

# August 3<sup>rd</sup>, 2023: Directory of Undergraduate Student Presenters

# **Posters 1-105 in Centennial Room**

# Posters 106-196 in Ballroom

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# Poster Details – Alphabetical by First Name

# **Abbegail Bowers**

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 145

Poster Title: Structural Changes and Dislocations of Rare-Earth Ferric Oxide Thin Films

Adviser: Xiaoshan Xu

# Abigail Schroeder Research Group: Other

Poster Location: 140

Poster Title: Norfolk Integrated Waste-Energy Framework

Adviser: David Gosselin

# Addyson Calfee

Research Group: UCARE Poster Location: 102

Poster Title: Peroxide-substituted Peptides as a New Class of Protease Inhibitors

Adviser: Patrick Dussault

# Aditya Prathapa

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 189

Poster Title: Mapping the Quantum Potential

Adviser: Herman Batelaan

#### Adriana Ruiz Ortiz

Research Group: Nebraska Summer Research Program

Poster Location: 59

Poster Title: Quantification of Lipids in Exophiala viscosa 03-3 WT, E. viscosa pks1, and Saccharomyces

cerevisiae for a Potential use in Biofuel Production

Adviser: Wayne Riekhof

#### Aislinn Varela

Research Group: Nebraska Summer Research Program

Poster Location: 113

Poster Title: 3D Printed Graphene-Biopolymer Aerogels for PFAS Remediation

Adviser: Nirupam Aich

# Alejandra Sanchez Sanchez

Research Group: Nebraska Summer Research Program

Poster Location: 138

Poster Title: Environmental Engineering: A Students' Use of Monitoring: A Comparison of Start and End-of-

Semester

Adviser: Grace Panther, Heidi Diefes-Dux

#### Alison Klein

Research Group: National Nanotechnology Coordinated Infrastructure Research Experience for Teachers

Poster Location: 193

Poster Title: Lanthanide Adatoms on Graphene: Promising Spin Qubit Materials

Adviser: Aleksander Wysocki

#### Allison Conzemius

Research Group: UCARE Poster Location: 103

Poster Title: Developing a set of geophysical maps to track the Yellowstone hotspot

Adviser: Irina Filina

#### Amara Reichert

Research Group: Nebraska Summer Research Program

Poster Location: 99

Poster Title: High-Throughput Analysis of Soybean Photosynthetic Capacity via Leaf Hyperspectral Data and

Machine Learning Adviser: Yufeng Ge

## **Amaya Street**

Research Group: Nebraska Summer Research Program

Poster Location: 73

Poster Title: A General Trend of Emission Stokes Shift in Lead-Halide Perovskites

Adviser: Yinsheng Guo

#### Amelia Schwensen

Research Group: UCARE Poster Location: 19

Poster Title: Vagrancy Vaugness? Habeas challenges to vagrancy policing in Douglas County, 1890-1925

Adviser: Katrina Jagodinsky

#### **Andrew Pick**

Research Group: Nebraska Summer Research Program

Poster Location: 57

Poster Title: Analysis of Photosynthetic Lipid Transport using Split-TurboID

Adviser: Rebecca Roston

#### Angela Gil

Research Group: Nebraska Summer Research Program

Poster Location: 115

Poster Title: Effects of Temperature on Metal Recovery from Spent Lithium-Ion Battery using the Microbiome in

Corn Silage Adviser: Xu Li

# Archita Raj

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Title: Effect of 3 Color Choice on Visual Discrimination in Zebrafish

Adviser: Ryan Wong

# Asher Ralphs

Research Group: Nebraska Summer Research Program

Poster Location: 61

Poster Title: Using an In-house Enzyme to Set Both Stereocenters for the Taxotere Family of Anti-Cancer Drugs

Adviser: David Berkowitz

# Ashlyn Westerfield

Research Group: Nebraska Summer Research Program

Poster Location: 86

Poster Title: Synthesis of Covalent Allosteric Peptide Inhibitors

Adviser: James W. Checco

#### Assiatou Bah

Research Group: Nebraska Summer Research Program

Poster Location: 158

Poster Title: An exploration of student's understanding of ultraviolet-visible spectroscopy

Adviser: Alena Moon

# Avery Campbell

Research Group: Nebraska Summer Research Program

Poster Location: 64

Poster Title: Streptavidin Silica Microcolumns for Analyzing Biopharmaceuticals

Adviser: David S Hage

#### Bakir Al-Ameri

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 143

Poster Title: Power Generation via Thermionic Electron Emission

Adviser: Mohammad Ghashami

#### Ben Aaron

Research Group: Nebraska Summer Research Program

Poster Location: 107

Poster Title: Analyzing Equity in EV Charging Station Access for Rural Areas

Adviser: Jason Hawkins

#### Benjamin Adams

Research Group: Nebraska Summer Research Program

Poster Location: 121

Poster Title: Artificial GPS in Indoor Testing of Unmanned Aircraft Systems

Adviser: Justin Bradley

#### **Benjamin Hammons**

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 181

Poster Title: Cryogenic Nitrogen Vacancy Widefield Microscopy

Adviser: Abdelghani Laraoui

#### Bernadette Traina

Research Group: Nebraska Summer Research Program

Poster Location: 83

Poster Title: Combinatorial Genetic Strategies for Enhanced Astaxanthin Production in Camelina

Adviser: Edgar B. Cahoon

#### Bhoomi Modi

Research Group: UCARE Poster Location: 41

Poster Title: Investigation of natural variation in Non-photochemical quenching in Soybean

