
Lake Louise Tandem MS Workshop Program



December 4 – 7, 2024

Fairmont Chateau Lake Louise
111 Lake Louise Drive
Lake Louise, AB, Canada

Welcome to the Lake Louise Tandem MS Workshop

Dear Colleagues,

Welcome to the 36th edition of the Tandem MS Workshop. We hope that you will enjoy the presentations and the social events we have organized for you this year. Held annually at the Fairmont Chateau Lake Louise, Lake Louise, Alberta, the Workshop focuses on scientific exchange and dissemination of technical aspects of tandem mass spectrometry.



36th Annual Tandem Mass Spectrometry Workshop

General Information

Registration

Registration Opens on Wednesday, December 4 at 16:00 in the Victoria Ballroom Foyer. Please come to pick up your packages and badges.

Posters

Poster presenters should have their posters up by 20:00, Wednesday, December 4. Posters must be taken down by noon on Friday, December 6.

Meals

Please note: If you order beverages other than tea or coffee at ANY meal, you will be charged. If anyone has special dietary requirements, please contact Janette Champ, if you have not already done so. Vouchers are available for lunches on Friday and Saturday for those wishing to ski or hike. Please obtain the Lunch-to-Go Vouchers at dinner the night before. Vouchers are to be used at the Chateau Deli located in the Lobby of the Hotel. If you take a voucher, you may NOT join in the sit-down lunch as well.

Wednesday, December 4

- 16:00 to 17:25 Meet & Greet
Pick up program package, name tags, drink tickets.
Victoria Ballroom Foyer
- 17:25 Introductory Remarks: **Lars Konermann**, The University of Western Ontario, London, ON, Canada
- 17:30 to 18:15 Plenary Lecture - Victoria Ballroom
Michel L. Gross, Washington University, St. Louis, MO
Lake Louise and Tandem Mass Spectrometry: A 36-Year Record of Breathtaking Change
- 19:00 to 23:00 Dinner
Victoria Ballroom

Thursday, December 5

- 07:00 Breakfast
Louiza, Lower Level
- 07:30 Registration Opens for Late Badge Pickup
Victoria Ballroom Foyer
- Ion Chemistry and Ion Structures
Chair: **Jon Amster**, University of Georgia, Athens, USA
- 08:00 **Peter Armentrout**, The University of Utah, Salt Lake City, USA
Challenges for Conformational-Space Calculations by Density Functional Theory and First Measurements of the Energetics of Peptide Conformers
- 08:25 **Michael Duncan**, University of Georgia, Athens, GA
Photodissociation Spectroscopy of Metal Ion Complexes
- 08:50 **Anouk Rijs**, Agathe Depraz Depland, Andrea Istrati, Sjors Bakels, May Constabel, Iuliia Stroganova, Ariadni Geballa-Koukoula, Vrije Universiteit, Amsterdam, The Netherlands
Unraveling Amyloid Oligomer Structures: Ion Mobility Mass Spectrometry Coupled with IMRPD Spectroscopy
- 09:15 **Elvin Cabrera**, Brian H. Clowers, Perdita Barran, University of Manchester, UK
Techniques for Ultra-Fast IM-MS Experiments and Structural Characterization of Large Protein Complexes
- 09:40 Discussion & Coffee Break
Victoria Ballroom

Thursday, December 5, cont.

Proteomics

Chair: **Peter Verhaert**, ProteoFormiX BV, BEL

- 10:10 **Marie A. Brunet**, Université de Sherbrooke, Sherbrooke, QC
Learning translation: deep learning-guided proteogenomics
- 10:30 **Daniel Hermanson**, Eugen Damoc, Cristina Jacob, Philip Remes, and Scott Peterman, Thermo Fisher Scientific, San Marcos, CA, USA
Translating omics discoveries into quantitative insights
- 10:50 **Jennifer Geddes-McAlister**, Ben Muselius, Florence Roux-Dalvai, Melanie Alpaugh, Arnaud Droit, University of Guelph, Guelph, Canada
Organ atlas proteome mapping of cryptococcosis defines novel putative biomarkers and promising druggable targets for personalized health management
- 11:10 **Meinusha Govindarajan**, Shahbaz Khan, Anish Puri, Vladimir Ignatchenko, Ximing Li, Matthew Waas, Amanda Khoo, Lydia Y Liu, Nazanin Tatari, Nhu-An Pham, Chitra Venugopal, Laurie Ailles, Ming-Sound Tsao, Sheila Singh, Thomas Kislinger, University of Toronto, Toronto, Canada
Pan-cancer N-glycoproteomic atlas of patient-derived xenografts for therapeutic target discovery

