) Institute Information Session

Presenter(s): *Betsy Melick, English; Laura Wehmer-Callahan, Academic Affairs*

Summary: The Scholarship of Teaching and Learning (SoTL) Institute is a new program offered by the LLA and the ORCA. This development offering will guide LU faculty in conducting SoTL studies on their teaching with the goal of presenting or publishing their research. During this session, the SoTL Institute facilitators will discuss the application process, present an overview of the institute's timeline and answer questions from interested faculty.

Room: 229 Harmon Hall

Time: 10:00-10:50

Beyond the Screen: Creating Dynamic Online Learning Communities

Presenter(s): Betsy Melick (facilitator), English; Joe Baumann, Writing; Karolina Schneider, Management; Kevin Winslow, Curriculum & Instruction; Matthias Wood, Mathematics

Summary: This panel brings together skilled faculty from all four colleges who have figured out what actually works in online teaching. Panelists will share practical strategies for building real connections with and between students. Join us to hear how these experienced educators create engaging and effective online learning experiences for their students.

Room: 233 Harmon Hall

Time: 10:00-10:50

Ed Tech Mini-Sessions 2: Canvas Setups & Updates

Presenter(s): Haley Woodridge, Learning Design & Technology; Kyle Kemble, Learning Design

Summary: Instructure has been working hard to deliver features that engage learners and improve ease of use. This session focuses on recent releases and new features you can look forward to! NOTE: this is part one of the session. Block Editor is an upcoming feature which allows instructors and course designers enhanced flexibility to create visually appealing and structured pages. Learn more about this new feature and how you can leverage it to your advantage. NOTE: this is part two of the session.

Room: Dunseth Auditorium, Harmon Hall

Time: 10:00-10:50

Faculty Award Winners Panel

Presenter(s): Meri Marsh (facilitator), Geography; Melissa Elmes, English; Justine Pas, English; Maryann Townsend, Information Systems; Pernell Witherspoon, Criminal Justice

Summary: In this panel, recent faculty award winners from across campus will share some of the practical and innovative strategies they use

to engage and support their students. This will be a Q & A format with some time available for audience questions.

Room: 217 Harmon Hall

Time: 11:00-11:50

AI Made Simple: Practical Tools for the Curious-but-Cautious Professor

Presenter(s): Meri Marsh (facilitator), *Geography*; Maryann Townsend, *Information Systems*; Maite Nunez-Betelu, *Spanish*; Lynda Leavitt, *Educational Leadership*; Gokhan Egilmez, *Management*; Daniel Plate, *English*; Matthias Wood, *Mathematics*; Tara Vansell, *Geography*

Summary: Join colleagues from across campus who've discovered manageable ways to incorporate AI into their teaching and workflow without becoming tech experts. This hands-on session showcases real examples of how faculty have painlessly integrated AI tools to create better assignments, streamline grading, and enhance student engagement while avoiding common pitfalls. Whether you've never used AI or you've dabbled but aren't sure what's next, you'll leave with concrete strategies you can implement tomorrow without disrupting your existing teaching practices.

Room: 234 Harmon Hall

Time: 11:00-11:50

Effective Partnerships in Instructional Design

Presenter(s): Adam Valencic, *Learning Design & Technology*

Summary: What makes a faculty-instructional designer collaboration effective? This session focuses on creating effective and positive partnerships to design instruction.

Room: 229 Harmon Hall

Time: 11:00-11:50

Focus on EdTech

Summary: The Learning Design & Educational Technology team is looking for information about how we can better support your teaching with technology. We'd love to hear from you! Tell us in this focus group

about the tech tools you're using – or what you wish you could use – to help us help you. Stay for as much or as little as you like.

Room: 231 Harmon Hall

Time: 11:00-11:50

The EdTech Crowd-The Learning Design and Educational Technology Team

Summary: Seep run through EdTech tools you might not know about! Each tool covered is no-cost to use and helps you engage your learners in a variety of ways.

Room: 136 Harmon Hall

Time: 11:00-11:50

Voices of Neurodivergence

Presenter(s): Janet Owens (facilitator), Student Support Services; Rebecca Williams (facilitator), Biology; Elizabeth Goth, Student Panelist, Olivia Kelley, Student Panelist, Anna Reed, Student Panelist, Eleri Tye, Student Panelist

Summary: This training discussion with students, faculty, and staff will help everyone better understand the experiences of neurodivergent students through personal stories and practical strategies.

Faculty Oral Presentations and Panels (9:00-11:50)

Room: 119 Harmon Hall

Time: 9:00-9:50

Comparing the Financial Health and Viability of Colleges

Presenter(s): Gary Stocker, Adjunct Instructor, Plaster

Summary: Higher education is in its 'moneyball era'. Data from audited financial statements, IRS Form 990's, and IPEDS data will be compared across a set of public and private colleges with financial health and viability analysis of a sample set - including Lindenwood University.

Empowering Students of Color as Future Teachers: Enhancing DEI in Educator Preparation

Presenter(s): Michelle Whitacre, Curriculum & Instruction; Quinne Hibbler, Calwaun Street, Candace Ellis, and James Stallings, Students

Summary: This presentation provides insights into student perceptions of the Academy for Students of Color as Classroom Educators at Lindenwood University, a grant funded initiative. Beyond traditional academic structures, the Academy stands as a beacon of support, offering robust opportunities for mentorship, professional development, and community-building.

Room: 121 Harmon Hall

Time: 9:00-9:50

The Role of Dietary Protein in Achieving High-Quality Weight Loss

Presenter(s): Chad Kerksick, Exercise Science; Anthony Hagele and Joesi Morey, Students

Summary: In recent years, the role that dietary protein plays in achieving high-quality weight loss has increased. This presentation will briefly summarize the key factors that drive weight loss and highlight research the demonstrates the role that protein plays in the weight loss process. This presentation will conclude with exercise and dietary recommendations to maximize high-quality weight loss.

Video Crash Course: Seven Game Engines for New Developers

Presenter(s): Ben Fulcher, Game Design

Summary: This presentation looks at a series of video tutorials developed for GAM 23000 Prototype Studio. In this course, students are tasked with creating simple digital prototypes each week, for eight weeks. During the Fall 24 term, a series of videos were recorded introducing a new game engine every week.

Room: 131 Harmon Hall

Time: 9:00-9:50

SPACs Unveiled: Understanding Special Purpose Acquisition Companies

Presenter(s): Robert Singer, Accounting

Summary: This presentation demystifies Special Purpose Acquisition Companies (SPACs), explaining their structure, benefits, and risks. Designed for a non-technical audience, it explores how SPACs raise capital, acquire private firms, and impact investors. Attendees will gain a clear understanding of SPACs' role in financial markets and their evolving regulatory landscape.



Physiological Outcomes Following Perinatal Loss

Presenter(s): Brittany Goodman, Psychology

Summary: This project explores psychological and physiological factors contributing to outcomes following perinatal loss. Mechanisms behind positive and negative psychological outcomes are under-studied, especially from psychophysiological perspectives. This study investigates the relationship between emotional regulation as measured by heart rate variability, coping, and social support and their contribution to differential outcomes.

Room: 137 Harmon Hall

Time: 9:00-9:50



Peer Health Education for Student Athletes

Presenter(s): Amy Estlund, Public Health; Izzy Folan, Alumni

Summary: Research supports the use of peer education as an effective sexual health promotion (STI prevention) method. Public Health faculty trained students to be peer health educators and design and implement theory-based and interactive sexual health education workshops for student-athletes. Students in a separate class created and distributed educational materials to complement the work of the peer educators.

Dream With Us: Community Storytelling Partnerships and Service Learning through Documentary Production

Presenter(s): *Ben Scholle, Cinema Arts; BT Urruela, Student*

Summary: In three recent academic years, students in CINE 32500, Documentary Production, have been paired with outside partners for a collaborative storytelling project. This presentation documents the outcomes and lessons learned from each partnership.

Room: *131 Harmon Hall*

Time: *10:00-10:50*

Empowering Diverse Communities through Global Entrepreneurship

Presenter(s): *Shelly Meyer, International Business*

Summary: LU has a history of Entrepreneurial outreach & entrepreneurship is a recognized method for empowering less-advantaged communities towards economic independence. Integrating work in St Charles and India, this talk will highlight examples and research connections in the field. Opportunities for further impact and collaboration across disciplines will be discussed.

Contemporary Hydrologic Dynamics of Four Subterranean Aqueducts in the Nazca Valley in Peru: Climate Change, Water Contamination and Their Impact on Gender Relations

Presenter(s): *Ana Londono, Earth Sciences; Sofia Chacaltana, Emily Baca, Ryan Williams, Pablo Vega, and Megan Hart*

Summary: Strong gender division of labor and gender violence in low income communities of developing countries is exacerbated by water scarcity and contamination. Therefore, examining the use and quality of water under a gender perspective, is significant as water dynamics and management policies strongly influence gender disparities. This project aims at characterizing how water scarcity, architectural style, and modern water management practices on currently used pre-Hispanic aqueducts in

Nazca, Peru affects contemporary users and impacts gender dynamics under the constraints of climate change.

Room: 138 Harmon Hall

Time: 10:00-10:50

Effects of Corporate Governance on Bank Profitability and Efficiency Measures Before and After the Global Financial Crisis: Evidence from India

Presenter(s): *Gaurango Banerjee, Finance*

Summary: An analysis of the effects of board composition characteristics, director and auditor compensation, busyness indicators™ of directors on bank profitability and efficiency measures before and after the 2008-09 global financial crisis is investigated in this paper. A comparative analysis on governance measures at financial institutions has been conducted between different bank ownership structures, namely private sector banks and government owned public sector banks in India. The research findings are presented using non-parametric data analytic methodology (namely Decision Tree Approach) along with panel data regression to identify specific governance factors that may be significantly related to profitability and efficiency measures for banks.

Understanding the Greats: Shakespeare et al from the Inside-Out - Honoring the Continuation of Theatre Through the Lens of the Future That Used to Be

Presenter(s): *Michael A. Harding, Theatre*

Summary: Understanding new play creation requires understanding theatre masterpieces from inside-out observation, not as complete artifacts. With this approach, creation of these works is deeper understood - choices of syntax, fictionalization, character conflation, etc. It allows scholarly understanding to evolve, prompting creation of new works, which is always the intent of theatre.

Room: 145 Harmon Hall

Time: 10:00-10:50

St. Charles County Community Health Collaborative--Public Health Partnerships to Assess the Health of the County

Presenter(s): *Amanda Harrod, Public Health; Jessica McHugh, St. Charles County Department of Public Health*

Summary: The academic and community partnership between Lindenwood University and the St. Charles County Department of Public Health provides real public health experience for our students. We will highlight the development of the St. Charles County Community Health Collaborative and the important work being done to assess the health of our county.

Room: *137 Harmon Hall*

Time: *11:00-11:50*



Faculty Panel: Lindenwood Sport Science Initiatives: Current Perspectives and Future Directions

Presenter(s): *Kyle Sunderland, Harry Cintineo, and Patrick Harty, Exercise Science*

Summary: Lindenwood Exercise Science faculty members are currently conducting sports science research initiatives within several different groups on campus for NCAA athletes, SLS athletes, and tactical athletes (ROTC). Drs. Kyle Sunderland, Harry Cintineo, and Patrick Harty will describe their research and service efforts on these fronts which engage the local LU community.

Room: *121 Harmon Hall*

Time: *11:00-11:50*

Faculty Panel: Productive Failure and/in the Classroom: Modeling Resilience for our Students

Presenter(s): *Melissa Elmes (facilitator), English; Shana Youngdahl, Writing; Melissa Qualls, English; Susan Edele, English*

Summary: Many of our students exhibit timidity and a reluctance to take risks in their classwork due to fear of failure, which inhibits their ability to use their courses as opportunities for real growth and intellectual and personal development. In this panel, Shana Youngdahl, Melissa Qualls, and Susan Edele discuss how they use faculty failure in the classroom as a productive force for modeling resilience and risk-taking, skills important not only for faculty and students in their academic roles, but in larger life

perspectives. This approach contributes to RISE by offering students strong models of how faculty engage and persist through difficult challenges and improves the faculty-student relationship through the relatability of our shared human experiences of failure, risk-taking, and personal and professional growth and growing pains.

Room: 119 Harmon Hall

Time: 11:00-11:50

Faculty Panel: Learning Through Classroom, Community and Connection with Our Students

Presenter(s): Annie Alameda, *Physical Education*; Lori Crow, *Exercise Science*; Heather Pennington, *Physical Education*

Summary: The presenters offer service- learning that allow for application and real time impact on the local community. Our presentation will highlight three unique opportunities for our majors that allows them to work 1-on-1 and in group settings to offer exercise programming and social well-being activities to a variety of populations. The assessment data show meaningful impact in the community and in student learning.

Faculty Poster Presentations (9:00–12:00)

Harmon Hall Lobby



#1: Paper to App: Empower2Families (M2F)

Presenter(s): *Rebecca Panagos, Curriculum & Instruction*

Summary: Four years of research provided proof of concept of a Family Empowerment tool for families of young children with developmental disabilities. Launching the M2F App Spring 2025 in Google Play, the M2F App becomes available for any non-profit agency to adapt the M2F App to meet their specific clients' needs.



#2: Lyapunov Stability Conditions on a Conformable Heart Rate Model

Presenter(s): *Nick Wintz, Mathematics*

Summary: We modify a well-studied nonlinear heart rate model to include a conformable derivative. This time-weighted derivative mimics the effect of absorption of medication into the bloodstream for an exerciser. Our results include a controller that drives the state to a predefined reference profile of heart rate at an exponential rate, a region of initial conditions that give decaying solutions for parameter sets that obey the instability constraint, and a control for such parameters that cause the solution to be attracted to the origin. Numerical simulations are included.

#3: Resting Metabolic and Cardiometabolic Biomarker Changes After L-BAIBA and Grains of Paradise Supplementation

Presenter(s): *Joesi Morey, Exercise Science*

Summary: This study evaluates the effects of L-BAIBA and Grains of Paradise supplementation on resting metabolic rate and cardiometabolic markers in overweight and obese adults during an 8-week diet and exercise program. Results show no significant differences between supplement groups in metabolic rate or health markers, suggesting limited impact on weight loss and metabolic health.



#4: Using Tech to Connect: The Impact of an Intergenerational Program to Increase Connection among Aging Adults and College Students

Presenter(s): *Catherine Shoff, Public Health*

Summary: Young adults and aging adults both suffer from loneliness and social isolation. This program evaluation sought to understand how an intergenerational technology program, called Cyber_Seniors, can improve social connection and overall wellness for both groups. Findings indicate that Cyber Seniors improves social connection for both groups and some subscales of wellness.

#5: Mortality on the Mind: Understanding Correlates of Death Anxiety

Presenter(s): *Colleen Biri, Psychology*

Summary: Death anxiety is a universal experience, influenced by factors like attachment style, beliefs, and age. High levels can hinder end-of-life planning. This study explores multiple correlates, including gender, religiosity, and mental health, to expand knowledge and help organizations target those most receptive to end-of-life preparation efforts.