Adviser: Katarzyna Glowacka

#### Blake Johnson

Research Group: UCARE Poster Location: 171

Poster Title: Controlled, Precise Tightening of Bolts to Enable the Systematic Measurement of Surface Strains

Adviser: Keegan Moore

#### Braden Olson

Research Group: Nebraska Summer Research Program

Poster Location: 112

Poster Title: Utilization of Polypropylene to Enhance Mechanical Performance of High-RAP Asphalt Mixtures

with Soybean Oil

Adviser: Jamilla Teixeira

# **Bradley Dice**

Research Group: Nebraska Summer Research Program

Poster Location: 66

Poster Title: Synthesis of Cr2TiC2Tx MXene for Hydrogen Evolution Reaction

Adviser: Alexander Sinitskii

#### **Brandon Groves**

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 179

Poster Title: Investigation of Perpendicular Magnetic Anisotropy with CoFeB Ferromagnetic Thin Films

Adviser: Shireen Adenwalla

#### **Brooke James**

Research Group: UCARE Poster Location: 167

Poster Title: Electronic Nose Adviser: Eric Markvicka

# Brooklynn Blackwell

Research Group: Nebraska Summer Research Program

Poster Location: 108

Poster Title: Casual Drivers of Flood-Induced Water Quality Issues in Nebraska

Adviser: Tirthankar Roy

# **Bryce Herrington**

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 155

Poster Title: Electronic transport properties of Fe(qsal)<sub>2</sub>-TCNQ molecular magnets

Adviser: Robert Streubel

# **Caden Connealy**

Research Group: UCARE Poster Location: 34

Poster Title: Reduced glycine-GGA OTS codon usage in West Nile Virus confers greater resistance to

mutagenesis

Adviser: Nicole Sexton

#### Caden Pak

Research Group: Nebraska Summer Research Program

Poster Location: 118

Poster Title: Wearable Ultrasound Patch: Mass-Spring Matching Layer

Adviser: Eric Markvicka

#### Caidan Moore

Research Group: Nebraska Summer Research Program

Poster Location: 165

Poster Title: Data Analysis Methods For Gas Phase Ultrafast Electron Diffraction

Adviser: Martin Centurion

#### Callan Schroder

Research Group: UCARE Poster Location: 90

Poster Title: To Determine the Biological Interactions of Stabilin-Ligand Binding Complexes

Adviser: Edward Harris

#### **Carlos Bucio**

Research Group: Nebraska Summer Research Program

Poster Location: 51

Poster Title: Innovations in Sorghum Bioenergy: Unlocking Unconventional Fatty Acids for Aviation

Adviser: Ed Cahoon, Kiyoul Park

# Carsyn Loncke

Research Group: UCARE Poster Location: 5

Poster Title: How Lincoln Became a Well Known Refugee City

Adviser: Emira Ibrahimpasic

# Cassandra Voigt

Research Group: UCARE Poster Location: 105

Poster Title: Analysis of Artificial Blood, Gunshot Residue, and Fiber Transfer in a Simulated Mass Shooting

Scenario

Adviser: Charles Murrieta

#### Chanasei Ziemann

Research Group: UCARE Poster Location: 50

Poster Title: A Comparative Transcriptome Analysis in Mice Susceptible to Zika Virus-Mediated Paralysis

Adviser: Luwen Zhang

# Chelsea Hanway

Research Group: UCARE

Poster Location: 8

Poster Title: Wakara Remains

Adviser: Max Mueller

# Chinmoy Dev

Research Group: Nebraska Summer Research Program

Poster Location: 109

Poster Title: Innovative Tornado Wind Characterization via Remotely Sensed Tree Damage

Adviser: Richard L. Wood

#### Chloe Yoder

Research Group: Nebraska Summer Research Program

Poster Location: 114

Poster Title: Evaluating Nebraska's Technical Capacity to Treat PFAS in Drinking Water

Adviser: Kaycie Lane

#### Christina Manna

Research Group: Nebraska Summer Research Program

Poster Location: 46

Poster Title: Micromanaging Midges: Utilization of Stem Removal in the Soybean Gall Midge Colony

Adviser: Justin McMechan

#### Christina Xu

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 190

Poster Title: Evaluating Large Language Models in Solving Math Word Problems

Adviser: Hamid Bagheri, Lisong Xu

# **Christine Humphrey**

Research Group: Nebraska Summer Research Program

Poster Location: 117

Poster Title: Investigating the Uptake of Outer Membrane Vesicles by Human Commensal Bacteria in the Gut

Adviser: Angela Pannier

# Cirilo Mejia

Research Group: Nebraska Summer Research Program

Poster Location: 116

Poster Title: Unraveling the Interplay between Microstructure and Mechanical Properties in Wire Arc Additively

Manufactured ER70S-6 Adviser: Jeffrey Shield

#### Cole Hammett

Research Group: Nebraska Summer Research Program

Poster Location: 98

Poster Title: The Effect of Drought Conditions on the Development of Solid-Stemmed Wheat

Adviser: Katherine Frels

#### Cole-Thomas Johnson

Research Group: Nebraska Summer Research Program

Poster Location: 124

Poster Title: Impact of Lighting Conditions on Object Tracking With Unmanned Surface Vehicles

Adviser: Justin Bradley

#### Connor Rudewick

Research Group: Nebraska Summer Research Program

Poster Location: 130

Poster Title: Comparative Study Between Rotary Auger and Hole Saw Soil Samplers

Adviser: Justin Bradley

#### Cooper Valentine

Research Group: Nebraska Summer Research Program

Poster Location: 85

Poster Title: Designing a Synthetic Signaling Pathway Using Hydrogels

Adviser: Stephen Morin

#### Cornell Daro

Research Group: Nebraska Summer Research Program

Poster Location: 60

Poster Title: Insights into Mechanical Properties of Pectin-hemp Biocomposites

Adviser: Barry Cheung

#### Courtney Guilbeaux

Research Group: Nebraska Summer Research Program

Poster Title: Characterization of E. coli Mutant D439A

Adviser: Donald Becker

# **Daniel Denehy**

Research Group: Nebraska Summer Research Program

Poster Location: 122

Poster Title: Who Put Their Soil Sampler On My Drone?

