

Abstract Book

for the 6th



Interdisciplinary Freshwater
Harmful Algal Blooms Workshop

Carleton University, Ottawa, ON

May 2-3, 2024

Greetings colleagues,

The IFHAB Workshop Organizing Committee is pleased to be hosting you at the 6th Interdisciplinary Freshwater Harmful Algal Blooms Workshop at Carleton University.

Here's a reminder of our mission:

The Interdisciplinary Freshwater Harmful Algal Blooms (IFHAB) Workshop is a yearly meeting of scientists focusing on the study of cyanobacterial and harmful algal species in freshwater environments. During this workshop, researchers from different disciplines present their most recent study plans and results, including on monitoring and fate of phytoplankton and their bioactive metabolites including toxins, ecology, analytical method development, drinking water treatment, risk assessment and management, and science communication. The workshop takes place in an informal environment, aiming to help researchers expand their networks and learn from the different fields and specialization focused on this complex environmental threat.

Best regards,

Organizing Committee, IFHAB Workshop

Zineb Bazza, McGill University

Daniel Beach, National Research Council of Canada

Michael McKay, University of Windsor

David McMullin, Carleton University

Sebastien Sauvé, Université de Montréal

René Shahmohamadloo, Washington State University and University of Guelph

Susan Watson, Trent University

Arthur Zastepa, Environment and Climate Change Canada

Sponsors

We would like to thank our sponsors for their generous support:

Silver level sponsors



Bronze level sponsor



With additional support from:



National Research
Council Canada

Conseil national de
recherches Canada

Location

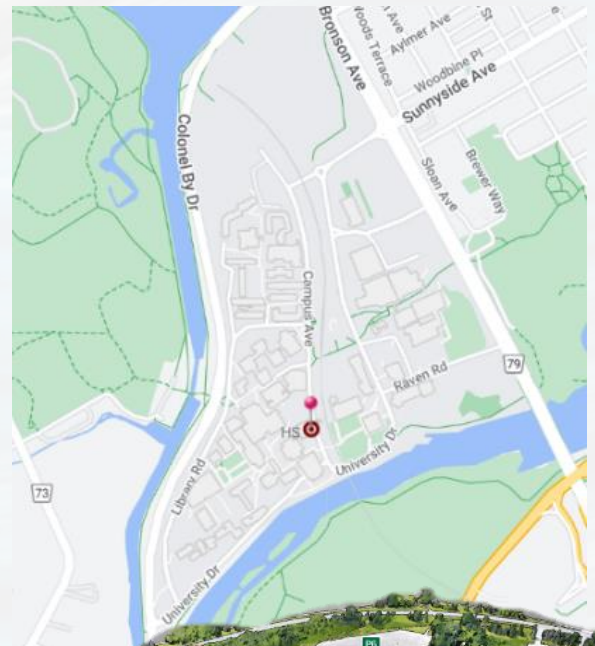
This year's IFHAB Workshop will be held at Carleton University.

The driving address is 1125 Colonel By Dr, Ottawa, ON K1S 5B6.

Presentations will take place on the 1st floor of the **Health Sciences Building** in room **1301**.

Coffee breaks, lunch, sponsor booths and live demonstrations, and poster sessions will take place in the lobby just outside room 1301.

<https://carleton.ca/campus/map/#HS>



Social Event

This year's social event will take place at **The Lieutenant's Pump**.

Address: [361 Elgin St, Ottawa, ON K2P 1M9](#)

We will meet there for some food and drinks on **Thursday May 2nd at 18:30** at no additional cost to IFHAB registered attendees.



