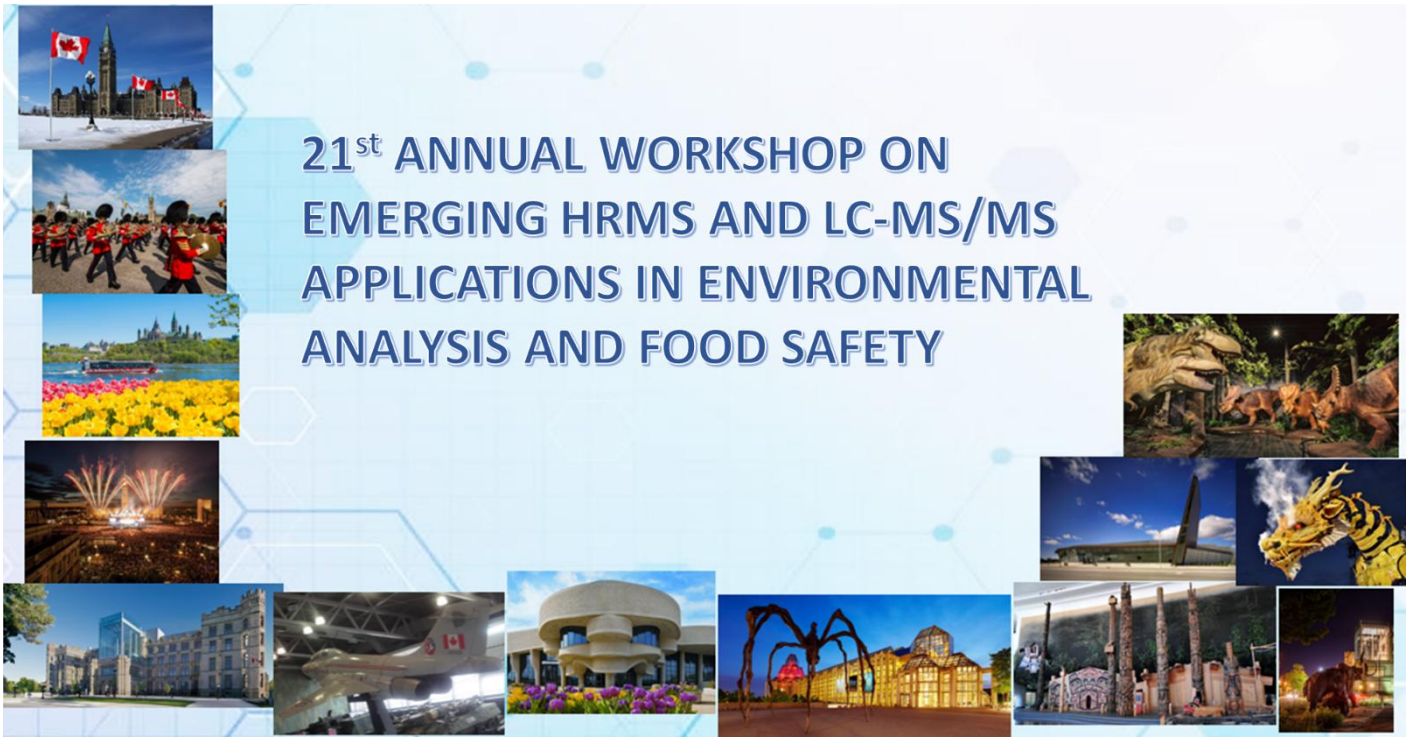
Workshop Program



Organized and hosted by:

Environment and Climate Change Canada

Environnement et Changement climatique Canada

07 – 08 October 2025, Ottawa, Canada

Sandman Signature Hotel, 250 West Hunt Club Rd, Ottawa

https://lcmsms2025.ca/

Dear Colleagues,

On behalf of the Organizing Committee, it is my great pleasure to welcome you to the 21st Annual Workshop on Emerging HRMS and LC-MS Applications in Environmental Analysis and Food Safety.