Legends of Lake Louise Travel Award Winner

- 11:30 **Margret Thorsteinsdottir**, Unnur A Thorsteinsdottir, Hrafnhildur L. Runolfsdottir, Finnur F Eiriksson, Vidar O. Edvardsson, Runolfur Palsson, Faculty of Pharmaceutical Sciences, University of Iceland
Implementation of UPLC-MS/MS assay for therapeutic monitoring in patients with APRT deficiency
- 11:50 **Ian K. Webb**, Ashlyn N. Dollar, Ankita B. Gurav, Indiana University, Indianapolis, USA
Discerning the Structural Dynamics of the Dark Proteome with Tandem Mass Spectrometry

12:10 Discussion & Group Photo

12:30 - 14:00 Lunch

Louiza, Lower Level

Biological Applications

Chair: **Jeff Smith**, Carlton University, Ottawa, Canada

- 14:00 **Broc Glover**, Waters Limited, Mississauga, Canada
Going Faster: Leveraging MRT Analyzers for High-Throughput, No-Compromise Omics
- 14:20 **Christopher Thibodeaux**, McGill University, Montreal, Canada
An interesting lipid-modifying enzyme involved in bacterial virulence and antimicrobial resistance
- 14:40 **Steffen Lindert**, Ohio State University, Columbus, USA
Energy Resolved Mass Spectrometry Data from Surfaced Induced Dissociation Improves Prediction of Protein Complex Structure

Thursday, December 5, cont.

15:00 *Amir Khajavinia, Deborah Michel, Udoka C. Ezeaka, Randy W. Purves, Shawn N. Whitehead, Robert B. Laprairie, Anas El-Aneed, College of Pharmacy and Nutrition, University of Saskatchewan*
Development of quantification and imaging mass spectrometric methods for the analysis of psilocin in plasma and brain tissues

Winner of a CSMS Travel Award

Sponsored by:



15:20 *AGILENT Sponsored Talk*
TBA

15:40 Discussion & Coffee Break
Victoria Ballroom

Proteins

Chair: **Gary Glish**, University of North Carolina, Chappel Hill, USA

16:10 *Rachel Loo, Joseph Loo, UCLA, Los Angeles, USA*
How to Break Up Married Subunits

16:30 *Bradley T. V. Davis, Anisha Haris, Alex Keszei, Algirdas Velyvis, David Bruton, Kevin Giles, Mohammad Mazhab-Jafari, Siavash Vahidi, University of Guelph, Canada*
Charge Detection Mass Spectrometry Meets Cryo-EM: Insights into Proteasome Activator Complexes

Winner of the Margaret Northcott Lake Louise Travel Award

16:50 *Elyssia Gallagher, Michael S. Cordes, Madeline G. Bannon, Alexis N. Edwards, Baylor University, Waco, USA*
Exploring the effects of ionization mode on the analysis of proteins in native mass spectrometry

17:10 *Mike Bowers, Steven Burratto, Ambuj Singh, Yingying Jin, UCSB, USA*
Parkinson's Disease: Search for Therapeutic Agents: An Update

17:30 Discussion

18:00 to 19:15 Dinner
LAGO, located on the main floor in the Mount Temple Wing

PICK UP LUNCH-TO-GO VOUCHERS. Please ask a server

Ion Mobility

Chair: **Derek Wilson**, York University, Toronto, Canada

19:30 *Brandon Ruotolo, University of Michigan, Ann Arbor, USA*
Collision Induced Unfolding: High-throughput, Information-rich Stability Measurements of Biological Macromolecules

Winner of The Ken Standing Award

Sponsored by:



Thursday, December 5, cont.

- 19:55 **John McLean**, Benjamin K. Blakely, Jody C. May, Vanderbilt University, Nashville, USA
Refining the landscape of high dimensional molecular phenomics - strategies for enantiomer separations with high resolving power ion mobility-mass spectrometry
- 20:15 **Christian Bleiholder**, Fanny C. Liu, Jusung Lee, Kaira A. Mayberry, Mark E. Ridgeway, Christopher A. Wootton, Alina Theisen, Erin M. Panczyk, Benjamin J. Jones, Lea Nienhaus, Melvin A. Park, Florida State University, Tallahassee, USA
Are atomic-level protein structures amenable with ion mobility/mass spectrometry?
- 20:35 **Erin Baker**, Guozhi Zhang, Artur McMillian, Abigail Gancz, Pieter Dorrestein, Tessa Andermann, Casey M Theriot University of North Carolina at Chapel Hill, Chapel Hill, USA
What Can Your Poop Tell You About Your Health?

