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MetaboNews

This month in metabolomics

December, 2023

Vol 13, Issue 12

MetaboNews is a monthly newsletter published in a partnership between The Metabolomics Innovation Centre (TMIC) and The Metabolomics Society



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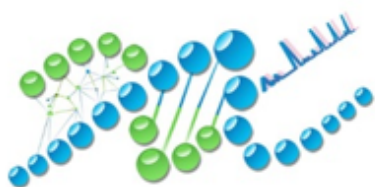
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Metabolomics Society News



METABOLOMICS SOCIETY
EARLY-CAREER MEMBERS NETWORK

The Metabolomics Society is an independent, non-profit organization dedicated to promoting the growth, use, and understanding of metabolomics in the life sciences.

General Enquiries

info@metabolomicssociety.org

Conference Corner

[Metabolomics 2024 – Welcome to Japan!](#)

The Metabolomics Society along with the Scientific Organizing Committee are delighted to extend this invitation to you to attend **Metabolomics 2024**, the 20th Annual Conference of the Metabolomics Society, in Osaka, Japan. The conference will be held June 16-20, 2024 at the ATC Hall.

Metabolomics 2024

Osaka, Japan

ATC Hall (Asia Pacific Trade Center)

June 16 – 20

www.metabolomics2024.org



[Calling All Sponsors!](#)

The [Sponsorship Brochure](#) is available for Metabolomics 2024.

As we approach the 20th Annual Conference of the Metabolomics Society, we look forward to partnering with your organization to continue the success of bringing together all the major international organizations involved in human, plant, microbial, animal, and environmental metabolomics.

Your support is extremely important to the success of the meeting, helping to keep registration costs down which allows more of our younger scientists to attend. We look forward to partnering with you for Metabolomics 2024!

Members' Corner

[Board of Directors](#)

Dear Society Members,

The Board of Directors met last week for our monthly meeting. This was the last one of 2023. While this was held close to Christmas, as we held the meeting virtually, there were no glasses of fizz nor any munching of mince pies. If you are unfamiliar with these little pies of joy, they are sweet little pastries (a few bites will take care of one) of English origin filled with mincemeat – the mince being a delicious mixture of fruit, spices, and suet. Anyway...

The Autumn, or what some call The Fall, or what I call Michaelmas Term in school, has always been a busy time for conferences and meetings and many of the board members have been traveling around the globe to represent their universities as well as the Metabolomics Society. In October, Matej Orešič visited the Chinese Metabolomics Meeting held in Xiamen. Matej gave a plenary talk, which according to X (Twitter), was very well received. There were over 1000 participants in Xiamen and this bodes well for a very busy meeting for us when we visit the Asia region for our annual meeting in Osaka next June. In October, I gave an online Opening Speech Declaration about the Metabolomics Society at the first Indonesian Metabolomics Symposium. This was organised by the Indonesian Metabolomics Society held in Institut Pertanian Bogor, West Java, where our Previous President Jessica Lasky-Su gave a plenary presentation. Finally in October, Kati Hanhineva was one of the Keynote Speakers at the 3rd Nordic Metabolomics Conference, which also took place in Trondheim, Norway. In November, I visited the beautiful city of Genova for the first face-to-face Italian Metabolomics Network (IMN: <http://metabonet.it>); during the visit, I learnt that the IMN had many online meetings and were eager to get together in the Istituto Italiano di Tecnologia. I was highly privileged to present the Metabolomics Society to the IMN as well of course talk about some of the work ongoing in the Centre for Metabolomics Research at the University of Liverpool. While in Genova, we discussed the finalization of the IMN becoming part of the international affiliates of the society and I am very pleased to report that as of 1 January 2024, we shall be affiliated together. This is a very exciting time for us as the global field of metabolomics continues to grow.

Many of you know that the Board of Directors (BoD) are a group of individuals who volunteer to help support and run the Metabolomics Society. We are elected by the membership of our society. I know I can speak for all the BOD members when I thank you very much for putting your trust and faith in our hands to coordinate our various international activities. Each member of the BOD is elected for a two-year term, after which they may be re-elected (again by membership vote) for a further two-year term. In a recent blog to MetaboNews, I congratulated Kati on being re-elected to our society board; Kati was the only person elected this year. In 2024, we will have 12 BoD positions up for election and with 13 Directors in total, these elections have become very unbalanced, and the BoD and thus society face loss of considerable skills as well as affecting our current nice geographical balance.

Within our Metabolomics Society Bylaws (section 5.8), we are allowed to adjust the term lengths

of our BoD by an additional year. As the BoD membership must include a critical number of Directors who have sufficient experience and institutional memory to guide the Board in its decision-making, we can use this Bylaw to protect the continuity of the society. This possibility was first discussed by the Executive Committee (this comprises the President, Treasurer, and Secretary), and we made a proposition to the BoD based on retaining key functions within the board relating to knowledge and know-how that are needed for the key actions for the society. The Executive Committee's suggestion was to retain five directors so that in 2024 we have elections for seven new directors. The five roles that at this time are important to protect include (i) the Treasurer position which is vital and we need continuity in this process; (ii) the Conference committee is essential, and we again need stability within the committee; (iii) the Publication committee needs follow up during this delicate phase where we are currently not affiliated with any publisher; (iv) our Training and Education is ongoing with substantial actions like our potential mentoring programme which we discussed in our Town Hall meeting in Niagara Falls; and (v) we need to maintain and grow our connections, as well as to interact with our International Affiliates.