Thursday May 2nd

| | | |
|---------------|--|---|
| 09:00 – 09:20 | Opening remarks | |
| 09:20 – 09:40 | Michael McKay Keynote speaker <i>University of Windsor</i> | Great Lakes microbial water quality assessment |
| 09:40 – 10:00 | Jennifer Jiang <i>McMaster University</i> | Longitudinal and region-specific cyanobacterial/cyanotoxin dynamics in the Great Lakes region |
| 10:00 – 10:20 | Emily Varga <i>University of Windsor</i> | Environmental drivers of phytoplankton and cyanobacterial community dynamics in an agriculturally-influenced tributary in the lower Great Lakes |
| 10:20 – 10:40 | Gertrud Nurnberg <i>Freshwater Research</i> | Empirical and theoretical evidence of the internal phosphorus loading effect on cyanobacteria |
| 10:40 – 11:00 | Coffee break | |
| 11:00 – 11:20 | Kevin Erratt <i>University of Toronto</i> | Salinization in the Anthropocene: an emerging challenge amplifying cyanobacterial risks? |
| 11:20 – 11:40 | Sharmila Thenuwara <i>University of Toledo</i> | Identification of novel cyanopeptolins in Lake Erie cyanoHAB samples using UHPLC-HRMS and HRMS/MS |
| 11:40 – 12:00 | Zineb Bazza <i>McGill University</i> | Exploring the drivers of cyanobacterial blooms through a citizen science approach |
| 12:00 – 12:20 | Stuart Oehrle <i>Northern Kentucky University</i> | LC/MS/MS analysis of cyanobacterial blooms: new and interesting results |
| 12:20 – 13:00 | Lunch | |
| 13:00 – 14:00 | Lunch & posters | |
| 14:00 – 14:40 | Colleen Yancey Keynote speaker <i>University of Michigan</i> | Toxin connoisseurs: using a multi-omic toolkit to dissect the secondary metabolism of <i>Microcystis</i> in Lake Erie blooms |
| 14:40 – 15:00 | Jordan Balson <i>Queen's University</i> | <i>Caenorhabditis elegans</i> as a model of nematode tolerance on a diet of toxic <i>Microcystis aeruginosa</i> |
| 15:00 – 15:20 | Arthur Zastepa <i>Environment and Climate Change Canada</i> | Concentrations and composition of bioactive metabolites produced by cyanobacteria across 190 north-temperate and boreal lakes |
| 15:20 – 15:40 | Coffee break | |
| 15:40 – 16:00 | Keri Malanchuk <i>Carleton University</i> | A dynamic cyanobacterial bloom in Lake Champlain: assessing the risks of cyanopeptides from both air and water |
| 16:00 – 16:20 | Sophie Crevecoeur <i>Environment and Climate Change Canada</i> | Impact of trace-metal contamination from manure on cyanobacterial and harmful algal blooms in freshwater bodies |
| 16:20 – 16:40 | Nicholas Schulz <i>Carleton University</i> | Patterns and drivers of algal assemblages in natural and constructed wetlands in Eastern Ontario, Canada |
| 16:40 – 17:00 | Daniel Beach <i>National Research Council Canada</i> | The development and application of mass spectrometry methods for cyanotoxin analysis |
| 17:00 – 17:20 | Concluding remarks | |
| 18:30 + | Social event at the Lieutenant's Pump | |

Friday May 3rd

| | | |
|---------------|--|---|
| 09:00 – 09:20 | Opening remarks | |
| 09:20 – 10:00 | Frances Pick Keynote speaker <i>University of Ottawa</i> | Ecologies of cyanobacteria: strange occurrences and shifting baselines |
| 10:00 – 10:20 | Katelyn Brown <i>Bowling Green State University</i> | Bacterial community and cyanotoxin gene distribution of the Winam Gulf, Lake Victoria, Kenya |
| 10:20 – 10:40 | Tri Nguyen-Quang <i>Dalhousie University</i> | A deterministic model for harmful algal bloom patterns |
| 10:40 – 11:00 | Coffee break | |
| 11:00 – 11:20 | Tim Patterson <i>Carleton University</i> | Tropical cyclones as an emergent driver of shallow lake harmful algal blooms in the 21st century |
| 11:20 – 11:40 | Greg Ford <i>Phytoxigene, Inc.</i> | Update on the use of quantitative PCR in the use of monitoring and prediction of harmful algal blooms |
| 11:40 – 12:00 | Irena Creed <i>University of Toronto</i> | Emerging measurement technologies for cyanobacterial toxins: from benchtop to field applications |
| 12:00 – 12:20 | Closing remarks | |
| 12:20 + | Lunch | |

Poster presentations

| | |
|---|---|
| Lucas Abruzzi <i>Vancouver Island University</i> | Development of paper spray high-resolution tandem mass spectrometry for rapid cyanotoxin analysis |
| Vichaya Charoensuk <i>University of Calgary</i> | The occurrence of cyanobacterial toxins in Alberta recreational waters |
| Joshua Culpepper <i>York University</i> | Cyanobacteria of the Canadian Lake Superior nearshore |
| Nathália Da Silva Resende <i>Campus Universitário Rua José Lourenço Kelmer</i> | Systematic review and meta-analysis of global cyanobacterial bloom occurrence |
| Rob Jamieson <i>Dalhousie University</i> | Occurrence of toxic benthic cyanobacteria in Nova Scotia lakes and rivers |
| Carolina Koebel <i>Trent University</i> | Algal growth, toxin production, and nutrient uptake rates under nutrient poor and nutrient rich regimes |
| Christophe Langevin <i>INRS-ETE</i> | Resistance and resilience of lacustrine microbial communities to eutrophication in Quebec lakes |
| Vani Mohit <i>MELCCFP</i> | Rapid on-site detection of cyanobacteria responsible for toxic blooms |
| Megan Quandt <i>Wayne State University</i> | An anabaenopeptin synthetic route to provide certified materials |
| Claire Stevens <i>Trent University</i> | Nuanced connections between ice phenology and summer phytoplankton blooms |
| Krista Thomas <i>National Research Council of Canada</i> | Research and development of reference materials for cyanobacterial toxins at NRCC |
| Jesse Vanloon <i>Brock University</i> | A prototype microfluidic device to simulate water flow patterns in Lake Ontario |

Thank you for attending

I F H A B