

THE DEPARTMENT OF FORESTRY & NATURAL RESOURCES PRESENTS

# SPRING 2024 SEMINAR SERIES

WEDNESDAY, APRIL 10, 2024  
PFEN 241 2:00PM - 3:00PM

JOIN US FOR A LECTURE AND CONVERSATION WITH  
**DR. GREGORY DICK**



Dr. Gregory Dick is the Director of the Cooperative Institute for Great Lakes Research and is Professor in the School of Environment and Sustainability and in the Department of Earth and Environmental Sciences at the University of Michigan.

This series aims to stimulate discussion and create opportunities for collaborations. Everyone is welcome to attend.

**How do intraspecies diversity and inter-species interactions influence cyanobacterial blooms?**

Toxic cyanobacterial blooms are among the biggest threats to freshwater ecosystems globally. While growing evidence shows that diverse bacterial communities shape cyanobacterial bloom dynamics, the nature of bacterial interactions with toxic cyanobacteria, and their influence on toxicity of cyanobacterial blooms, remains unclear. *Microcystis*, which forms blooms and threatens freshwater systems worldwide, provides an interesting case study for bacterial interactions. It is a single-celled organism that forms macroscopic colonies with a diverse bacterial community embedded in mucilage, thus making a well-defined microbiome and phycosphere. *Microcystis* also displays extensive intraspecies diversity, with an open pangenome and rapid genomic recombination, and succession of strains in blooms underpins shifts in toxicity. In this presentation I will describe progress towards understanding how the intraspecies diversity of *Microcystis* and its interaction with other bacteria shape the dynamics of cyanobacterial blooms. Overall, our results suggest that intimate mutualistic interactions between *Microcystis* and its microbiome modulate stressors, nutrient availability, and phenotypic diversity of *Microcystis* and likely contribute to its widespread dominance in freshwater systems.

If you would like to meet with Dr. Gregory Dick during his visit, contact Dominique Turney at [dturney@purdue.edu](mailto:dturney@purdue.edu).

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Forestry and Natural Resources