Adviser: Justin Bradley

# Daysanit Rivera-Garcia

Research Group: Nebraska Summer Research Program

Poster Location: 56

Poster Title: Exploring the Role of Antioxidant Nanoparticles as a Potential Therapeutic Agent in the Battle

Against Oxidative Stress and Astrocytic Damage in Traumatic Brain Injury

Adviser: Forrest Kievit

# **Dayton Gatewood**

Research Group: Nebraska Summer Research Program

Poster Location: 52

Poster Title: Multi-Species Comparison of Mitochondrial Function in Green and Etiolated Plants

Adviser: Jeff Mower

#### Elaine Yu

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 188

Poster Title: Micromagnetic Monte Carlo Simulations of Disordered Materials

Adviser: Robert Streubel

#### Elana Arazi

Research Group: Nebraska Summer Research Program

Poster Location: 96

Poster Title: Expanding Lincoln Public School Gardens: To Grow a Better Tomorrow

Adviser: Terri Kim and Kim Todd

#### Elizeh Tarkian

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientist High School

Interns

Poster Location: 187

Poster Title: Isolation and Characterization of Photosynthetic Pigments

Adviser: Rebecca Roston

# Ella Wiggenhorn

Research Group: Nebraska Summer Research Program

Poster Location: 94

Poster Title: Epigraph Design of Human Influenza A Virus Neuraminidase Subtype 2 Vaccine

Adviser: Eric Weaver

# Ellen Daugherty

Research Group: Nebraska Summer Research Program

Poster Location: 146

Poster Title: Effects of Annealing on Ferroelectric DC-MBI Films

Adviser: Xiaoshan Xu

#### Ellis Chen

Research Group: Nebraska Summer Research Program

Poster Location: 12

Poster Title: Habeas Corpus & Narcotics in Washington & Nebraska, 1882-1916

Adviser: Katrina Jagodinsky

## **Emilia Frey**

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 178

Poster Title: Thin Film Deposition Using Nd:YAG Laser

Adviser: Xiaoshan Xu

# **Emily Hogg**

Research Group: UCARE Poster Location: 38

Poster Title: How Human Cytomegalovirus UL6 Interacts with the Cellular Genes QSOX1 and F2 to Control

Proliferation and Disease Adviser: Lindsey B. Crawford

#### Emma Cook

Research Group: Nebraska Summer Research Program

Poster Location: 65

Poster Title: Effects of Small Signaling Molecules on Lysobacter enzymogenes

Adviser: Liangcheng Du

#### Emma Kurtz

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 140

Poster Title: Norfolk Integrated Waste-Energy Framework

Adviser: David Gosselin

#### **Enrique Stolz**

Research Group: Nebraska Summer Research Program

Poster Location: 148

Poster Title: Application of Nitrogen vacancy centers in Spin wave imaging

Adviser: Abdelghani Laraoui

#### Esme Krohn

Research Group: Nebraska Summer Research Program

Poster Location: 16

Poster Title: "The Best Interests of the Child:" Parental Claims in Nebraska Child Custody Cases, 1877-1924

Adviser: Katrina Jagodinsky

#### **Ethan Clinchard**

Research Group: UCARE

Poster Location: 7

Poster Title: The Life and Legacy of Roy Long

Adviser: Beth Dotan

#### Ethan Van Winkle

Research Group: National Nanotechnology Coordinated Infrastructure Research Experience for Teachers

Poster Location: 192

Poster Title: Constructing an Economical Temperature Regulated UV-Vis Setup for Measuring the Antioxidant

Activities of Chemicals Adviser: Chin Li Cheung

#### Evan Bourke

Research Group: Nebraska Summer Research Program

Poster Location: 159

Poster Title: Developing Augmented Reality Demos for Use in Physics Education

Adviser: Kees Uiterwaal

# **Evelyn Reyes**

Research Group: Nebraska Summer Research Program

Poster Location: 106

Poster Title: Microplastics And Antibiotics: Exploring Their Distribution and Impact In Surface Water

Adviser: Shannon Bartelt-Hunt

#### Franccesca Mamani

Research Group: Nebraska Summer Research Program

Poster Location: 26

Poster Title: Perceptions of Economic Hardship and Aspirations for Higher Education of Rural Latino

Adolescents

Adviser: Lorey Wheeler

#### **Gabriel Pantusa**

Research Group: Nebraska Summer Research Program

Poster Location: 87

Poster Title: Annotation of Adipocyte Lipid Factors

Adviser: Robert Powers

#### Gabriella Rizzo

Research Group: Nebraska Summer Research Program

Poster Location: 58

Poster Title: Methanogenesis from calcium carbonate in the presence of Martian regolith simulant and

characterization of Methanobacterium sp. ACI

Adviser: Karrie Weber

# Gabrielle Hope

Research Group: Nebraska Summer Research Program

Poster Location: 11

Poster Title: Habeas Corpus In Nebraska: A Statutory Review

Adviser: Katrina Jagodinsky

# Gonzalo Ortiz

Research Group: Nebraska Summer Research Program

Poster Location: 151

Poster Title: Pinning and Depinning of Magnetic Domain Walls

Adviser: Shireen Adenwalla

# Grace Kevin-Aligah

Research Group: Nebraska Summer Research Program

Poster Location: 15

Poster Title: Taking Refuge From Habeas in the Early 20th Century: Women's Efforts to Remain in the Omaha

