

## Thermal regimes along the river network

Stream temperature is a key measure of water quality that governs nutrient exchange and habitat availability for thermally sensitive organisms. Our understanding of how stream temperature varies along the river network is built on reach-scale modeling and synthesis, but necessitates further work to clarify what organizes river temperature responses to changing climate and human modification of the water cycle through space and time. This talk presents several field-based, data-driven, and model-based investigations that showcase how river thermal regimes vary from headwaters to large rivers, including examples from channel heads at the start of the river network, from urban streams, and from across the continental US. Overall, this presentation highlights the areas where our understanding of riverine thermal regimes is nascent but improving, and demonstrates the ways in which human activity leaves a strong imprint on riverine thermal regimes.

**Bio:** Prof. Christa Kelleher is an Assistant Professor at Syracuse University with shared appointments in Earth Sciences and Civil Engineering. She earned her BS in Civil and Environmental Engineering from Lafayette College and her MS and PhD in the Department of Civil Engineering at the Pennsylvania State University. After completing her dissertation, she spent time as a postdoctoral associate in the Watershed Hydrology and Biogeosciences Laboratory at Duke University. Her research interests are at the interfaces between climate, hydrology, humans, and ecology, particularly using observations and mathematical models to investigate the organization of hydrology and water quality across spatio-temporal scales. Christa is also working with unmanned aerial vehicles (also known as drones) to understand patterns of hydrology and water quality in Syracuse and beyond.