Poster Session

20:55 to 23:00 Authors are asked to be present until 23:00

Annie Ha, Amanda Khoo, Jaron Arbet, Zhuyu Qiu, Stanley K Liu, Julius O Nyalwidhe, Oliver John Semmes, Paul C Boutros, Thomas Kislinger, University of Toronto, Toronto, Canada
Racial differences of the urinary proteome in Black men with localized prostate cancer.

John Headley, Rio G Bouwers, Erin Pedersen, Ian J Vander Meulen, Dena W McMartin, Cassidy VanderSchee, University of Saskatchewan, Saskatoon, Canada
Tandem mass spectrometry of oil sands naphthenic acid-metal interactions in water samples

Mahsa Dolatkahh, Lars Konermann, University of Western Ontario
Operation of an Electrospray Source Studied by Molecular Dynamics Simulations

Nathan Ghafari, Athanase C, Lacroix M, Sleno L, University of Quebec in Montreal
Correlation analysis to improve metabolome coverage for studying different disease models

Ayesha Chaudhry, Cristina Lento, Derek Wilson, York University, Toronto, Canada
Understanding the misfolding of Tau protein using Time-resolved Hydrogen-Deuterium Exchange Mass Spectrometry

Jennifer Kolwich, Jessie F. Deng, Lainey K. Ennett, Kyla Toshack, Richard D. Oleschuk, and Avena C. Ross, Queen's University, Kingston, Canada
Monitoring spatiotemporal dynamics of soil microbe co-culture metabolites using ambient mass spectrometry.

Chau Nguyen, Tao Huan, University of British Columbia, Vancouver, Canada
Alternation of ionization efficiency and its consequence to quantitative comparison in untargeted metabolomics

Richard Oleschuk, Jian Yu, Jess Deng, Haidy Metwally, Jennifer Kolwich, Hailey Tomm, Martin Kaufmann, Rachel Klotz, Chang Liu, J.C. Yves Le Blanc, Thomas R Covey, John Rudan, Avena Clara Ross, Queens University, Kingston, Canada
Rapid and robust workflows using different ionization, computation and visualization approaches for spatial metabolome profiling of microbial natural products

Thursday, Dec. 5 Poster Session, cont.

Paul Mayer, Sofia Zaman, Andras Bodi, University of Ottawa, Ottawa, Canada
To bond or not to bond: the temperature is the question (and the answer)

Yuen Ki Ng, Elnaz Aliyari, Caroline Cui and Lars Konermann, University of Western Ontario, London, Canada
Enzyme Catalysis in the Gas Phase Revealed by ESI-IMS/MS/MS

Derek Wilson, Esther Wolf, Vimanda Chow, Alex Listigovers, Cristina Lento, York University, Toronto, Canada
Rapid Characterization of Protein Interactions Using Automated Millisecond Hydrogen Deuterium Exchange Mass Spectrometry

Zeynab Azimychetabi, Erin N. Morrison, Anna B. Kisiala, Scott C. Farrow, R. J. Neil Emery, Trent University, Peterborough, Canada
The Relationships Among Phytohormones And Benzylisoquinoline Alkaloids During Early Development Of Papaver Rhoeas L.

Joshua Maliepaard, Dr. Karli R. Reiding, Biomolecular Mass Spectrometry and Proteomics, Utrecht University, Utrecht Netherlands
Towards MS-based identification and quantification of glycopeptide isomers

Syed Ghulam Musharraf, H.E.J. Research Institute of Chemistry, ICCBS, University of Karachi
Dereplication of Polyherbal formulation using mass spectrometry-based targeted and untargeted metabolomic

Tao Huan, University of British Columbia, Vancouver, Canada
Influence of Ionization Efficiency Variability on Quantitative Metabolomics

Kasra Hanifi, Lars Konermann, The University of Western Ontario, London, Canada
Mobile Proton MD Simulations for Determining Protein Charge State Distributions in Aqueous Ammonium Acetate Droplets During Native ESI-MS

Evelyn MacKay-Barr, Lars Konermann, The University of Western Ontario, London, Canada
Oxidative Modifications During Thermal Protein Unfolding and Their Implications for Thermodynamic Stability Measurements