Salvation Army Rescue Home Adviser: Katrina Jagodinsky

#### **Graciela Couret Morales**

Research Group: Nebraska Summer Research Program

Poster Location: 74

Poster Title: Investigating Potential Probiotics for Ability to Inhibit Clostridioides difficile Infection

Adviser: Dr. Jennifer Auchtung

#### Gwenyth Coleman

Research Group: Nebraska Summer Research Program

Poster Location: 33

Poster Title: Sugar and Plant Tissue Analysis of Pollinator Garden-Collected Mosquitoes

Adviser: Troy Anderson and Leslie Rault

#### Hannah Allen

Research Group: Nebraska Summer Research Program

Poster Location: 95

Poster Title: Cattle Upland Grazing Preferences in a Patch-Burn Grazing System

Adviser: Daniel Uden

# Hannah Nguyen

Research Group: UCARE Poster Location: 48

Poster Title: Effects of Point Mutations of Aspartate in the 91st position on the Enzyme Activity of Yeast

Mitochondrial MDH Adviser: Jing Zhang

# Hannah Tang

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 186

Poster Title: Visualizing and processing pancreatic cancer images

Adviser: Hongfeng Yu

# **Henry Jones**

Research Group: Nebraska Summer Research Program

Poster Location: 163

Poster Title: Simulating Ray Optics in Augmented Reality

Adviser: Herman Batelaan

## Henry Michaelson

Research Group: Nebraska Summer Research Program

Poster Location: 127

Poster Title: Link Budget Design for UAV Networks in 5G and Beyond

Adviser: Shuai Nie

#### Hermione Lofton

Research Group: Geophysics Lab

Poster Location: 196

Poster Title: Developing a Scientific Database of the North Atlantic

Adviser: Irina Filina

#### **India Watson**

Research Group: Nebraska Summer Research Program

Poster Location: 30

Poster Title: Screening For Resistance in Sorghum Against Sugarcane Aphid Feeding

Adviser: Joe Louis

# Isabella Phillips

Research Group: Nebraska Summer Research Program

Poster Location: 119

Poster Title: Methodology in Novel Object Recognition: Object and Arena Validation

Adviser: Forrest Kievit

#### Isabelle Childs

Research Group: Nebraska Summer Research Program

Poster Location: 13

Poster Title: Habeas at Home and Heart: Progressive Era Cases of Spousal Confinement to Nebraska's

**Psychiatric Hospitals** 

Adviser: Katrina Jagodinsky

# Isabelle Juhler

Research Group: Nebraska Summer Research Program

Poster Title: Impacts of Host Environment on West Nile Virus Replication

Adviser: Nicole R. Sexton

# Ivana Lopez

Research Group: Nebraska Summer Research Program

Poster Location: 111

Poster Title: Resilience of Agricultural Infrastructure to Windstorms: Center Pivot Irrigators

Adviser: Christine E. Wittich

#### Jacob Larsen

Research Group: UCARE Poster Location: 195

Poster Title: Paper-based Platform for Enhanced Quantification of Extracellular Nitric Oxide Concentration

Using Single-walled Carbon Nanotube Sensors

Adviser: Nicole Iverson

# Jacquez Daniels

Research Group: Nebraska Summer Research Program

Poster Location: 44

Poster Title: Potential of Black Soldier Fly Larvae as a Biocontrol Agent for Stable Fly Larvae

Adviser: Gary Brewer

#### Jada Iwuoha

Research Group: Nebraska Summer Research Program

Poster Location: 110

Poster Title: Electric Vehicles Crashworthiness and Analysis of Collision Trends.

Adviser: Mojdeh Asadollahi Pajouh

#### Jarod Harris

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 142

Poster Title: Effect of Polymer Molecular Weight on CO2 Sorption Capacity in Supported Ionic Liquid

Membranes

Adviser: Mona Bavarian

#### Jay Schneider

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 172

Poster Title: Trends in Extreme Heat Events Across Nebraska from 1981-2022

Adviser: Liang Chen

#### Jayden Schriner

Research Group: Nebraska Summer Research Program

Poster Location: 71

Poster Title: Optimization of Falling-Film Plasma Reactors for the Degradation of Organic Dyes

Adviser: Chin Li Cheung

Jennie Nguyen

Research Group: UCARE Poster Location: 43

Poster Title: Stability and solubility of RBM7 protein in vitro

Adviser: Catherine Eichhorn

Jenny Olander

Research Group: UCARE Poster Location: 169

Poster Title: Adaptive Optical Alignment System for In Situ & 3D Printing of Optical Waveplates for Terahertz

Adviser: Eva Schubert

Jess McThomas

Research Group: Nebraska Summer Research Program

Poster Location: 88

Poster Title: Understanding the Functional and Structural Mechanisms of WhiB1 in M. Tuberculosis

Adviser: Limei Zhang

Jessica Momanyi

Research Group: Nebraska Summer Research Program

Poster Location: 139

Poster Title: A Response to Crisis: Instructor Facilitation of Learning Communities as seen in Syllabi