This workshop provides a forum for scientists from government, academia, and industry to exchange knowledge, discuss challenges, and advance the application of HRMS and LC-MS/MS in environmental and food safety research. Our goal is to highlight innovative and practical applications of these techniques for the screening and quantification of organic contaminants in environmental and food matrices.

Together with the Scientific Committee, we have prepared an exciting and diverse scientific program. Highlights include plenary and invited lectures by Diana Aga, Damià Barceló Cullerès, Stéphane Bayen, Robert Letcher, Paul Mayer, Hui Peng, and Jeff Smith. Poster sessions, held mid-day, further enrich the program and provide opportunities for interaction and discussion.

It is important to highlight that this workshop would not have been possible without the involvement of many people who have worked on planning and organizing this annual event. In particular, I would like to thank the Scientific Committee members for overseeing all scientific aspects of this meeting, providing advice, assisting in planning the plenary lectures and the overall technical program, session chairpersons, and selecting the best presenters for awards. The Scientific Committee members include:

Prof. Diana Aga (University at Buffalo, Buffalo, USA)
Prof. Stéphane Bayen (McGill University, Montréal, Canada)
Prof. Damià Barceló Cullerès (IDAEA-CSIC, ICRA, Barcelona, Spain)
Prof. Robert Letcher (ECCC, Carleton University, Ottawa, Canada)
Prof. Amadeo Rodríguez Fernández-Alba (University of Almeria, Spain)
Dr. Andrzej Wnorowski (Chair), (Environment and Climate Change Canada, Ottawa)

I am also deeply grateful to the Organizing Committee, who have worked tirelessly since last year to ensure that every detail of the Workshop is carefully planned. Their support with logistics, audio-visual preparations, website design, and registration have been invaluable. The members are:

Dr. Alana Greaves (ECCC, Canada)
Gillian Chapman (ECCC, Canada)
Devon Gouveia (ECCC, Canada)
David Harnish (ECCC, Canada)
Philippe Lalonde (ECCC, Canada)
Anita Pall (ECCC, Canada)
Dr. Tristan Smythe (Carleton University, ECCC, Canada)
Dr. Andrzej Wnorowski (ECCC, Canada)

We would also like to acknowledge our Sponsors, whose generous contributions allowed this event to remain free of charge for all participants, and whose support helps us recognize outstanding young scientists for their research achievements. The contributing partners are:

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Canadian Society for Mass Spectrometry

Finally, I extend my sincere thanks to all presenters for sharing their findings, for their dedication in the laboratory, and for preparing their presentations so that we can all benefit from new knowledge and the latest applications of HRMS and LC-MS/MS in environmental and food safety analysis. I am equally grateful to all attendees for your participation, questions, and discussions. Your engagement is what makes this Workshop successful.

I hope your participation in this event sparks new ways of thinking, inspires fresh ideas and approaches, and fosters partnerships and collaborations. This spirit of exchange and connection is the true purpose of the Workshop.