Randall Clark, Younis Abiedalla, Auburn University, Auburn, USA,
EI-MS and MS/MS Fragmentation Studies on Regioisomeric Ether Substituted Aromatic Esters and Ketones

Arthur Zastepa, Judy A. Westrick, Paul W. MacKeigan, Zofia Ecaterina Taranu, Todd R. Miller, Anqi Liang, Irene Gregory-Eaves, Justin D. Chaffin, Environment and Climate Change Canada, Burlington Canada
Bioactive metabolites produced by cyanobacterial blooms in Canadian freshwaters

Elisabeth Schwiebert, Georgia Institute of Technology, Atlanta, USA
Metabolomics of Papanicolaou Tests for the Discovery of Ovarian Cancer Biomarkers

David Schriemer, Bruno Amaral, Andrew Michael, University of Calgary, Calgary, Canada
Click-linking: an approach to in situ crosslinking that improves sampling of protein interactions

Thomas Kislinger, Princess Margaret Cancer Centre, Toronto, Canada
Droplet-based proteomics for low-input proteomics

Shannon Lemmens, Arthur E. Lee, Christian Ieritano, W. Scott Hopkins, University of Waterloo, Waterloo, Canada
Fragmentation Behaviour of Short-Chain Perfluoro Sulfonic Acids: Mechanisms and Pathways of SO₃⁻ and FSO₃⁻ Formation in the Gas Phase

Thursday, Dec. 5 Poster Session, cont.

Anas El-Aneed, Maryam Alyari, Salah Almubarak, Darryl Adamko, College of Pharmacy and Nutrition, University of Saskatchewan

Assessment of LC-MS targeted metabolomics for urgent neuroprotective cooling of hypoxic ischemic encephalopathy (HIE) neonatal

Chris Le, Tetiana Davydiuk, Karen Hoy, Chester Lau, Qingqing Liu, Xiufen Lu, Hanyong Peng, University of Alberta, Edmonton, Canada

Identification of arsenic species for studies of arsenic metabolism and health effects

Reshmi Karamel, Lydia Zamlynny, Christopher O. Miles, Krista Thomas, Elliott Wright, Pearse McCarron, University of Ottawa, Ottawa, Canada

Unimolecular Dissociative Photoionization of Terpene Radical Cations

Joe Anacleto, Ebadullah Kabir, Yves LeBlanc, Cristina Lento, Derek J. Wilson, York University
Reducing gas-phase hydrogen/deuterium scrambling on a QTOF Mass Spectrometer equipped with electron activated dissociation (EAD) fragmentation technology

Sandesh Gondarry, Paul M. Mayer, University of Ottawa, Ottawa, Canada

Does the dissociation of guaiacol family radical cations mimic their thermal decomposition?

Liang Li, University of Alberta, Edmonton, Canada

Developing Separation Techniques and Tandem MS for Expanding and Characterizing the Metabolome, Lipidome, and Exosome in Biological Systems

Wei, Zhou, Janusz Pawliszyn, University of Waterloo, Waterloo, Canada

High throughput analysis in complex samples by coated blade spray-mass spectrometry

Dajana Vuckovic, Reza Maulana, Lise Cougnaud, Ana Carolina dos Santos, Concordia University, Montreal, Canada

Impact of adduct and internal standard selection on accuracy of semi-quantification in lipidomics

Thomas Velenosi, Victor Lee, Khanh Nguyen, Linglan Zhu, Chloe White, Tao Huan, University of British Columbia, Vancouver, Canada

DIATAGeR: Triacylglycerol Annotation of Data-Independent Acquisition based Lipidomics

Pierre Chaurand, Rachel Pryce, Catherine Argyriou, Nancy Braverman, Samy Omri, Université de Montréal, Montreal, Canada

Lipidomic Alterations in the Retina of a mouse model of Zellweger Spectrum Disorder Investigated by Mass Spectrometry Imaging

Jared Shaw, Sachin Tennakoon, University of Nebraska-Lincoln, Lincoln, United States

Characterization of ribosome heterogeneity by complex-up and top-down mass spectrometry

Jeffrey Smith, Christian A. Rosales, Noah A. Lepinsky, Wondewossen Gebeyehu, Fraser Colquhoun, Karl V. Wasslen, Benjamin B. Warnes, Jasmine Chihabi, Jeffrey M. Manthorpe, Carleton University, Ottawa, Canada
Improved LCMS detection of opioids, amphetamines, and psychedelics using TrEnDi

Francisco Fernandez Lima, Florida International University, Miami, USA

Top/middle/bottom TIMS-ExD/UVPD histone proteoform identification of unknown coral species

Scott Hopkins, Christian Ieritano, Mila Abaeva, Derek Schipper, University of Waterloo, Waterloo, Canada
Symmetry (in)action: How protonation can induce pseudochirality within achiral molecules

Thursday, Dec. 5 Poster Session, cont.

