

Graduate Student Research Day Program



April 17, 2025
Nebraska Student Union
Ponderosa Rooms

Schedule of Events

April 17, 2025

Nebraskan Student Union Ponderosa Rooms



Thursday, April 17, 2025

7:30 - 9:00 am	Students set up posters, (Session1)
9:00 – 10:30 am	. Session 1: Natural & Physical Sciences Poster Presentation & Judging Ponderosa A & B
10:30 – 11:00 am	. Poster removal (Session 1) and set up (Session 2A & 2B)
11:00 am – 1:00 pm	. Session 2A: Behavioral & Social Sciences Poster Presentation & Judging
	Session 2B: Fine Arts & Humanities Poster Presentation & Judging
1:00 pm – 1:30 pm	. Poster removal (Sessions 2A & B) and set up (Session 3)
1:30 - 3:30 pm	. Session 3: Prof & Applied Studies Poster Presentation & Judging
3:30 – 4:00 pm	. Poster removal (Session 3)
10:00 am – 2:45 pm	. Oral Presentations
4:30 pm	. Closing Ceremony & Presentation of Awards

Thursday, April 17, 2025

Oral Presentations

10:00 – 2:45 pmOral Presentation

<u>rosa C)</u>	Session 6 (Ponder	<u>rosa D)</u>
Dylan McCoy (History)	10:00 – 10:15 AM	Abby Trantham (English)
Emily Mayes Grad (History)	10:15 – 10:30 AM	Kaitlynn Ashlock (English)
Grace Ottman (Teacher Ed)	10:30 – 10:45 AM	Faolan Stump (English)
Payten Gibson (Teacher Ed)	10:45 – 11:00 AM	Sarah Farritor Grad (English)
Cody McGregor Grad (Biology)	11:00 – 11:15 AM	Amelia Rogers Grad (English)
	Dylan McCoy (History) Emily Mayes Grad (History) Grace Ottman (Teacher Ed) Payten Gibson (Teacher Ed)	Dylan McCoy (History) 10:00 – 10:15 AM Emily Mayes Grad (History) 10:15 – 10:30 AM Grace Ottman (Teacher Ed) 10:30 – 10:45 AM Payten Gibson (Teacher Ed) 10:45 – 11:00 AM

Session 7 (Ponderos	<u>a C)</u>	Session 8 (Ponderos	<u>a D)</u>
10:45 AM – 12:00 PM	Peggy Huss (Biology)	10:45 AM – 12:00 PM	Olivia Beauchamp (Pol Sci)
12:00 – 12:15 PM	Naara Ramirez (Biology)	12:00 – 12:15 PM	Connie Gassaway (Pol Sci)
12:15 – 12:30 PM	Marissa Hoover (Biology)	12:15 – 12:30 PM	Clarice Wendt (Pol Sci)
12:30 – 12:45 PM	Carter Moss (Biology)	12:30 – 12:45 PM	Lizbeth Trejo (Pol Sci)
12:45 – 1:00 PM	Caleb Rother (Biology)	12:45 – 1:00 PM	Bennett Magnuson (Pol Sci)

Session 9 (Ponderosa C)		Session 10 (Ponderosa D)		
1:30 – 1:45 PM	Kim Larbey (Physics)	1:30 – 1:45 PM	Jaden Longfellow (Pol Sci)	
1:45 – 2:00 PM	Joe Kubat (Physics)	1:45 – 2:00 PM	Arielle Lawrence (Pol Sci)	
2:00 – 2:15 PM	Mohmmed Nour (Physics)	2:00 - 2:15 PM	Juliana Merrihew (Pol Sci)	
2:15 – 2:30 PM	Oliver Combs (Business)	2:15 – 2:30 PM	Tiffany Stoiber Grad (Comm)	

4:30 - 5:00 Closing Ceremony & Presentation of Awards

Graduate In Person Oral Presentation Abstracts



Biology

Cody McGregor

Mentor: Jayne Jonas-Bratten

Title: Avian Communities in Varying Stages of Restored Riparian Habitat Along the

Platte River

Historically the Platte River in Nebraska was a mostly open prairie river with intermittent cottonwood and Salix woodlands and savannas lining its banks. Due to flood control projects, irrigation, and fire prevention, the river has transitioned to a dense mixed deciduous and eastern red cedar forest corridor. This shift has resulted in the bird community changing from one consisting of open grassland and wet meadow species to those associated with forest and edge habitats. In response to this change, conservation organizations, such as the Crane Trust, have implemented restoration projects in an effort to return the river to a more natural open state. As a result of these ongoing projects, the river at the Crane Trust now consists of a myriad of habitats ranging from open grassland/wet meadow to dense forest. We surveyed remnant, restored, and forested areas to understand how these restoration projects impact the bird communities. Overall avian species richness and diversity increased with tree cover measured by leaf area index. However, many of the avian species contributing to increased richness and diversity consist of woodland species, while native grassland species are reduced in number or completely absent. This presentation will also examine how tree removal affects local bird communities and identify species indicative of the forest to grassland restoration process.

