Community Work and Learning Fall 2021 Symposium

St. Catherine University
Community Work and Learning

Sydney Kennedy
AMP Research Assistant, *A modern method to monitor harmful algal blooms in a warm, nutrient-rich world.*

Impact of Work:

Dr. Furey and I worked to gain a full understanding of new monitoring and management methods for harmful algal blooms. Harmful algal blooms are a unique threat, caused by the rapid growth of algae and cyanobacteria- microorganisms in freshwater and marine ecosystems, responsible for primary production at the base of our food webs. Harmful algal blooms may also result in a variety of skin-irritating, neurological, and respiratory toxins being released into the environment, posing a health threat to communities near these water systems. Therefore, successful monitoring of blooms and attempted interventions are key to protecting humans and other organisms, through use of modern technologies such as the FlowCam 5000®, a fluid imagining particle analyzer. We used the waterbody of Como Lake, in Minneapolis in order to test the capabilities of the FlowCam®, finding high abundance of potentially toxin-producing cyanobacteria genera, despite the city's numerous interventions to quell this issue.

Personal Growth:

I have learned a great deal in this position. I am primarily proud of my skills I have developed in utilizing the FlowCam 5000®. This is an intimidating, expensive piece of equipment that took most of the summer to gain experience with. This semester, now being able to simply run samples and classify waterbodies, as well as assist students in the Algal Ecology course, who are also using the FlowCam®, has truly reflected to me how far my skills have come. This ability to understand a complex research tool, has largely built my confidence in a laboratory setting, which I will not only carry with me through my final semester at St. Kate's but will invaluably aid my future career aspirations.

Career Impact:

Many components of this research will be applicable to my future work. For example, just having familiarity with the FlowCam® is becoming a highly valuable skill, as the technology gains more popularity. The FlowCam® now is not only used in freshwater ecologist's realm, but in biopharmaceutical companies, and an increasing number of other industries, as the broad range of abilities of this tool continues to be discovered. Furthermore, my acquired skills in communication, field work, and troubleshooting, are some of the many other applicable abilities that will serve me well in future endeavors.