

Fall Student Research & Creative Activity Symposium

October 8, 2026

Nebraskan Student Union Ponderosa Rooms



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Schedule of Events



1:00 – 2:00 pm	Open poster viewing <i>Ponderosa A & B</i>
2:00 – 4:45 pm	Oral Presentations <i>Ponderosa C & D</i>
5:00 – 6:00 pm	Banquet <i>Speaker: Dr. Bradley Stastny, Principal User Research Manager, Copilot</i>

Oral Presentation Schedule



Session 1 Room: Ponderosa C

- 2:00 **Nate Lilla** (*graduate student*): Examining Sex-Specific Differences in Dendritic Cell Responses to Peanut Following Airway Exposure (Mentor – Joseph Dolence)
- 2:15 **Nnamdi Okore** (*graduate student*): The Potential Links of a Widely Used Ultraviolet Filter Octocrylene to Dyslipidemia (Mentor – Yipeng Sui)
- 2:30 **Carter Cochran**: Eukaryotic toxicity of plasma-activated antibiotics on murine fibroblasts (Mentor – Austin Nuxoll)
- 2:45 **BREAK**
- 3:00 **Kianna Greene**: Implementation and Evaluation of a CRISPRa Platform for Endogenous Gene Activation in Hybrid Poplar (Mentor – Haiwei Lu)
- 3:15 **Morgan Holm**: Discovering birds' hidden hitchhikers, the parasites that travel North and the parasites that spend the summer in south-central Nebraska (Mentor – Letty Reichart)
- 3:30 **Harrison Kuta**: Effect of Food Insecurity on Anxiety-Like Behavior in Juvenile Mice (Mentor – Nicholas Hobbs)

3:45 **BREAK**

4:00 **Tanner Theis:** Impact of Therapy Altered Osteoblasts on Prostate Cancer (Mentor - Catherine Johnson)

4:15 **Noah Burbul:** Fluorescent Strategies for Quantitative Detection of Hydrogen Sulfide (Mentor – Haishi Cao)

4:30 **Trey Schuyler:** Troubleshooting Recombinant Fh-V Protein Expression and Purification: Identifying Insolubility as a Cause of Reduced Yield (Mentor – Frank Kovacs)

Session 2 Room: Ponderosa D

2:00 **Will Krondak:** Piezoelectric response in amorphous glucose (Mentor – Ken Trantham)

2:15 **Andrew Yemma:** Hunting for Oe Stars with WISE by Observing Photometric Fluctuations to Understand Signatures of Mass-Ejection (Mentor – Brandon Marshall)

2:30 **Gao Runde:** Alternating sum in composition (Mentor – Jia Huang)

2:45 **BREAK**

3:00 **Sylvie Luo:** Bilingual Emotion Expression: Do Bilingual Speakers Express Emotions Similarly Across Their Languages? (Mentor – Ladan Ghazi Saidi)

3:15 **Blaine Tewahade:** Caregiver Cognition and Well-being Related to Support and Self-efficacy (*Mentor* – Rachael Turner)

- 3:30 **Naela Resendiz:** Piloting Community-Based Research for Improving Multigenerational Immigrant and Refugee Health and Well-Being in Rural and Micropolitan Communities in Nebraska (Mentor – Eun Jee Song)
- 3:45 **BREAK**
- 4:00 **Narinda Ranaivo** (*graduate student*) *Sports: Funding, Fan Engagement, and Institutional Change* (Mentor – Rachel Silverman)
- 4:15 **Paxton Robertson:** Public Opinion Towards China in Central America (Mentor - Will Aviles)
- 4:30 **Gracie Boe:** A Study of Visual Language: Psychology Behind Color and Shapes (Mentor – Richard Schuessler)

