SCHOOL OF NATURAL RESOURCES

HYDROLOGICAL SCIENCES

Available to both MS and PhD candidates.

Contact Information

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SNR's Hydrological Sciences program, a specialization within the Natural Resource Sciences graduate program, aims to train the next generation of scientists studying the hydrologic cycle, its components and processes, and its complex interactions with human societies. Faculty and students in this specialization explore a broad range of hydrological topics including:

Atmospheric moisture transport, Surface and vadose zone hydrology, Groundwater hydrology, Hydrogeology, Limnology, Wetland management and recovery, Water quality and biogeochemistry, Isotope hydrology, Contaminant transport and remediation, Environmental geophysics and hyrdogeophysics, Remote sensing of the water cycle, Hydrologic modeling and forecasting, Ecohydrology, Hydroinformatics and integrated hydrology

Faculty and graduate students in this specialization incorporate field and laboratory research techniques to answer basic and applied hydrological questions in Nebraska and across the globe.

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Faculty Advisors

Dr. Steve Comfort | scomfort1@unl.edu

Soil & water chemistry, organic chemicals, fate & transport of remediation of contaminated soil & water, restoration, environmental restoration, environmental soil analysis

Dr. Tom Franti | tfranti@unl.edu

Surface water quality, urban stormwater BMPs, ecological engineering, river restoration engineering

Dr. Trenton Franz | tfranz2@unl.edu

Hydrogeophysics

Dr. Troy Gilmore | gilmore@unl.edu

Isotope/tracer hydrology, agricultural nutrient & water fluxes, groundwater-surface water interactions, groundwater & surface water quantity & quality, emerging contaminants, instrumentation & methods development for monitoring groundwater & surface water, Isotopes, geospatial applications, nutrient cycling, water quality, environmental restoration

Dr. Dave Gosselin | dgosselin2@unl.edu

Groundwater chemistry, environmental isotopes, groundwater & surface, water relationships, sandhills hydrology, science education, dakota aquifer/stratigraphy/geochemistry, isotope hydrology for environmental tracking, Nebraska earth systems education network, water quality, wetlands

Dr. Ayse Kilic | akilic3@unl.edu

GIS in water resources, evapotranspiration, remote sensing, climate change, hydrology, crop modeling

Dr. Jesse Korus | jkorus3@unl.edu

Groundwater, aquifer characterization, stratigraphy & sedimentology, regional geology & hydrogeology, geology, hydrogeology, sand, wells, paleoenvironments, petroleum resources, palesols, rivers, rocks & stones,tectonics, water quality, groundwater modeling

Dr. Tiffany Messer | tiffanymesser@unl.edu

Emerging sensor technologies, hydrologic & stable isotope tracer techniques, nutrient & pesticide cycling, fate, & transport, surface water hydrology modeling, ecosystem restoration, engineering education, environmental impacts in developing countries, groundwater hydrology modeling, restoration assessments of ecosystem services, environmental policy

Dr. Pat Shea | pshea1@unl.edu

Environmental chemistry & toxicology, ecotoxicology, xenobiotics, agrichemicals, environmental management, environmental remediation & restoration, soil quality, water quality, soils, lawns & landscape, agriculture & livestock, drinking water, land use / land cover

Dr. Dan Snow | dsnow1@unl.edu

Water Quality, aquatic chemistry, mass spectrometry, stable isotopes, drinking water, microbiology

Dr. Joe Szilagyi | jszilagyi1@unl.edu

Linear systems in hydrology, hydrological forecasting, flow routing, evaporation/ET, watershed hydrology, stream-aquifer interactions, freshwater, surface & groundwater

Dr. Tsegaye Tadesse | ttadesse2@unl.edu

Drought monitoring, natural resource management, team leadership & development, seasonal weather prediction, climate change & variability, human impacts on the environment, remote sensing/GIS, data mining & risk management.

Dr. Steve Thomas | sthomas5@unl.edu

Spatial dynamics of biogeochemical cycling in ecosystems, stream ecosystems, population dynamics/distribution, river & streams, aquatic ecosystems, ecohydrology, freshwater, resilience, watersheds, insect ecology