

## 2007 Ohio Student Research Forum

Wright State University  
Dayton, OH

## RESEARCH ABSTRACT FORM

**TITLE:** The Responsibility Nitrogen has on the Development of Bacterial Blooms in the Western Basin of Lake Erie

**AUTHOR:** Jessica Macklin, J. Baeseman, J. Ortiz

**MENTOR(S):** Dr. Jenny Baeseman, Curtis Clevenger

**INSTITUTION:** Kent State University



Lake Erie provides water, transportation, recreation and food to visitors and communities along its shore (Vanderploeg 2002). With all the good resources that Lake Erie has to offer, there are also few bad ones. One of the serious problems is the reoccurrence of algal blooms (Paerl 1988). Algal blooms have the potential to be very harmful because they can be toxic to aquatic life, animals, and humans that may come into contact with the blooms. Cyanobacteria are common in freshwater ecosystems (Paerl 1988). *Microcystis aeruginosa* is a species of cyanobacteria which produces toxins during bloom events in Lake Erie (Harada 1991).

The objective of our work was to find out what conditions promote development of cyanobacteria blooms in the Western Basin of Lake Erie by sampling water quality and bacteria. We planned to take four cruises on Lake Erie between June and August, stopping at twenty target stations to collect and analyze the water quality and distribution of cyanobacteria. We collected samples to analyze cell counts, dissolved organic carbon (DOC), nitrate + nitrite (NO<sub>3</sub>+NO<sub>2</sub>), ammonium (NH<sub>4</sub><sup>+</sup>), soluble reactive phosphorus (SPR), chlorophyll (CHL), phycocyanin (PCY), and secchi depth.