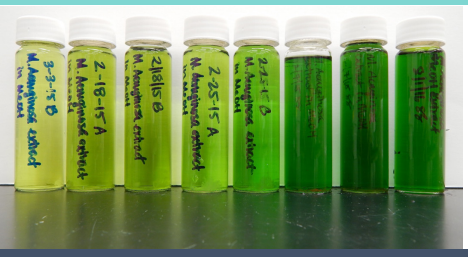
EPA

Small Systems Monthly Webinar Series

The U.S. Environmental Protection Agency's Office of Research and Development and Office of Water invite you to a **free webinar**



Harmful Algal Blooms (HABs) and Algal Toxin Treatment

May 21, 2019 from 2:00 to 3:00 pm ET

Optional Q&A session from 3:00 to 3:30 pm ET

A certificate for one training hour will be offered for this webinar

Treatment Options for HAB Impacted Drinking Source Waters

Harmful algal blooms (HABs), which include blooms of cyanobacteria, pose challenges for drinking water systems. EPA has been conducting research to improve our understanding of HABs and their associated toxins through treatment processes. This presentation will focus on the removal of cyanobacteria and toxins through drinking water treatment. It will include the utility of ELISA and cell integrity assays to monitor the condition of cyanobacterial suspensions during oxidation treatment, and the impact of copper sulfate algicide exposure on cyanobacterial cells and the response of those cells to permanganate oxidation.

Presented by **Nick Dugan**

Nick is an environmental engineer in with EPA's Office of Research and Development (ORD), National Risk Management Research Laboratory (NRMRL) in Cincinnati, Ohio, where he specializes in drinking water treatment. In addition to his work with cyanobacteria and cyanobacterial toxins, Nick has performed treatment studies to evaluate the control of *cryptosporidium*, nitrate, perchlorate, pesticides, and disinfection byproduct precursors. He has an M.S. in environmental engineering and a B.S. in civil and environmental engineering from the University of Cincinnati, a B.A. in economics from Carleton College, and he is a member of the technical advisory committee for the Water Research Foundation's HAB research focus area.

High Frequency Monitoring of Cyanobacterial HABs

Lake Harsha, a multi-use reservoir and primary drinking water source in southwest Ohio, has experienced an increase in the frequency and intensity of cyanobacterial HABs over the past several decades. An on-going study was initiated to assess the lake's HAB trends and develop monitoring tools and approaches. In 2015, an intensive sampling regime was implemented using high frequency monitoring to determine the timing and rate of sampling. The goal is to develop relationships between HAB indicator measures and cyanotoxin occurrence, which can provide time-relevant information regarding source water quality for drinking water treatment plant operators and other public health stakeholders. This presentation will cover the resulting data from the sampling study, which provides a time-series of the cyanobacterial population dynamic and greatest periods of cyanotoxin production.

Presented by **Joel Allen, Ph.D.**

Joel Allen is an environmental scientist with EPA, ORD, NRMRL in Cincinnati, Ohio. Joel's current research includes development of temporally dense data sets for assessing trends and impacts of source water quality on drinking water processes with emphasis on harmful algal blooms. He has developed and evaluated on-line toxicity monitors and conducted research on environmental endocrine disruption and nanoparticle toxicity. Joel also worked with EPA regional partners in the design and implementation of the Upper Mississippi Water Quality Monitoring Network, an effort to digitally monitor water quality using technologically sophisticated approaches. Joel has a Ph.D. and an M.S. of environmental science from the University of North Texas.

Registration: https://register.gotowebinar.com/register/1956722077772414721

Who should attend?

State primacy agencies, Tribes, community planners, technical assistance providers, academia, and water systems interested in issues facing community water systems and solutions to help solve them.

Looking for more webinars?

This webinar is part of EPA's Monthly Small Systems Webinar Series: *Challenges and Treatment Solutions for Small Drinking Water Systems*. A webinar will be held each month in 2018.

epa.gov/water-research/small-systems-monthly-webinar-series