Adviser: Grace Panther, Heidi Diefes-Dux

Joe Staab

Research Group: Nebraska Summer Research Program

Poster Location: 90

Poster Title: To Determine the Biological Interactions of Stabilin-Ligand Binding Complexes

Adviser: Edward Harris

Joiner Pfister

Research Group: UCARE Poster Location: 152

Poster Title: Synthetic biology toolkit for Paraburkholderia sacchari to enhance native bioplastic production

Adviser: Rajib Saha

Jonah Reynolds

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 189

Poster Title: Plotting the De Broglie-Bohm Theory

Adviser: Herman Batelaan

Jonathan Wear

Research Group: Geophysics Lab

Poster Title: Analyzing the crustal nature of the Norwegian margin from regional magnetic anomalies

Adviser: Irina Filina

Joseph Tighi

Research Group: UCARE Poster Location: 153

Poster Title: Effects of Polypropylene Waste Plastic on the Mechanical Performance of Asphalt Concrete

Adviser: Jamilla Teixeira

Josephine Ivy

Research Group: UCARE Poster Location: 3

Poster Title: Expanding Access to Outdoor Education Opportunities for Marginalized Communities in Central

Nebraska

Adviser: Jenny Keshwani

Joy Duan

Research Group: Nebraska Summer Research Program

Poster Location: 77

Poster Title: Effects of sorghum fiber on disease severity in a T cell-driven mouse model of inflammatory bowel

disease

Adviser: Amanda Ramer-Tait

Julia Dominguez

Research Group: Nebraska Summer Research Program

Poster Location: 22

Poster Title: Navigating within Change: Polyvictimization and Adaptive Social Networks as a Buffer to COVID-19

as Trauma

Adviser: Arthur R Andrews III

Julia Steffensmeier

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 185

Poster Title: Molecular Orientation and Water Uptake of Fuel Cell Ionomers

Adviser: Shudipto Dishari

Julian Auchtung

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 176

Poster Title: DLP Optimization of Porous Zirconia for Artificial Bone Fabrication

Adviser: Bai Cui

**Justin Severson** 

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 174

Poster Title: Methods and Results of Actual Temperature Trends Across Nebraska

Adviser: Liang Chen

#### Kassandra Ramos

Research Group: Nebraska Summer Research Program

Poster Location: 92

Poster Title: Co-infection of herpes viruses with human papillomavirus among HIV-positive women in Tanzania

Adviser: Peter C. Angeletti

# Keegan Nitsch

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 156

Poster Title: A Study on Electrocatalytic Nanoelectrode Using Local Electrochemistry

Adviser: Ravi F. Saraf

#### Khaleb Pafford

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 157

Poster Title: Nationwide Trends of Battery Electric Vehicle Crashes

Adviser: Cody Stolle

# Kian Dannelly

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 173

Poster Title: Review About 3D Printing Methods

Adviser: Eva Schubert

#### Kota Aono

Research Group: Nebraska Summer Research Program

Poster Location: 54

Poster Title: Reconstructed skin dermal layers using 3D biofabrication for skin regeneration

Adviser: Ruiguo Yang

#### Kwesi Kumi

Research Group: Nebraska Summer Research Program

Poster Location: 79

Poster Title: Dissecting function of the gene model Gm20P that governs the soybean QTL cqSeed protein-003

Adviser: Tom Clemente

#### Kyle Lockwood

Research Group: Nebraska Summer Research Program

Poster Location: 70

Poster Title: High Pressure Manipulation of Molecular Interactions in Ferroelectric Polymers

Adviser: Yinsheng Guo

# Kylie Nguyen

Research Group: UCARE Poster Location: 48

Poster Title: Effects of Point Mutations of Aspartate in the 91st Position on the Enzyme Activity of Yeast

Mitochondrial MDH. Adviser: Jing Zhang

# Kyra Martindale

Research Group: Nebraska Summer Research Program

Poster Location: 55

Poster Title: Additive Manufacturing of Functional Emulsions to Spatially Control Mechanical Properties

Adviser: Eric Markvicka

#### Laura Kirshenbaum

Research Group: UCARE Poster Location: 40

Poster Title: Developing a Method to Increase the Dynamic Range of Gene Expression in Methanogens

Adviser: Nicole Buan

#### Laurene Lee

Research Group: UCARE Poster Location: 4

Poster Title: Causes of Provocation: An Electoral Analysis

Adviser: Robert Schub

# Lily Scholnik

Research Group: Nebraska Summer Research Program

Poster Location: 132

Poster Title: Variable Geometry Laparoscopic Instrument

Adviser: Carl Nelson

#### Lincoln Graham

Research Group: UCARE Poster Location: 6

Poster Title: The Depths of the Digital Archives

Adviser: Robert Twomey

#### Linda Acho

Research Group: UCARE Poster Location: 9

Poster Title: Investigating the Correlation Between: Oral and Cervical Cancers Coursed by Human Papilloma

Virus (HPV) and the Role Of HIV/AIDs in Such Cases in Sub-Saharan Africa.