Communication

Tiffany Stoiber

Mentor: Tiffani Luethke

Title: Ethical considerations of disproportionately fact-checking candidates: An analysis

of press coverage about the 2024 Harris-Trump presidential debate

While fact-checking is a powerful tool in the Fourth Estate's arsenal to combat misinformation and disinformation, recently criticisms have been levied at journalists making the decision whether or not to fact-check a politician's statements. Notably, such concerns about bias were raised regarding the moderators of the 2024 presidential debate between Kamala Harris and Donald Trump, as they fact-checked Trump but not Harris. With trust in news media on a decline in recent years, ethical treatment in fact-checking should be a top concern for journalists in order to maintain public trust. However, maintaining equity in fact-checking proves challenging for journalists covering candidates who tell a disproportionate number of mistruths.

This paper explores how journalists treated each of the candidate's statements during the 2024 Harris-Trump presidential debate, examining 34 digital news articles about the debate published between September 10 and September 12, 2024, and using content analysis to determine whether the candidates were fact-checked equally and how their individual truths and mistruths were characterized. With this data, the paper then creates an ethical framework by which to examine news media's treatment of each candidate, using Ralph B. Potter's model to determine that even though the fact-checking of the candidates was unequal, it was ultimately equitable and therefore ethical.

Given the volatile state of political discourse and growing distrust in news media, these findings suggest that while journalists may be covering politicians equitably, further education or a pivot in process may be needed so that the general public may understand why journalists make these decisions and why they are still deserving of public trust.

English

Sarah Farritor

Mentor: Janet Graham

Title: Mighty Oaks from Little Acorns Grow

"Might Oaks from Little Acorns Grow," is a short collection of poetry I wrote during my Graduate studies. After I had written these separately, I knew that they were best placed together and so I decided to create this collection of the three poems. I also presented this collection at the Sigma Tau Delta Conference. It features poetry that has the theme of nature. The theme is experienced through different scenes such as winter for a gardener, a desert landscape that is also a homeland, and a deeper experience and acknowledgment of rain on a rainy day. Each of these poems could stand on their own when it comes to expressing experiences with nature but as the title of my collection suggests, they are one of nature's mighty oaks once together. It is a privilege to be allowed to present them here today at Student Research Day.

Amelia Rodgers

Mentor: Susan Honeyman

Title: Evangelical Activism, Domestic Ideology, and Women's Desires in the Victorian

Novel

Evangelistic activism during the Victorian period appeared to solve the problem of the "redundant woman" by providing a way for single women to extend their domestic role into a meaningful public vocation. However, this apparent solution introduced the pervasive anxiety that women's unchanneled desires had the potential to wreak havoc in a male-dominated society. While previous research has examined the literary genres specifically devoted to educating these desires, this paper argues that female evangelical activism became a widelyrecognized literary convention which allowed authors throughout the 19th-century to utilize, question, or critique ideas about women's roles and desires. The anonymous epistolary novel The Woman of Colour utilized the positive attitudes surrounding philanthropy to "desexualize" and therefore disarm the potentially threatening aspects of the book's black heroine. Charlotte Brontë's acknowledgment of the single female missionary in Jane Eyre served as a catalyst to question a woman's right to heed her desires. Wilkie Collins' parody of the philanthropic heroine in *The Moonstone* offered critique on the effectiveness of evangelistic activism to subdue women's desires. Taken together, these three seemingly disparate texts suggest that women's involvement in evangelistic activism was a far more complex issue than simply meeting the needs of the poor or making Christian converts. In the end, philanthropy and mission work partially served as socially-sanctioned options for single women to avoid becoming "rampant spinsters," while still confining them to the prevailing domestic ideology's definition of virtuous womanhood.

<u>History</u>

Emily Mayes

Mentor: James Rohrer

Title: The Formation of Race in the Sixteenth Century

Current scholarship on the formation of racial systems in the European Atlantic world perceives European opinions about blackness and indigeneity to be formed as a product of cross-cultural interactions as they develop and to develop primarily in the seventeenth century Scientific Revolution. This assumption is faulty. Rather than being formed as a result of crosscultural interactions described in the scientific language of Northern Europe, the assumptions that form these racial systems have deep roots in the European intellectual tradition. Beginning with ancient Christian monastic literature, the development of a Christian Self identity across Europe is set in opposition to various Others follows a path that informs the earliest Spanish understanding of the Caribbean world into which they entered in the later fifteenth century. The use of demonic imagery separately influenced narratives of Jewish blood libel and helped provide the intellectual backing of the dehumanization of Muslims in the Crusades period. The imagery of the semi-demonic Other was shifted during the course of the fourteenth century in a decidedly Mongol direction. These two strands, the separate Otherizations of the Jewish and Islamic peoples came together during the Spanish and Portuguese Reconquistas to form a new understanding of the medieval Christian self. The ancient monastic literature, which had been taken up into oral traditions and later into Jacobus de Vorraigne's Golden Legend, helped to form the initial Portuguese understanding of the Kongolese that they encountered in 1483. This Reconquista and Golden Legendinspired understanding of the Kongolese Other entered into European knowledge centers, and became the basis of the Spanish interpretations of the indigenous peoples of the Americas. It was this interpretation that spread across Europe and formed the basis for the scientific racism which has been taken as the beginning of the European Atlantic racial systems in the contemporary applicable literature.

