

Dr. Sarah Princiotta

Professor Tenure-Line Biology

Title of your research project.

Integrating Water Quality and Cyanotoxin Production to Combat Harmful Algal Blooms

Description of research. Please provide a few sentences that explain the question and the methods employed in this research project.

Increased frequency and severity of harmful algal blooms is one of the most visible consequences of human-driven changes to the Earth's landscape. Proliferations of cyanobacteria pose serious risks to water quality worldwide, especially in Northeastern Pennsylvania where 68,000 acres of open water act as a highly valuable natural resource. This is of critical concern given that tourism associated with recreational lakes provide the economic backbone for the region. Although excessive nutrient loading can stimulate a bloom, or prolong its dominance in a waterbody, many other factors make this water quality issue complex and unpredictable. There is a critical knowledge gap concerning the relation between phytoplankton community structure with cyanobacteria abundance, diversity, and cyanotoxin production. This work leverages a regional limnological sampling program to address drivers of toxin production associated with blooms of cyanobacteria.

Did this project include Penn State students as researchers?

Yes

If yes to the above question, please state where it was published.

n/a

What problem do you address with your research?

The overall goal of this work is to leverage an existing limnological sampling program across recreational lakes of NE Pennsylvania in order to assess the impact of biological interactions between members of the plankton on development of cyanobacteria blooms and production of associated cyanotoxins.