Adviser: Peter Angeletti

#### Linh Hua

Research Group: UCARE Poster Location: 39

Poster Title: Determine the residues of SRSF2 involved in 7SK RNA binding

Adviser: Catherine Eichhorn

Logan Hake

Research Group: UCARE Poster Location: 36

Poster Title: Titers of PRRSV at Different Time Intervals

Adviser: Hiep Vu

**Lola Kouretas** 

Research Group: Nebraska Summer Research Program

Poster Location: 69

Poster Title: Synthesis of unnatural amino acids containing aryl diazonium groups

Adviser: James Checco

**Lucas Kramer** 

Research Group: Nebraska Summer Research Program

Poster Location: 78

Poster Title: Impact of Genetic Mutation on Sweet Corn Crop Components

Adviser: David Holding

**Luis Flores** 

Research Group: Nebraska Summer Research Program

Poster Location: 67

Poster Title: Aptamers Against Neuropeptide-Y for a Mouse Brain Neurochemical Sensor

Adviser: Luis Flores

Luyang Zhang

Research Group: Nebraska Summer Research Program

Poster Location: 100

Poster Title: A Quantitative Genetic Analysis of Sorghum Responses to High and Low Soil Nitrogen Application

Adviser: James Schnable

Lynnette Frey

Research Group: National Nanotechnology Coordinated Infrastructure Research Experience for Teachers

Poster Location: 191

Poster Title: Active Mixing for Dual Extrusion Ink Writing

Adviser: Eric Markvicka

Maalini Krishna

Research Group: Nebraska Summer Research Program

Poster Location: 164

Poster Title: Observation of Linear and Circular Dichroism in Ellipsometric Studies of Chiral Metallic

Nanostructures

Adviser: Timothy Gay

# Madelyn Milharcic

Research Group: Nebraska Summer Research Program

Poster Location: 136

Poster Title: Complexion of the Complex: Engineering Course Environment Complexity Trends

Adviser: Grace Panther

#### Maeve Allen

Research Group: Nebraska Summer Research Program

Poster Location: 20

Poster Title: The Influence of Program Facilitators on the Personal and Queer Identity Development of Youth

Adviser: Katie Edwards

# Magaly Del Rello

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 175

Poster Title: Two-Dimensional (2D) MoS2 Field Effect Transistor

Adviser: Xia Hong

# Magdalene Peklo

Research Group: UCARE Poster Location: 170

Poster Title: Investigating geometric and material properties of Arabidopsis thaliana guard cells

Adviser: Joseph A. Turner

#### Maria Alvarado

Research Group: Nebraska Summer Research Program

Poster Location: 62

Poster Title: Remediation of Polystyrene Nanoplastics in Aqueous Solutions Using Plasma-Activated Water

Adviser: Chin Li Cheung

#### Marie Shaffer

Research Group: Nebraska Summer Research Program

Poster Location: 84

Poster Title: Arabinoxylan Concentrations of Wheat with High Water Absorptioni

Adviser: Devin Rose, Katherine Frels

#### Mason Chandler

Research Group: Nebraska Summer Research Program

Poster Location: 32

Poster Title: Evaluation of Artificial Diets for Monarch Caterpillar Development

Adviser: Ana Velez

#### Matthew Cvach

Research Group: Nebraska Summer Research Program

Poster Location: 135

Poster Title: Learning Management Systems (LMS) Feature Use in Core 2nd and 3rd Year Civil Engineering

Courses

Adviser: Grace Panther, Heidi Diefes-Dux

#### Mauricio Velasco

Research Group: Nebraska Summer Research Program

Poster Location: 149

Poster Title: Analyzing Nanoparticle Properties on Hematite and Magnetite

Adviser: Abdelghani Laraoui

# Maxwyll McConnell

Research Group: UCARE Poster Location: 168

Poster Title: Graphene-Reinforced 316L Stainless Steel Prepared via Selective Laser Melting Additive

Manufacturing
Adviser: Wen Qian

# Megan Santamore

Research Group: Nebraska Summer Research Program

Poster Location: 131

Poster Title: Development of a Tungsten and Liquid Metal Based Matching Layer for Improved Signal

Transmission within Wearable Transcranial Doppler Ultrasound Device

Adviser: Eric Markvicka

#### Melina Kostal

Research Group: UCARE Poster Location: 1

Poster Title: Travel Study as a Vehicle of Teacher Preparation: A Design Research-Oriented Self Study

Adviser: Ted Hamann

#### Michael Wu

Research Group: Nebraska Summer Research Program

Poster Location: 137

Poster Title: Chart the course: Identifying the presence of technical and professional skills in engineering syllabi

over time

Adviser: Grace Panther, Heidi Diefes-Dux

#### Mohamed Radalla

Research Group: Nebraska Summer Research Program

Poster Location: 129

Poster Title: DroneQuest: A Human-Drone Interaction Game for STEM Outreach

Adviser: Justin Bradley

#### **Monae Davis**

Research Group: Nebraska Summer Research Program

Poster Location: 76

Poster Title: Effect of Microbiota Accessible Carbohydrates Concentration on the Metabolism of the Gut

Microbiota from Different Fecal Donors

Adviser: Jennifer Auchtung

#### **Monica Calkins**

Research Group: Nebraska Summer Research Program

Poster Location: 63

Poster Title: Synthesis of Nitroxide Amino Acid Spin-Label

Adviser: Andrzej Rajca

# Morgan Madsen

Research Group: UCARE Poster Location: 196

Poster Title: Summarizing Seismic Survey Results Over the Norwegian Margin

Adviser: Irina Filina

## Morgan McCaskill

Research Group: Nebraska Summer Research Program

Poster Location: 126

Poster Title: Implementing Tracking Abilities for Sensor Retrieval in USVs Using Computer Vision

Adviser: Justin Bradley

# Myles Sam

Research Group: Nebraska Summer Research Program

Poster Location: 82

Poster Title: Effect of tannins on the ability of Faecalibacterium prausnitzii to colonize mice harboring a human

gut microbiome

Adviser: Amanda Ramer-Tait

#### Natalie Kotlin

Research Group: Nebraska Summer Research Program

Poster Location: 68

Poster Title: Determining Pharmaceutical Waste in the Environment

Adviser: David S. Hage

# Nicholas Wayman

Research Group: UCARE Poster Location: 120

Poster Title: Catalysts for O2 Reduction on Gas-Diffusion Layer

Adviser: Siamak Nejati

#### Nikole Salas

Research Group: Nebraska Summer Research Program

Poster Location: 81

Poster Title: Utilizing Camelina Seed Mucilage Based Bioaerogels as a Novel Thickening Agent in 3-D Food

