



Department of Civil & Environmental Engineering
Missouri Water Center (MWC)
Seminar in Environmental Engineering

Time:

Friday, March 20, 2026

2:00 – 3:00 P.M.

Location:

E2511 Lafferre Hall



Dr. Micah Wyssmann

is an Assistant Professor of civil engineering at UMKC. He obtained his BS in civil engineering from the University of Arkansas in 2014 and PhD in civil engineering from the University of Tennessee in 2021. Since joining UMKC, he has established the Environmental Flow & Transport Processes ([EFTP](#)) lab and is leading research advancing fundamental understanding of river processes, river-ecosystem interactions, and particulate contaminant transport. Dr. Wyssmann's research group is working on environmental problems of fundamental and practical importance ranging from MP transport prediction to Missouri River morphodynamics to freshwater mussel habitat conditions.

**Microplastic (MP) Transport in the Environment:
Experimental Insights into MP Flocculation, Soil
Retention, and Environmental Parameter Controls**

Micah Wyssmann, PhD

Assistant Professor

University of Missouri-Kansas City (UMKC)

<https://umsystem.zoom.us/j/98163271696?pwd=ZTxbPfgKsRv6RxvgOleburYRGewlZB.1&from=addon>

Meeting ID: 981 6327 1696

Passcode: 039002

Microplastics (MPs) are contaminants of emerging concern increasingly detected in surface waters, groundwater, and soils. Despite growing recognition of the MP pollution problem, knowledge gaps remain that hinder understanding of MP transport behavior in the environment. This talk highlights ongoing experimental research at UMKC aimed at studying MP transport mechanics and generating quantitative datasets that support improved predictive approaches for environmental transport modeling. We use controlled laboratory experiments to isolate the effects of key environmental parameters and document how they influence MP movement, flocculation, settling, and retention. The overarching objective is to develop a stronger process-based understanding of MP transport and refined predictive relations that can be used in future modeling studies.

This talk highlights results from two complementary experimental research thrusts. The first examines MP settling behavior in surface-water environments with a focus on flocculation processes and the influence of salinity and suspended sediment on settling dynamics. The second examines MP transport and retention in soil and groundwater systems using controlled porous-media experiments in moderate- and large-scale flow facilities. Together, these studies demonstrate that environmental conditions strongly influence MP transport behavior and provide quantitative insights to improve MP fate predictions across surface-water and subsurface environments.