



Distinguished Lecture: Allison MacKay, PhD, BCEEM
Chair, Department of Civil, Environmental and Geodetic Engineering
The Ohio State University

“When in Ohio ... Linking Water Quality Parameters to Algal Toxin Fate During Drinking Water Treatment”



Prompted by a 3-day shutdown of the Toledo, OH (pop. 400,000) water supply, Ohio university researchers have been studying harmful algal bloom mitigation from ‘Farm to Faucet’. We have focused on the tools available to utility plant operators to better manage intermittent occurrences of cyanobacteria toxins. Led by students and post docs, we have shown how simple optical properties can account for toxin competition for permanganate and chlorine oxidants from naturally occurring organic matter in the source water. We have found that cyanobacteria cells are robust to mechanical shear, and we have learned how subsequent transfer of toxins in water treatment residuals are immobilized. Finally, deeper examination of permanganate oxidation of organic matter has yielded insights into treatment impacts on chlorine disinfection byproduct formation. Collectively, these findings provide specific management strategies to address toxin-producing cyanobacteria bloom events.

1:25 PM on Monday, March 6, 2023
Watt Family Innovation Center – Auditorium
Reception will follow in the Watt Center Atrium