Printing

Adviser: Ozan Ciftci

# Nina Raghavan

Research Group: Nebraska Summer Research Program

Poster Location: 147

Poster Title: Fabrication and characterisation of nonvolatile ferroelectric field effect transistors with free

standing Pb(Zr,Ti)O3 top gated ReS2

Adviser: Xia Hong

#### Nolan Pettit

Research Group: Nebraska Summer Research Program

Poster Location: 128

Poster Title: Interference Modeling and Mitigation Strategies for UAV Communications in 5G Networks

Adviser: Shuai Nie

# Ojusvi Gudi

Research Group: Nebraska Summer Research Program

Poster Location: 123

Poster Title: Pymavswarm: Enabling Efficient Swarm Control

Adviser: Justin Bradley

# Paean Luby

Research Group: Nebraska Summer Research Program

Poster Location: 125

Poster Title: Comparing Object Detection Algorithms for Energy-Constrained Human-Following Robots

Adviser: Justin Bradley, Brittany Duncan, Dung Hoang Tran

#### Patricia Parish

Research Group: UCARE

Poster Location: 2

Poster Title: Exploring Self-Efficacy Through Self-Study

Adviser: Kara Viesca

#### Patrick Brien

Research Group: Nebraska Summer Research Program

Poster Location: 160

Poster Title: Laser effect on Gallium Arsenide Conductivity

Adviser: Herman Batelaan

#### Patrick Gutierrez

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 180

Poster Title: Electrochemistry: Fundamentals and Applications of Catalysis

Adviser: Siamak Nejati

#### Patrick Hayden

Research Group: Nebraska Summer Research Program

Poster Title: Directional Emissivity with Angled Structures Produced via Femtosecond Laser Surface Processing

Adviser: Craig Zuhlke

# Quentin Walker

Research Group: Nebraska Summer Research Program

Poster Location: 133

Poster Title: Optimizing Transducer Placement of a Wearable Ultrasound Device for Measuring Cerebral Blood

Flow

Adviser: Greg Bashford

#### Rachamim Zamek

Research Group: UCARE Poster Location: 154

Poster Title: Impacts of Bridge Infrastructure Ownership on Flood Resilience.

Adviser: Christine Wittich

# Rachel Tuma

Research Group: Nebraska Summer Research Program

Poster Location: 28

Poster Title: Unmasking Silence: Exploring Identity and Social Perceptions in Transgender Sexual Assault

Disclosure

Adviser: Lorey Wheeler

#### Rane Parr

Research Group: Nebraska Summer Research Program

Poster Location: 97

Poster Title: Unveiling the Benefits: Long-Term Impacts Of Cover Crops On Soil Health In No-Till Corn-Soybean-

Wheat Systems

Adviser: S. Carolina Cordova

#### Reese Yeatman

Research Group: Nebraska Summer Research Program

Poster Location: 47

Poster Title: The Benefits of Black Soldier Flies: The Effects of Hermetia illucens on Soil Microbiota

Adviser: Georgina Bingham

#### Rianna Morrone

Research Group: Nebraska Summer Research Program

Poster Location: 27

Poster Title: Reporting Physical Abuse in the U.S.

Adviser: Arthur R Andrews III

#### Ryan Herman

Research Group: UCARE Poster Location: 37

Poster Title: Adaptations of Interferon Regulatory Factors 5 and 6

Adviser: Ryan Herman

# Ryan Humeniuk

Research Group: Nebraska Summer Research Program

Poster Location: 23

Poster Title: Delta 8? In My State? It's More Likely Than You Think: An Overview of Who is Using Delta 8 THC in

Nebraska

Adviser: Patrick Habecker

# Ryleigh Grove

Research Group: UCARE Poster Location: 35

Poster Title: Automatic Visual Recognition of Native Nebraskan Snakes

Adviser: James Schnable

# Ryley Hall

Research Group: Nebraska Summer Research Program

Poster Location: 45

Poster Title: Parasitic Wasps on Milkweed

Adviser: Tom Weissling

#### Saicharith Vaitla

Research Group: UCARE Poster Location: 134

Poster Title: An Empirical Study on How Developers Detect Defects in UML Class Diagrams

Adviser: Bonita Sharif

## Sam Spencer

Research Group: UCARE Poster Location: 49

Poster Title: Using Environmental DNA Techniques Towards the Conservation of an Endangered Species

Adviser: Thomas Powers

#### Sam Koebernick

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 182

Poster Title: Investigating the effects of Laser Shock Peening in the porosity of additively manufactured

polymers Adviser: Li Tan

#### Samuel Peterson

Research Group: UCARE Poster Location: 120

Poster Title: Catalysts for O2 Reduction on Gas Diffusion Layer

Adviser: Siamak Nejati

# Sandy Nguyen

Research Group: Nebraska Summer Research Program

Poster Location: 53

Poster Title: Exploring a Predicted Mitochondrial CO2 Recapture Mechanism in the Alga Chlamydomonas

Adviser: Heriberto Cerutti

## Santiago Zuniga

Research Group: Nebraska Summer Research Program

Poster Location: 18

Poster Title: Financial Crimes Revealed by Habeas Corpus in Nebraska 1885-1924

Adviser: Katrina Jagodinsky, William G. Thomas

# Sergio Ambriz

Research Group: Nebraska Summer Research Program

Poster Location: 150

Poster Title: Synthesis and Mechanical Properties of 2D Perovskites

Adviser: Yanan (Laura) Wang

#### Shawna Itakura

Research Group: Nebraska Summer Research Program

Poster Location: 24

Poster Title: How do Messages About Genital Hygiene Influence Sexual Health In College Age Women?