Abstracts



Art and Design

Gracie Boe

Title: A Study of Visual Language: Psychology Behind Color and Shapes

Mentor: Richard Schuessler

The study explores the influences of shape and color on emotion to identify a pathway for character designers to more deeply connect with shared human experiences through visual storytelling elements. This study reports data from 37 participants using an online survey to examine associations between colors (red, yellow, orange, green, blue, purple and gradients), shapes (circle, triangle and square) and emotions (joy, sadness, anger, fear, wonder and disgust). Results indicated primary shapes tended to be associated with primary colors, and the circle had the strongest emotion association, whereas the triangle and square had a wider range of associations. Several gradients showed a higher concentration of association responses with particular emotions, while others showed a wider distribution of responses. More complex visual forms, including character and creature silhouettes and grayscale environments, showed more varied color associations, suggesting that visual context and complexity may influence these associations. Overall, the findings suggest that color, shape, and emotion are closely connected, with saturation, shape, and visual context all influencing associations. This study highlights the complexity of visual and emotional relationships and suggests that simple shapes and colors may produce more predictable associations, while more recognizable and complex forms create more varied emotional responses and associations.

Biology

Carter Cochran

Title: Eukaryotic toxicity of plasma-activated antibiotics on murine fibroblasts

Mentor: Austin Nuxoll

Antibiotic resistance is one of the most significant issues in modern healthcare. Overuse of antibiotics has led to unprecedented prevalence of antibiotic-resistant bacteria, which causes infections that are significantly more difficult to treat. The discovery of new antibiotics and improvements to current ones are essential to public health. Previous experiments have shown that plasma activation of antibiotics significantly increased their efficacy; however, eukaryotic toxicity had yet to be investigated. In this study, mouse fibroblasts were exposed to Plasma activated antibiotic solutions (PAAS) and conventional antibiotics (CAS) then cell viability was measured with the XTT assay. PAAS appeared to exhibit less toxicity than CAS in the results of initial experiments; however, further experimentation is necessary to rule out toxicity caused by other factors.

Kianna Greene

Title: Implementation and Evaluation of a CRISPRa Platform for Endogenous Gene Activation in Hybrid Poplar

Mentor: Haiwei Lu

Salicinoids are phenolic glycosides created by *Populus* and *Salix* species as secondary metabolites to aid in the plant's defense against herbivores. They not only contribute to plant fitness and survival but also have significant medicinal value. However, their relatively low natural production and structural complexity make large-scale synthesis increasingly challenging. Developing a way to enhance salicinoid natural biosynthesis could therefore provide a more sustainable and scalable approach for producing these valuable plant-derived compounds. This study aims to evaluate the efficacy of CRISPR-mediated transcriptional activation (CRISPRa) in increasing the expression of the salicinoid biosynthetic gene, UGT71L1, a UDP-glycosyltransferase. Specifically, we adapted the Act3.0 system, a previously established CRISPRa system, and designed three single-guide RNAs (sgRNAs) targeting the promoter region of UGT71L1. Because this CRISPRa system can be multiplexed to target multiple genes

simultaneously, successful activation of UGT71L1 using this system could provide a foundation for regulating multiple genes within the salicinoid biosynthetic pathway. Along with the CRISPRa construct, we created three control constructs, including an empty CRISPRa construct, a UGT71L1 overexpression (OE) construct, and an eYGFPuv construct. All constructs included the eYGFPuv marker. More than 1,000 explants from the hybrid poplar clone 717-1B4 (*Populus tremula* × *P. alba*) were co-cultured across the four constructs. Once callus became visible, we monitored eYGFPuv fluorescence and used it for visual identification of transgenic events. In total, we recovered 386 independent transgenic events, including 131 CRISPRa, 108 empty CRISPRa, 61 OE, and 86 eYGFPuv control events. RT-PCR confirmed the transgene integration in 88 events, including 46 CRISPRa, 16 empty CRISPRa, 25 OE, and 4 eYGFPuv events. qRT-PCR analysis showed substantial variation in UGT71L1 expression among individual transgenic events and different constructs. The OE construct produced the strongest activation, with 10 out of the 25 analyzed events showing at least three-fold increase in UGT71L1 expression relative to wildtype (WT) plants and the eYGFPuv events. Among the 22 CRISPRa events analyzed by qRT-PCR, seven showed approximately twofold or greater increase in UGT71L1 expression compared with the eight analyzed empty CRISPRa events. However, we also observed an overall decrease in UGT71L1 expression in empty CRISPRa events compared with WT plants, so although CRISPRa conferred gene activation, the effect was diminished compared with WT plants. These results demonstrate successful implementation of the CRISPR-Act3.0 system in hybrid poplar and evaluate its performance across a large number of transgenic events. The modest activation efficiency observed for UGT71L1, together with the reduced expression detected in the empty CRISPRa control, highlights opportunities for further optimization of the platform to achieve more robust activation of endogenous genes.