Graduate Online Oral Presentation Abstracts



English

Kiley Truex

Online

Mentor: Amanda Sladek

Title: Basic Writing through the Lens of Mina Shaughnessy: The Ideas and Influence of

the Field's Most Prominent Figure

Written as an outgrowth of her experiences as an instructor and administrator at the City University of New York during the tumultuous early years of open admissions, Mina Shaughnessy's Errors and Expectations is largely regarded as the most influential text in the field of basic writing. Indeed, Shaughnessy's work drastically impacted the way that reading and writing remediation at the college level was thought about and done nationwide, and the reverberations of that impact are still being felt today. My presentation will explore the field of basic writing—its history, pedagogy, and politics—through the lens of Mina Shaughnessy. I will begin by providing a brief overview of Shaughnessy's life and work, followed by an analysis of her most influential publications and speeches. Then, I will trace the responses that other scholars have had to Mina Shaughnessy, from her death in 1978. What these responses demonstrate is the perseverance of the conflicts and tensions that have characterized the field of basic writing since its inception. In many ways, Shaughnessy's work is simultaneously praised—deified even—and condemned, and because she is still referred to so regularly within scholarship on basic writing, tracking these references and analyzing the ways in which scholars disagree with, build off of, criticize, or laud her ideas is a useful strategy for crafting a narrative about how the field has developed over the last 50 years. I will conclude by addressing how this historical game of tug-of-war between competing sides, centered around the symbol of Mina Shaughnessy, can help to characterize the current state of the field of basic writing and what it can reveal about where the field may go from here.

<u>History</u>

Matthew Busch

Online

Mentor: Christopher Steinke

Title: Intersections of Memory: "Rediscovering" Indigenous Agency within the

Northeastern Great Plains through Traditional Cultural Knowledge and Oral History

Indigenous agency within the greater context of U.S. and North American history is slowly being revealed through contemporary narratives following more than a century of academic exclusion. Within past historical narratives, ethnocentric ideas such as "wilderness" or "frontier" were designed and utilized by colonial powers to justify expansionist ideology associated with continental conquest initiated under the "Doctrine of Discovery." This essay (or presentation) discusses preliminary research results associated with my thesis that considers Indigenous cultural adaptative strategy and agency in the Northeastern Great Plains through the concept and theme of "migration." My thesis proposes this theme as applied to anthropological and historical narratives is deeply rooted in Western ethnocentrism and settler colonialism ideology. The basis for this argument is the limited inclusivity of Indigenous Traditional Cultural Knowledge (TCK) and oral history in historical narratives. Privileging this body of knowledge can arguably be used in concert with other forms of historical scholarship to arrive at renewed understandings of Indigenous agency and perspectives towards the greater realization of its impact upon contemporary historical narratives. The thesis focuses on Indigenous intertribal and colonial encounters at the intersection of TCK, traditional historic, and archaeological perspectives to formulate new arguments and hypotheses regarding the strategic temporal movements of specific cultural groups within the Northeastern Great Plains between the sixteenth and early nineteenth centuries. Preliminary primary source research associated with my thesis and presented in this essay (or presentation) includes Indigenous oral histories archived at the South Dakota Oral History Center located at the University of South Dakota. Additional preliminary research includes various primary and secondary forms of Western documentation relaying both Indigenous and Euro-American perspectives through published personal accounts imparting cultural knowledge or experience that is supported by ethnographic, traditional history, and archaeological publications.

Sarah Lee

Online

Mentor: Will Stoutamire

Title: Camp Ritchie in WWII: Buildings of the Fort and Beyond

Fort Ritchie, nestled in the Cascade Mountain range of Maryland, hosted thousands of men and some women in intelligence training to strengthen the United States Army's foreign intelligence during World War II. The fort experienced many changes during this formidable period, most especially with the construction of various buildings to fill their needs. This study highlights specific buildings of Fort Ritchie used during wartime, some of which no longer remain standing. While we can learn about what the students did for the war effort, examining how the military used the buildings and further shaped the fort for their purposes helps us better understand how the fort and its grounds functioned in supporting intelligence efforts. Not only that, we're able to look through a window into the lives of the men and women who lived and studied there, who then went on to impact the world with the knowledge they gained at Fort Ritchie.

Graduate In Person Posters

Fine Arts & Humanities

History

Poster G1 - Joseph Colanino

Mentor: Will Stoutamire

Title: Remembering the Red Summer: The Commemoration of Omaha's Riot in 1919

The purpose of this study was to better understand Middle Eastern and North African (MENA) refugee women who have relocated to the United States. Specifically, the challenges they face during their transition, and their strengths as individuals joining a society. The refugee crisis in the MENA region is ongoing, and intense (Kira, et al., 2014). As a host country, the U.S. can implement better integration processes for these refugees to help them transition into their new lives and promote their abilities. To further investigate the strengths and challenges of MENA refugee women we used PhotoVoice, a form of community based participatory research, to capture their stories and experiences in photos. With photographs and group discussion transcripts as qualitative data, we generated findings through the inductive process of thematic analysis.

As a research assistant, I helped with IRB approval paperwork and flyers for this project. I also worked with our team to code the data from the group sessions held with participants using thematic analysis. I searched for relevant literature on this topic to construct a literature review about the strengths and challenges of MENA refugees. After extensive research, it was clear that more research is necessary to better understand the experiences of MENA refugees who relocate to the U.S. This research is important to help create long term solutions that will make the reintegration process easier for MENA refugee women, now, and in the future. By conducting this vitally important research, we hope to help refugees who resettle in the U.S. receive lasting support and the resources they deserve to live happy and healthy lives.