Katherine Tschirhart, Emir Nazdrajic, Scott Hopkins, Larry Campbell, Domenico Santoro, University of Waterloo, Kitchener, Canada
Comparative Analysis of Disinfection Byproducts from Chlorine, Peracetic Acid, and Performic Acid in Wastewater Using UHPLC-HRMS

Peter Verhaert, Gilles Frache, Dietmar Thal, Marthe Verhaert, Raf Sciot, ProteoFormiX & University of Leuven, Leuven, BEL
(Tandem) Mass Spectrometry Histochemistry of FFPE tissue sections. Close to the Holy Grail in Pathology?

Lars Konermann, V. Alinezhad, Y. K. Ng, S. Mehta, University of Western Ontario, London, Canada
Uncovering the Pathway of Serine Octamer Magic Number Cluster Formation During Electrospray Ionization: Experiments and Simulations

Friday, December 6

- 07:00 Breakfast
Louiza, Lower Level
Protein Therapeutics
Chair: **Erin Baker**, University of North Carolina, Chapel Hill, NC, USA
- 08:00 **Andy Hoofnagle**, University of Washington, Seattle, WA, USA
Protein analysis for clinical care, one piece at a time.
- 08:25 **Dina Schuster** Jan Fiala, Simon Ollivier, Danique M.H. van Rijswijck, Athanasios Smyrnakis, Florian Busch, Mariangela Kosmopoulou, Stuart Pengelley, Oliver Raether, Jean-Francois Greisch, Dimitris Papanastasiou, Albert J.R. Heck, Utrecht University, Utrecht, The Netherlands
Novel mass spectrometry approaches for antibody analysis: repertoires, sequencing and therapeutics
- 08:50 **Luca Fornelli**, Linda Lieu, Cynthia Nagy, Ryan Oates, Jake Kline, Christopher Mullen, Graeme McAlister, David Bergen, Vlad Zabrouskov, Kristina Srzenti, Kenneth Durbin, Rafael Melani, University of Oklahoma, Norman, Oklahoma USA
Simplifying to characterize: applications of proton transfer charge reduction to improve the middle-down mass spectrometry analysis of antibodies and biotherapeutics
- 09:15 **Igor A. Kaltashov**, University of Massachusetts, Amherst MA, USA
Reverse Engineering of a Pathogenic Antibody Reveals the Molecular Mechanism of a Vaccine Side Effect
- 09:40 Discussion & Coffee Break
Victoria Ballroom
Methods and Instrumentation, Part I
Chair: **David Schriemer**, University of Calgary, Calgary, Canada
- 10:10 **Yehia Mechref**, Texas Tech University, Lubbock, USA
Isomeric Separation of Glycans and Glycopeptides with Mesoporous Graphitic Carbon Material for Effective Tandem MS Interpretation
- 10:30 **Sylvain Letarte**, Ingenio by Phytronix, Calgary, Canada
Selective Water radical cation adduct formation in the analysis of Dehydroepiandrosterone
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Friday, December 6, cont.

10:50 *Carlos Canez, Liang Li, University of Alberta, Edmonton, Canada*
The adverse effects of labware leachables on lipidome analysis and the multiple sources contributing to contamination variability.

Winner of a CSMS Travel Award Sponsored by:



11:10 *Shira Joudan, Nipuna Senanayake, University of Alberta, Edmonton, Canada*
Redox chemistry of antioxidant environmental pollutants: In source or solution?

11:30 *Xing-Fang Li, Qiming Shen, Tingting Zhao, K.N. Minh Chau, Emma Jin, Menglan Gao*
University of Alberta, Edmonton, Canada
Nontargeted Analysis of Emerging Contaminants in Water

11:50 Discussion

12:00 to 13:30 Lunch
Louiza, Lower Level

FRIDAY AFTERNOON - FREE TIME - ENJOY THE GREAT OUTDOORS!

18:00 Cocktails
Victoria Foyer/Victoria Ballroom

19:00 to 23:00 Banquet Dinner
Victoria Ballroom

PICK UP LUNCH-TO-GO-VOUCHERS. Please ask a server.