Morgan Holm

Title: Discovering birds' hidden hitchhikers, the parasites that travel North and the parasites that spend the summer in south-central Nebraska

Mentor: Letty Reichart

Many bird species are migratory, traveling long distances between their overwintering location and the breeding location every year. For every species, there are multiple

parasites that can potentially hitch a ride on a vertebrate host. We are interested in investigating ecto- and endoparasites of migratory birds that stop in south-central Nebraska on their migration northward. In addition to migrants moving through Nebraska, we investigated migratory birds that breed in south-central Nebraska throughout the summer. Currently, we are reviewing and examining microscope slides of resident and migratory birds. We will continue trapping migratory birds during Fall migration and trap breeding migratory species during the Fall. We aim to collect more blood samples to obtain a larger sample size of blood smears that will allow us to determine potential endo-parasites (e.g., Haemosporidians). Ectoparasites can easily be removed from birds and stored in ethanol for future laboratory identification and potential screening for zoonotic diseases. Blood smears are an excellent method to identify some types of endoparasites. The results from this project will help us to better understand important parasites present in migrants stopping in south-central Nebraska and migratory songbirds breeding in south-central Nebraska. This research will contribute to the growing body of literature to better understand the frequency of potential zoonoses transmitted via ectoparasites and endoparasites that affect migratory songbirds. To our knowledge, no previous study has investigated ecto- and endoparasites for migratory songbirds in this region.

Harrison Kuta**Title:** Effect of Food Insecurity on Anxiety-Like Behavior in Juvenile Mice**Mentor:** Nicholas Hobbs

Food insecurity (FI), in which individuals have insufficient access to enough food to sustain an active, healthy lifestyle, has become more common in the U.S. FI is associated with several negative health consequences, including anxiety disorders. Anxiety disorders are more prevalent in women compared to men and male mice, similarly, show a sex difference with anxiety-like behavior as measured on behavioral assays. This suggests that gonadal hormones and their receptors help to modulate anxiety as human males with lower levels of testosterone or declining testosterone exhibit a higher level of anxiety relative to men with normal androgen levels. To elucidate their effect, testicular feminization mutant (TFM) mice will be used. TFM males are mice whose androgen receptors are insensitive to androgens. However, less

is known about how FI affects anxiety-like behavior in juvenile mice, who do not exhibit high levels of gonadal steroid hormones. Therefore, we hypothesize that FI increases anxiety-like behavior of juvenile mice, and such changes in behavior are mediated by changes in hormones and their receptors. Mice were exposed to 1 of 3 experimental treatments: a chronic 10-day FI, an acute 24-hour FI, or were provided with continuous access to food. Blood samples were taken before and after these treatments to determine if such treatments affected corticosterone. Mice underwent a series of behavioral assays to measure anxiety-like behavior, including the elevated plus maze (EPM), open field (OF), and novel object (NO) tests. Brain tissue will be collected to determine if FI affects activation of neurons in brain regions known to modulate anxiety-like behavior in rodents. We expect to see a higher prevalence of anxiety-like behavior in mice in the FI treatments. Furthermore, we predict that such changes in anxiety-like behavior are driven by changes in gonadal steroid hormones.

The project described here was supported by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under Grant # 5P20GM103427.