Kind regards,

Andrzej Wnorowski, Ph.D.
21st HRMS and LC-MS/MS Workshop Chair

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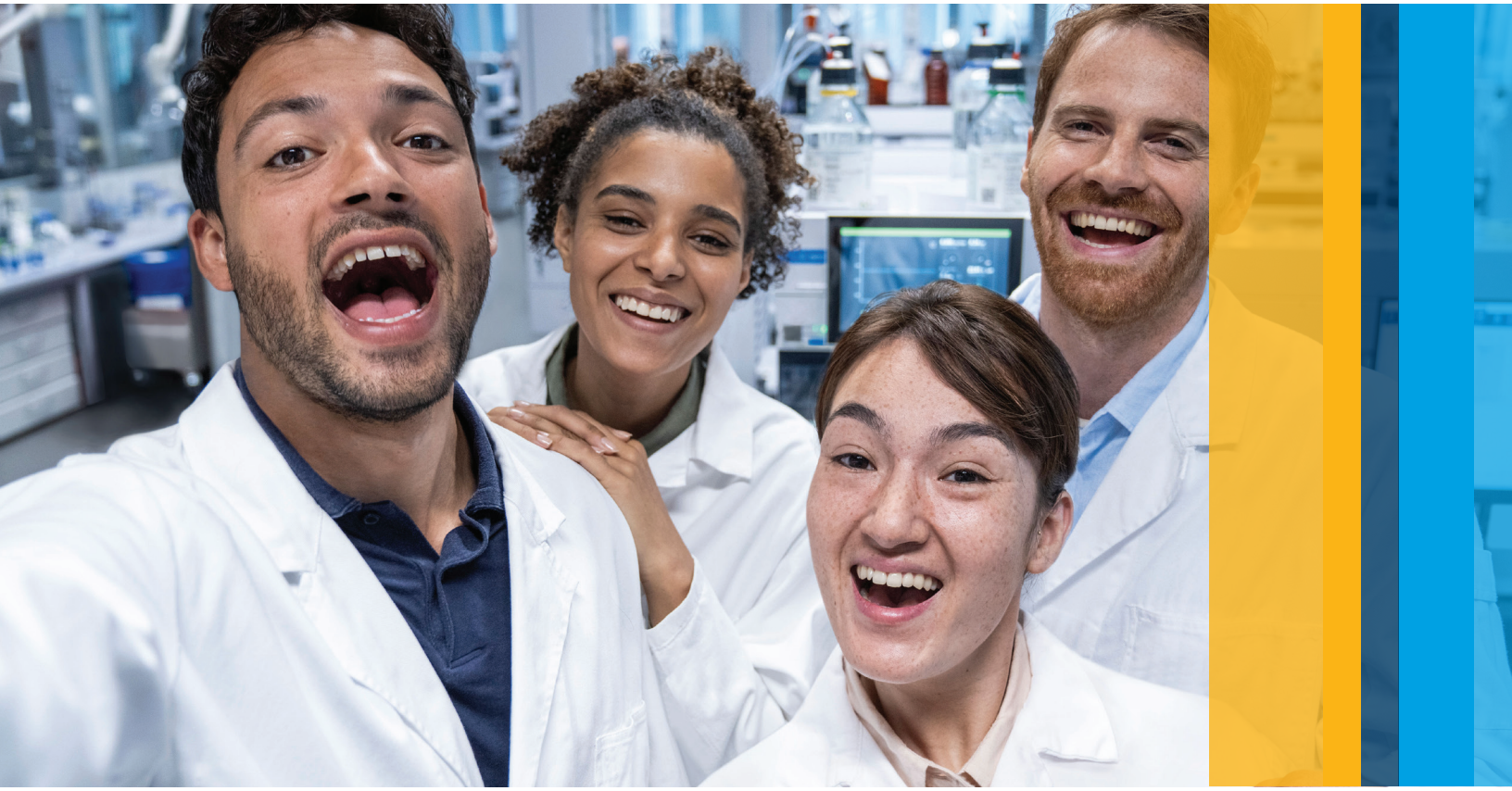

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Oral Sessions take place in the Capital Room

Poster Sessions take place in the Manotick Room

Workshop Partners Exhibition takes place in the Manotick Room

Day 1, Tuesday, October 07, 2025

8:30AM – 9:00AM Registration - Capital Room / Visiting Partners - Manotick Room

9:00AM – 9:05AM Welcome and Introduction by Andrzej Wnorowski (Workshop Chair)
Environment and Climate Change Canada, Ottawa, Canada

9:05AM – 9:15AM Welcome by Environment Canada by Alana Greaves
Environment and Climate Change Canada, Ottawa, Canada

ORAL SESSION 1 – Session Chair Robert Letcher

9:15AM – 10:00AM **OP-01** PLENARY LECTURE Damià Barceló Cullerès
University of Almería, Almería, Spain
Immunoproteomics and Emerging Contaminants Determination followed by Maldi-TOF and LC-orbitrap-MS in Wastewater Based Epidemiology

10:00PM – 10:20AM **OP-02** Emmanuel C. Tolefe
Memorial University of Newfoundland, St. John's, Canada
Identification of new markers of AFFF contamination in surface water and groundwater near a hotspot in Atlantic Canada

