

## 2025 DWFI Research Forum

### *Agenda*

Tuesday, April 8

Nebraska Innovation Campus Conference Center, Lincoln

First Floor Meeting Rooms

1:00 p.m.	Registration Opens. Poster Set-up. Refreshments available.
1:30 p.m.	Opening Remarks: DWFI Director of Research, Christopher M.U. Neale, Ph.D., P.E., including overview of program impacts to date
1:35 – 2:15 p.m.	Oral Presentations
2:15 – 2:30 p.m.	Poster Presentation – Flash Talks <ul style="list-style-type: none"> <li>Students give a brief introduction to their posters</li> </ul>
2:30 – 3:15 p.m.	Poster Session and Networking Break
3:15 – 3:45 p.m.	Oral Presentations
3:45 – 4:15 p.m.	Facilitated Networking Session
4:15 – 4:30 p.m.	Closing Remarks: DWFI Director of Research, Christopher M.U. Neale, Ph.D., P.E.

### **1:35 – 2:15 p.m. ORAL PRESENTATIONS**

***Tracking Agrochemical Contaminants in Aquatic and Terrestrial Environments Using Tadpoles and Songbirds as Sentinels*** **Shabani Muller**, Graduate Research Assistant, Natural Resources, UNL; Graduate Research Advisor: **Elizabeth VanWormer**, Associate Professor, Director of Nebraska One Health, for the project: *Assessing neonicotinoid and fungicide exposure in wildlife sentinels in eastern Nebraska: A One Health study on agrochemical contamination linked to the AltEn facility*

***Microbial Ecology and Water Quality in Protected Niobrara vs. Unprotected Elkhorn Watersheds*** **Bincy Sunny**, Graduate Research Assistant, Master's, Biology, UNO; Graduate Research Advisor: **Paul Ayayee**, Assistant Professor, UNO Biology, for the project: *Investigating the impact of recreation on riverine microbiome and process rates, and ecosystem functions in Elkhorn and Niobrara River systems*

Public Health/Hubbard Fellowship: ***Release, Adsorption, and Biotransformation of Biosolid-Borne PFAS at the Water-Sediment Interface in Agricultural Watersheds*** Amy Yanagida, Graduate Research Assistant, Civil and Environmental Engineering, UNL; Graduate Research Advisor: **Nirupam Aich**, Associate Professor, UNL Civil and Environmental Engineering, for the project: *Investigating the Leaching and Fate of Forever Chemical Pollutant Per- and Polyfluoroalkyl Substances (PFAS) from Land-applied Biosolids in Agricultural Watersheds*

***What Goes up Must Come Down: Tracking Groundwater Levels in Nebraska with Repeated Gravity Surveys*** Kaitlin Steinauer, Graduate Research Assistant, Geology, UNL; Graduate Research Advisor: **Irina Filina**, Assistant Professor, UNL Earth and Atmospheric Sciences, for the project: *Gravity and seismic measurements over Nebraska aquifers to detect seasonal changes in water level*

***Platte Basin Timelapse Student Internship Program*** Ethan Freese, Producer, UNL School of Natural Resources, for the Platte Basin Timelapse Project

## 2:15 – 2:30 p.m. POSTER PRESENTATION – FLASH TALKS

***Farm water management and nitrate concentration in the Bazile Groundwater Management Area in Northeastern Nebraska*** Atif Atiqullah, Graduate Research Assistant, Geosciences, UNL; Graduate Research Advisor: **Erin Haacker**, Assistant Professor, UNL Earth and Atmospheric Sciences, for the project: *Modeling Nitrate Contamination in Northeastern Nebraska*

***Investigating Cosmic-ray Neutron Sensors in a Mountainous Pilot Network for Soil Moisture and Vegetation Water Monitoring*** Sophia Becker, Graduate Research Assistant, Hydrological Sciences, UNL; Graduate Research Advisor: **Trenton Franz**, Associate Professor, UNL School of Natural Resources, for the project: *Investigating proximal gamma-ray sensor for soil moisture monitoring*

***Modelling the Effects of Biopolymer Mulch on Water Routing Using Hydrus*** Afruja Begum, Graduate Research Assistant, Geosciences, UNL; Graduate Research Advisor: **Erin Haacker**, Assistant Professor, UNL Earth and Atmospheric Sciences, for the project: *Bioplastics with Regenerative Agricultural Properties (BioWRAP)*

***Evaluating Atrazine Exposure on Parkinson's Disease Prevalence in Rural Nebraska Counties*** Alex Egbuchiem, MD, Graduate Research Assistant, Public Health, Concentration in Environmental Agricultural and Occupational Health, UNMC; Graduate Research Advisor: **Eleanor G. Rogan**, Associate Dean – Strategic Initiatives, UNMC College of Public Health