Nate Lilla (*graduate student*)

Title: Examining Sex-Specific Differences in Dendritic Cell Responses to Peanut Following Airway Exposure

Mentor: Joseph Dolence

Peanut (PN) allergy remains a major public health concern. Females (F) are twice as likely as males (M) to develop PN allergy, but the immunological mechanism behind this difference remains unclear. When dendritic cells (DCs) become excessively activated, they can initiate immune pathways that ultimately lead to PN allergy. However, little is known about how DC responses to PN differ between M and F and how these differences drive PN allergy. We have preliminary data that shows CD11c+ DCs from F mice respond more robustly to PN than in M mice. Given the heterogeneity of DCs, a more subset-specific analysis is required to understand how sex influences DC responses to PN. In this project, we developed a 10-color multiparameter flow cytometry panel to determine what specific type of DC drives responses to PN and

how these DCs were impacted by sex differences. Lung and lung-draining LNs were harvested from mice exposed to PN via inhalation for 3 days and analyzed for DCs. Our initial data suggests that cDC2s respond to PN, express IL-1R1, and are sensitive to sex differences as they are more abundant in F mice. More work is being conducted to better elucidate how DCs react to PN and how sex differences impact these responses

Nnamdi Okore (*graduate student*)

Title: The Potential Links of a Widely Used Ultraviolet Filter Octocrylene to Dyslipidemia

Mentor: Yipeng Sui

Cardiovascular disease (CVD) remains a leading cause of mortality and morbidity worldwide. Growing evidence suggests that exposure to endocrine-disrupting chemicals (EDCs) may contribute to cardiovascular disease by disrupting lipid metabolism. Pregnane X receptor (PXR) is a xenobiotic nuclear receptor activated by a wide variety of drugs, dietary compounds, and environmental chemicals. Although PXR is primarily known for regulating xenobiotic metabolism, recent studies have demonstrated an important role for PXR in lipid homeostasis, hyperlipidemia, and atherosclerosis. Octocrylene (OCTO) (2-ethylhexyl-2-cyano-3,3-diphenylacrylate) is an organic ultraviolet (UV) filter widely used in sunscreens, cosmetics, and other personal care products and has been detected in wastewater, surface waters, aquatic organisms, and human urine. Previous studies have implicated OCTO in altered fatty acid metabolism and mitochondrial dysfunction. Our preliminary data indicated that OCTO could activate PXR; however, the underlying mechanism of how OCTO alters lipid metabolism remains unclear. In this study, we first used cell-based transfection assays in human hepatic HepG2 and intestinal LS180 cells to characterize OCTO-mediated PXR activation. OCTO activated human PXR in a concentration-dependent manner and also activated mouse PXR in both cell types. Nuclear receptor specificity assays demonstrated that OCTO acts as a PXR-specific agonist. Furthermore, OCTO inhibited the interaction between PXR and its co-repressor, providing mechanistic insight into OCTO-mediated PXR activation. Together, these findings identify PXR as a

novel molecular target of OCTO. Further studies are needed to investigate how OCTO regulates intestinal lipid uptake through PXR signaling. These findings could provide novel insights into the mechanisms by which exposure to environmental chemicals in sunscreens and other personal care products may contribute to cardiovascular disease risk in humans.

Tanner Theis

Title: Impact of Therapy Altered Osteoblasts on Prostate Cancer

Co-authors: Eri Watanabe, Kassidy Quandt, Abhi Srivastava

Mentor: Catherine Johnson

Androgen receptor (AR)-targeted therapies are a primary treatment for advanced prostate cancer, but their effectiveness is often limited by the development of therapy resistance. While resistance is commonly studied within prostate cancer cells, changes in the surrounding tumor microenvironment may also contribute to treatment failure. When prostate cancer is localized the five-year survival rate is relatively high; however, 90% of patients with advanced prostate cancer will have metastasis to bone, which greatly decreases the five-year survival rate. Androgen deprivation therapy (ADT) and androgen receptor inhibitors such as enzalutamide are commonly used to treat and slow prostate cancer by inhibiting AR signaling. The cancer cells, however, eventually develop resistance. Changes in the tumor microenvironment may contribute to the resistance. Osteoblasts also express androgen receptors and therefore AR targeted therapies can alter osteoblast function. These changes may influence the behavior of prostate cancer cells within the bone microenvironment. The purpose of this study was to investigate how AR targeted therapies alter osteoblasts and determine whether those changes influence prostate cancer cell behavior. MC3T3-E1 mouse pre-osteoblast cells and hFOB1.19 human pro-osteoblast cells were treated with AR inhibitors and osteoblast proliferation, differentiation, and mineralization were assessed. Conditioned media from drug-treated osteoblasts was then used to investigate its effect on bone metastatic prostate cancer cells. Prostate cancer cell proliferation and migration were evaluated using growth curves and scratch wound-healing assays.

