

3RD INTERDISCIPLINARY FRESHWATER HARMFUL ALGAL BLOOMS WORKSHOP

Day 1: Wednesday, April 24th

Time	Event
8:00 – 8:30 am	Registration Desk Open
8:30 – 8:50 am	Welcome & Announcements
8:50 – 9:30 am	Plenary: Caren Binding <i>Remote sensing algal bloom indices for enhanced monitoring of Lake Erie algal blooms</i>
9:30 – 9:50 am	Platform: Herb Schellhorn <i>Use of DNA metagenomic sequencing and conserved signature sequences to characterize harmful algal blooms in Ontario Lakes</i>
9:50 – 10:10 am	Platform: Brigitte Simmatis <i>Drivers of frequent algal blooms and environmental change inferred from a sediment core archive of Stoco Lake (ON, CA)</i>
10:10 – 10:30 am	Platform: Dorothy Yu Huang <i>The prevalence of microcystin congeners in Alberta waters</i>
10:30 – 11:00 am	BREAK
11:00 – 11:20 am	Platform: Maria Dittrich <i>Polyphosphate in picoplankton in the eutrophic embayment of Lake Ontario (Hamilton Harbour): a hidden P source for HABS?</i>
11:20 – 11:40 am	Platform: Paul MacKeigan <i>Comparative analyses of cyanobacteria assemblages using microscopy and metabarcoding from the LakePulse Network</i>
11:40 – 12:00 pm	Platform: Daniel Beach <i>Anatoxins and Phormidium spp. in samples associated with dog deaths in New Brunswick</i>
12:00 – 1:20 pm	LUNCH
1:20 – 2:00 pm	Plenary B: Muriel Gugger <i>Microcystis, Planktothrix and few others, what do we fear when they are blooming in our freshwater bodies?</i>
2:00 – 2:20 pm	Platform: Megan Larsen <i>Cyanobacterial blooms -- the effects of an extreme rainfall event on bloom onset</i>
2:20 – 2:40 pm	Platform: Maryam Tabatabaei Anaraki <i>Determination of total microcystins (free and protein-bound) in fish tissue using Lemieux Oxidation</i>
2:40 – 3:00 pm	Platform: Xavier Ortiz Almirall <i>Analytical methods for the quantification of microcystins in drinking water: a regulatory perspective.</i>
3:00 – 3:30 pm	BREAK
3:30 – 3:50 pm	Platform: Jill Crossman <i>Bridging the gap between catchment management and lake response</i>
3:50 – 4:10 pm	Platform: Elaina MacIntyre <i>The challenge of algal blooms for public health practitioners in Ontario</i>
4:10 – 4:30 pm	Platform: Benjamin Trueman <i>Fluorescence spectra predict microcystin-LR occurrence in lake water</i>
4:30 – 4:50 pm	Platform: Matthew Duda <i>Seabirds alter the environment via the introduction of nutrients and metals</i>
4:50 – 5:10 pm	Platform: Thijs Frenken <i>The effect of climate change on sick cyanobacteria and consequences for the rest of the aquatic food web</i>
5:10 – 5:30 pm	Platform: Arash Zamyadi <i>HABs in drinking water supply systems: expression of toxicity, treatment process issues, management tools and public health</i>



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Day 2: Thursday, April 25th

Time	Event
8:00 – 8:30 am	Registration Desk Open
8:30 – 8:50 am	Welcome & Announcements
8:50 – 9:30 am	Plenary: Andrew Turner <i>Cyanobacterial toxins in the UK – can they be a food safety threat?</i>
9:30 – 9:50 am	Platform: Yuxiang Wang <i>Developing preventative bioremediation strategies to curb harmful algal blooms in freshwater systems in Canada and China</i>
9:50 – 10:10 am	Platform: Elizabeth Favot <i>Inferring historical changes in cyanobacterial production from lake sediments using Visible Near-infrared Reflectance Spectroscopy (VNIRS)</i>
10:10 – 10:30 am	Platform: Athanasios (Ethan) Paschos <i>Use of high-resolution DNA metagenomics to identify cyanobacteria in algal blooms occurring in Ontario lakes</i>
10:30 – 11:00 am	BREAK
11:00 – 11:20 am	Platform: Arthur Zastepa <i>What lurks below, toxic secondary metabolite production in deep-living layers dominated by the cyanobacteria <i>Planktothrix isoethrix</i></i>
11:20 – 11:40 am	Platform: Benjamin Kramer <i>The effect of climate change and nutrients on <i>Anabaena</i>: a harmful, diazotrophic cyanobacterial genus</i>
11:40 – 12:00 pm	Platform: Todd Miller <i>Microcystin liver toxins at hazardous levels in algal dietary supplements revealed by a combination of bioassay, immunoassay and mass spectrometric methods</i>
12:00 – 1:20 pm	LUNCH
1:20 – 2:00 pm	Plenary: Janice Lawrence <i>Identification of cyanotoxin producers in New Brunswick waterbodies using genetic tools</i>
2:00 – 2:20 pm	Platform: Greg Ross <i>Remote sensing program for cyanobacteria at the Northern Ontario School of Medicine</i>
2:20 – 2:40 pm	Platform: Tri Nguyen-Quang <i>Deterministic model for gradient-based taxis: an approach to predict algal bloom pattern</i>
2:40 – 3:00 pm	Platform: Mark Verschoor <i>Relationship of sulfate, sediment biogeochemistry, and hypolimnetic iron levels in the promotion of cyanobacterial blooms</i>
3:00 – 3:20 pm	Platform: Sébastien Sauvé <i>ATRAPP – Overview of first two year of results</i>
3:30 – 5:30 pm	Poster Session and Social Event <i>See next page for list of posters</i>