Adviser: Tierney Lorenz

#### Sherman Cravens

Research Group: Nebraska Summer Research Program

Poster Location: 75

Poster Title: There's More To It Than Astronaut Ice Cream!: An exploration into the process of freeze drying, necessary equipment, and the potential impact freeze drying can have on the 21st century diet and home.

Adviser: Mary Grace Danao

# Shrey Agarwal

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 190

Poster Title: Evaluating Large Language Models in Solving Math Word Problems

Adviser: Hamid Bagheri, Lisong Xu

#### Silvia Foss

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 177

Poster Title: Characterization of Aptamers for Neuropeptide Y

Adviser: Rebecca Lai

#### SJ Kim

Research Group: Nebraska Summer Research Program

Poster Title: Identifying Mischievous Responses in Online Survey of LGBTQIA2S+ Youth

Adviser: Katie Edwards

# Sofia Ayala

Research Group: Nebraska Summer Research Program

Poster Location: 31

Poster Title: Role of fall armyworm frass in modulating sorghum defenses

Adviser: Joe Louis

#### Sofia Sarroub-Le Sueur

Research Group: Nebraska Center for Materials and Nanoscience and Young Nebraska Scientists High School

Interns

Poster Location: 184

Poster Title: First Principles Investigation of Properties of Pt-water Interfaces

Adviser: Vitaly Alexandrov

#### Somi Mbaukwu

Research Group: Nebraska Summer Research Program

Poster Location: 17

Poster Title: The "Human Dog Pound:" Omaha Women's Detention Home & Habeas in the Progressive Era

Adviser: Katrina Jagodinsky

# Sophia Hayes

Research Group: Nebraska Summer Research Program

Poster Location: 14

Poster Title: "Purely Eugenic": Habeas Corpus & Resisting Sterilization in Nebraska, 1915 -1924

Adviser: Katrina Jagodinsky

## Spencer Cooper-Ohm

Research Group: Nebraska Summer Research Program

Poster Location: 21

Poster Title: Factors Associated with Gaps in Naloxone Knowledge: Evidence from a 2022 Great Plains Survey

Adviser: Patrick Habecker

#### Sukaina Al-Hamedi

Research Group: UCARE Poster Location: 10

Poster Title: Optimization of Two Peroxidase Activity Assays to Determine Pro-Inflammatory Activities of Innate

Immune Cell Populations
Adviser: Amanda Ramer-Tait

#### Tatiana Startseva

Research Group: UCARE Poster Location: 104

Poster Title: Simultaneous calibration of antenna locations and n(z) for the Radio Neutrino Observatory in

Greenland.

Adviser: Ilya Kravchenko

# **Taylor Pettit**

Research Group: Nebraska Summer Research Program

Poster Location: 166

Poster Title: Glancing Angle Deposited All Dielectric Distorted L-Shape 'Boomerang' Metamaterial Platforms: A

New Route for Molecular Sensing Adviser: Eva Franke-Schubert

#### **Thomas Butler**

Research Group: Nebraska Summer Research Program

Poster Location: 161

Poster Title: Saturation of Fluorescein in Ultrafast Laser Pulses

Adviser: Cornelis Uiterwaal

#### Tori Vondra

Research Group: Nebraska Summer Research Program

Poster Location: 93

Poster Title: Amyloid Precursor Protein Regulates c-fos Expression in Zika Virus-Mediated Paralysis

Adviser: Luwen Zhang

## **Trinity Jackson**

Research Group: Nebraska Summer Research Program

Poster Location: 101

Poster Title: Evaluation of Lettuce Productivity and Quality

Adviser: Yeyin Shi

#### Truman Stoller

Research Group: Nebraska Center for Energy Sciences Research

Poster Location: 144

Poster Title: Flow Boiling with Femtosecond Laser Processed Surfaces and Dielectric Working Fluid

Adviser: George Gogos

#### Vanessa Njoku

Research Group: Nebraska Summer Research Program

Poster Location: 80

Poster Title: Production of Enriched Vigna unguiculata (Black-eyed beans) Milk and Physiochemical Profile

Evaluation

Adviser: Devin Rose

#### ViolaMay Simwanza

Research Group: Nebraska Summer Research Program

Poster Location: 72

Poster Title: Peroxide Reactivity with an Iron(II)·Borane Complex

Adviser: Patrick H. Dussault

# Wes Sliger

Research Group: National Nanotechnology Coordinated Infrastructure Research Experience for Teachers

Poster Location: 194

Poster Title: Laser Shock Peening Effects on Additively Manufactured Polymers

Adviser: Li Tan

# Wyatt Morse

Research Group: UCARE Poster Location: 42

Poster Title: Observing a possible volatile signaling phenomenon in Chlorella Sorokiniana.

Adviser: Wayne Riekhof

# Yuhki Ueda

Research Group: Nebraska Summer Research Program

Poster Location: 29

Poster Title: The Pathway from Preschool Emotion Socialization to Adolescent Psychopathology: The Mediating

Effect of Preadolescent Emotion Regulation

Adviser: Timothy Nelson