Chemistry

Noah Burbul

Title: Fluorescent Strategies for Quantitative Detection of Hydrogen Sulfide

Mentor: Haishi Cao

2,4-Dinitrobenzenesulfonate (DNBS)-based fluorescent sensors are widely used for hydrogen sulfide (H_2S) detection due to their high selectivity. However, their application in aqueous media is often limited by the hydrophobic nature of DNBS, which typically requires a high proportion of organic co-solvents, such as DMSO. In water-rich environments, DNBS hydrophobicity reduces its effective reaction with H_2S , leading to decreased sensor sensitivity. In this work, a supramolecular additive was used to improve H_2S detection in aqueous media. As a result, the sensitivity of DNBS-based fluorescent sensors was significantly improved in aqueous solutions. This approach provides an effective strategy to enhance the performance of DNBS-based H_2S sensors under aqueous conditions.

Trey Schuyler

Title: Troubleshooting Recombinant Fh-V Protein Expression and Purification: Identifying Insolubility as a Cause of Reduced Yield

Mentor: Frank Kovacs

Recombinant fatty acid-binding proteins from the liver fluke *Fasciola hepatica* are of interest for studies of ligand binding and possible mechanisms associated with triclabendazole resistance. During this summer project, we sought to produce sufficient soluble Fh-V protein for subsequent characterization. Initial wild-type preparations yielded strong elution peaks during nickel–nitrilotriacetic acid (Ni-NTA) affinity chromatography. However, yields fell dramatically after we changed from growing a 4-L cultures to growing a 1-L culture directly. We evaluated column performance, bacterial stocks, cell disruption, possible loss of the His tag, and protein solubility. SDS-PAGE analysis helped reveal that a band initially interpreted as untagged target protein was instead consistent with the lysozyme added during lysis. Fractionation experiments then showed that substantial target protein was associated with the insoluble pellet rather than the cleared lysate. To reduce the rate of protein expression, we lowered the growth temperature to 30 °C and compared induction with 0 and 50 μM isopropyl β -D-1-thiogalactopyranoside (IPTG). The 50 μM condition restored the expected purification yield across multiple preparations. Applying the revised conditions to additional Fh-V variants, also substantially improved recovery. These

results illustrate the importance of expression conditions and solubility analysis when troubleshooting unexpectedly low affinity-purification yields

Communication Disorders

Sylvie Luo

Title: Bilingual Emotion Expression: Do Bilingual Speakers Express Emotions Similarly Across Their Languages?

Mentor: Ladan Ghazi Saidi

Introduction

Bilingual speakers may experience and express emotions differently across their first language (L1) and second language (L2), with L1 often carrying greater emotional significance. This study examined whether bilingual adults express six emotions similarly across their two languages and whether language preference remains evident among frequent and proficient L2 users.

Methods

A cross-sectional online survey was completed by 82 bilingual adults aged 19–45 who spoke English and at least one other language. Participants reported their language background, L2 use and proficiency, and preferred language for expressing sadness, anger, happiness, disgust, surprise, and fear. They also rated which language felt more natural and emotionally intense and whether they switched languages when expressing emotions. Descriptive statistics were used to summarize response patterns.

Results

Participants represented 18 native languages. L1 was preferred over L2 for all six emotions: sadness (77.8%), happiness (75.6%), fear (71.6%), anger (66.7%), surprise (66.7%), and disgust (63.0%). Overall, 81.7% reported that L1 felt more natural for emotional expression, 82.9% experienced stronger emotions in L1, and 81.7% believed L1 expressed emotions better. Despite this preference, 80.5% reported switching languages when expressing emotions. Participants also reported frequent L2 use and generally high self-rated L2 proficiency.