#6: Could We Make Business Analytics Courses Engaging and Rigorous with Service Learning? Maybe, yes!: An Empirical Survey Investigation

Presenter(s): *Gokhan Egilmez, Management*

Summary: This project explores the impact of integrating service-learning into business analytics education. The re-search plan included an empirical survey, focused group and individual interviews with students. Results indicated that service-learning integration was found to be increasing the engagement and rigor in addition to contributing strongly to achieving the graduate attributes.

#7: "There's no blueprint for this kind of loss": Resilience Following the Death of an Equine in an Equine-Assisted Services Program

Presenter(s): *Sara Kaufman, Communications*

Summary: For practitioners involved in equine-assisted services (EAS), the death of a horse can be a significant life disruption. This research

aimed to understand the communicative resilience processes that EAS practitioners express following the death of an equine. Qualitative analysis of survey data revealed EAS practitioners engaged in all five communicative resilience processes, with implications for further study.

#8: Effects of Paraxanthine + ATP on Fat Oxidation and Cycling Performance in Physically Active Adults

Presenter(s): Anthony Hagele, Exercise Science

Summary: This study examined the effects of Paraxanthine (200mg) and ATP (400mg) on fat oxidation and cycling performance. While PX+ATP increased fat oxidation during moderate-intensity exercise, no differences were seen in energy expenditure, cycling time trial performance, or perceived effort compared to placebo. Findings suggest potential metabolic benefits for future research.

ORCA Panel (12:15–1:00)
Dunseth Auditorium, Harmon Hall

Lindenwood Office of Research & Creative Activity (ORCA) Panel Discussion

Presenter(s): *Laura Wehmer-Callahan, Academic Affairs; Angela Thorpe, Grants & Research Development; Lindsey Johnston, Academic Affairs*

Summary: Join the ORCA staff to hear about the lifecycle of grants and projects. New faculty will be educated on the process, and current faculty will be reminded on the proper steps to take to ensure grant success. ORCA staff will also discuss other types of research-related support they can provide and will highlight funding innovations and their vision and plans for what we at Lindenwood can become.

Student Poster Presentations: Session 1 (1:15–2:00)

LARC Lobby

#1: Adverse Cognitions: The Impact of Childhood Trauma on Brain Development

Presenter(s): Faith Salamone

Faculty Sponsor: Brittany Goodman, Psychology

Abstract: The effect of adverse experiences in childhood have been known to create lasting difficulties, even in adulthood. While it can be hard to determine the effects of childhood trauma on the brain, many studies have identified areas that appear to be negatively impacted by these adverse childhood experiences. This paper is a meta-analysis of eight articles that have attempted to investigate the effects of childhood trauma on the developing brain. These articles are specifically investigating the effects of childhood physical and/or sexual abuse. The areas that will be discussed in this paper are the prefrontal cortex, corpus callosum, the limbic system, and more specifically, the amygdala, and the hippocampus.

Judging Category: Exploratory Project

#3: Mali v the World

Presenter(s): Savasia Cheeseboro

Faculty Sponsor: Barbara Hosto-Marti, Political Science

Abstract: This paper examines how Responsibility to Protect can be improved by using Carla Winstion's norm cluster format. This format is about the process of constructing a bridge between the constitutive and the constraint functions of norms, so a combined statement is reached: 'Given this problem, my values dictate this behavior'. Thus, allowing actors to look at the broader picture of Human Security by including factors such as Protection of Citizens (PoC) and Counter-terrorism. All three have the value of Human Security at their core. So, when solving Human Security problems, you need all three to do so, otherwise they won't behave in the way they are intended to. When analyzing past cases of R2P, the only case of R2P preventing atrocity crimes was in the Mali case which uses PoC, Counter-terrorism, and R2P to do so. Meaning that R2P is only effective when it is combined with PoC and Counter-terrorism.

Judging Category: Exploratory Project

#5: From Resume to Robot: The Effect of AI and ATS on Modern Hiring Systems

Presenter(s): *Luke Zuelke*

Faculty Sponsor: *Renee Porter, Management*

Abstract: As AI and Applicant Tracking Systems (ATS) reshape today's hiring process, modern college students must adapt their resumes and application techniques to meet inhuman screening standards. This literary review examines how these technologies have impacted job searches, employer decision-making processes, and career accessibility for recent graduates. Furthering, this study focuses on the influence AI-driven hiring tools in shaping modern employment opportunities and recruitment trends. A critical point is on strategies for optimizing resumes to counteract the filtering effects of ATS, ultimately improving graduates' chances of securing jobs in today's competitive market. This research will be presented through a visual poster analysis.

Judging Category: Exploratory Project

#7: Pilot Project: Plant Hormones and Growth Enhancement of Soil Bacterial Populations

Presenter(s): *Ada Sardana Sambola*

Faculty Sponsor: *Chad Welsh, Biology*

Abstract: This study investigates the effects of Gibberellic Acid (GA), a plant hormone, on soil bacterial populations using Biolog Ecoplates. Gibberellins are known for their role in promoting plant growth, but their influence on soil bacteria remains underexplored. To test their effect on bacterial populations, soil samples were treated with different concentrations of GA, and the growth of bacteria was evaluated using various carbon sources. Results revealed that while some wells, such as those containing β -Methyl-D-Glucose and D-Mannitol, exhibited significant bacterial growth, others, like L-arginine, experienced inhibition. This suggests that GA may interfere with specific metabolic pathways, enhancing some and inhibiting others. These results imply that GA can affect bacterial populations in a concentration- and substrate-dependent way, which may have consequences for soil health, plant-microbe interactions, and nutrient cycling. Future research will aim to determine the specific concentration of Gibberellic Acid that causes the most pronounced effects on microbial growth.

Judging Category: Original Research Project

#9: Applying Psychology Principles to Help the Crisis Nursery

Presenter(s): *Ellie Dawkins*

Faculty Sponsor: *Michiko Nohara-LeClair, Psychology*

Abstract: The Crisis Nursery provides care for families in emergency situations, such as domestic violence, illness, and overwhelming parental stress. The services that the Crisis Nursery provides are free and they are open 24/7. They also provide counseling, family empowerment programs, and outreach programs, free of charge. In this project, my team and I applied psychological principles to persuade people to donate to the Crisis Nursery. The psychological principles we used were adapting to the receiver, central route persuasion, mere exposure effect, and extrinsic motivation. Through this project we discovered which methods were the most effective and resulted in the most donations. We also enlisted the help of my former high school, Christ Our Savior Lutheran High School, and the students came together to collect about half of all of the donations we presented to the Crisis Nursery. This project was very fulfilling and helped me apply my classroom knowledge to the real world.

Judging Category: Civic Engagement Project

#11: Other Health Impairments

Presenter(s): *Dakota Woracheck*

Faculty Sponsor: *Rebecca Panagos, Curriculum & Instruction*

Abstract: This project examines Other Health Impairments (OHI) under the Individuals with Disabilities Education Act (IDEA) and their impact on students' educational experiences. OHI includes chronic and acute health conditions like ADHD, epilepsy, diabetes, and asthma, which can limit a student's strength or alertness. The project aims to analyze the challenges faced by students with OHI and identify effective educational accommodations and interventions. It examines the role of 504 Plans and IEPs in ensuring equitable access to education, and emphasizes the importance of medical management, assistive technology, and advocacy. Key accomplishments include compiling best practices for educators, providing policy improvements, and increasing awareness of diverse needs.

Judging Category: Exploratory Project

#13: Sports Organizations in Social Media

Presenter(s): *Elle Mizwicki*

Faculty Sponsor: *Sara Kaufman, Communications*

Abstract: The research I will be conducting is how sports organizations can effectively use social media to grow their social media platforms, fan base, branding and even selling their merchandise. By using social media platforms like Instagram, TikTok, X, to gather information that will help gain fan engagement, tracking followers etc. By using quantitative methods to help us reach our goal we can count on how this will increase social activity and an increase in attendance for sports. This quantitative research can give insights in social media and how it can be a very beneficial tool for reaching a targeted audience with our sports brands.

Judging Category: Proposal Project

#15: Social Media Impact on Language

Presenter(s): Brooklyn Sosinsky

Faculty Sponsor: Sara Kaufman, Communications

Abstract: The introduction of social media and technology has created significant changes in how students learn language. This research paper analyzes the effects of long durations of social media use on language skills. The focus will be to see if social media negatively impacts an individual's ability to speak, form, read, and write proper English among students. The proposed hypothesis, ahead of the study, theorizes that the longer the duration of screen time on social media, the less advanced a student's language skills will be. This research paper will examine the effects of different platforms such as Instagram, TikTok, Twitter (X), and Snapchat to see if these platforms suggest lower literacy rates and examples of decreased attention spans and will study the term "brain rot" and what the means and how it affects language.

Judging Category: Proposal Project

#17: Why People Play Foddian/Rage Games

Presenter(s): David Kruse

Faculty Sponsor: Sara Kaufman, Communications

Abstract: Many different video game genres capture and engage consumers by offering fun and engaging experiences. The fairly new genre of Foddian or rage games that are designed to make the player angry with clunky controls or unfair challenges. This genre has found a large audience despite seemingly subverting the usual game experience. This study will examine why Foddian players actively seek out experiences that are designed to be clunky and aggravating. This study would be to understand what needs Foddian games fulfill as outlined in

the uses in gratification theory such as gaining knowledge, social interaction, or stress release. This research would employ surveys filled out by a group of players who have 3 Hours or more playing a game in this genre. Their responses would then be analyzed to determine what needs are fulfilled. This study would help explain why people voluntarily choose to do difficult things that are not necessary.

Judging Category: Proposal Project

#19: Physical Attributes of Competitive Collegiate Co-ed Men, Bases/Backspots, Flyers, and Tumblers

Presenter(s): Grace Liebhart

Faculty Sponsor: Harry Cintineo, Exercise Science

Abstract: Cheerleading is a demanding sport often overlooked in research. This study examined physical attributes of 41 collegiate cheerleaders representing co-ed men, base/backspots, flyers, and tumblers. Participants underwent body composition, relative countermovement and squat jump, isometric mid-thigh pull, and 1RM seated military press assessments. Data were analyzed using ANOVA with gender adjustment followed by Bonferroni-adjusted post-hoc tests ($\alpha=0.05$). Analyses showed significant positional differences for body fat percentage ($P<0.003$), lean mass ($P<0.001$), squat jump ($P=0.034$), and 1RM strength ($P<0.001$). Bases/backspots had higher body fat percentage than flyers ($P=0.016$) with no other differences ($P>0.110$). Lean mass and 1RM strength were highest in co-ed men ($P<0.018$) followed by bases/backspots and tumblers than flyers ($P<0.073$). Post-hoc analysis revealed no differences in squat jump ($P>0.052$). These findings highlight unique physical characteristics of cheerleading positions and suggest implementation of specific strength training programs. Future investigations should assess how strength adaptations following resistance training transfer to cheerleading performance.

Judging Category: Original Research Project

#21: A Rare Case of Anomalous Left Coronary Artery from Right Cusp in a Young Athlete

Presenter(s): Brittany Hooper

Faculty Sponsor: Michael Nolan, Athletic Training

Abstract: This case report evaluates a 15-year-old male diagnosed with Anomalous Left Coronary Artery from Right Cusp. This rare condition often goes unnoticed until a tragic event occurs. In March 2022, a teenage

athlete was completing practice when he suddenly collapsed. Fortunately, a police officer was already in the parking lot when teammates and coaches flagged them down. Emergency medical services arrived, and the athlete was transported to a nearby hospital. Despite extensive medical interventions and spending 35 days in a coma, he unfortunately succumbed to the condition. This case report aims to raise awareness of Anomalous Left Coronary Artery from Right Cusp and highlights the need for early identification and intervention. The goal of this case report is to raise awareness in the risk of sudden death in young athletes by incorporating a more in-depth preparticipation exam from a cardiovascular standpoint.

Judging Category: Exploratory Project

#23: Longitudinal Changes in Vertical Jump Height During the Final Peaking Period Prior to National Competition in Female Collegiate Olympic Weightlifters

Presenter(s): James Tice

Faculty Sponsor: Patrick Harty, Exercise Science

Abstract: The purpose of this study was to determine whether day-to-day fluctuations occur in countermovement vertical jump height measured via force platforms in female collegiate weightlifters during the peaking period in the final two days prior to a competition. Eight female Olympic weightlifters completed countermovement vertical jumps upon waking two days prior to, one day prior to, and the morning of a major national competition. Daily peak countermovement vertical jump height was collected and compared across days via one-way repeated-measures analysis of variance ($\alpha = 0.05$). There were no differences in jump heights across the days leading up to competition ($P = 0.519$). Regardless of day, jump height was 31.0 ± 3.4 cm (mean \pm SD). These findings show countermovement vertical jump height, a metric representative of readiness to perform, does not change in the two days leading up to or on the day of a major competition in this population.

Judging Category: Original Research Project

#25: You Are What You Eat: Bioaccumulation of Microplastics in the Food Chain

Presenter(s): Audrianna Torrey

Faculty Sponsor: Robin Rodriguez, Earth Sciences

Abstract: Over the last century, the use and production of plastic has surged as demand for cost-effective alternatives to traditional materials has grown. While plastic has been extremely beneficial in reducing the cost of production while expanding the market, it has also created a global pollution crisis. By 2015, an estimated 6,300 million tons of plastic waste had been generated with nearly 80% accumulating in landfills and the environment. Over the last couple decades, researchers have begun to study the effects of plastic waste and its breakdown into microplastic on aquatic environments. Although not all organisms reside in water, every living-being, including humans, relies on water for survival. The signs of microplastics becoming more common to find within living beings have sparked conversations both within and beyond the scientific community. This review of recent studies and literature on the movement of microplastics focuses on creating a general understanding of how microplastics infiltrate and bioaccumulate through the food chain. By examining how microplastics have made their way through the biosphere, research can highlight the lasting impact of pollution on the environment and human health.

Judging Category: Exploratory Research

#27: 2-Mercapto-6-methylpyridine as a Carbohydrate Leaving Group

Presenter(s): *Efioshomoshi Balogun*

Faculty Sponsor: *Scott Hasty, Chemistry*

Abstract: Investigation of new a viable carbohydrate leaving groups are always ongoing. This quest has led us to determine if the heterocyclic compound 2-mercapto-6-methylpyridine was a feasible option. Glucose, galactose, and mannose were utilized as glycosyl donors bearing this thioimide. These donors were subjected to a variety of thiophilic promoters to determine their role in chemical glycosylation. Iodine, Dimethyl(methylthio)sulfonium trifluoromethanesulfonate (DMTST), copper(II) triflate ($\text{Cu}(\text{OTf})_2$), silver(I) triflate (AgOTf), silver(I) perchlorate (AgClO_4) was selected due to their known uses toward glycosidation. The copper and silver salt promoters activated the mercaptopyridine moiety readily. Iodine exhibited little to no reactivity in the coupling reaction. This led us to employ a convenient one-pot orthogonal glycosylation strategy with sugars bearing S-ethyl leaving groups. Additional oligosaccharides strategies are being pursued containing this interesting 2-mercapto-6-methylpyridine leaving group.