10:20AM – 10:40AM **OP-03** Anca Baesu
Health Canada, Ottawa, Canada
Targeted and non-targeted analysis of endocrine disrupting chemicals and their metabolites: implications for reproductive effects

10:40AM – 10:50AM David Solomon Jalajel, Prince Sultan Bin Abdulaziz International Water Prize (announcing this year's awardees, PSIPW video)

10:50AM – 11:00AM **BREAK**

11:00AM – 11:45AM **OP-04** PLENARY LECTURE Stéphane Bayen
McGill University, Montréal, Canada
Bridging non-targeted studies across LC-MS platforms using machine learning: honey fingerprinting as a case study

11:45AM – 12:05PM **OP-05** Pawan Kumar
Punjabi University, Patiala, India
Forced degradation, LC-UV and LC- HRMS studies on Mometasone Furoate and Glycopyrrolate: Characterization of degradation products

12:05PM – 12:50PM **LUNCH BREAK**

12:50PM – 01:05PM **Poster Session & Visiting Partners Exhibition, Manotick Room**

ORAL SESSION 2 – Session Chair Stéphane Bayen

01:05PM – 01:50PM **OP-06** INVITED GUEST LECTURE Jeffrey Smith
Carleton University, Ottawa, Canada
Enhancing our understanding of viroceuticals using an optimized mass spectrometry-based lipidomics approach

01:50PM – 02:10PM **OP-07** Erik Krogh
Vancouver Island University, Vancouver, Canada
High throughput tandem mass spectrometry analysis of para-phenylene diamine quinones for spatiotemporal analysis of tire wear toxicants in urban waters

02:10PM – 02:30PM **OP-08** Donald Bimpong
McGill University, Montréal, Canada
Assessing chemical leachables from microplastics and bulk plastic single-use food contact materials

02:30PM – 02:50PM **OP-09** Louis Thomas
McGill University, Montréal, Canada
Impact of daily usage and washing on the contaminant and microplastics loads released from reusable drinking water bottles and food storage bags

02:50PM – 03:00PM **BREAK**

03:00PM – 03:20PM **OP-10** Hieu Le
Carleton University, Ottawa, Canada
Pomegranate juice authentication by flow-injection nano-LC-ESI mass spectrometry

03:20PM – 03:40PM **OP-11** Thushara Tennakoon
University at Buffalo, Buffalo, USA
To Automate or Not to Automate: Optimizing Parameters in Liquid Chromatography–Triple Quadrupole Mass Spectrometry for Pesticides

03:40PM – 04:00PM **OP-12** Sarah Dowd
Waters Corporation, Milford, USA
Identification of Known and Novel PFAS in Aqueous Film-Forming Foam (AFFF) by Non-Targeted Screening with High-Resolution Mass Spectrometry and Pattern Analysis

04:00PM – 04:00PM **Closing** Andrzej Wnorowski (Chair)

04:00PM – 06:00PM **Welcome Reception**, Capital Room

Day 2, Wednesday, October 08, 2025

08:30AM – 08:45AM Registration - Capital Room / Visiting Partners - Manotick Room

08:45AM – 08:45AM Opening by Andrzej Wnorowski (Workshop Chair)

ORAL SESSION 3 – Session Chair Damià Barceló Cullerès

08:45AM – 09:30AM **OP-14** PLENARY LECTURE Diana Aga
University at Buffalo, Buffalo, USA
Role of Mass Spectrometry in Achieving "One Health" with "Zero Casualty": Lessons Learned from Decades of Research on Emerging Contaminants and Forever Chemicals

09:30AM – 09:50AM **OP-15** Frank Dorman
Dartmouth College, Hanover, USA
Chemical Characterization of "Non-Traditional" Sources of PFAS Through the Use of High-Resolution Ion Mobility Separation Coupled to High-Resolution Mass Spectrometry

09:50AM – 10:10AM **OP-16** Holly Lee
SCIEX, Concord, Canada
Quantitation of ultrashort- and short-chain PFAS in beverages by a direct injection LC-MS/MS method

10:10AM – 10:30AM **OP-17** Yoann Rodriguez
Agilent Technologies, Canada
PFAS in the future : Challenges for Baby Food