Professional & Applied Studies

Counseling School Psychology & Family Studies

Poster G2 - Mayson Fago

Mentor: Tammi Ohmstede-Schmoker

Co-Authors: Taylor Philbrick

Title: Addressing the School Psychologist Shortage: Offering a Blended Model

The current shortage of school psychologists and increase in the number of potential students reaching out who are current educators working in the field has led to the initiation of adding a blended option to the current on campus Ed.S. program. It is difficult for school districts across the nation to fill openings for School Psychologists. Many districts, especially in the rural areas, are encouraging current teachers to pursue the Ed.S. in School Psychology with the intent of working for the district upon completion. The requirements of attending classes on campus one to two times per week makes this nearly impossible for students who live several hours away from the University. Thus, the Ed.S. program has initiated the process to add a blended option for educators who have at least two years of experience working in the field. This poster will outline the need, process, and provide details related to adding a blended option to a current on campus Ed.S. program. Results: While none of the comparisons reached statistical significance, agreement towards each statement increased post camp compared to pre camp. In addition, agreement to the statement "I was happy to be at Loper Launch and work on my speech" was approaching statistical significance.

Poster G3 - Megan Garbe

Mentor: Tammi Ohmstede-Schmoker

Title: The effects of extended breaks on classroom engagement

Classroom engagement is a critical determinant of academic success, influencing students' active participation, motivation, and learning outcomes. Conversely, disengagement often leads to disruptive behaviors and academic underachievement. While the impact of extended summer breaks on learning loss is well-documented, there is limited research on the effects of shorter seasonal breaks, such as spring and winter breaks, on classroom engagement. This study aimed to investigate the influence of seasonal breaks (summer, winter, and spring) on classroom engagement among middle school students. Participants from an alternative school in Kearney, Nebraska, were assessed using a Behavioral Goal Point System and criteria for classroom engagement. Analysis of weekly engagement scores following each break revealed significant variations, with summer break showing the highest variance compared to spring and winter breaks. Specifically, a decrease in engagement post-spring break was observed, while engagement increased following summer and winter breaks.

Implementing targeted interventions and support mechanisms for students returning from breaks may mitigate potential declines in engagement. Further research is warranted to explore underlying factors and develop strategies to sustain engagement across all break durations.

Poster G4 – Charolette Okraska

Mentor: Umut Arslan Co-Authors: Umut Arslan

Title: Ethical Challenges in Counseling: Future Counselors' Approaches to Political

Discussions with Clients

The aim of this research is to examine future counselors' ethical beliefs regarding political conversations with clients. Given the attitudes of current policymakers and in light of the recent legislation that has been passed that removes protections from minorities through the end of diversity, equity, inclusion, and accessibility (DEIA) initiatives (The White House, 2025), it is relevant to reflect on the impact that these rapidly changing policies may have on both counselors and clients. The governing ethical body for professional counselors, the American Counseling Association (ACA), states in the American Counseling Association Code of Ethics (2014) section on the counseling relationship that counselors must be aware of their personal beliefs and take care not impose these beliefs on their clients, especially in circumstances when the beliefs of the counselor and the client are in conflict with each other, or in instances where the counselor's beliefs are discriminatory. However, in the section on professional responsibility, the ACA also outlines that counselors must not discriminate against clients based on their identity or status. Recent legislation has created new definitions for what constitutes discrimination, producing a unique and challenging new social atmosphere that will undoubtedly affect the counseling field. To understand the impact that the political climate will have on the future of the counseling profession, it is necessary to examine the ethical beliefs of counseling students and how these future counselors plan to approach conversations around political beliefs with their clients, both in scenarios where they have political beliefs that are in alignment, and in scenarios where they have political beliefs that do not align. To achieve this goal, the authors propose a qualitative study of a sample of approximately 30 Nebraska counseling students. A semi-structured Qualtrics survey will be used to collect data on their ethical beliefs, actions, and reactions. Findings will contribute to the ongoing discourse on ethical counseling practices in an increasingly polarized political climate.

Poster G5 - Chris Vera

Mentor: Tammi Ohmstede-Schmoker

Co-Authors: Elias Hutt

Title: Student Engagement in an Alternative School classroom

This study investigates classroom engagement among middle school students in an alternative school setting, focusing on potential differences between Mondays and Fridays. Data from eight students were collected using daily assessments completed by teachers. Results indicate higher average engagement on Fridays compared to Mondays for the majority of students, potentially attributed to factors such as anticipation of the weekend break and the positive, supportive environment cultivated within the school. The study underscores the impact of teacher practices, school environment, and individual student characteristics on engagement levels. While limited by a small sample size and a lack of existing literature on daily variations in engagement, the findings highlight the importance of promoting autonomy-supportive practices and creating a positive learning environment to enhance student engagement throughout the week. Further research with larger sample sizes is warranted to validate these findings and inform targeted strategies for promoting classroom engagement.