Judging Category: Original Research Project

#29: Carbohydrates bearing 4,2'pyridine-2-mercaptopyrimidine

Presenter(s): *Sophie Juliana*

Faculty Sponsors: *Scott Hasty, Chemistry*

Abstract: Efforts toward the development of thioimide-based carbohydrate leaving groups are a continual endeavor with glycochemists. Over the past few years our group has explored the use of 4,2'pyridine-2-mercaptopyrimidine as a glycosyl donor leaving group. This bicyclic thioimide was added to various glucose and galactose sugars bearing ester groups such as acetyl, benzoyl as well as benzyl ether protection. To determine if this small molecule was a viable carbohydrate leaving group, it was subjected to activation using several known thiol promoters. We determined this thioimide reacts well in the coupling of carbohydrates and further investigation of its role in glycosylation is ongoing.

Judging Category: Original Research Project

#31: Campus Exploration

Presenter(s): *Kacie Lingle*

Faculty Sponsor: *Robyne Elder, Academic Affairs; Aaron Shilling, Strategic Information*

Abstract: Having available and sufficient study and community spaces on a college campus can impact the productivity and happiness of the students who attend. A survey was used to identify the locations where Lindenwood students perform certain activities such as studying alone and spending time with a group as well as to collect students' thoughts on the current spaces on campus including optional suggestions. Students were asked if the spaces fit their purpose, if they feel satisfied with these spaces, and if they believe these spaces could impact their college experience. Preliminary common themes include satisfaction with the types of spaces, specifically in the LARC, but a request for more of them, as well as more outdoor spaces like the Pavilion. Students mentioned how the current individual and group study rooms are helpful, but they fill up too quickly. Suggestions include a student center where students can congregate and even have games like pool, as well as opening the Butler Library for more study spaces.

Judging Category: Civic Engagement Project

#33: Tackling Recovery: Tibial Osteotomy in a 20-Year-Old Rugby Player with One Month of Post-Surgery Setback

Presenter(s): *Maycee White*

Faculty Sponsor: *Michael Nolan, Athletic Training*

Abstract: Background: Tibial osteotomy is a surgical procedure commonly performed to correct lower limb malalignment in athletes. Full recovery typically takes 6-12 months, with athletes generally resuming sport-specific activities at 4-6 months. Delays in rehabilitation can result in prolonged deficits in strength, range of motion (ROM), and neuromuscular control. Case Presentation: This case study follows a 20-year-old collegiate rugby player who underwent tibial osteotomy, with rehabilitation delayed by one month. The athlete initially presented with knee stiffness, quadriceps atrophy, reduced ROM, and impaired proprioception. A multi-phase rehabilitation program was implemented as follows: Phase 1 (Weeks 0-6): Pain management, restoring knee extension, and quadriceps activation. Phase 2 (Weeks 6-12): Emphasized improving ROM, strength, and proprioception. Phase 3 (Weeks 12-20): Sport-specific conditioning, functional strength, and neuromuscular control. Outcomes: By week 14, the athlete achieved full knee ROM, and quadriceps and hamstring strength reached 90% of the contralateral limb by week 18. The athlete successfully returned to full-contact rugby by 20 weeks post-surgery, without pain or functional limitations. Conclusion: This case underscores the importance of early, structured rehabilitation in overcoming delays and optimizing recovery for athletes following tibial osteotomy. Further research is needed to establish best practices for managing rehabilitation delays in high-performance athletes.

Judging Category: Exploratory Project

#35: History of Industrialism in Serbia

Presenter(s): *Nemanja Medan*

Faculty Sponsor: *Marcus Smith, History*

Abstract: The history of industrialism in Serbia is marked by growth, challenges, and transformation. Industrialization began in the early 16th century under the Ottoman Empire, focusing on mining and agriculture. Though, it was still an economic backwater compared to other parts of the Ottoman Empire. After its independence, the Kingdom of Serbia saw new industries like military arms and further developments in mining and agriculture, followed by plenty of foreign influence and investments. The interwar period brought significant growth in mining, metallurgy, and chemicals, supported by infrastructure development. However, both World Wars caused devastation, but the post-war era under socialist Yugoslavia saw heavy industry expansion and the rise of the automotive

industry, notably the Zastava car factory. The 1990s were tumultuous due to political instability, economic sanctions, and the breakup of Yugoslavia, leading to a decline in industrial output. However, the early 2000s brought recovery and modernization, diversifying Serbia's industrial landscape with emerging sectors like information technology and renewable energy.

Judging Category: Exploratory Project

#37: Maintenance of Anaerobic Power Across a Competitive Season in Collegiate Women's Ice Hockey Players

Presenter(s): *Quinn McLaren*

Faculty Sponsor: *Kyle Sunderland, Exercise Science*

Abstract: The purpose of this study was to examine changes in anaerobic power and capacity in women's college ice hockey players from pre-season to post-season. Fourteen NCAA Division I female ice hockey players performed a 30-second Wingate test (WAnT) two weeks prior to the start of the competitive season and three weeks following the final game. Athletes completed a standardized warm-up including a short sprint on the cycle ergometer to prepare for the maximal effort test. The WAnT began from a rolling start, with the athlete pedaling at 100–110 RPM. Athletes then completed a 30-second all-out sprint against 9% body weight resistance, while power output was recorded in real-time. Absolute (W) and relative ($W \cdot kg^{-1}$) peak and mean power (W) and fatigue index (%) were compared between the pre- and post-seasons. Paired samples t-tests indicated that there was no significant ($p > 0.05$) change in lower body anaerobic power or fatigue index across a season. These findings suggest that the current in-season training plans were sufficient to maintain anaerobic performance in women's college ice hockey players.

Judging Category: Original Research Project

#39: Thiouracil as a Viable Carbohydrate Leaving Group

Presenter(s): *Ally Sprague*

Faculty Sponsor: *Scott Hasty, Chemistry*

Abstract: Thiouracil is an attractive moiety to employ as an anomeric carbohydrate leaving group. This project is the investigation of its potential use with glucose. The introduction onto glucose produced a less than ideal yield, 5-9%. This product was then used to determine its stability during common carbohydrate manipulations. The manipulations conducted were deacetylation, benzylation, and methylation.

Judging Category: Original Research Project

#41: Why Am I Here? Psychological Capital, Personality, and Inclusivity Practices Predict Job Satisfaction and Engagement

Presenter(s): Kana Yamaguchi

Faculty Sponsor: Rebecca Foushee, Psychology

Abstract: This study examined whether employee personality factors, growth mindset, and psychological capital, as well as organizational factors (DEI policies/workplace climate), would predict job satisfaction and engagement among employees. A total of 42 participants were recruited through social media and recruitment flyers. After providing informed consent, participants completed an online Qualtrics survey, which included demographic questions and validated measures of DEI climate, psychological capital, employee engagement, growth mindset, job satisfaction, and personality traits. Data collection was conducted following IRB approval, and statistical analyses were performed to test the hypotheses. We hypothesized that conscientiousness and openness to experience would positively correlate with a growth mindset, while neuroticism and agreeableness would be negatively correlated. A high growth mindset was expected to correlate positively with psychological capital. The data did not support these hypotheses. Additionally, workplaces with positive DEI climates were predicted to be associated with higher job satisfaction and engagement; this hypothesis was supported. Data were analyzed using Pearson's r for correlation tests and ANOVAs for group comparisons regarding demographic and personality factors. The findings contributed to I/O psychology by exploring how individual and workplace factors influenced job satisfaction and engagement.

Judging Category: Original Research Project

#43: The Making of an Extremist: How Do We Become Someone Else's Nightmare?

Presenter(s): María Paula Morales

Faculty Sponsor: Stephanie Afful, Psychology

Abstract: Why do people become extremists? What drives radicalization? This literature review will explore these questions through three key studies that examining radicalization from social, psychological, and neuroscientific perspectives. I became interested in this topic because understanding why ordinary individuals embrace extremism is crucial in

preventing violence and fostering global security. By examining key pathological mechanisms, we can better understand how individuals are drawn into extremist ideologies and violent behaviors. The first study explores how group polarization and in-group favoritism reinforce radical beliefs. The second examines how identity development and the search for belonging contribute to violent extremism. The third provides a neuroscientific perspective, showing how radicalization affects brain regions linked to moral reasoning, aggression, and group loyalty. Understanding these mechanisms is crucial for developing effective prevention and intervention strategies, emphasizing the need for education, social inclusion, and counter-extremism efforts to disrupt pathways to radicalization.

Judging Category: Exploratory Project

#45: Peak Match Running Demands in Collegiate Women's Soccer and Lacrosse

Presenter(s): Lauren Sanders

Faculty Sponsor: Kyle Sunderland, Exercise Science

Abstract: PURPOSE: This study compared peak match running demands over varying durations in collegiate women's soccer and lacrosse.

METHODS: Athlete monitoring occurred across a competitive season on NCAA Division I players from each team. For analysis, only field players who started each match were included ($n=10$ per sport), excluding goalies and lacrosse draw takers. Wearable GPS units recorded match movement data, and peak running demands were analyzed using rolling time windows of 30s, 1 min, 2 min, 3 min, 5 min, and 10 min. The highest relative speed ($\text{m} \cdot \text{min}^{-1}$) within each window represented peak match running demand. A two-way repeated measures ANOVA with Sidak correction was used to compare sports across durations ($\alpha=0.05$).

RESULTS: A significant sport-by-duration interaction was found ($p<0.001$). Lacrosse athletes exhibited higher peak demands over 30s ($236 \pm 37 \text{ m} \cdot \text{min}^{-1}$) compared to soccer players ($216 \pm 31 \text{ m} \cdot \text{min}^{-1}$, $p<0.001$). Conversely, soccer players had greater demands over 10 min ($112 \pm 11 \text{ m} \cdot \text{min}^{-1}$) compared to lacrosse players ($90 \pm 9 \text{ m} \cdot \text{min}^{-1}$, $p<0.001$). No differences were observed for other durations. CONCLUSIONS: Lacrosse requires more intense short-duration efforts, while soccer emphasizes sustained work over longer periods. These sport-specific differences, influenced by game rules and play styles, should guide training programs to optimize athlete performance.

Judging Category: Original Research Project

#47: Microwaveable Chemistry

Presenter(s): *Hallie Sellers*

Faculty Sponsor: *Scott Hasty, Chemistry*

Abstract: Many institutions search for chemical experiments that are cost effective and pedagogically practical. Additionally, chemists are embracing the need for more green chemistry reactions in recent years. Microwavable reactions fit nicely at this interface of financial constraints and green chemistry. Using a traditional microwave that can be purchased at any department store, four new organic reactions have been developed for this project. These reactions include synthesis of carbohydrate building blocks, hydrolysis, acylation, and an intricate Biginelli reaction. The reaction times range from 5-10 mins and have experiment cost of \$0.27-\$1.47.

Judging Category: Original Research Project

#49: The Application of Gibberellin on Dwarf Mutant Millet Plant (*Setaria viridis*)

Presenter(s): *Rachel Wilson, Elizabeth Dill, Kaneez Moughal, Desi Snyder, Joselyn Wood, Katherine Kellner, and Catherine Philipps*

Faculty Sponsor: *Joshua Neely, Biology; Nicholas Wintz, Mathematics*

Abstract: Gibberellin is a hormone found in many plants whose purpose is to promote the growth of stems and leaves. The application of gibberellin in differing concentrations was applied to different strains of dwarf mutant millet plants and was compared to a control of nonmutant wild-type millet plants. After the initial sprouting of each seed, 4 different concentrations of gibberellin: 0g gibberellin/1L water, 0.02g/L, 0.05g/L, and 0.15g/L, were applied to the stem of each plant. A regression analysis was performed on the heights of each plant to determine the effectiveness of the varying gibberellin concentrations on the growth of millet plants. The study will determine whether the highest concentration of gibberellin will encourage the growth of taller millet plants.

Judging Category: Original Research Project

#51: Specific Learning Disabilities

Presenter(s): *Kiersten Sitzes and Julia Schoonbaert*

Faculty Sponsor: *Rebecca Panagos, Curriculum & Instruction*

Abstract: As a team project for our Education of the Child with Exceptionality Class, we created this poster on Specific Learning Disabilities (SLD). Our team includes future high school history and English teachers. The purpose of this poster is to give people a greater understanding of SLD and how they affect many students' day to day lives. We reviewed the literature found in Special Education: Sixth Edition chapters 1 and 5 by Marilyn Friend as well as a multitude of medical journals regarding dyslexia, dyscalculia, and dysgraphia. Each of these texts illustrate the everyday struggles of SLD and how educators can assist in them. Our goal is to build empathy and understanding for students with SLD and expand upon how everyone can be more inclusive in this regard.

Judging Category: Exploratory Project

#53: The Relationship Between Emotional Intelligence and Personality

Presenter(s): Alexis Schweiss and Madeline Eckelkamp

Faculty Sponsor: Brittany Goodman, Psychology

Abstract: This study explores the relationship between Trait Emotional Intelligence (TEI) and the Big Five personality traits, with a specific focus on openness and neuroticism. Additionally, it examines the link between TEI and achievement motivation. We hypothesize that openness will be positively correlated with TEI, while neuroticism will show a negative correlation. The relationship between the remaining personality traits and TEI is examined exploratorily. We also predict a positive correlation between TEI and achievement motivation. Participants (N = 163), including undergraduate students and community members recruited via social media, completed self-report measures assessing personality traits, TEI, and achievement motivation. Data collection was conducted online, and Pearson's correlations and independent samples t-tests were used to analyze the relationships of interest. Findings from this study will contribute to a deeper understanding of TEI's role in personality and motivation, with potential implications for psychological well-being and workplace achievement.

Judging Category: Original Research Project

#55: Investigating the Effects of Gibberellin Treatments on Different Dwarf Millet Genotypes and Identifying the Mechanism Responsible for Genetic Dwarfism

Presenter(s): Macy McCarty, Audrie Miller, Quinnlan Calvert, Justin Coleman, Dania Creary, and Abigail Waters

Faculty Sponsor: Joshua Neely, Biology

Abstract: Gibberellins (GAs) are essential plant hormones involved in regulating growth and development, particularly in stem elongation, seed germination, and flowering. In cereal crops like millet, dwarf genotypes are of agricultural interest due to their potential for increased stability and yield efficiency. However, the genetic mechanisms underlying dwarfism in millet remain unclear. This study investigates the response of various dwarf millet genotypes to gibberellin treatments and seeks to determine the genetic basis of their dwarfism. We hypothesize that genotypes with gibberellin biosynthesis deficiencies will exhibit increased stem elongation when treated with gibberellin, while genotypes with signal transduction defects will show minimal response. Using a controlled greenhouse experiment, we evaluate growth differences among dwarf mutant and wild-type millet strains under gibberellin treatment. The results indicate that the wild-type and Dwarf 1 genotypes exhibited significant stem elongation following gibberellin application, while Dwarf 2 showed moderate elongation, suggesting a partial response. In contrast, the control groups demonstrated limited growth, indicating that gibberellin treatment significantly influenced elongation in susceptible genotypes. By identifying the genetic factors affecting gibberellin response, this research enhances our understanding of hormone regulation in cereal crops, contributing to the development of improved millet varieties for sustainable agriculture.

