



## Seminar & Workshop

### Monitoring for Cyanobacteria and Harmful Algal Blooms

**Date and Time:** Wednesday, November 9th. Seminar: 9-10am; Workshop: 10am- 3pm. Optional tour of the EPA begins at 3pm (for seminar and/or workshop participants only)

**Seminar-** *Developing a Regional Cyanobacteria and Harmful Algal Bloom (HABS) Monitoring Program*, Hilary Snook (EPA - Region 2)

**Workshop** - *Citizen Science Training Workshop - Cyanobacteria Monitoring & Bloom Watch Program*, Hilary Snook. This workshop will provide introductory information about monitoring techniques for cyanobacteria that can cause harmful algal blooms (HABS). Participants will receive in-depth training on the Cyanoscope kit ([www.cyanos.org](http://www.cyanos.org)), including how to use the equipment and report their findings. If there is interest, there will be an optional tour of the EPA beginning at 3pm. Participants may order lunch from Northern Waters (which will be delivered) or bring their own lunch.



**Location:** US Environmental Protection Agency (Ontonagon Room), 6201 Congdon Blvd, Duluth, MN 55804

**Who should come?** Scientists, teachers, educators, lakeshore property owners, municipal staff, water quality or environmental specialists and technicians, and people interested in citizen science.

**Register by Monday, November 7th:**

[https://umn.qualtrics.com/SE/?SID=SV\\_bvhw1uOV2bz5B9b](https://umn.qualtrics.com/SE/?SID=SV_bvhw1uOV2bz5B9b)

If you have questions, contact Marte Kitson at [mkitson@d.umn.edu](mailto:mkitson@d.umn.edu) or 218-726-8305.

## Want more information about the program or about cyanobacteria? Read on!

**Background information on the Cyanobacteria monitoring program:** Cyanomonitoring kits provide consistent methods in sample collection and data output, while providing real time data submission from the field accompanied by microscope smartphone images of waterbody cyanobacteria. The kits have been designed to provide all the tools necessary for collection of nearshore or open water samples, separation of cyanobacteria from algae and zooplankton, and the concentrating of samples for microscopic evaluation. The program recently received an EPA Office of Research and Development grant to further its efforts in promoting the citizen science component of the program and provide support for additional equipment and training needs. Interest in the program is growing quickly, and requests to participate have come from all across the country.

### **Background information on Cyanobacteria:**

Cyanobacteria and their associated toxins are a looming issue in the Great Lakes region and are of particular concern from a human and ecological health perspective. Increasing intensity and duration of precipitation events along with development and land use pressures are resulting in increasing nutrient loads to aquatic systems. These inputs set the stage for recurring algal blooms that affect recreational activities such as swimming and water sports, as well as incurring additional costs in public water supply treatment investments and more oversight and monitoring of public beaches. Cyanobacteria and their associated toxins have been responsible for human and animal deaths worldwide, and wildlife and pet deaths have occurred in the region from ingestion of these algal toxins. A recent example of the potential impacts was the shutdown of the Toledo water system in 2014 due to cyanotoxins from Lake Erie blooms found in the public water supply.



A cyanobacteria bloom in New England

Despite these risks, monitoring and understanding this unique form of bacteria has been elusive. Cyanobacteria concentrations can vary enormously in space and time and their level of toxicity can be equally as variable. In addition to their heterogeneity, regional monitoring efforts historically have been equally inconsistent, with every entity utilizing a different sampling approach and methodology. These inconsistencies make it extremely difficult to aggregate data at larger spatial and temporal scales to help understand the characteristics and behavior of this bacteria or to share information across a region that benefits everyone.