Poster G6 - Kailey Wilcox

Mentor: Umut Arslan Co-Authors: Umut Arslan

Title: Evaluating Nebraska's Statewide Suicide Prevention Plan: Insights,

Comparisons, and Future Directions

The aim of this research is to evaluate the impact of Nebraska's Statewide Suicide Prevention Plan (2022-2025), compare it to national and similar state initiatives, and provide data-driven recommendations to enhance future suicide prevention efforts, with particular attention to Nebraska's unique demographic and geographic challenges. In 2022, suicide was ranked the 10th leading cause of death in Nebraska and was the 2nd leading cause of death for individuals aged 10-24 years old (American Foundation for Suicide Prevention, 2024). The average number of deaths by suicide in Nebraska per 100,000 individuals was 15.6 compared to a national average of 14.21 (CDC, 2022). This same year, a Nebraska specific suicide prevention plan was issued. This plan aims to guide Nebraska in preventing suicide from 2022-2025. It provides Nebraskans with a variety of actionable items and resources to reduce suicide statewide. As the plan approaches its expiration, this research critically evaluates its impact and provides data-driven insights for future prevention efforts. This project compares Nebraska's Statewide Suicide Prevention Plan with National Initiatives and those of similar states. Considerations are made regarding Nebraska's unique challenges. These include those in relation to Nebraska's distinctive population distribution and important differences found between rural and urban areas in relation to suicidality. Connections between Nebraska's statewide suicide prevention plan and other mental health and suicide prevention initiatives and policies, including 988 related laws, are explained and assessed.

Findings aim to enhance Nebraska's suicide prevention strategies and inform future research and policy development.

Center for Teaching Excellence/Graduate Studies and Academic Innovation

Poster G7 - Marlee Nebesniak

Mentor: Shannon Mulhearn

Title: Judging a website by its cover: A multi-university website analysis

Institutions of higher education in the United States allocate their largest expenditures to faculty salaries, yet dedicated support for teaching excellence remains an evolving priority. Centers for Teaching Excellence (CTEs) have emerged as a key resource for faculty development, offering professional support, mentorship, and instructional resources. While universities utilize websites for marketing and recruitment, the extent to which they highlight teaching excellence through their CTE webpages remains underexplored. This study analyzed the websites of 18 mid-sized, regional institutions to assess how they communicate teaching excellence, focusing on accessibility, resources, mission statements, and terminology usage. Findings indicate that while most CTEs provide faculty resources, their visibility and emphasis on excellence in teaching vary, highlighting opportunities for strategic communication improvements in higher education. These findings also suggest that institutions can improve how they showcase their Centers for Teaching Excellence by making their websites clearer and more engaging. Future research should look at how well-designed CTE websites affect faculty participation and teaching quality. Schools may also want to update their websites with clearer mission statements, easier-to-find resources, and messaging that better highlights their commitment to strong teaching. Enhancing these websites could help faculty feel more supported and encourage greater use of available teaching resources. Institutions might also benefit from gathering faculty feedback to ensure that CTE webpages meet their needs and expectations. Ultimately, making these improvements could strengthen a university's overall commitment to teaching excellence and faculty development.

Kinesiology & Sports Sciences

Poster G8 - Mack Anderson

Mentor: JP Rech

Title: Exploring working memory in preschool-aged children while controlling for

biological sex and other demographic variables.

Background: Working memory (WM) plays a crucial role in children's cognitive development, influencing their ability to process and retain information. Previous research suggests that WM development may be influenced by biological sex and various demographic factors, but findings remain inconclusive. This study aims to explore WM in preschool-aged children using data from the International SUNRISE study while accounting for sex and other demographic variables.

Methods: WM was evaluated using standardized cognitive assessments tailored to measure memory retention, processing speed, and cognitive flexibility in young children. Sample size is approximately 100 3.0-4.9 year olds from Nebraska. Data collection methods included Mr. Ant to assess constructs of working memory administered in controlled settings within the preschool setting. Demographics were reported via caregiver reported survey, including biological sex, socio-economic status, and home environment. Statistical analysis will involve descriptive statistics, correlation analysis, and regression modeling to examine the relationships between WM performance and demographic influences.

Discussion and Conclusion: Although results are not yet available, this study has the potential to provide valuable insights into the relationship between movement behaviors and WM development in early childhood. Findings may inform future research, educational practices, and policy recommendations aimed at optimizing cognitive development in young children by considering factors such as physical activity, sleep, and socio-demographic influences.

Poster G9 – Eva Shirley Dias

Mentor: Kazuma Akehi

Title: Musculoskeletal Sonography During the First 8 Weeks Revealed Moderate Tendon Thickness Changes Among Track and Field Athletes During the Athletic

Season

Among track and field athletes, patellar tendon injuries are common due to the high mechanical loads and tensions at the knee joint. These injuries are particularly prevalent among jumpers because of the repetitive jumping and increased strain on the patellar tendon, which can affect its thickness. The typical thickness of the patellar tendon is approximately 4 to 5 mm. Understanding these changes in patellar tendon thickness may be a predictor of tendinopathy. However, there are limited studies on the adaptations of patellar tendon thickness during the competitive athletic season. The purpose of this study was to examine seasonal changes in patellar tendon thickness using musculoskeletal (MSK) sonography. This cross-sectional study included 18 competitive collegiate track and field athletes (age = 20.8±1.28 years). None of the participants had undergone patellar tendon or knee surgery in the past six months. The thickness of the patellar tendon at the proximal, middle, and distal poles was measured every four weeks during their athletic season. It was reported that 26% of the athletes experienced patellar tendinitis within the first four weeks. These athletes showed an increased baseline in the middle and distal poles of patellar tendon thickness by 5 mm more than the baseline of others. One athlete who had an anterior cruciate ligament repair using a patellar tendon graft four years ago was found to have a significantly thicker proximal portion of the patellar tendon, with an increase of approximately 50% from the baseline. The results regarding thickness may help identify those at risk for tendinopathy and assist in monitoring changes in thickness throughout the season in athletes undergoing lower leg rehabilitation. Additionally, this can aid in diagnosing other patellar-related pathologies, such as inflammation or ossification of surrounding knee structures.