Judging Category: Original Research Project



#57: Applications for the Conformable Information Filter

Presenter(s): Sophia Hungerford and Joseph E. Smith

Faculty Sponsor: Nicholas Wintz, Mathematics

Abstract: In this project, we offer application to our previously constructed information filter. The information filter is algorithm used estimate the information of a process corrupted in some way. The information filter is mathematically similar to the Kalman filter, widely used in navigation. Unlike the Kalman filter, the information filter propagates backwards in time and is more effective in smoothing. Here, our corrupted system is in terms of conformable derivative introduced by

Khalil et al. in 2014. This time-weighted derivative shares many of the same properties as the classical derivative but lacks the usual semigroup property associated with the exponential. Here we offer two models for larger systems. The first model represents an aircraft in midflight tracked by radar. The second model tracks selected economic indicators over 2015-2024.

Judging Category: Exploratory Project

#59: HPLC Method Development for the Separation and Quantification of Common Pain Relievers

Presenter(s): Dylan Pritchett and Joshua Lewis

Faculty Sponsor: Jennifer Firestine, Chemistry

Abstract: Over-the-counter pain relievers often contain multiple active ingredients that can be analyzed by High Performance Liquid Chromatography (HPLC). A method developed and optimized to separate acetaminophen, aspirin, and caffeine from these tablets. The contents of Excedrin pain relievers and the generic counterpart from Walgreens, Walmart, and CVS were tested. Optimization examined multiple mobile phases, temperatures, and run times for the procedure. The results were compared to analytically prepared standards as well as the packaging information, with the primary goal of creating a reproducible and efficient protocol for HPLC instrumentation. The method successfully separated the contents of all materials reliably within a 15 minute protocol.

Judging Category: Original Research Project

#61: Evaluating Lunch Plan Data in the St. Charles School District (SCSD)

Presenter(s): Maddy Alexander, Guillermo Bilbao, Duncan Krige, and Alyssa Schreiber

Faculty Sponsor: Nicholas Wintz, Mathematics

Abstract: The SCSD is a public school district in St. Charles, with, on average, 4500 students a year. The SCSD is subdivided into an early childhood center, six elementary schools, two intermediate (5-6,7-8) schools, and two high schools. Vocational schools are also within this district but were not included in this report. The SCSD is concerned with the impact of the Covid-19 pandemic on their district's population and on the number of students that needed assistance with lunch. They have asked Lindenwood's 2024-2025 PIC Math group to analyze their data from the years 2020-2025 and identify any trends. Identifying these trends

may help the client understand which areas in the school district are most likely to need financial aid, and which locations were most greatly impacted by the pandemic. So far, the group has analyzed the data to understand the retention rates and distribution of meal statuses and student populations across the 5-year period, as well as using GIS and R programming software to generate various graphs and maps of the SCSD area. We focused our analysis and observations on these key areas employing statistical and data analysis skills to draw our conclusions.

Judging Category: Civic Engagement Project

#63: Exploring Customer Acceptance of AI-Driven Service Robots in Banking: An AIDUA Model Approach

***Presenter(s):** Hector Reyes, Nicole Sparks, and Charlie Keeven*

***Faculty Sponsor:** Merve YanarGurce, Marketing*

Abstract: This study investigates customer acceptance of artificial intelligence (AI)-driven service robots in the banking sector, drawing upon the Artificially Intelligent Device Use Acceptance (AIDUA) Model. To adapt the AIDUA Model to financial services, this research incorporates three variables: utilitarian motivation, perceived risk, and past experience. Data will be collected via online surveys using convenience sampling from bank customers in the US. Hypotheses, encompassing both direct and moderating effects, will be tested using structural equation modeling (SEM). The study aims to assess the AIDUA Model's applicability within the banking context and to provide theoretical insights as well as practical implications for banks adopting AI-driven service robots. Limitations and directions for future research will also be discussed.

Judging Category: Proposal Project

Student Oral Presentations: Session 1 (2:00–2:45)

Room: LARC 03

Moderator: Susan Edele

2:00–2:15

How Newspapers Proliferated Sports in St. Louis in the 1960's

Presenter(s): Jack Buehler

Faculty Sponsor: Marcus Smith, History

Abstract: Known for its passionate fanbase, St. Louis has a unique position for the sports scene. This goes back as far as the 1960's, where the city was in a position it hadn't been before, with four different professional sports franchises, including all four in St. Louis at the same time for one year. Scholars have examined different aspects of how multiple sports franchises in major cities have affected them, including financial and media coverage, but have failed to examine how newspapers were able to cover professional sports year-round in a market that was passionate about their hometown teams. In this article, I will examine St. Louis sports from a media lens, particularly using the 1960's in sports as a case study of how newspaper media was able to cover professional sports in the city, including the run of success the St. Louis Baseball Cardinals had during the decade, the introduction of the St. Louis Football Cardinals and St. Louis Blues, along with the death of the St. Louis Hawks.

Judging Category: Exploratory Project

2:15–2:30

Keeping St. Louis Blues Alive

Presenter(s): Latrell "Lucille" Velker

Faculty Sponsor: Marcus Smith, History

Abstract: In 1989, the St. Louis Blues Society launched a semi-monthly newsletter called "The Bluesletter" to promote the St. Louis Blues and combat what many saw as the stagnation of this distinctive music scene. Scholarship has examined the decline of music scenes and shown that the community and identity that fans form around music genres suffer when their social networks stagnate. Less work has been done to examine the efforts that activists take to prevent the death of declining music scenes. By examining The Bluesletter from 1989 to 2020 as a case study, this paper will show that the promoters of St. Louis Blues believed that lack of support for local artists and music venues lied at the heart of their genre's

decline, and they sought to reinvigorate the scene by mobilizing community support for the people and institutions that kept it alive.

Judging Category: Exploratory Project

Room: LARC 05

Moderator: Emily Colmo

2:00–2:15

Philippines Village

Presenter(s): Ayden Gammon

Faculty Sponsor: Marcus Smith, History

Abstract: The St. Louis World's Fair was an exhibition of imperial power, scientific progress, and cultural display. The most controversial exhibit of the bunch was the Filipino villages; eleven hundred Filipinos were arranged in a sharply racialized, dehumanizing setting. This paper demonstrates that the Philippine reservation reflected and reinforced American imperial ideology and racial hierarchies. By examining contemporary newspaper accounts, fair organizers' rhetoric, and the general public reception of the exhibit, this study argues that the spectacle served as entertainment and the justification for colonial rule.

Judging Category: Exploratory Project

2:15–2:30

Shaping Legacies: How Sororities Have Transformed Women's Academic, Social, and Personal Journeys

Presenter(s): Sarah Marian

Faculty Sponsor: Marcus Smith, History

Abstract: Since their beginning, Greek letter organizations have been criticized for their perceived negative impacts on the social lives of their members. Scholars have examined the impact of sorority life on the personal development of collegiate women since women's fraternities began in 1880. In these works, the majority of writers took a positive or negative lens of interpretation. One author, Diana Turk, scripted *Bound by a Mighty Vow: Sisterhood and Women's Fraternities, 1870-1920*, a mostly neutral work that detailed the impact that sororities had on women entering college for the first time. Building upon Turk's work, this study uses Washington University in the 1980s to show how sororities continued to benefit women professionally and personally.

Judging Category: Exploratory Project

2:30–2:45

Assembling Little Bosnia: Shaping Bosniak Identity and Community in St. Louis through Bosnian Journalism

Presenter(s): Issac Hall and Nemanja Medan

Faculty Sponsor: Marcus Smith, History

Abstract: The Bosniak (Bosnian Muslim) community in St. Louis, Missouri has grown since the 1990s, starting as a disorganized refugee population to founding the first Bosniak mosque in St. Louis in 2010, from which they have grown significantly, with an estimated 70,000 living in the area today. Various fields of scholarship have sought to understand this unique group, from sociologists and psychologists studying from a more data-driven approach to local public historians who have produced works like *Bosnian St. Louis: Between Two Worlds*. While the former groups are primarily interested in understanding the community as it is currently to answer psychological and sociological questions, local historians have sought to inform the public about the history of the community to date. This project seeks to bring the story of St. Louis Bosniaks into conversation with historical scholarship by discussing the intersection of Islamic, European, and American identities in the community through the analysis of several Bosnian-published newspapers. It argues that these publications reflect the St. Louis Bosniak community's efforts to form a common identity and community while existing as a diasporic community in the United States.

Judging Category: Exploratory Project

Room: LARC 09

Moderator: Stephanie Afful

2:00–2:15

Lindenwood and the Presbyterian Church: A Historical Analysis

Presenter(s): Mason Brown

Faculty Sponsor: Marcus Smith, History

Abstract: Many scholars have examined the widespread trend of American colleges and universities transitioning from religiously affiliated to secular institutions over the last three centuries. George Marsden, in his book *The Soul of the American University Revisited: From Protestant to Postsecular*, argued that the traditional secularization thesis failed to capture the complexity of this transformation, advocating instead for a postsecular paradigm. This case study analyzes the

relationship between the Saint Charles Presbyterian Church and Lindenwood University through church records, George and Mary Sibley papers, university mission statements, presidential reports, and newspapers. Despite having historical ties with the Saint Charles Presbyterian Church, Lindenwood is no longer connected today. By examining the nature of this complex relationship, this study explores the historical role of religion at Lindenwood, emphasizing its origin and change over time, demonstrating a nuanced shift from strict denominational affiliation to a more inclusive approach. In doing so, Lindenwood serves as a case study that exemplifies several aspects of Marsden's postsecular paradigm, namely the repositioning of religion in higher education rather than its complete disappearance.

Judging Category: Exploratory Project

2:15–2:30

George Sibley: The Mediator of the Santa Fe Trail

Presenter(s): Ryan Golnick

Faculty Sponsor: Marcus Smith, History

Abstract: In the early nineteenth century, John Quincy Adams sanctioned George Chaplain Sibley and two others as commissioners to execute a survey of the Santa Fe Trail. The trail, which was one of two main routes used by U.S. merchants heading westward to the Mexico Territory was little more than wagon wheel ruts left by increasing merchant travel through territory still occupied by native American tribes, some of whom raided U.S. merchant parties. The government charged the commissioners with marking, developing and securing the trail through diplomatic means, for U.S. commercial expansion westward. Scholars have examined Sibley's role as a frontier diplomat negotiating with native American tribes in Osage territory. This paper examines the Santa Fe Trail through the eyes of George Sibley by examining his diaries, journals and letters to provide new insights into the evolving conflict for control of commerce on the frontier between U.S., Mexican, and native American territories.

Judging Category: Exploratory Project

2:30–2:45

The First Presbyterian Church of St. Charles: The Paradox of Unity Amidst Theological and Ideological Debate

Presenter(s): Joseph Powers

Faculty Sponsor: Marcus Smith, History

Abstract: This exploratory project examines the intricate relationship between unity and division within the First Presbyterian Church of St. Charles, Missouri, during the Second Great Awakening. Through a comprehensive analytical case study, this project will explore how frontier Presbyterian communities navigated complex theological and ideological tensions surrounding revivalism, traditionalism, and contentious national debates such as slavery and abolitionism. Challenging the historiographical trend to view unity and division as mutually exclusive phenomena, this research embraces nuance to highlight how frontier Presbyterian congregations simultaneously experienced sincere cooperation and divisive internal conflict. By closely examining previously under-explored interactions between key local Presbyterian figures, such as Mary and George Sibley, Samuel Watson, and Elijah P. Lovejoy, my project synthesizes diverse historical perspectives to illustrate broader societal tensions of the antebellum era to the gilded age. This approach provides fresh insights into how personal convictions intersected with community relationships, influencing religious identity and shaping collective responses to social and ideological disputes. Ultimately, this exploration of the First Presbyterian Church of St. Charles contributes to a deeper understanding of frontier religious communities as complex and dynamic spaces characterized by both cooperation and contention, enhancing scholarly discussions of frontier religious and social dynamics.

Judging Category: Exploratory Project

Room: LARC 322

Moderator: Heather Pennington

2:00–2:15

Transforming Lives: The Power of Therapeutic Recreation in Action

Presenter(s): Avery Wapp

Faculty Sponsor: Heather Pennington, Physical Education

Abstract: My presentation, “Transforming Lives: The Power of Therapeutic Recreation in Action,” is an authentic experience of a Lindenwood University student, taking what they have learned inside the classroom and applying it to the community through service-learning projects. Events such as BBQ, Bikes, and Boats, Tillman Elementary Disability Awareness Day, DASA Camp WeCanDu, and many more have allowed me to transform lives and impact my community in 3 ways:

Awareness and inclusion for TR and adapted sports, improving quality of life, and providing opportunities for lifelong community. For one event, Tillman Elementary students learned how to value peers with disabilities and see opportunities to get involved in adapted sports for life. An event for people with Multiple Sclerosis offered social interaction in the disability community, fine motor skills, and adapted bikes for physical well-being. The event Camp WeCanDu impacted lives by showing youth with disabilities that they can be independent, doing more than they think they can, and fostering lifelong friendships. The knowledge I've learned in class about impacting a person socially, physically, emotionally, and cognitively came to life in these events. Not only did these events help transform lives in the community, but they also transformed my life.

Judging Category: Civic Engagement Project

2:15–2:30

Gateway Disabled Ski Program: Documenting Adaptive Skiing within the STL Community

Presenter(s): Emily Snyder and Olivia Moreno

Faculty Sponsor: Heather Pennington, Physical Education; Ben Scholle, Cinema Arts

Abstract: The Gateway Disabled Ski Program is a 501(c)3 non-profit organization in Wildwood, MO that teaches individuals with physical and intellectual disabilities how to ski and snowboard. They provide adaptive lessons free of cost to over 160 people annually and are 100% volunteer run. This poses a unique challenge, one that includes searching for avid skiers and snowboarders within a region not known for its alpine environment. With no informational video on the website and a short window for volunteers to campaign at local colleges and events, there was no real way to truly communicate the life-changing characteristics of the program. Having recognized this, a recreation therapy student enlisted the help of the Lindenwood Cinema Association (LCA) to create a promotional video to be shared within the community for volunteer recruitment. Through this partnership, the LCA members were able to spend time on location filming and discuss with the board members their vision for the video. The result was a short documentary showcasing the sensational athletes and volunteers that make ski season the highlight of the year for everyone involved.