Discussion

The findings suggest a consistent L1 advantage in emotional expression, even among bilinguals with substantial L2 experience and relatively high proficiency. However,

variation across emotions indicates that this preference is not uniform. Frequent language switching further suggests that L2 remains relevant in emotional communication. Given the cross-sectional, self-report design and convenience sample, future research should examine how language experience, proficiency, cultural background, and specific emotions shape bilingual emotional expression

Mathematics and Statistics

Runde Gao

Title: Alternating sum in composition

Mentor: Jia Huang

In this paper, we study the moments of the alternating sums in compositions of a positive integer. First, we use a generating function to describe the alternating sums for all compositions. By applying a differential operator to this, we can calculate different moments. However, repeated differentiation becomes more complicated when the order of the moment gets higher. To make the calculation easier, we introduce a matrix method based on a recurrence relation. This method allows us to compute higher-order moments more efficiently, and we also use a Python program to verify the calculations. We obtain formulas for several moments of the alternating sums. At this stage, we have not found a general closed formula for moments of arbitrary order. In future work, we hope to find such a formula so that different moments can be calculated more directly and efficiently.

Physics, Astronomy, and Engineering

Will Krondak

Title: Piezoelectric response in amorphous glucose

Mentor: Kenneth Trantham

The piezoelectric properties of amorphous glucose are measured, with distinctions between the enantiomers. Using a torsional oscillator method to increase the measurability, the direct and indirect piezoresponse of both D- and L-glucose was measured and compared. The enantiomers were expected to have the same but opposite responses, due to their symmetric relationship. Results were varied, generally

following predictions but not falling within expected errors. The D-glucose samples exhibited an average of around 3.4 nrad/V for the indirect effect and an average of 0.29 C/(N*m) for the direct effect. The L-glucose sample exhibited 12.6 nrad/V and 0.473 C/(N*m).

Andrew Yemma

Title: Hunting for Oe Stars with WISE by Observing Photometric Fluctuations to Understand Signatures of Mass-Ejection

Mentor: Brandon Marshall

Emission phenomena have been well documented among B-type stars; however, the known population of Oe stars remains limited. We are analyzing the 8000+ HII regions from the WISE catalogue of HII regions, where we know high-mass stars must be. Using photometry from WISE, 2MASS, and Spitzer we are constructing spectral energy distributions and identifying candidate O-type stars within the Milky Way. NEOWISE time series photometry is used to identify emission events among O-type candidates. Using these archival data sets, we aim to substantially expand the current catalogue of Oe stars, providing a foundation for further research into the underlying mechanisms of the emission phenomenon.

Political Science

Paxton Robertson

Title: Public Opinion Towards China in Central America

Mentor: William Aviles

China-Central American relations have changed drastically in recent decades, but little is known about how this has shaped public opinion within the region. Previous public opinion studies of the region have focused on South American countries with longer-standing diplomatic and economic relations with China. However, since 2007 various Central American countries have switched diplomatic recognition from Taiwan to the People's Republic of China (PRC), signaling the beginning of a new age in China-Central American relations. This study examines what factors affect public opinion of China in Central America and what these attitudes suggest about the nature and future

of China's presence there. I utilize a qualitative most similar systems design of Costa Rica, Guatemala, and El Salvador, three countries with similar regional contexts but differing relationships with the PRC. This study analyzes Latinobarómetro public opinion data from 2009 to 2025 to evaluate how factors like historical relations with Taiwan, national economic structures, leadership ideology, and development projects shape public perceptions of China. I argue that, as diplomatic and economic relations intensify, material benefits and economic engagement, including Chinese imports and development projects, have become fundamental in shaping public opinion. Because political elites and parties in these nations have not generally adopted polarized ideological stances toward China, instead utilizing a pragmatic approach, factors like partisan alignments play a less decisive role than material considerations. This study clarifies factors shaping perceptions of China in Central America, laying the groundwork for future research on China-Central American relations.