Poster G10 - Katelyn Feiber

Mentor: Elena Dille

Title: Improving Documentation Practices in a Graduate Athletic Training Program's

Injury Clinic: A Quality Improvement Initiative

Context: As the athletic training profession evolves, comprehensive and consistent documentation is crucial for ensuring efficient and effective patient care. In the University of Nebraska at Kearney's Master of Athletic Training program, graduate students and faculty run a weekly injury clinic for the community that relies on paper documentation for evaluations and treatments. A recent review of completed injury evaluation forms identified gaps in critical documentation areas, highlighting the need for revisions to improve thoroughness and consistency. Such gaps can be improved by using a quality improvement (QI) initiative to aid in establishing a framework for improving existing practices to advance aspects of patient care. The objective of this QI initiative was to standardize the initial evaluation documentation

practices among those running the injury clinic. Standardization may improve consistency in the completion of the injury evaluation form, ensuring that essential assessment information—necessary for comprehensive care—is thoroughly recorded.

Methods: This QI project used a Plan-Do-Study-Act (PDSA) cycle to evaluate the documentation gaps in 111 initial evaluations from the previous academic year and create an updated form. The review identified significant inconsistencies in key documentation areas such as patient goals, vascular history/tests, and neurological history/tests. To address these deficiencies, the "plan" stage involved revising the form that expanded upon various history and objective portions of the exam and refining the layout of the form to allow greater ease of documenting (e.g., checkboxes, more writing space for sections, etc.). An educational session was held to familiarize faculty and students with the initiative intentions and documentation updates. Following 6 weeks of implementing the clinic's new evaluation form, pre-PDSA and post-PDSA standardization trends of the form will be assessed to note if the intervention was successful or if additional changes to the documentation strategy must be made.

Poster G11 – Keila Gillispie

Mentor: Kazuma Akehi

Title: Therapeutic Interventions for Chronic Exertional Compartment Syndrome in High

School and Collegiate Athletes: A Systematic Review

Background: Chronic exertional compartment syndrome (CECS) is a debilitating condition affecting athletes in high-impact sports. It results from increased intramuscular pressure in the anterior compartment of the lower leg during exercise, leading to ischemia, pain, and functional impairment. While fasciotomy is the standard treatment, emerging evidence supports non-surgical alternatives. This review examines mechanisms of injury (MOI), treatment approaches, and rehabilitation strategies in athletic populations. **Methods:** A systematic review analyzed studies on CECS in high school and collegiate athletes, focusing on MOI, surgical and non-surgical treatments, and rehabilitation protocols. Results: CECS is linked to repetitive muscle contractions, altered biomechanics, and excessive impact forces. Fasciotomy provides symptom relief in 80–90% of cases, but 20–30% experience recurrence or prolonged recovery (Tarabishi et al. 2023). Non-surgical interventions show promise: gait retraining reduces post-exercise intracompartmental pressure by 50–60% (Breen et al. 2015), while strength and mobility training improve symptoms in 60–70% of cases (Biedert et al. 2019). Botulinum toxin type A (BoNT-A) injections result in complete pain relief in 94% of patients, with 87.5% showing normalized intramuscular pressure for up to nine months (Isner-Horobeti et al. 2013). Extracorporeal shockwave therapy (ESWT) and hyperbaric oxygen therapy (HBO) may also benefit CECS by reducing pain and inflammation. Additional

therapies like neuromuscular re-education, soft tissue mobilization, dry needling, and graded exercise exposure contribute to symptom relief. Post-fasciotomy rehabilitation follows a structured progression emphasizing early mobility, progressive loading, and sport-specific retraining. **Clinical Applications:** While fasciotomy remains the gold standard, non-surgical interventions such as gait retraining, BoNT-A injections, and targeted rehabilitation offer effective alternatives, potentially reducing reliance on surgery. Additionally, ESWT and HBO show positive results in symptoms. Further research should refine treatment protocols to optimize return-to-sport outcomes.

Poster G12 – Evan Kingston

Mentor: Kazuma Akehi

Title: Sleep influences mood, fatigue, muscle soreness, and energy in collegiate

student-athletes.