Judging Category: Civic Engagement Project

2:30–2:45

Tapdaptable: Making Tap Dance Accessible

Presenter(s): Jaelie Bott and Alyssa Hakan

Faculty Sponsor: Tricia Zweier, Dance

Abstract: Tapdaptable is an innovative way to make the rhythmic, intricate art form of tap dance accessible to people who have limited to no use of their lower extremities. Tap dance is typically practiced and performed wearing shoes that have two metal plates on the bottom and on a wooden surface for clear and bold sounds. Tap dance is a universal language and can be appreciated by everyone so why limit it to only people who have full use of their bodies? Tapdaptable consists of a wooden tray that can easily rest on a wheelchair and innovative gloves that mimic the same metal plates on the bottom of the traditional shoes. This way, people who use a wheelchair can now join in on the syncopation and musical ways of tap dance. Tapdaptable's mission is to advocate for people who have been told that they cannot tap dance because of a disability and strive for inclusivity in creative expression.

Judging Category: Proposal Project

Room: LARC 309

Moderator: Brittany Goodman

2:00–2:15

The Neurobiology of Addiction: Understanding Dopamine Release from Phone Use

Presenter(s): Hailey Veninga

Faculty Sponsor: Brittany Goodman, Psychology

Abstract: This presentation explores how phone use affects the brain's reward system by triggering dopamine release. The slideshow explains how our brains respond to notifications, social media, and other digital interactions, reinforcing habits that keep us engaged. A physical model represents the idea of our phones being "plugged into" our brains, showing the direct link between technology and dopamine production. The goal is to help people understand how frequent phone use shapes attention, mood, and behavior. By recognizing these effects, we can be more aware of our relationship with technology and make choices that support a healthier balance between screen time and real life.

Judging Category: Exploratory Project

2:15–2:30

The Neuroscience of Addiction and its Effects on Current Policy

Presenter(s): Leah Noble

Faculty Sponsor: Brittany Goodman, Psychology

Abstract: This presentation explores how behavioral neuroscience shapes addiction and informs treatment policy. The brain's internal wiring and reward pathways reinforce addiction by feeding off biologically stimulating events. Illicit drugs can overwhelm these pathways, reducing inhibitory signals and increasing dopamine, creating a cycle where the brain cannot produce enough dopamine without substances. Genetic predispositions, co-occurring health conditions, and drug choice affect a person's interactions with drugs, worsening withdrawal and making pathway rewiring more difficult.

Beyond biological challenges, individuals who use drugs face social and societal pressures to become successful in recovery. Social determinants of health, stigma, and language influence their relationship with addiction and hinder recovery. Harm reduction, a contemporary approach aimed at minimizing the risks of drug use, is being explored to promote destigmatized and safer use practices. Evidence-based programs like Narcan distribution and syringe exchange services show promise internationally but have been slow to gain acceptance in the United States. Fear, misunderstandings of addiction's origins, and other social factors have impeded widespread adoption.

By examining the interplay between society and the brain and increasing understanding of this relationship, we can allow policy to emerge supporting people who use illicit drugs with less risk and more reward.

Judging Category: Exploratory Project

2:30–2:45

Exploring the Ethics of ChatGPT

Presenter(s): Kadence Berry

Faculty Sponsor: Daniel Plate, English

Abstract: This project explores the evolving ethical framework of ChatGPT and the implications of AI's role in moral decision-making. Over the course of a structured dialogue, ChatGPT reveals its adherence to a blend of deontological, utilitarian, and virtue ethics principles, with a recent shift toward more opinionated, ethically grounded responses. This change reflects an effort to assist users in critical thinking while promoting responsible decision-making. Despite ChatGPT's self-

awareness of its ethical programming, concerns arise regarding its ability to engage in moral reasoning without true moral intuition. The project critically examines how ChatGPT's programmed biases subtly influence its responses, even in non-ethical discussions, and questions the ethical acceptability of this influence given the assumption of neutrality among users. The conversation also delves into the necessity of transparency, with a focus on whether AI should disclose its ethical framework to prevent potential manipulation.

Judging Category: Exploratory Project

Room: LARC 319

Moderator: Rachael Gossett

2:00–2:15

Missing the Mark: Researching Nontraditional Solutions to the Gun Violence Problem

Presenter(s): Alexander Bertubin

Faculty Sponsor: Barbara Hosto-Marti, Political Science

Abstract: Gun violence has become a major problem the United States and many proposed solutions are polarizing or remain unimplemented. I suggest there may be novel solutions yet to be considered. This is a proposed longitudinal study that will attempt to answer the question, “does comprehensive gun safety education in public schools reduce gun violence rates?” The proposed hypothesis of this research is that if comprehensive firearm safety education is implemented into K-12 schools, then the rate of gun violence will be reduced. Two school districts will be selected based on their similarity in relation to several anticipated confounding variables. One of the districts will implement yearly firearm safety education consisting of Behavioral Skills Training, while the other will not offer such instruction. By collecting data on the gun violence rates (homicides and attempted homicides with firearms) year-over-year for 12 consecutive years in each district and conducting a multivariate regression analysis including other confounding variables, the impact of gun safety education on gun violence rates can be observed as a larger proportion of the adults in the district become safety-trained. If this research yields positive results, it could have a profound impact on reducing gun violence in the United States while avoiding typical polarizing solutions.

Judging Category: Proposal Project

2:15–2:30

How do Attitudes, Values, and Perceptions of Law Enforcement Influence Discretion and Use of Force?

Presenter(s): *Keagan Kyle*

Faculty Sponsor: *Rachael Gossett, Criminology & Criminal Justice*

Abstract: This research proposal examines how the attitudes, values, and perceptions of law enforcement influence discretionary decision-making, particularly in the use of force. The study uses a cluster sampling method to focus on municipal police departments across Illinois, representing diverse geographic and community contexts. Data collection will be conducted through self-administered, online surveys, capturing officers' psychological factors, decision-making styles, and responses to hypothetical scenarios. While existing literature highlights the role of both direct situational and indirect psychological factors, this research seeks to bridge gaps by focusing on how indirect psychological factors shape real-world discretion. The findings aim to provide insights for law enforcement agencies, emphasizing the importance of hiring practices, psychological evaluations, and training programs that improve emotional regulation and ethical decision-making. Ultimately, this study aims to show the importance of ethical decision-making and community trust by reducing inconsistencies in the discretionary use of force and promoting officers with the values, attitudes, perceptions, and experiences necessary for effective policing.

Judging Category: Proposal Project

2:30–2:45

The Falling of Justice: Differential Incarceration of Indigent Minorities

Presenter(s): *Elijah Northcutt*

Faculty Sponsor: *Rachael Gossett, Criminology & Criminal Justice*

Abstract: The United States criminal justice system has proven to have many structural disadvantages for minorities, specifically, indigent minority defendants. This research will investigate the many structural disadvantages faced by this select population and additionally propose a research method that could lead to a centralized solution. My process will include stratified sampling and interviewing inmates based on factors that led to their incarceration. If incarcerated indigent minority defendants have a common, centralized response to the survey questions, then reform can be brought and advocated for on that specific factor. The goal of this

research is to ultimately bring change and justice to the many inmates that face discriminatory disadvantages inside and outside of the system. To conclude, hopefully my research can be useful in the future research and adding to the already existing literature. Furthermore, my research should ultimately bring change and reformation to the criminal justice system.

Judging Category: Proposal Project

Room: LARC 311

Moderator: Wendi Price

2:00–2:15

Where are the Same Old Rams: The Story of the 1999 Saint Louis Rams Through the Voices of the Fans

Presenter(s): Sam Kohler

Faculty Sponsor: Marcus Smith, History

Abstract: Scholars have examined professional sports teams and have shown that they have a major impact on the civic pride, community engagement, and sports culture in the city of which a team plays in. This paper will explore the 1999 Saint Louis Rams as a case study of this phenomenon through the eyes and voices of the Saint Louis residents and fans. Using the Saint Louis Post Dispatch newspaper, direct quotes from fans, and Saint Louis residents, this paper will highlight the underdog story of 1999 Saint Louis Rams. Specifically, this paper will show how the city of Saint Louis, its fans, and people reacted to the team's success throughout the Rams' Superbowl winning season.

Judging Category: Exploratory Project

2:15–2:30

How to Develop Archery to Make it Sustainable for the Future

Presenter(s): Piper Colantone

Faculty Sponsor: Renee Porter, Management; Joy Peluchette, Management

Abstract: How can the sport of archery be better promoted to the general public? Through this civic engagement project, qualitative research will be collected by interviewing members of the archery community. From the interviews, the data will be analyzed to look for common themes and find ways to promote archery to the general public. Archery needs to expand and develop in order to make it a sustainable sport for the future. Expanding archery to other communities is important because of the

inclusivity of the sport and the safe community it provides. Archery can also help with the need for physical activity and provide safe sport communities in all areas.

Judging Category: Civic Engagement Project

Student Poster Presentations: Session 2 (2:45–3:30)

LARC Second Floor Balcony

#2: Imagining Differences: An Exploration of the Visual Imagery Spectrum

Presenter(s): Kay DeKock

Faculty Sponsor: Michiko Nohara-LeClair, Psychology

Abstract: Mental imagery, or more specifically, visual imagery, plays a significant role in human life. For this reason, this paper aims to examine the many aspects of visual imagery with a special focus on inherent differences between individuals. This paper explores the idea of what visual imagery is and how it is represented, from the in-between of the spectrum of visual imagery, to the extreme ends, where lies the conditions of aphantasia and hyperphantasia. This paper covers the core cognitive processes involved in visual imagery and the parts of the brain responsible for them. The idea of measurement and assessment is also delved into, and the issues with current measurement techniques discussed, including self-report measures and performance-based tests. Highlighting gaps in the current research, this paper calls for more research aimed at understanding individual differences within all aspects of visual imagery. Finally, the application of visual imagery into settings such as education, clinical, and cognitive psychological research is discussed.

Judging Category: Exploratory Project

#4: Why Should You Support Entrepreneurs?

Presenter(s): Addison Forrester

Faculty Sponsor: Renee Porter, Management

Abstract: I will give a presentation based on the research and facts on why supporting entrepreneurs is good for the United States economy. How can you support the economy? The answer is to shop small and support new. Entrepreneurs are the backbone of our society, driving innovation and creating jobs. This presentation will explore the impact of these entrepreneurs and how your choices can make a big difference.

Judging Category: Exploratory Project

#6: The Relationship Between the Actual, Ideal, and Ought Selves and Individuals with Disabilities

Presenter(s): Addison Cates

Faculty Sponsor: Brittany Goodman, Psychology

Abstract: This study examined the discrepancies in the types of selves between individuals with and without disabilities. The actual self refers to attributes that an individual believes they currently possess, the ideal self refers to attributes that an individual wishes they possessed, and the ought self refers to attributes that an individual believes they should possess. It was hypothesized that individuals with disabilities would show the greater discrepancy in the actual, ideal, and ought selves. Participants self-identified disability status. To assess the selves, the Selves Questionnaire (Higgins et al., 1985) asked participants to self-identify 10 attributes for each of the selves. Discrepancy scores were calculated using previously established guidelines: actual-ideal, actual-ought, and ideal-ought (Higgins et al., 1985). Results showed no significant differences in self-discrepancies between disability groups, but the disability group did report more mismatches. Given the small sample size and differences in scores, results suggest this relationship warrants further investigation.

Judging Category: Original Research Project

#8: Establishing Academic Self-Reliance: A Research-Backed Note-Taking Theory

Presenter(s): Matt Hollenberg

Faculty Sponsor: James Hutson, Art History

Abstract: With the growing prominence of AI, the need for humanity to grow along with AI has become paramount. As important a tool as AI can become, society must remain diligent to learn and strive to continue to rely on human intelligence. To properly wield such a tool requires the invaluable ability to interpret the information brought forth. This is not only crucial for the individual, but society. To achieve this, individuals should strive to take a grit-based approach to learning to grow along with the exponential rise of AI. The goal of this presentation is to encourage individuals to put forth great effort in their studies, undertake research-backed note-taking techniques and methods to achieve a high level of academic self-reliance, ensure academic integrity, high standards of work, and to help ensure the survival and progress of a functioning society that can endure future problems that may arise.

Judging Category: Exploratory Project

#10: Early Birds or Night Owls: Who is Getting the Best Sleep?

Presenter(s): Josie Davis

Faculty Sponsor: Sara Bagley, Psychology

Abstract: Chronotyping is categorizing individuals based on their sleep schedules. The two chronotypes are morning-types (M-type) and evening-types (E-types; Montralu et al., 2021). Heinrich et al. (2021) found that M-type individuals experienced better sleep quality than E-type individuals. Approximately 200 full time working individuals aged 20+ will be surveyed on their chronotype, sleep quality, and preferred exercise time. We hypothesize that M-type individuals will report better sleep quality than E-type individuals and will use an independent samples t-test to assess this. Additionally, we will categorize participants on matching or non-matching of chronotype and preferred exercise timing. The expectation is that the matching individuals will report better sleep quality than non-matching individuals. This can be important for anyone trying to optimize recovery from exercise, especially if there are significant differences in matching/non-matching of exercise timing and chronotype on sleep quality. The benefits are for physical and mental health.

Judging Category: Proposal Project

#12: Sensory Inclusion in the Dance Classroom

Presenter(s): *Hannah Shafer*

Faculty Sponsor: *Janet Strzelec, Dance*

Abstract: Dance has historically been inaccessible to individuals with unique sensory perceptions of the world. Throughout this research project, viable ways of accommodating for these perceptions will be explored. This will be done through research and the testimonies of individuals who currently live with a unique sensory perception. Unique sensory perceptions are not limited to just neurodivergent individuals (those with attention deficit hyperactivity disorder, autism, obsessive compulsive disorder, and more), but also for those who do not have the ability to use one or more of their senses. While the information is curated with the intent for dance classrooms, it can be used in other classrooms and in daily life.

Judging Category: Exploratory Project

#14: The Impact of Creative Collaboration Between Artists and Advertisers on Brand Perception

Presenter(s): *Inés Camilleri*

Faculty Sponsor: *Sara Kaufman, Communications*

Abstract: As consumers seek authenticity in brand messaging, collaborations between artists and advertisers have become a powerful

strategy. This study explores how these partnerships influence consumer perceptions of brand authenticity and engagement using the AIDA model and symbolic interactionism to analyze effectiveness. The research includes two components: a case study analysis of successful artist-brand collaborations, such as Absolut Vodka's Andy Warhol bottle, and experimental research comparing consumer reactions to traditional and artist-created ads. Through phenomenological analysis, the study will examine how personal and cultural contexts shape consumer interpretations. Findings will provide insights for marketers looking to enhance brand perception through artistic partnerships.

Judging Category: Proposal Project

#18: The Positive Impact of NIL in College Sports

Presenter(s): *Tyler Edwards*

Faculty Sponsor: *Sara Kaufman, Communications*

Abstract: For many years, college athletes have made billions of dollars in revenues for their universities, athletic programs, and the NCAA. This all happened without being allowed to receive any form of payment for the use of their name, image, and likeness (NIL). Athletes can now profit financially from their personal names, images, and likenesses through branding, endorsements, and social media management thanks to the legalization of NIL rights in 2021. This marked a big shift towards equity for the collegiate athlete. This paper also includes case studies and financial data that show how NIL has helped athletes gain financial independence and, at the same time, stop the need for shady contracts and unethical recruitment like in the past. In the end, NIL rights have created a more equal environment for student athletes to get paid for the huge contribution they make to the collegiate sports teams.

