# Spring 2023 Research Expo

**Biodiversity**

Lindsay Darling, Environmental and Ecological Engineering
*Historical urban development affects current forest distribution, composition, and structure and is related to inequitable distribution of forests*

Logan Potter, Forestry and Natural Resources
*Fatty acid differences amongst different populations of river mussels*

Marisol Sepulveda, Forestry and Natural Resources
*Studying the Impacts of Chemicals and Other Stressors on Aquatic Biota*

Emily Usher, Horticulture and Landscape Architecture
*Diverse Corn Belt: Enhancing Rural Resilience Through Landscape Diversity in the Midwest*

**Climate and Weather**

Adam Aleksinski, Earth, Atmospheric, and Planetary Sciences
*Modeling Eocene-Aged Oceanic εNd Distribution with CESM 1.2*

Carly Frank, Earth, Atmospheric, and Planetary Sciences
*Assessment of Historical Climate Variability in Maine with Implications for Future Agricultural Productivity*

Grace Kowalski, Science
*Variability in the areal characteristics of precipitation in the Houston, TX region*

Xiaoqing Liu, Earth, Atmospheric, and Planetary Sciences
*Connecting warming patterns of the paleo-ocean to our future*

Michael Oyelakin, Earth, Atmospheric, and Planetary Sciences
*Modeling the Arctic Amplification Response using a simplified Atmospheric general circulation Model - SPEEDY*

Elisa Rivera, & James Garrison, Aeronautics and Astronautics
*New Techniques for Remote Sensing of Sub-surface and Sub-canopy Soil Moisture using Signals of Opportunity (SoOp)*

Kanaan Hardaway, Environmental and Ecological Engineering
*Exploring Urban Resilience Thinking with Structural Equation Modeling*

*Kong, Qinqin, Earth, Atmospheric, and Planetary Science*
*Coupling between soil moisture and heat stress within ERA5 reanalysis*

**Environmental Stressors**

Gracie    Fitzgerald, Civil Engineering
*Can you safely clean baby items after contaminated drinking water exposure?*

Tyler Hoskins, Forestry and Natural Resources
*Agricultural biosolids application contaminates wetland ecosystems with per- and polyfluorinated alkyl substances (PFAS)*

Tao Huang, Civil Engineering
*Estimating Bayesian Model Averaging Weights and Variances of Ensemble Flood Modeling Using Multiple Markov Chains Monte Carlo*

Johnathan Klicker-Wiechmann, Health Sciences
*Size Selective Field Analysis of Metallic Aerosols*

Chang Geun Lee, Health Sciences
*Comparison of X-Ray Fluorescence (XRF) and Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES) with ICP-Mass Spectrometry (ICP-MS) for the Measurement of Toenail Metal levels*

Jung Hyun Lee, Earth, Atmospheric, and Planetary Sciences
*Development of a field method for measuring tetrachlorethylene (PCE) exposure in a community setting*

**Environmental Stressors**

Meredith Scherer, Forestry and Natural Resources
*Exploring the Effects of Perfluorooctanoic Acid Across Life Stages in Xenopus laevis*

Vasisht Varsh Sridhar, Health Sciences
*Understanding the Toxicology Profiles of Dicamba and Glyphosate to Evaluate the Effect of Roundup Xtend on Zebrafish (Danio Rerio) Embryo-Larval Model*

Sydney   Stradtman, Health Sciences
*The Kisspeptin System in the Developing Zebrafish and Differential Gene Alterations Following Two Exposure Periods to the Agricultural Herbicide Atrazine*

Xueqi Tang, Health Sciences
*IGF/Insulin Signaling Interruption in Acute vs Chronic Manganese Exposure*

**Sustainable Communities/ Environmental Justice/ Risk & Resilience**

Kenneth Burnell, Health Sciences
*Evaluating Particulate Matter Levels Surrounding a Steel Recycling Facility*

Ian Frantal, Earth, Atmospheric, and Planetary Sciences
*Comparing shallow and deep soil $O_2/CO_2$ dynamics among agriculture and restored prairie ecosystems*

Edwin Kpodzro, Global Engineering Program
*Sustainable end-of-life management of electric vehicle lithium-ion batteries to maximize resource efficiency*

Katherine Pivaral, Horticulture and Landscape Architecture
*"Emerging markets for diversifying agriculture: Case studies in the U.S. Corn Belt"*

Utkuhan Genc, Industrial Engineering
*Using Travel Time to Essential Services to Identify Vulnerable and Fragile Communities in Hurricane-Prone Areas*

Carol X Song, Department of Computer Science
*CyberInfrastructure Enabling FAIR Science and Workforce Development*

Rajesh Kalyanam, Rosen Center for Advance Computing
*Purdue IT Research Computing Resources*

**Water Challenges/ Great Lakes**

Taymee Brandon, Environmental and Ecological Engineering
*Closing the Loop on the Textile Industry with Sustainably Sourced Biochar for Aqueous Heavy Metal Remediation*

Alaina Bryant, Health Sciences
*Identifying and Addressing Environmental Justice Issues Related to Tetrachloroethylene (PCE) Contamination in Martinsville, Indiana*

Ankit Ghanghas, Civil Engineering
*How is rising temperature affecting the spatial extent of precipitation extremes: A global assessment*

Madeline Larsen, Environmental and Ecological Engineering
*Impact of Epoxy Manufacturing and Installation Conditions on Chemical Leaching from Water Infrastructure*

Lisa Welp, Earth, Atmospheric, and Planetary Sciences
*What causes low nitrate concentrations in agricultural tile drainage waters at the beginning of storm hydrographs?*

Spencer Gardner, Forestry and Natural Resources
*Coupled climate, hydrodynamic, biogeochemical, and bioenergetic models to aid understanding of larval dynamics and recruitment in Lake Michigan*

Alex Fields, Forestry and Natural Resources
*"Spatially and temporally heterogeneous trends in surface chlorophyll-a in Lake Superior from 2014-2018."*

Justin Meyer, Forestry and Natural Resources
*Tracking changes in Saginaw Bay productivity using fish catch data*

Les Warren, Forestry and Natural Resources
*Isotopic analysis of alewife, Alosa pseudoharengus, otoliths to determine early life habitat utilization and growth in Lake Michigan*