Context: Collegiate athletes face challenges such as insufficient sleep duration, poor sleep quality, daytime fatigue, irregular schedules, and sleep disorders. These issues can affect their performance, leading to decreased muscular strength and speed, increased injury risk, slower recovery post-injury, and impaired cognitive functions such as vigilance, learning, decision-making, and creativity. Up to 60% of all college students experience poor sleep, and 7.7% meet the criteria for an insomnia disorder. However, there are limited studies demonstrating how sleep specifically impacts athletic performance throughout their seasons. **Objectives:** The purpose of this study was to examine the quality and quantity of sleep among Division II football players during their season and how these factors influence athletic performance, including muscle soreness, fatigue, energy levels, and mood. We hypothesized that athletes who slept between 7 and 7.5 hours would correlate strongly with improved performance. Methods: Survey data collected by the UNK Loper Performance staff during previous athletic seasons will be used to assess football players' sleep quality and quantity, along with their muscle soreness, fatigue, energy level, and mood. Clinical Application: This study will offer unique insights into the importance of sleep duration and quality for athletes' performance. Additionally, this research may uncover a trend in the relationship between sleep and athletic performance throughout their athletic seasons.

Poster G13 – Bonnie Naughtin

Mentor: Elena Dille

Title: The Effect of Transcutaneous Auricular Vagus Nerve Stimulation During

Treatment of Dysautonomia: A Level 2 CASE Study

Background: Dysfunction of the autonomic nervous system can have a widespread impact on the body's involuntary functions. A form of dysautonomia known as Postural Orthostatic Tachycardia Syndrome (POTS) is characterized by an inappropriate increase in heart rate while in an upright posture. This type of dysautonomia frequently leads to multi-system symptoms of orthostatic intolerance.

Patient: The subject was a 22-year-old female diagnosed with POTS one year ago through a process of ruling out other conditions and a positive head-up tilt table test. Along with tachycardia, the patient also presented with orthostatic intolerance with dramatic changes in heart rate (HR) beats per minute (BPM). Primary daily complaints were persistent fatigue, dizziness, concentration difficulties, and nausea.

Intervention: Traditional treatment plans consisted of maintaining a high sodium diet, increasing fluid intake, and a prescribed vasoconstrictor for one year. Then the intervention of transcutaneous auricular vagus nerve stimulation (taVNS) was introduced and applied 30 minutes/day for 28 days. All other treatments were continued without change which allowed comparisons of treatment (traditional & traditional + taVNS).

Outcomes: A 70-day baseline data period was established with weekly completion of the Malmö Symptom Questionnaire and daily HR measures—one at rest in the morning, and one peak measure after standing. The intervention was applied post-baseline period and measures were repeated. Repeated measures ANOVA will be conducted on symptoms scoring and heart rate changes.

Poster G14 – Gabrielle Oborny

Mentor: Kazuma Akehi

Title: Identifying Deficits in Joint Mechanics for Return-to-Play Decisions after ACLR

Surgery in High School and College athletes.

Context: The importance of thigh muscle strength and lower limb joint ROM after anterior cruciate ligament reconstruction (ACLR) surgery on competitive collegiate athletes has been analyzed to determine their return-to-play readiness. However, it is still limited to examining joint mechanical deficits in this population during dynamic athletic motions which can lead to reinjury. Thus, the purpose of the study was to analyze the mechanical deficits, and the duration of any limitations experienced in high school and college-aged competitive athletes who have undergone ACLR surgery and rehabilitation. Methods: Nineteen subjects (age=20.42±4.20 years, height=176.58±12.42 cm, weight=81.16±19.31 kg) who have undergone ACLR surgery and were 4-12 months post ACL reconstruction surgery completed the study. Joint kinetics data such as ankle, knee, hip, and trunk ROM (°), dynamic knee valgus angle (°), knee torsion angle (°), weight distribution (%), peak torque production (N) at each joint, ground reaction force (N), jump height (in.), flight time (s), rate of force development (RFD; N/s) at the time of the jump, peak power (W) and net impulse (Ns) at takeoff were analyzed during their double- (DVJ) and single-leg vertical jump (SVJ) using a markerless three-dimensional analysis system during their ACLR rehabilitation (6-8, 8-10, and 10-12 months). **Results:** In a DVJ, loading (*P*<0.01) and jumping hip flexion (*P*=0.01) significantly decreased at 10-12 months, jumping knee peak torque increased at 10-12 months (P<0.01), jumping ankle peak torque increased at 8-10 months (P =0.03), and landing depth increased throughout the rehabilitation (*P*=0.04). In SVJ, the injured limb of dynamic knee valgus was significantly higher than the uninjured limb (P=0.04), and the injured limb of knee torsion angle was less than the uninjured limb (P<0.01). **Discussion:** The findings of this study highlight that DVJ and SVJ may be critical exercises to identify the dynamic joint kinetics deficit (hip vs. knee dominant jumping and landing strategies) during ACLR rehabilitation, especially in the early rehabilitation phase (i.e. 6-8 months) to the later rehabilitation phase (i.e. 10-12 months). Clinical Application: This information can be applied to athletic training practice by teaching and training appropriate jumping and landing techniques.