List of Posters

1. *Research and development of reference materials for cyanobacterial toxins at NRCC (Daniel Beach)*
2. *Quantification of emerging cyanotoxins in the freshwater of Nova Scotia Southwestern Region (Nora Benachour)*
3. *Semi-automated method for detecting and counting cells of cyanobacterial colonies and filaments (Frances Buerkens)*
4. *Characterization of spatial and temporal variability of the aquatic microbiome along the Thames River-Lake St. Clair-Lake Erie continuum (Sophie Crevecoeur)*
5. *Optimizing satellite-based models for prediction of phytoplankton biomass across broad geographic gradients (Michael Dallosch)*
6. *Anti-cyanobacterial properties and chemical characterization of essential oils obtained from the endemic Moroccan mint, *Mentha suaveolens* subsp. *timija* (mint timija) (Soukaina El Amrani Zerrifi)*
7. *Assessment of the potentialities of *Vicia faba* seeds and *Opuntia ficus indica* as natural coagulants to reduce cyanobacterial proliferation (Widad El Bouaidi)*
8. *Iron and molybdenum influence growth and microcystin production of a freshwater cyanobacterium, *Microcystis aeruginosa* (Eric Enanga)*
9. *Microplastic particles act as a medium to concentrate waterborne microcystin (Eden Hataley)*
10. *Cyanotoxins in Lake Torment (Nova Scotia, Canada) during summer-fall 2017-18 (Kateryna Hushchyna)*
11. *Evidence for and quantification of anoxia and internal phosphorus loading in Callander Bay, Central Ontario (Robyn Jones)*
12. *Tracking eutrophication using the sediment archives of lakes in southwest Nova Scotia in relation to the advent and escalation of the local mink fur farming industry (Nell Libera)*
13. *Using chironomid assemblages to assess the long run changes of external nutrient inputs in tropical lakes (Joeline Lim)*
14. *Drivers of water quality changes in North American lakes over the past 40 years (Octavia Mahdiyan)*
15. *Untargeted LC-MS/MS approaches to investigate *Microcystis* oligopeptide production (Kimberly McDonald)*
16. *Untargeted high resolution mass spectrometry approaches for identifying novel microcystins (Chris Miles)*
17. *Salinity tolerance and toxin concentration in *Microcystis aeruginosa* in the Chesapeake Bay region (Judith O'Neil)*
18. *Determination of microcystins in water – MECP interlaboratory studies (Moustapha Oke)*
19. *A wicked problem: internal phosphorus loading in Canadian freshwaters (Diane Orihel)*
20. *Advanced QToF MS acquisition modes for non-targeted analysis of microcystins (Xavier Ortiz Almirall)*
21. *Effects of cobalt on heterocyst formation of *Anabaena flos-aqae* (Purnank Shah)*
22. **Microcystis aeruginosa* adversely impacts *Daphnia* spp.: implications on food webs in the Great Lakes (Rene Shahmohamadloo)*
23. *Getting your phyll of data: Assembling a freshwater lake water chemistry database (Arnab Shuvo)*
24. *Characterizing the early development of cyanobacterial algal blooms in small fresh water bodies through high temporal frequency eDNA and photogrammetric analysis with UAV (Allen Tian)*
25. *Effects of road salt application on sedimentary Cladocera assemblages in shallow softwater lakes in the Muskoka River Watershed, Ontario (Robin Valteau)*
26. *A paleolimnological assessment of anthropogenic impact on the lakes of Algonquin Provincial Park (Christopher Wilkins)*
27. *Exploring implementation of Lake Simcoe's Integrated Watershed Management Model in Callander Bay and Eagle Lake (Kyle Wittmaier)*

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Day 3: Friday, April 26th

Time	Event
8:00 – 8:30 am	Registration Desk Open
8:30 – 8:50 am	Welcome & Announcements
8:50 – 9:30 am	Plenary: Jason Venkiteswaran <i>Constant nutrient loads yield changing annual cyanobacteria bloom dynamics</i>
9:30 – 9:50 am	Platform: Kevin Erratt <i>Danger lurks in warm, murky water: microcystin production modulated by temperature and browning</i>
9:50 – 10:10 am	Platform: Oscar Senar <i>Revisiting the concept of “harmful” : when cyanobacteria do not bloom</i>
10:10 – 10:30 am	Platform: Chris Miles <i>Unusual microcystins revealed in Planktothrix by untargeted LC-HRMS, ¹⁵N-labeling and chemical derivatizations</i>
10:30 – 11:00 am	BREAK
11:00 – 11:20 am	Platform: Zofia Taranu <i>Identifying major producers of microcystin across multiple lakes using paleo-records</i>
11:20 – 11:40 am	Platform: Aleksey Paltsev <i>Not all temperate lakes respond to climate change</i>
11:40 – 12:00 pm	Platform: Robert McKay <i>Source-tracking a toxigenic Microcystis bloom in a major Great Lakes tributary</i>
12:00 pm	Meeting Adjourned

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