***A Data-Driven Framework for Assessing Surface Water-Groundwater Resilience in Nebraska*** Rimsha Hasan, Graduate Research Assistant, Natural Resource Sciences, UNL; Graduate Research Advisor: **Francisco Munoz-Arriola**, Associate Professor, UNL School of Natural Resources, for the project: *Predictability of surface water-groundwater resilience to climate and contaminant forcings*

***FTIR-Based Analysis of Corn Ethanol Fermentation Emissions: Air Treatment Optimization and Machine Learning Modeling of Hazardous Air Pollutants*** Mahyar Mahdavi Hezaveh, Graduate Research Assistant, Environmental Engineering, UNL; Graduate Research Advisor: **Bruce Dvorak**, Ray Fauss Professor, UNL Civil and Environmental Engineering and Biological Systems Engineering, for the project: *Utilizing Fermentation HAP Air Emissions Data to Improve Ethanol Sustainability*

***Energy from Flow: Self-Powered Wireless Irrigation Valves for Efficient Farming*** Joseph Oboamah, Graduate Research Assistant, Biological Systems Engineering, Mechanized Systems Management, UNL; Graduate Research Advisor: **Xin Qiao**, Associate Professor, UNL Biological Systems Engineering, for the project: *Development of an innovative partial variable rate irrigation (VRI) system*

***Evaluating the Reuse of Greywater for Irrigating Ground-Level Fresh Produce: A Microbiological Risk Assessment of Generic E. coli Contamination on Lettuce*** Andrew Stiven Ortiz Balsero, Graduate Research Assistant, Food Science and Technology, UNL; Graduate Research Advisor: **Bing Wang**, Associate Professor, UNL Food Science and Technology, for the project: *Risk-based Assessment and Criteria Specification of the Microbial Safety of Greywater Reuse in Food Crop Irrigation*

***Patterns of Select Per and Polyfluoroalkyl Substances (PFAS) in Nebraska Drinking Water*** Sarah Tucker, Graduate Research Assistant, Toxicology, Environmental Health & Occupational Health, UNMC; Graduate Research Advisor: **Kristina Kintziger**, Professor of Health & Environment, UNMC Environmental, Agricultural & Occupational Health, for the project: *Detection of Poly- and Perfluoroalkyl Substances in Nebraska Drinking Water and Exposure Assessment in Adult Rural and Service Member Populations*

***Stories of Drought and Hope for Rural Resilience*** Rachel Williss, Graduate Research Assistant, Natural Resources, UNL; Graduate Research Advisor: **Tonya Haigh**, Research Assistant Professor/Social Science Coordinator, National Drought Mitigation Center, UNL School of Natural Resources, for the project: *Water Management and Agricultural Community Resilience: Communication Approaches*

**2:30 – 3:00 p.m. POSTER SESSION AND NETWORKING BREAK**

**3:00 – 3:45 p.m. ORAL PRESENTATIONS**

***From County-level Groundwater to Individual Household Drinking Water Exposure: The Impact of Agrichemicals in Drinking Water on Birth Outcomes*** Augustine Kena Adjei, Graduate Research Assistant, Statistics, UNL; Graduate Research Advisors: **Martha Rhoades**, Research Assistant Professor, UNL School of Natural Resources, for the project: *DWFI Continued Support of Birth Outcomes and Water (BOW) Study*, in collaboration with **Kent Eskridge**, Professor, UNL Statistics and **Troy Gilmore**, Associate Professor, UNL School of Natural Resources

Public Health/Hubbard Fellowship: ***Watershed Monitoring of Shell Creek for Antibiotics and Antibiotic-Resistant Bacteria***, Moriah Brown, Graduate Research Assistant, Environmental Engineering, UNL; Graduate Research Advisor: **Shannon Bartelt-Hunt**, Professor and Department Chair, UNL Civil and Environmental Engineering, for the project: *Connecting AntiMicrobial Resistance, Agricultural Decisions, and Environmental Systems: A tool for mitigating AMR and assessing risk to human health in agro-ecosystems*

***Evaluation of Chilling-Tolerant Grain Sorghum in the High Plains of Nebraska*** **Rafael Bley Cottica**, Graduate Research Assistant, Agronomy, UNL; Graduate Research Advisor: **Cody Creech**, Assistant Professor, UNL Agronomy & Horticulture

***Climate Variability and Drought: Quantifying Impacts on Cattle Stocking Rates and Climate Adaptation Strategies*** **Shara Akat**, Graduate Research Assistant, Agricultural Economics, UNL; Graduate Research Advisor: **Taro Mieno**, Professor, UNL Agricultural Economics, for the project: *Drought Impacts on Cattle Stocking Density and Land Use*

***High-resolution climate simulations over High-Mountain Asia: Focus on the Central Himalaya and Karakoram*** **Tika Gurung**, Graduate Research Assistant, Climatology/Meteorology, UNL; Graduate Research Advisor: **Liang Chen**, Assistant Professor, UNL Earth and Atmospheric Sciences, for the project: *High-Resolution Simulations of Hydroclimate over the Glacial Regions of the High Mountain Asia*