Poster G15 – Cambrie Schroder

Mentor: Kazuma Akehi

Title: The Effect of the Menstruation Phase on Body Composition Using Bioelectrical

Impedance Analysis

Context: Hormonal fluctuations through the menstrual cycle are believed to affect the body's ability to retain water, which can significantly impact the hydration status of female athletes. Hydration plays a crucial role in mental and physical performance, mood regulation, and exercise capacity. Understanding how water retention varies across different menstrual phases can help female athletes recognize when they need to be more mindful of their fluid intake. While previous studies have explored the potential link between the menstrual cycle and extracellular water retention, no conclusive evidence has been established. **Purpose:** The purpose of the study is to determine if there is a difference in extracellular water during the three phases of the menstrual cycle. **Methods:** Females between the ages of 19 and 25 years will be recruited. They will come in during different menstrual cycle phases: menstruation, ovulation, and luteal stages, to conduct an InBody BIA scan. The InBody measures body composition, total body water, extracellular water, and intracellular water. **Clinical application:** This information will help female athletes understand proper hydration needs depending on the phase of the menstruation cycle they are in. Knowing why they may have more water retention and temporary weight gain during their cycles can help athletes adjust nutrition in diets and keep their mental health at ease during these varying phases.

Poster G16 – Ethan Twohig

Mentor: Kazuma Akehi

Title: The Effect of the Menstruation Phase on Body Composition Using Bioelectrical

Impedance Analysis

Context: High-intensity laser therapy (HILT) is one of the newest therapeutic interventions for treating musculoskeletal pain. Previous research on low-intensity laser therapy (LILT) has shown a reduction in musculoskeletal pain, as well as an inflammatory response following tissue damage and beneficial effects on tissue composition. However, studies using HILT are limited. Objective: The purpose of this study is to evaluate the effects of HILT on tissue responses to clinically induced delayed onset muscle soreness (DOMS). Pain scales, muscle architectural characteristics, and muscle strength will be analyzed to assess the effects of HILT on tissue healing responses. Study Design: Randomized factorial design. Subjects: Twenty-four males aged of 19 to 25 will be recruited. Procedure: In the first session, subjects will undergo a baseline peak torque assessment on the right quadriceps and hamstring muscles using an isokinetic dynamometer. In the next session, subjects will undergo a musculoskeletal (MSK) sonography on the right quadriceps and complete a baseline visual analog scale (VAS) to determine their pain and soreness. Following this, subjects will participate in a muscle fatigue protocol using the isokinetic dynamometer. After completing

the fatigue protocol, they will complete another VAS scale and undergo MSK sonography. Subjects will then receive either HILT or pseudo-laser treatment on the quadriceps. After the treatment, another VAS scale and MSK sonography will be conducted. HILT or pseudo-laser treatment, VAS assessment, and MSK sonography will be repeated over three days. During the final visit, subjects will complete the peak torque assessment using the same procedure as the baseline session. Clinical Application: The results of this study will enhance the clinical understanding of HILT for treating musculoskeletal injuries and the associated pain. Additionally, this research may reveal the acute tissue response to an acute bout of HILT on DOMS.

Graduate Online Posters

Fine Arts & Humanities

Communication

Poster Online - Kattie Sadd

Mentor: Tiffani Luethke

Title: Using Photovoice to Understand the Lived Experiences of Unhoused People in

Rural Maine

The purpose of this research was to understand the lived experiences of unhoused individuals and families in rural Maine. Because of the increase in the homeless population in recent years, more research has been dedicated to focusing on the homelessness crisis. However, much of the current research focuses on the causes of homelessness and how it has been increasing in major cities. There is a dearth of research from the perspective of people experiencing homelessness, as well as a lack of research about homelessness in rural parts of the United States. This research aims to work with unhoused individuals to gain their perspective, and to learn more about what it means to be homeless in a rural area through the use of photovoice, a community based participatory action research (CBPAR) methodology. Research questions asked (1) what can be done to better understand this issue from the perspective of those who are unhoused, and (2) how the negative narrative that corresponds to unhoused individuals impacts their lived experiences and the ability to solve homelessness. By better understanding the unique narratives that surround the homelessness crisis, I hope this study will display the importance of extending the research to involving unhoused individuals and working together to create better awareness and resources for people experiencing homelessness.

History

Poster Online - Katie Henry

Mentor: Will Stoutamire

Title: Forgotten West: The Lost Integrity of Josephine Meeker

Josephine Meeker (1857-1882) is known to history as "Brave Miss Meeker," the daughter of U.S. Indian Agent Nathan Meeker, who was killed in 1879 during the event simultaneously remembered as "the Ute Uprising" or "the Meeker Massacre." After her father's death, Josephine, her mother, and another agency woman were held hostage by a group of the White River band of Ute people for several weeks.

After their release, the women-especially Josephine-attracted the imagination of the entire nation. Josephine became a martyr, an object of gossip, and the story of her captivity was used by politicians and newspapermen-and even her own sister-to further the expansionist agenda of removing all Ute people from Colorado completely.

Even as the local, state, and national newspapers sensationalized her story, spread gossip and rumor, and used her experience to justify political ends-Josephine's integrity, compassion, and humanity is visible in the words printed about her. She was not overtaken by expansionist and exterminationist rhetoric and belief that surrounded her throughout her life: even as she mourned her father, Nathan Meeker, she recognized he was not an innocent victim. Her first-hand accounts of her experience reveal not only incredible intelligence and empathy, but also show how a 19th century woman could fracture the facade of Manifest Destiny, just by telling the story of her own experience.

A simple biographical investigation of her life reveals her sense of adventure and courage, but also breaks through the layers of myth and memory that shrouds the history of the Meeker Incident, and the nostalgic history of the American West.

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