Saturday, December 7

- 07:00 Breakfast
Louiza, Lower Level

Novel Techniques and Applications
Chair: **Lars Konermann**, University of Western Ontario, London, Canada
- 08:00 **Kyle Duncan, Kiera Nguyen, Gillian Carleton, Julian J. Lum**, Vancouver Island University, Nanaimo, Canada
Expanding spatial metabolomics coverage with lithium doped nanospray desorption electrospray ionization mass spectrometry imaging
- 08:20 **Malek Hassan, Haidy Metwally, Rachel Theriault, Randy Ellis, Martin Kaufmann, Kevin Ren, John Rudan, Richard Oleschuk**, Queen's University, Kingston, Canada
Ambient Ionization Mass Spectrometry Analysis of Formalin-Fixed Paraffin-Embedded Clinical Tissue Samples

Winner of the Bill Davidson Award Sponsored by the Davidson Family
- 08:40 **Mathieu Lavallée-Adam, Yun-En Chung, Iryna Abramchuk, Maram El-Azouni, Giorgio Freije, Jonathan Krieger, Tharan Srikumar**, University of Ottawa, Ottawa, Canada
Novel machine learning-guided precursor ion selection and fragmentation to improve peptide identification in tandem mass spectrometry
- 09:00 **Lekha Sleno, Kahina Chabi**, UQAM, Montreal, Canada
The complex metabolism of tartrazine, a challenging molecule to study by LC-MS/MS
SPONSORED BY SCIEX
- 09:20 **Christopher Chouinard, Ralph Aderorho, Baker Garrison, Copeland Johnson, Drew Whitman**, Clemson University, Clemson, USA
Tandem Mass Spectrometry Approaches for Interesting Psychoactive Substances
- 09:40 Discussion & Coffee Break
Victoria Ballroom

Methods and Instrumentation, Part II
Chair: **Derek Wilson**, York University, Toronto, Canada
- 10:10 **Edgar White Buenger, Andras Bodi, Maxi A. Burgos-Paci, Paul M. Mayer**, University of Ottawa, Ottawa, Canada
Hidden in Plain Sight: Cyclopentene Formation in the Pyrolysis of Isoprene
- 10:30 **Tingting Zhao, Qiming Shen, Xing-Fang Li*, Tao Huan***. The University of British Columbia, Vancouver, Canada (*University of Alberta)
Machine Learning-Guided Identification of Halogenated Compounds in High-Resolution Mass Spectra for Exposomics Profiling

Winner of a CSMS Travel Award Sponsored by: 
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Saturday, December 6, cont.

- 10:50 **Felix Meissner**, Annika Frauenstein, Benedikt Gansen, Marc Vaisband, André C Michaelis, Jose J Almagro Armenteros, Matthias Mann, Jan Hasenauer, Soren Brunak, University of Bonn - Institute of Innate Immunity, Bonn, Germany
Mass spectral meta-analysis reveals human and mouse secretory protein variants with altered structures and functions
- 11:10 **Janusz Pawliszyn**, University of Waterloo, Waterloo, Canada
Microextraction using chemical biopsy tool combined with convenient MS determination of free and total concentration of species including unstable species
- 11:30 **Daniel Beach**, Lydia Zamlynny, Christopher O. Miles, Krista Thomas, Elliott Wright, Pearse McCarron National Research Council, Halifax, Canada
Tandem Mass Spectrometry Methods for Measuring Cyanotoxins
- 11:50 **Gary Glish**, Conner Baucom, Matthew Campbell, Tyler Larson, Russell Grant, University of North Carolina, Chapel Hill, USA
Ion Optics Change the Structure of Electrosprayed Ions
- 12:10 Discussion and Adjournment
- 12:15 to 13:30 Lunch
Louiza, Lower Level
- FOR INDIVIDUAL STAYING ON:
- SATURDAY AFTERNOON - FREE TIME - ENJOY THE GREAT OUTDOORS!
- 18:00 Dinner
Victoria Foyer/Victoria Ballroom

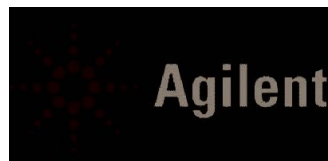
Sunday, December 7

- 07:00 to 10:30 Breakfast
Louiza, Lower Level

Thank you for joining us at the 36th Annual Lake Louise Tandem MS Workshop. We hope you will join us next year!

Our Sponsors

We gratefully acknowledge financial support for the Lake Louise Workshop. Sponsorship levels are ranked in accordance with the Lake Louise downhill ski runs.



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