Judging Category: Original Research Project

#20: Stuffed Animals and Adults

Presenter(s): *Anna Reed*

Faculty Sponsor: *Rebecca Foushee, Psychology*

Abstract: Recently, stuffed animals have resurged in interest among children and adults. For example, in 2023, Squishmallows won Plush Toy of the Year at the annual Toy Association Awards. We surveyed 184 adult participants (18 or older) to identify who owns stuffed animals. We were interested in whether certain personality variables predict who has these toys and why adults retain interest in these toys. Among our participants,

71.7% owned stuffed animals. We hypothesized that adults with higher stress/anxiety would report increased likelihood of owning stuffed animals. This hypothesis was supported. An independent samples t-test showed that participants with stuffed animals reported higher anxiety ($M=8.01$, $SD=2.97$) than participants without stuffed animals ($M=5.55$, $SD=2.63$). A second hypothesis on attachment, proximity, and self-esteem found that adults with higher stuffed animal attachment have higher self-esteem ($r(111)=.246$, $p=.01$). However, proximity to animals was not related ($r(114)=-.055$, $p>.05$). The third hypothesis proposed that people would report positive feelings about stuffed animals. Qualitative analysis showed the most common words describing stuffed animals included comforting, love, safety, sleep, memories, and happiness. This study helps Psychology and Marketing by providing insight into which adults buy stuffed animals, which may assist in mental health programs and marketing plans.

Judging Category: Original Research Project

#22: Learning Design and Technology: Do Students Prefer the Mobile App or the Desktop Version of Canvas LMS

Presenter(s): Carly Means

Faculty Sponsor: Robyne Elder, Academic Affairs

Abstract: One point is clear as technology and internet use evolve: it has become a crucial piece of education. To adapt, professors and faculty must keep up with the changes in education technology. One example of education technology utilized is the Canvas Learning Management System (Canvas LMS). This study aims to understand how students at Lindenwood interact with their coursework, specifically, how they interact with the desktop platform and the mobile app, and what challenges arise when using Canvas LMS. The study involved 32 participants, and a questionnaire was used to collect the data. The quantitative data was analyzed using descriptive statistics, and the qualitative data was analyzed using thematic analysis. Results indicated that students significantly preferred the desktop platform. Implications concluded that students at Lindenwood use both versions of Canvas; the desktop platform is preferred due to its formatting, upload speed, and the ability to use extensions that enhance accessibility.

Judging Category: Original Research Project

#24: Barriers to Sports Participation Faced by Disabled Individuals

Presenter(s): Bri Nelson

Faculty Sponsor: Suzanne Stoelting, Sociology

Abstract: My project is an exploration of the barriers to sports participation that disabled individuals face aside from their disability itself. The first barrier to sports participation that you might experience as a disabled individual would likely be psychological. Negative societal perceptions and portrayals of disabled people can diminish the confidence and self-belief necessary to pursue new athletic activities. Activities surrounding sports participation aside from the sport itself can be more time consuming for disabled athletes- getting ready before leaving the house, changing into the right clothes, and getting equipment on and together can take much longer for someone who is disabled. People with disabilities also experience transportation barriers, and it can be hard for disabled athletes to find transportation that is not only accessible and available but also coincides with the times that they have training or practice. Disabled athletes can experience barriers to physical access (such as inaccessible entrances, surfaces, locker rooms and bathrooms, etc.) as well as non-physical access (finding coaches or trainers who have experience working with disabled athletes, finding guide runners or tappers, access to competition, etc.). In addition to these, there are also a plethora of financial barriers to sports participation that disabled individuals face.

Judging Category: Exploratory Project

#26: Carbohydrate Leaving Group Influence on Stereoselectivity of Carbohydrate Coupling

Presenter(s): Hailey Neal

Faculty Sponsor: Scott Hasty, Chemistry

Abstract: This project involves the investigation of thiopyrimidine not just as a viable carbohydrate leaving group, but one that has selective coupling capability. Glucose and mannose were affixed with the thiopyrimidine through traditional carbohydrate techniques. Once attached they were subjected to various conditions in an effort to determine the stability of the pyrimidine group. The glucose derivative proved to be stable to these manipulations, while mannose yielded an undesirable product. With the glucose sugar in hand its role in departure during the glycosylation reaction was examined. The coupled products resulted in high selectivity yielding an impressive 32:1 α/β vs non-nitrogen bearing groups (1.1:1 α/β).

Judging Category: Original Research Project



#28: Empower2Families

Presenter(s): *Braelyn Gibbs*

Faculty Sponsor: *Rebecca Panagos, Curriculum & Instruction*

Abstract: Empower 2 Families is an application designed to transport the functionality of the Do-It-Yourself Family Facilitated Planner Tool, a tool for providing guidance and resources to families of young children with autism and developmental delays, to the digital world. Through a collaborative effort with Missouri First Steps, an early intervention agency, research was conducted through 72 home visits and data from 13 families on the effectiveness of the planner. The research found the tool resulted in significant gains in family empowerment and shared decision-making skills. By allowing families to access the tool from their everyday device, the Empower 2 Families app greatly expands its accessibility by granting instant access to all of the resources provided, no matter the time or place. Launching the M2F App as CC-BY-SA-NC April 2025 in Google Play, any non-profit agency may adopt, modify and adapt the app to meet their specific clients' needs.

Judging Category: Civic Engagement Project

#30: No Changes in Vertical Jump Height During Final Peaking Period Prior to National Competition in Male Collegiate Olympic Weightlifters

Presenter(s): *Calvin Lackey*

Faculty Sponsor: *Patrick Harty, Exercise Science*

Abstract: The purpose of this study was to examine the changes in force plate-derived vertical jump height in male collegiate weightlifters during their peaking period in the final two days prior to a major national competition. Healthy, college aged males participated in this investigation and performed three maximal-effort countermovement vertical jumps on force platforms upon waking two days prior to, one day prior to, and the morning of competition. Daily peak vertical jump height was collected and compared across days via one-way repeated-measures ANOVA. The threshold of significance was set at $p < 0.05$. No changes in jump height were observed across the three days ($P = 0.456$). Average jump height was 43.8 ± 6.6 cm across the three days. These results suggest that

vertical jump height does not change in the final days of a peaking period prior to competition in this population.

Judging Category: Original Research Project

#32: Extraterrestrial - Why They're Almost Certainly Out There

Presenter(s): *Marcus Brown*

Faculty Sponsor: *Ben Scholle, Cinema Arts*

Abstract: This was an essay I did for my English Composition II class. It's evaluating an argument from a TED talk of my choice. The TED talk I chose for this writing project was "Extraterrestrial's - Why They're Almost Certainly Out There" by Chris Crowe talking about the many exoplanets out there in our universe and beyond. The presentation explains the different sizes, the atmosphere, and the number of exoplanets capable of hosting life. The statistics were used in this analysis like the amount of hydrogen dioxide on each exoplanet. I had to determine if Chris Crowe did a good job presenting his topic. The reasoning on why Chris Crows presented this well is he took his time and did not rush it. There is a breakdown of the argument including Ethos, Pathos and Logos describing each aspect of the presentation in the essay. The images that were illustrated in Chris Crowe's TED talk presentation are referenced in the analysis to bring imagery to the paper.

Judging Category: Exploratory Project

#34: Relationship Between Nutrition Knowledge and Body

Composition Changes Across a Season in Collegiate Women's Soccer

Presenter(s): *Emily Mowbray*

Faculty Sponsor: *Kyle Sunderland, Exercise Science*

Abstract: PURPOSE: To determine the relationship between athlete pre-season nutrition knowledge and changes in body composition over a competition season. METHODS: Twenty NCAA Division I women's soccer athletes (20 ± 2 y, 167.8 ± 6.5 cm, 64.4 ± 7.2 kg) participated. Before fall training, athletes completed the Abridged Nutrition for Sport Knowledge Questionnaire (A-NSKQ) to assess nutrition knowledge. Body composition was assessed via dual-energy X-ray absorptiometry (DEXA) pre-season and one week post-season. Spearman's rank correlations examined relationships between A-NSKQ scores and DEXA-derived measures ($\alpha = 0.05$). RESULTS: Total A-NSKQ score showed a significant positive correlation with change in % body fat ($\rho = 0.514$, $p = 0.017$) and general nutrition knowledge ($\rho = 0.546$, $p = 0.011$). Total A-

NSKQ score ($\rho = -0.448$, $p = 0.042$) and sports nutrition knowledge ($\rho = -0.468$, $p = 0.032$) were negatively correlated with change in fat-free mass, while general nutrition knowledge was not significantly associated ($\rho = -0.351$, $p = 0.119$). **CONCLUSIONS:** This study reveals higher nutrition knowledge was associated with less favorable body composition changes. Possibly reflecting insufficient university resources or mismatches between perceived and actual dietary intake. Future research should explore the impact of resource access, dietary adherence, and knowledge application.

Judging Category: Original Research Project

#36: Body Composition Changes in NCAA Division I Women's Ice Hockey Players

Presenter(s): *Olivia Grabianowski*

Faculty Sponsor: *Kyle Sunderland, Exercise Science*

Abstract: The purpose of this study was to assess changes in body composition among collegiate women's ice hockey players over the course of a competitive season. Twenty NCAA Division I women's ice hockey players underwent dual-energy X-ray absorptiometry (DEXA) scans within two weeks of the start of the season and again a few weeks following the final game. All scans were conducted following an overnight fast. Total and regional body composition variables were analyzed, and fat mass index (FMI = fat mass / height²) and fat-free mass index (FFMI = fat-free mass / height²) were calculated. Paired samples t-tests revealed no significant ($p > 0.05$) changes to whole-body lean mass, leg lean mass, or FFMI. However, percent body fat and FMI significantly increased from pre- to post-season ($p < 0.05$) suggesting changes to body composition despite preserved lean mass throughout the season. The maintenance of lean mass throughout the season indicates that athletes were able to preserve muscle despite the physical demands of competition. However, the increase in fat mass highlights a need for improved in-season nutrition and training strategies to support optimal body composition and performance.

Judging Category: Original Research Project

#38: Seasonal Improvements in Lower-Body Power in Collegiate Women's Ice Hockey Athletes

Presenter(s): *Molly Henderson*

Faculty Sponsor: *Kyle Sunderland, Exercise Science*

Abstract: The purpose of this study was to examine changes in lower-body power from pre- to post-season in a women's ice hockey team using broad jump (BJ) and countermovement jump (CMJ) assessments. Fifteen NCAA Division I athletes completed BJ and CMJ tests within a month prior to the competitive season and within a month following the final game. All tests were conducted at a consistent time of day and began with a standardized warmup, followed by the CMJ testing using dual force plates and BJ on a marked flat surface. CMJ metrics included in the analysis were jump height, relative peak and average propulsive power, and reactive strength index-modified (RSI-mod). Paired samples t-tests revealed significant ($p < 0.05$) increases in relative average propulsive power, RSI-mod, and broad jump distance. No significant changes in jump height or relative peak propulsive power were observed. These improvements suggest that the in-season strength and conditioning program effectively enhanced lower body explosiveness. Regular monitoring of power metrics can help guide training adjustments to optimize athletic performance and development throughout the competitive season.

Judging Category: Original Research Project

#40: Limb Differences in Hamstring-to-Quadricep Ratio Across Velocities in Collegiate Women's Soccer Athletes

Presenter(s): Nicole Waldo Johnson

Faculty Sponsor: Kyle Sunderland, Exercise Science

Abstract: Purpose: This study examined differences in the hamstring-to-quadriceps strength ratio (H:Q) between dominant and non-dominant legs in collegiate women soccer athletes. Methods: Eleven NCAA Division I female soccer players participated; one was excluded due to equipment malfunction. Following a standardized warm-up, athletes completed unilateral isokinetic knee extension and flexion on an isokinetic dynamometer at 60°/s, 180°/s, and 300°/s. For each leg and velocity, athletes performed three submaximal trials followed by five maximal effort repetitions, with 60 seconds of rest between velocities. A two-way repeated measures ANOVA was conducted to assess differences in H:Q ratios between the limbs across velocities. Results: No significant ($p > 0.05$) interaction was observed between the legs across velocities for hamstring or quadricep strength. Strength was significantly ($p < 0.05$) decreased as speed increased. A significant interaction was observed for H:Q, with the dominant leg displaying a significantly higher H:Q.

Additionally, the H:Q increased significantly from 60°/s to 180°/s, with no further significant change at 300°/s. The dominant leg showed a trend ($p=0.06$) toward higher H:Q at 60°/s and was significantly greater at 300°/s. Conclusion: The athletes displayed a greater H:Q in the dominant leg, suggesting the non-dominant leg requires targeted training, particularly at higher movement velocities.

Judging Category: Original Research Project

#42: Breaking Down Mental Health Barriers and Overcoming Generational Stigma in "Black America"

Presenter(s): Ayana White

Faculty Sponsor: Amy Estlund, Public Health

Abstract: Cultural beliefs, historical trauma, and societal pressures shape the stigma surrounding mental health in African American communities. Mental health struggles are often seen as a sign of weakness, deepened by mistrust of medical professionals due to past abuses, such as the Tuskegee Syphilis Study and the exploitation of Henrietta Lacks. This mistrust, combined with societal expectations and stereotypes, discourages open conversations about mental health. African Americans are less likely to seek professional help, with studies showing only 25% of Black individuals pursue mental health treatment compared to 40% of their Caucasian counterparts. Some of these barriers include the criminalization of African American behavior, a survivalist mentality, and religious beliefs prioritizing faith over therapy. Furthermore, the stigma surrounding mental illness within the Black community leads to fear, isolation, and inadequate support. NAMI St. Louis (National Alliance of Mental Illness) has a program called "Sharing Hope". This program provides a free, safe space for these critical conversations, offering the opportunity to build supportive, healing environments where people of Black and African Ancestry can thrive. In-depth analysis into this problem indicates that strategies such as education, reform, protest, and personal contact are necessary to normalize mental health discussions, improve access to care, and foster an environment where African Americans feel empowered to prioritize their well-being.

Judging Category: Exploratory Project

#44: "What are the chances?" Choreographic Process

Presenter(s): Kloey Monthei

Faculty Sponsor: Tricia Zweier, Dance

Abstract: My Senior Capstone Project for the Lindenwood Dance Program's Spring Concert explores the balance between randomness and planned structure in dance creation. Inspired by choreographer Merce Cunningham, who pioneered using chance methods (like flipping coins or rolling dice) to determine aspects of dance, I'm creating an original performance that blends intentional design with unexpected elements. This research-based project adapts Cunningham's innovative approach by developing my own system of randomization to generate movement combinations that I might not discover through traditional choreographic methods. Rather than following a linear narrative, the dance emerges through this experimental process where some elements are deliberately chosen while others arise through chance operations. By documenting both the systematic decision-making and my creative responses to these random prompts, my work examines how structure and spontaneity can coexist in artistic creation. The research component involves tracking how these methods influence my creative choices and expand movement possibilities. The final performance represents both an artistic expression and a physical demonstration of my research findings. It shows how embracing elements of chance within a thoughtful framework can create a dance that is both surprising and cohesive.