Psychology

Blaine Tewahade

Title: Caregiver Cognition and Well-being Related to Support and Self-efficacy

Mentor: Rachael Turner

Informal caregivers provide unpaid care to family members or friends who require assistance in daily tasks. These caregivers often endure chronic exposure to stress (Pearlin et al., 1990) as they take on these caregiving demands around the clock, resulting in mental, physical, and cognitive challenges. While prior research demonstrates support services can mitigate the negative outcomes associated with caregiving (Bangerter et al., 2019; Gaugler et al., 2003; Zarit et al., 1998), many services are costly, and their availability can vary across regions. The goal of the current study was to examine how support, including both informal and formal, and self-efficacy, may relate to the well-being of caregivers. Participants completed self-report measures that examined well-being, self-efficacy, caregiving context, access and use of support, memory failures and strategies, and demographics. During the in-person session, participants completed an interview about their experience as a caregiver and a color-matching task with an embedded prospective memory task. Thematic analysis was used to analyze participants' interview responses and revealed three major themes: The Value of Informal Support, Ineffective Support Offerings, and

caregivers' health concerns. These findings highlight the challenges caregivers face for their own well-being while indicating that all support is not effective for every caregiver.

Social Work

Naela Resendiz

Title: Piloting Community-Based Research for Improving Multigenerational Immigrant and Refugee Health and Well-Being in Rural and Micropolitan Communities in Nebraska

Mentor: Eun Jee Song

Immigrant and refugee health and well-being in rural and micropolitan Nebraska are shaped by complex, interconnected social determinants of health (SDoH), including healthcare access, transportation, language interpretation, housing, and intergenerational family dynamics. Building on momentum from the UNL Grand Challenges Planning Grant and the 2025 Forced Migration and Resettlement Community Partnership Symposium, this research establishes an empirical, literature-based foundation for a community-based interventional pilot study.

During SSRP Summer 2026, a systematic literature review was conducted analyzing a total of 31 peer-reviewed studies across social work, public health, psychology, sociology, and migration studies. The literature was classified into nine key thematic areas: (1) immigrant/refugee health disparities, (2) social determinants of health, (3) healthcare access barriers, (4) rural and micropolitan contexts, (5) resettlement and integration, (6) intergenerational family dynamics, (7) Community-Based Participatory Research (CBPR) methodologies, (8) stakeholder partnerships, and (9) community health interventions. Synthesis of these 31 papers revealed significant gaps in micropolitan-specific health data and intergenerational framework applications in rural settings. Findings informed a preliminary multilevel conceptual framework bridging individual migration experiences, family dynamics, local social infrastructure, and structural policies. This foundational framework will guide subsequent site visits, listening sessions, manuscript development, and multi-year external grant proposals.

Sport Management

Narindra Ranaivo (*graduate student*)

Title: Explaining the Growth Trajectory of Women's College Sports: Funding, Fan Engagement, and Institutional Change

Mentor: Rachel Silverman

The purpose of this study is to evaluate the specific drivers of the current growth trajectory in women's collegiate athletics through a multi-theoretical framework comprising institutional theory, demand theory, and social identity theory. By analyzing variables such as media supply, broadcast distribution, spectator motives, Title IX compliance metrics, and athletic department spending pools, this study provides a holistic view of how external market dynamics and internal institutional investments impact fan engagement. Longitudinal financial, viewership, and attendance data were compiled and wrangled across publicly available archives, including NCAA Financial Dashboard, Equity in Athletics Disclosure Act (EADA) database, Sports Media Watch, Nielsen, and secondary industry reports such as the Wasserman 15% Study. Results indicate that institutions have made little progress toward Title IX compliance, maintained baseline funding levels for women's sports, and persistent disparities remain in participation opportunities, financial aid, and operational support relative to men's programs. Increases in institutional spending, such as in Division I (FBS) recruiting, occurred after the initial surge in consumer engagement and media exposure, demonstrating that universities responded to market growth rather than proactively driving it. Furthermore, women's sports marketing strategies have historically misaligned with what drives consumer engagement. This study demonstrates findings regarding how media availability and targeted social identity marketing catalyzed unprecedented growth. Ultimately, this report will assist athletic administrators in optimizing fan engagement and resource allocation, guide policymakers in justifying investments, and contribute to literature on women's sports and institutional change