10:30AM – 10:40AM BREAK

10:40AM – 11:25AM OP-18 INVITED GUEST LECTURE Hui Peng
University of Toronto, Toronto, Canada
High-throughput protein target mapping enables accelerated bioactivity discovery for environmental chemicals

11:25AM – 11:45AM OP-19 Tristan Smythe
Environment and Climate Change Canada / Carleton University, Ottawa, Canada
PFAS and fluorotelomer biomarkers in Canadian birds: Quantitative Targeted and Suspect Screening

10:45AM – 12:05PM OP-20 Nejumal Kannankeril Khalid
Université de Montréal, Montréal, Canada
Per and polyfluoroalkyl substances (PFAS) in Aquatic Ecosystems and Marine Mammals: Detection, Fate, and Impacts

12:05PM – 12:50PM LUNCH BREAK

12:50PM – 01:05PM Poster Session & Visiting Partners Exhibition, Manotick Room

ORAL SESSION 4 – Session Chair Diana Aga

01:05PM – 01:50PM OP-21 PLENARY LECTURE Robert Letcher
Environment and Climate Change Canada / Carleton University, Ottawa, Canada
Analysis of Individual Chain Length Congeners of Polychlorinated Alkanes in Lipid-Rich Samples by Liquid Versus Gas Chromatography with High-Resolution Mass Spectrometry

01:50PM – 02:10PM OP-22 Jonathan Grandy
Sepsolve Analytical / Markes Int., Waterloo, Canada
PFAS in the Environment: Challenging Matrices, and Analytical Innovations

02:10PM – 02:55PM OP-23 INVITED GUEST LECTURE Paul Mayer
University of Ottawa, Ottawa, Canada
Detective Stories in Mass Spectrometry – It's Not So Elementary My Dear Watson!

02:55PM – 03:05PM BREAK

03:05PM – 03:25PM OP-24 Yaxi Hu
Carleton University, Ottawa, Canada
Simultaneous detection of two adulteration practices for plant-based milk alternatives using flow-injection mass spectrometry and machine learning

03:25PM – 03:45PM **OP-25** Erasmus Cudjoe
PerkinElmer Scientific, Woodbridge, Canada
Building Robust LC-MS/MS Workflows: The Power of Thoughtful Sample Preparation

03:45PM – 03:55PM AWARDS ANNOUNCEMENTS

03:55PM – 04:00PM CLOSING REMARKS

POSTER SESSION – October 07-08, 2025, Manotick Room

12:50PM – 01:05PM PP-01 Anca Baesu
Health Canada, Ottawa, Canada
Development of a general protocol for non-targeted analysis of PFAS in drinking water: QA/QC for reproducible identification

12:50PM – 01:05PM PP-02 Faraz Iliaee
Concordia University, Montréal, Canada
Trend-guided Prioritization of Chemical Features in Non-Targeted Analysis: A Case Study of Tire-derived Transformation Products

12:50PM – 01:05PM PP-03 Georgina Kalogerakis
Université Laval, Montréal, Canada
Targeted and non-targeted analyses of reaction products formed during remediation of toluene by heat-activated peroxydisulfate in groundwater

12:50PM – 01:05PM PP-04 Holly Lee
SCIEX, Concord, Canada
Leveraging high-resolution mass spectrometry (HRMS) for resolving PFAS interferences and quantitation in food matrices

12:50PM – 01:05PM PP-05 Tanya Sharma
Purdue University, West Lafayette, USA
Reaction Mechanisms for Fast Pyrolysis of Polystyrene by Using a Pyroprobe Integrated With an Ion Trap Mass Spectrometer

12:50PM – 01:05PM PP-06 Yanpei Cai
McGill University, Montréal, Canada
Tandem Amadori-Heyns Rearrangement: A novel route to non-enzymatic de-glycation

12:50PM – 01:05PM PP-07 Zilin Zhou
Health Canada, Ottawa, Canada
Non-targeted analysis of endocrine-disrupting chemicals in ovarian follicular fluid via new diagnostic fragmentation evidence and mass spectral library matching

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