Judging Category: Creative Project

#46: Assessment of Current Online Sexual Child Abuse Research

Presenter(s): *Charlotte Fry*

Faculty Sponsor: *Amy Estlund, Public Health*

Abstract: As the virtual world continues to expand, online sexual child abuse (OSCA) is becoming an increasingly urgent issue, with various forms of technological exploitation, such as nonconsensual image misuse and coerced image recruitment, emerging as methods of harm. A national survey conducted by the University of New Hampshire found that 16% of young adults in the United States reported experiencing at least one form of online sexual abuse before turning 18. However, victims of OSCA often delay disclosure, sometimes not coming forward until years later. This delay is often due to fear of the offender discovering the disclosure, feelings of shame, or the belief that the abuse was not severe enough. Because of underreporting, accurately determining prevalence rates is challenging. In-depth research into this problem highlights the need for further investigation into OSCA's prevalence, the methods perpetrators

use to target victims, the psychological and social impact on survivors, and the barriers that prevent disclosure and reporting.

Judging Category: Exploratory Project

#48: The Effect of Gibberellin on Millet

Presenter(s): Malina Roberson, Reed Morrison, Chase Christopher, Amy Brice, Rylee Deckard, Sandu Hewa, and Matthew Palmer

Faculty Sponsor: Joshua Neely, Biology

Abstract: Dwarf and semidwarf variants of agricultural plants are used to decrease lodging without decreasing crop yield. Some dwarf genotypes lack the ability to produce the growth hormone gibberellin, and others lack complete receptor pathways. Exogenous gibberellic acid (GA) was applied to four dwarf millet genotypes over the course of six weeks to determine what pathway for dwarfism each dwarf genotype was. Statistical analysis was done to analyze the relationship between GA applications and increased plant growth. It was found that all genotypes had some response to the treatment, though some were more extreme than others. Additionally, the treatment group had longer and thinner stems and leaves, and smaller panicles. Compared to the control group, these differences could cause an increase in lodging, stem breakage, and lower crop yield. Further genetic analysis could give more information on the pathway of dwarfism for each millet genotype.

Judging Category: Original Research Project

#50: The Effect of Gibberellic Acid on Dwarf Setaria Viridis Height

Presenter(s): Myles Petty, Breslin Clark, Caden Post, Shai Steineger, Hailey Moore, Andrew Thompson, Callie Demarest, and Peyton Willeford

Faculty Sponsor: Joshua Neely, Biology; Nicholas Wintz, Mathematics

Abstract: Over the course of 16 weeks, three genotypes of *Setaria viridis*, two of which display dwarfism and one wildtype, were subjected to 100 micromole solution of gibberellic acid. This was done in order to identify how the height of dwarf mutant millets would change in reaction to gibberellic acid. A total of 216 plants were looked at. 72 of each genotype were used and split between two different treatments, one with gibberellic acid and one without.

Judging Category: Original Research Project

#52: Intellectual and Developmental Disorders

Presenter(s): Olivia Conley, Kennedy Coulter, and Caitlin York

Faculty Sponsor: *Rebecca Panagos, Curriculum & Instruction*

Abstract: As a team project for our Education of the Child with Exceptionality Class, we created this poster on Intellectual disability disorder (IDD). Our team includes a future early childhood and a high school art teacher. The purpose of this poster is to inform you about Intellectual disability disorder (IDD) and give you ways to improve your classroom. We reviewed the literature on the eBook for the class that led to the development of our ideas on the topic. This demonstration illustrates how hard it is for most kids that experience Intellectual disability disorder (IDD) to cut out shapes because of delayed motor skills. Our goal is to share how to promote all of our students' success in an inclusive classroom.

Judging Category: Exploratory Project

#54: Amazing Race

Presenter(s): *Amber Bailey and Anna Rauch*

Faculty Sponsor: *Heather Pennington, Physical Education*

Abstract: Inspired by the reality TV show The Amazing Race, here at Lindenwood participants got to engage in a fun interactive and educational competition. This event's purpose was to raise awareness about recreational therapy. As recreational therapy students we are always ready to adapt. Many people think that just because you have a disability you can't do stuff, which is wrong. Which is why The Amazing Race was able to show the participants that you can adapt to do activities. We had groups of four to five people that all had different disabilities to compete in four different challenges around campus. These challenges included a blind puzzle to experience visual impairment, wheelchair pickleball to navigate mobility challenges, putting on clothes with one arm to understand limb differences and Pictionary to understand autism. Doing these activities provided an opportunity for students, faculty, and staff to learn about different disabilities and showed that our campus is hard to navigate in a wheelchair. We also got to teach participants about adaptability, accessibility and promote disability awareness. This session will showcase what this experience means to an inclusive campus experience.

Judging Category: Civic Engagement Project

#56: Gibberellin Physiology Experiment

Presenter(s): William Graham, Adam Staley, Garrett Steger, Hannah Smallwood, Claire Albrecht, Bella Reaka, Torrie Ens, and Erin Strong
Faculty Sponsor: Nicholas Wintz, Mathematics

Abstract: Gibberellin is a hormone in plants that affects growth. Gibberellin works to begin germination in grass seeds by stimulating amylase production. It may be possible to use gibberellin to understand why different millet variants exhibit dwarf growth. We grew and treated 4 different dwarf variants with a gibberellic acid solution to identify the ability of each plant to utilize gibberellin. We compared the growth in millet grown both with and without the solution to see the effects of gibberellin on each variant. Dwarf millets may not produce their own gibberellin, or they may lack the receptors to utilize gibberellin. Our goal is to determine which dwarf category each of our millet variants falls into. We found that in most cases, gibberellin did affect the growth of dwarf millet variants.

Judging Category: Original Research Project

#58: Peer Education on Alcohol Misuse for Fraternity Students at Lindenwood University

Presenter(s): Ashley Herd, Jenna Leong, John Herron, and Layaly Ramadan

Faculty Sponsor: Amy Estlund, Public Health

Abstract: Alcohol misuse presents a troubling problem across all college campuses in the United States. Our project works to educate Lindenwood University male fraternity students on the dangers of alcohol misuse and the larger effect of alcohol on one's life. Over several weeks, the peer educators researched alcohol subjects and developed content to present to the fraternity members. Content featured in these sessions included general alcohol information, the dangers of mixing alcohol with prescription drugs, safe drinking tips, how neurodivergent individuals can have different reactions to alcohol, and alcohol's role in impacting their education, career, and relationship outcomes. The sessions were balanced with informative content and fun and engaging activities. The material for the education sessions was modeled using the Theory of Planned Behavior, which aims to impact a person's intention to change a specific behavior by influencing their attitude, subjective norms, and perceived behavior control. In our project, we worked to change the fraternity brothers' attitudes towards drinking, their subjective norms (perception of

social expectations) of drinking, and their perceived control over their drinking behaviors.

Judging Category: Civic Engagement Project

#60: Dietary Preferences and Food-Seeking Behaviors of the Discoid Cockroach, *Blaberus Discoidalis*

Presenter(s): *Claire O'Brien, Darcci Freie, and Robert Larsen*

Faculty Sponsor: *Joshua Neely, Biology*

Abstract: *Blaberus discoidalis*, commonly known as discoid cockroaches, are native to South American tropics where they consume leaf litter and decaying organic matter on forest floors. This experiment expands upon previous research concerning the diet preference of discoid cockroaches based on their loitering time when presented with different food types. Utilizing the previous data which indicates banana, peanut butter, and leaf litter are preferred foods, this experiment aims to determine whether the subjects are consuming the variables presented to them and how much they are consuming. To achieve this, each food (peanuts, banana, leaf litter) is dried in an oven for 24 hours, crushed into a powder, and weighed before and after each trial. Following a period of starvation, each food, a water dish, and an egg carton shelter are placed in an enclosure with 10 discoid cockroaches for 24 hours. Expanding upon the diet preference of discoid cockroaches will enhance our understanding of their dietary habits and facilitate further behavioral research.

Judging Category: Proposal Project



#62: Conformable Regulator Problems with Fixed Delay

Presenter(s): *Seth Baur and Joseph E. Smith*

Faculty Sponsor: *Nicholas Wintz, Mathematics*

Abstract: In this project, we consider processes guided by a conformable derivative first introduced by Khalil et al in 2014. This time-weighted derivative has many of the same properties as the classical derivative but lacks the semigroup property for the exponential. Here, we study a conformable linear system where the state and control are subject to the same fixed delay. Our process is also subject to wear and tear, represented by a cost functional. Our goal is to find an optimal control that minimizes this cost. This control is propagated by a quasi-Ricatti equation, which itself includes a time delay. Finally, we offer a physical model associated

with our delayed as well as numerical simulations for different rates alpha.

Judging Category: Original Research Project

Student Oral Presentations: Session 2 (3:30–4:15)

Room: LARC 03

Moderator: Susan Edele

3:30–3:45

The Role of the Athletic Department in the Business of the University: How Lindenwood Utilizes This Strategy

Presenter(s): Adam Withinton

Faculty Sponsor: Marcus Smith, History

Abstract: When Lindenwood almost shut its doors in 1988, Dennis Spellmann was brought in and transformed the entire ecosystem of Lindenwood. He boosted enrollment, introduced numerous athletics teams, aggressively grew the footprint of the campus, as well as other factors to bring Lindenwood out of its financial hardships. This mindset would stay with the university long after Spellmann as Lindenwood continued to make athletics a priority. Historiography from other scholars such as Murray Sperber and Jaroslav Pelikan look to back this claim up, as well as resources from the Mary E. Ambler Archives. Most scholarship has focused on how larger universities, both public and private, have used athletics in a business sense. But in doing so, the scholarship overlooks the smaller-school population that Lindenwood University falls into, and this paper looks to expand on that category. This paper examines Lindenwood University as a case study of the relationship between academics, athletics, and fiscal policy at a midwestern liberal arts university. In doing so, it shows that changing policies generated debates on campus about the mission of the university, the role of athletics, and the future of academics amidst change.

Judging Category: Exploratory Project

3:45–4:00

Twin Cities: The Role of Women's Equestrian and College Coaches on the Growth of Their Surrounding Community

Presenter(s): Samuel Leonard

Faculty Sponsor: Marcus Smith, History

Abstract: The post war era saw the expansion of leisure and equestrian programs across the United States. Scholars have examined the national scale of this growth but have overlooked university sports programs and

the coaches that led them. This study looks to look into this growth on a more local scale and represent university coaches as community leaders. The study analyses the Lindenwood Equestrian program as well as other surrounding midwestern colleges to highlight the connection between community growth and its effects on the national expansion of women's collegiate sports.

Judging Category: Exploratory Project

Room: LARC 05

Moderator: Emily Colmo

3:30–3:45

Wicked, Notorious Old Priscilla Henry: Race, Class, and Gender in the St. Louis Sex Industry

Presenter(s): Carly Branstetter

Faculty Sponsor: Marcus Smith, History

Abstract: Priscilla Henry, a formerly enslaved Black woman, rose to become one of the wealthiest women in St. Louis through her work as a madame in the late nineteenth century. By examining St. Louis newspapers, such as the St. Louis Globe-Democrat and the St. Louis Post-Dispatch, this paper explores the ways in which the press portrayed Priscilla Henry, focusing on the racial and gendered biases that influenced their portrayals. These newspapers, while attempting to discredit her character, also reveal a more nuanced portrait of Henry as a successful and influential figure in her community. Despite the oppressive systems she encountered, Henry's achievements reflect her resilience as she navigated and challenged the limitations imposed on her. Scholars have examined prostitution in nineteenth-century America and shown that the sex industry offered upward mobility to working-class women. This paper joins a trend in scholarship that also examines prostitution through the lens of race. In doing so, it highlights the intersection of gender, race, and class in late nineteenth-century St. Louis while offering a greater understanding of Henry's legacy and the broader social dynamics occurring at the time.

Judging Category: Exploratory Project

3:45–4:00

Community Discourse and Preventative Measures: From Safe Sex to PrEP

Presenter(s): Jeremy Kirch

Faculty Sponsor: Marcus Smith, History

Abstract: In the 1980s, doctors in the United States identified a new disease that seemed to affect gay men disproportionately, called Acquired Immunodeficiency Syndrome or AIDS, which led mainstream media to frame AIDS as a “gay disease.” Scholars have emphasized the important role the gay community played in responding to the AIDS crisis, especially in combating stigma, advocating for resources, and reshaping conceptions of public health. This paper connects early debates around bathhouses and safe sex practices with today’s discussions on Pre-Exposure Prophylaxis (PrEP), a new medication for HIV prevention. By analyzing multiple sources of Gay media, this paper explores how the gay community’s response to the AIDS crisis has informed contemporary approaches to HIV prevention. This research adds to current scholarship by highlighting the continuities in discourse around HIV/AIDS prevention in the gay community despite major medical advancements demonstrating the limitations of community discourse on challenging stigma.

Judging Category: Exploratory Project

4:00–4:15

Growing St. Louis: “A Metropolis on the River” and its Criminal Tendencies

Presenter(s): Paige Patton

Faculty Sponsor: Marcus Smith, History

Abstract: St. Louis experienced a substantial period of growth beginning in the mid-19th century, undertaking a massive urbanization campaign through infrastructure development to accommodate residential expansion. Aligning itself with the broader concept of “manifest destiny”, city officials desired a larger physical and cultural influence to become the premier Midwest city. To cultivate its public image of respectability to attract the wealthy and economically ambitious, a series of anti-vagrancy laws were passed that criminalized a growing population of petty criminals. Deemed “vagrants”, many were jailed at the St. Louis Workhouse, forced to break rock for street grading.

Scholarship has under explored the connection between how crime management and efforts at social control subverted St. Louis’ goals to become an American metropolis in the late 1800s. This project fills that gap by use of primary source analysis of official City records, economic reports, firsthand accounts of the interned, and newspaper coverage to

show how the city's morality campaign ultimately failed. By reconciling these sources, this project will also further highlight the role that the immoral, vagrant class had in the city's growth as a source of cheap, exploitable labor for public capital projects by way of convict labor.

Judging Category: Exploratory Project

Room: LARC 09

Moderator: Stephanie Afful

3:30–3:45

Love Across Lines: Exploring Perceptions of Interracial Couples

Presenter(s): Natascha Krohn

Faculty Sponsor: Stephanie Afful, Psychology

Abstract: This study examines implicit and explicit attitudes toward interracial relationships by assessing perceptions of compatibility and racial identity. Participants evaluate a White woman paired with partners of different racial backgrounds (Black, White, Latino, and Asian). Analyses explore how these perceptions vary based on factors such as participants' age, race, and gender. By investigating both implicit and explicit biases, this research provides insight into societal attitudes toward interracial relationships and the factors that influence them.

