Michigan DEQ Harmful Algal Bloom Grant Awards

Oakland University

In August, 2016 Oakland University, in partnership with Wayne State University, Lake Superior State University, and Northern Kentucky University, was awarded $158,314 by the Michigan DEQ to develop both statewide harmful algal bloom (HAB) predictive maps and a smartphone app for rapid HAB detection by citizens. Current monitoring and assessment methods may fail to detect HABs early enough for effective regulatory response. Oakland University proposes to use emerging technologies and HAB detection by citizen scientists to address the challenge. Predictive HAB maps will be developed using existing land use information and cyanotoxin data collected using a variety of sampling methods and testing for statistical relationships between HABs and likely environmental drivers. Researchers will also develop, implement, and validate an approach to early HAB detection by citizen scientists. Volunteers will report potential HABs using a smartphone app that uses photographs of water samples to estimate cyanobacteria (blue-green algae) abundance. Water samples will be collected for microscopic validation. (Primary Investigator: David Szlag, Oakland University)

Grand Valley State University

In August, 2016 Grand Valley State University was awarded $83,573 by the Michigan DEQ to develop new monitoring methods to rapidly detect the presence of toxin-producing cyanobacteria and determine whether they are producing cyanotoxins at the cellular level. The goal of the project is to develop analytical methods (using qPCR and Imaging Flow Cytometry) for rapid evaluation of cyanotoxin production status of HABs. The two methods will be used together to establish a rapid near real-time screening tool (IFCM can be performed in minutes) followed by confirmatory methods (qPCR) enabling managers to make informed decisions during algal blooms. (Primary Investigator: Rick Rediske, Annis Water Resources Institute, Grand Valley State University)