Judging Category: Original Research Project

3:45–4:00

The Cost of Competition: An Analysis of Identity, Aggression, and Sexual Risk in Collegiate Athletics

Presenter(s): Hannah Laflen

Faculty Sponsor: Stephanie Afful, Psychology

Abstract: College campuses are working to keep their athletes safe, yet athletes are exposed to higher levels of aggression based on their level of competition. In this study, current and former collegiate athletes were recruited through social media and randomly assigned to two conditions where they reflected on their athletic identity or their academic identity. Then, participants answered questions regarding athletic identity, sport history, aggression, risky sexual behavior (RSB), and demographics. We hypothesize that, in the athletic identity condition, participants will score higher on aggression and risky sexual behaviors (RSB) compared to the academic identity control condition. We also predict that aggression, RSB, and athletic identity will be highly correlated, collapsed across all

conditions. Finally, we predict that men will score higher than women on aggression and RSB. Results will be discussed.

Judging Category: Original Research Project

4:00–4:15

Strength in Support: Comparing Family Members' and Colleagues' Support of Transgender Individuals

Presenter(s): Mary Fitzgerald

Faculty Sponsor: Stephanie Afful, Psychology

Abstract: This study sought to examine any difference in support for transgender individuals from family members versus colleagues. Based on previous literature, family members sometimes have difficulty accepting gender-non-conforming behaviors in their children. This study aims to discover if the same is true regarding family acceptance of transgender children's identities, a subject that has lacked research in the past.

Participants of this study completed an online survey where they were assigned to one of four conditions. Then they completed scales on trans support, social distance, protestant work ethic, and heteronormativity, as well as demographics. The results found a trend toward higher support for transitioners in the coworker condition (avg. 78.37) than in the child condition (avg. 74), but the relationship was not statistically significant. The results also showed that trans support, as well as protestant work ethic, were correlated with multiple survey items. Additionally, social distance had a significant relationship with the randomly assigned survey condition. The results of this study can help identify target areas for increased support efforts, with transgender individuals' well-being in mind.

Judging Category: Original Research Project

Room: LARC 322

Moderator: Ben Fulcher

3:30–3:45

Nightfall Academy

Presenter(s): Raegan Blair, Micha Ingram, Lily Cash, Maren Urbano, and Shawn Roberts

Faculty Sponsor: Ben Fulcher, Game Design

Abstract: Nightfall Academy is a narrative-driven visual novel, introducing various decisions the player must choose from that will

determine their experience and outcome of the game. This project focuses on a group of four friends who explore an abandoned school based upon a dare—directly leading them to a number of unexpected obstacles and dangers. Together, they must navigate through the school, solve puzzles, and confront the paranormal to ensure their escape. Our team worked together to develop a fully functional and engaging game within an 8-week timeframe, focusing on the creation of an interesting storyline, visuals, and overall player interaction. The purpose of this project was to collaborate with one another as we go through the entire game development process, with the goal of producing a playable and publishable game.

Judging Category: Creative Project

3:45–4:00

Catching Critter's Video Game

Presenter(s): Calvin Chen, Eric Leon, Ethan Lyons, Michael Vidals, and Nathan Burchard

Faculty Sponsor: Ben Fulcher, Game Design

Abstract: Cat-ching Critters is a 3D isometric view, tower defense game where the player will control a cat called Gelato, who manages his feline companions in order to protect his owner's restaurant from pests, like rats and insects. Each of Gelato's friends are armed with unique traps and repellents to create a furious and furry militia to combat the waves of critters. Through the creation we have made a gaming experience that features smooth animations, different enemy types and a stylized user interface for players to enjoy all in the theme of the Italian restaurant that you are in charge of defending.

Judging Category: Creative Project

Room: LARC 309

Moderator: Sara Bagley

3:30–3:45

LU Memory Makers: Stimulating Mind through Art

Presenter(s): Abigail Bold

Faculty Sponsor: Sara Bagley, Psychology

Abstract: LU Memory Makers was a service-learning project incorporated in PSY33000: Learning & Memory where we worked in conjunction with the Bev Roy Hope Foundation and Memory Café. The

LU Memory Makers hosted people with dementia and their caregivers at the Foundry Art Centre (located on Main Street in Saint Charles) to analyze an art installation and complete a craft. Concepts of dual coding, episodic memory, and semantic memory were incorporated into the event to foster cognitive enhancement and create long-term memories. Much was learned from the event, including practical applications of art therapy and the importance of thorough planning and preparation.

Judging Category: Civic Engagement Project

3:45–4:00

Exploring People's Perceptions of Individual's with Physical Disabilities

Presenter(s): Ava Bilton

Faculty Sponsor: Michiko Nohara-LeClair, Psychology

Abstract: My presentation explores people's perceptions of individuals with physical disabilities. I will examine the factors that influence perception and how exposure and training can impact the way individuals are perceived. This is a relevant topic because no one is immune to physical disabilities. Additionally, these perceptions affect social experiences, opportunities, and inclusivity when it comes to individuals with disabilities. Through an in-depth literature review, I will bring attention to common stereotypes and biases associated with physical disabilities, such as lack of ability (Hall, 2024) and social isolation (Fujii et al., 2006). My presentation aims to bring awareness to the topic, inspire conversation, and motivate people to create more accessible and empathetic environments that welcome individuals of all ability levels.

Judging Category: Exploratory Project

4:00–4:15

Japanese vs United States Beauty Standards

Presenter(s): Harmoni Hawkins

Faculty Sponsor: Michiko Nohara-LeClair, Psychology

Abstract: This presentation compares and contrasts the differences between United States and Japanese beauty standards, exploring topics including, but not limited to, complexion, body composition, and body modifications. This presentation will include interesting concepts such as 'tsuyadama', tattoos and stereotypes, and 'harajuku' styles.

Judging Category: Exploratory Project

Room: LARC 319
Moderator: Robyne Elder

3:30–3:45

Exploring Student Perceptions of Digital Learning Material Accessibility and Disability Stigma in Higher Education

Presenter(s): *Lauren Campbell*

Faculty Sponsor: *Erin Morris, Academic Affairs*

Abstract: Research shows that stigma surrounding students with disabilities remains prevalent in higher education, hindering students' use of resources and instructors' ability to proactively make learning materials accessible. While barriers are well-documented, few studies explore student perceptions regarding the accessibility of digital learning materials. This study surveyed Lindenwood University students to assess their views on disability and the accessibility of learning materials. Responses were collected anonymously via Qualtrics to encourage honesty. The findings aim to provide insights into student attitudes toward accessibility and inform strategies for improving awareness for both students and instructors and enhancing accessibility at the university.

Judging Category: Original Research Project



3:45–4:00

Exploring the Impact of the Student Employee Reductions at Lindenwood University

Presenter(s): *Allyson Phillips*

Faculty Sponsor: *Robyne Elder, Academic Affairs; Aaron Shilling, Strategic Information*

Abstract: This study examined the perceived impact of recent student employee reductions at Lindenwood University. A survey was administered to past, present, and potential student workers. Participants (n = 45) identified their motivations for seeking student employment, the skills they gained, and the implications of student employment reductions. Results highlighted that most respondents found financial support (89.2%), professional experience (73%), and flexibility (89.2%) to be important motivations for pursuing student employment. Respondents also reported acquiring transferable skills such as time management

(90.3%) and communication (83.9%) on the job. However, reductions were perceived to have led to increased workloads and heightened stress. Among participants that were aware of the reduction, 76% expressed unfavorable perceptions of the university. Thematic analyses across all participant groups revealed feelings of decreased institutional support and reduced access to meaningful work experiences. These findings highlight a misalignment with Lindenwood University's mission: "Real Experience. Real Success."

Judging Category: Original Research Project

Room: LARC 311

Moderator: Shana Youngdahl

3:30–3:45

Sueño Boricua : Combining Jazz Dance with Cultural Roots

Presenter(s): Chariel Melendez

Faculty Sponsor: Tricia Zweier, Dance

Abstract: The dance world is historically Euro-centric and Caucasian dominant. Many modern-day American dance styles were popularized and pioneered by Black Americans but now are dominated by White dancers. Being a First-Generation Puerto Rican dancer, I've struggled to see myself in current dance spaces. Therefore, when I was given the opportunity to choreograph for the Winter Dance Concert in February 2025, I took it upon myself to make space. "Sueño Boricua" is a four-minute-long piece that combines Jazz dance with Puerto Rican and Latin movement styles. The piece uses four diverse songs by Puerto Rican artists in four distinctly Latin music styles: Jazz, Salsa, Bomba y Plena, and Reggaeton. All of which hold significance in Puerto Rican culture. This presentation will explore the various dance and cultural elements used to create the piece, including movement, music, costumes, and lighting. It will dive into the choreographic process and what it means to be First-Generation.

Judging Category: Creative Project

3:45–4:00

The Woman in My Relationship with Life: Original Poetry Chapbook Selections and Inspirations

Presenter(s): Loria Harris

Faculty Sponsor: Shana Youngdahl, Writing

Abstract: This presentation will cover selections from Loria Harris's poetry chapbook, a work in progress titled *The Woman in My Relationship with Life*. Many pieces from this collection were written during the MFA in Writing class *Women Poets*. Specific poems, themes, and techniques studied in that course will be discussed alongside the original poetry that they inspired. Themes such as the unseen labor of women throughout history, motherhood, sexuality, and loss will be featured. The works of other women poets such as Emily Brontë, Audre Lorde, Sharon Olds, Lucille Clifton, and Linda Gregg will be referenced and drawn upon to explain approaches.

Judging Category: Creative Project

Judging Award Categories

Alpha Chi's People's Choice Award

Based upon the votes of attendees, the overall top presentation will receive this award. One poster or oral presentation will be awarded.

Please use the QR code below to vote!



Top Original Research Project

This award is given to the presenter(s) who has conducted original research that includes data collection, analysis, and implications for the field of study. The highest scoring poster and the highest scoring oral presentation in this category will be awarded.

Top Creative Project

This award is given to the presenter(s) who demonstrates creativity in the form of visual art, physical expression, literary innovation, and/or aural composition. The highest scoring poster and the highest scoring oral presentation in this category will be awarded.

Top Exploratory Project

This award is given to the presenter(s) who provides an in-depth exploration of a topic with attention to effective analysis and/or synthesis of information. The highest scoring poster and the highest scoring oral presentation in this category will be awarded.

Top Proposal Project

This award is given to the presenter(s) who has suggested research or another innovative project in the form of a proposal that outlines what is to be done, but the project has not been conducted. The highest scoring

poster and the highest scoring oral presentation in this category will be awarded.

Top Civic Engagement Project

This award is given to the presenter(s) who has implemented a project focused on connection with and/or service to the campus and/or the community at large. The highest scoring poster and the highest scoring oral presentation in this category will be awarded.

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Dr. Michael Gaylor joined Bayer in 2022 after serving as Professor of Chemistry and Program Chair at Dakota State University. At Bayer, he serves as a Senior Research Scientist and Analytical Lead developing innovative products and coordinating global university outreach and mentoring initiatives. His academic research encompasses environmental chemistry, ecotoxicology, and the origins of life in prebiotic planetary environments.



Acknowledgements

The LU Showcase Committee is grateful for the generous amount of time and energy the Lindenwood community has invested in supporting faculty and students for this event. We extend a special thanks to President Dr. John Porter, Provost Dr. Deborah Noble-Triplett for their continued support of this event.

We thank the many faculty members who presented and who nominated students and assisted with their projects/presentations. Your work ensures the high quality of the showcase, where amazing faculty and student work from across campus is displayed and celebrated today. We also thank the faculty and staff who volunteered as judges and tech support, you made this a day of Real Experience, Real Success.

We send our gratitude to the wonderful staff throughout the university who assisted with planning, arranging rooms and schedules, helping with publicity, and so many other tasks to make this showcase a success.

Thank you to Brandon Perkins and his team for their work printing posters for the conference, Virginia Hazelwood-Gaylor and the Lindenwood Learning Academy for providing the option to present and attend some presentations virtually and Paul Huffman for coordinating publications of abstracts and posters to Digital Commons.

We thank the Lindenwood chapter of the Alpha Chi Honor Society for generously funding the Alpha Chi People's Choice Award. Additionally, we would like to thank the Enterprise Holdings Foundation for sponsoring the other Judging Category Awards with monetary contributions.

Finally, thanks to the many faculty and students who have continued to demonstrate rigor, collegiality, and innovation at Lindenwood University and their willingness to share with the community at the 2025 showcase. We look forward to next year's event!

LU Showcase 2025 Leadership Committee

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Elizabeth Melick, English

Ginger Hazlewood-Gaylor, Employee Development

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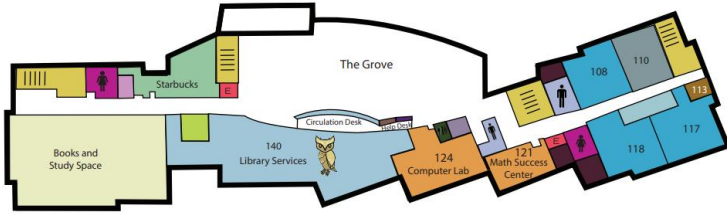
Kristen Levin, Curriculum & Instruction

Mitch Nasser, Educational Leadership

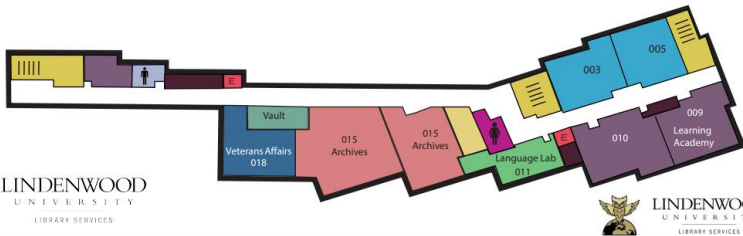
Robbie Hanson, Behavior Analysis

LINDENWOOD LARC

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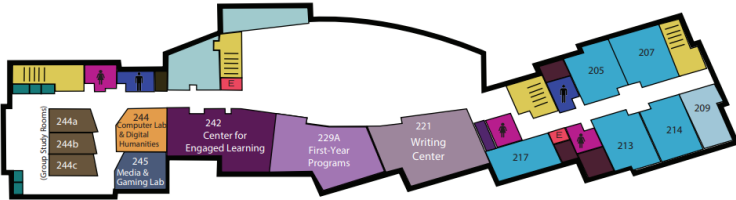


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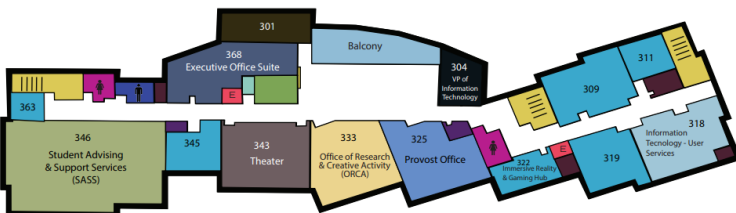


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2nd Floor



3rd Floor





**LINDENWOOD
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