At our latest meeting, the Board unanimously voted to accept this proposal. With respect to mapping onto the above positions, I am very pleased to let you know that we shall retain expertise and memory of our processes by extending for an additional year the following Directors: (i) Candice Ulmer Holland as Treasurer; (ii) Natasa Giallourou as Conference chair; (iii) Michael Witting as Publication committee chair; (iv) Stacey Reinke as our Training and Education Chair; and (v) Matej Orešič as the chair of our International Affiliates committee.

I would like to personally thank these Directors for agreeing to continue to support our society and feel confident that we shall now have the continuity that our members deserve. I also hope that our members of the Metabolomics Society are happy with these actions.

In addition to the above, as per our usual practice, Fabien and I (as current Officers) will remain as non-voting BoD members for 2 years from next October. Jessica has been a non-voting BoD member since October 2022 (when her role as President ended). She has been a font of knowledge and a great help to the Board in terms of us understanding some of the historic decision-making and the impact these decisions have had on the society.

Well, that's enough for now on society business.

For those who celebrate Christmas – I trust that you have all been good enough for Father Christmas to visit and to be generous!

Two of our directors were blessed with new additions to their families this year and I know many of our members will have growing families. Christmas is a very special and precious time for all, and I hope that you have a lovely time with your families and friends.

As my next communication will be next year, I wish you, your family, and friends a peaceful and prosperous 2024.

All the very best.

Roy Goodacre, University of Liverpool, UK

President, Metabolomics Society

Next Metabolomics Society Webinar

Would you like to assess and report the quality of your untargeted metabolomics data? What laboratory procedures and samples do I need to include in this process? How do I calculate and report data quality? How important is assessing and reporting data quality?

Join us in this podcast to explore these and other related questions that often arise for scientists applying metabolomics in their research whether in academia, industry or contract research organisations.

The podcast will operate on January 30th at 10.00 (ET), 15.00 (UK) and 16.00 (CET).

You can access the podcast using Zoom via <https://liverpool-ac-uk.zoom.us/j/443092043>

Early-career Members Network (EMN)

EMN Webinar Series

The EMN would like to once again thank Prof. David Friedecký and Ms. Barbora Pisklákova for their insightful and brilliant talks on the Translation of clinical metabolomics into routine applications.

The next EMN webinar will take place in January (exact date TBA). Prof. Andrew Finch (Barts Cancer Institute, Queen Mary University of London) will give a webinar about targeted metabolomics in cancer.



We are delighted to extend an invitation for you to participate at this year's Canadian Metabolomics Conference (CanMetCon 2024), "Integrating Metabolomics with Other Omics", scheduled for Thursday, 25 April to Friday, 26 April 2024, at the Jack Poole Hall, The University of British Columbia, Vancouver, BC, co-hosted by The Metabolomics Innovation Centre (TMIC) and the UBC Department of Chemistry.

Early bird registration is now open at a discounted rate of CAD 150 for students! Limited space [available](#).

Task Groups' Corner

International Affiliations Task Group

The International Affiliates Task Group Meeting that was held during the 19th Annual Conference of the Metabolomics Society, Metabolomics 2023, in Niagara Falls, on June 20, 2023, was attended by 12 national/regional metabolomics societies. During the meeting, it was proposed to establish an "Affiliates Training Network". The network aims to facilitate training, research visits, and exchanges of young scientists across the labs from affiliated societies. The proposed training network received support from the Board of Directors of the Metabolomics Society. In the follow-up online meeting of the Task Group (November 27, 2023), initial steps to establish the "Affiliates Training Network" were discussed and defined, such as improving the exchange of information about the current national/regional training and funding opportunities for student visits.

Lipidomics Task Group (LipidMet)

The Lipidomics Task Group within the Metabolomics Society (LipidMet) has been established and kicked off with an online meeting on September 20, 2023. The field of lipidomics has grown

considerably over the past years, and judging by the high number of lipidomics presentations at the meetings of the Metabolomics Society, a large number of members are pursuing lipidomics as part of their research as well. Research on lipid biology is a very broad field, and lipidomics has become an essential tool of interest to many scientific societies and initiatives related to lipids. Given this, it is important to engage the lipidomics community within the Metabolomics Society and to contribute to its growth. This is also important if we aim to significantly impact data harmonization and quality control procedures in this subfield of metabolomics via relevant task groups from the Metabolomics Society.

LipidMet aims to connect the relevant initiatives in the field, including other related task groups in the Metabolomics Society, International Lipidomics Society, and major international lipidomics networks such as EpiLipidNet (<https://www.epilipid.net/>).

LipidMet will hold meetings bi-monthly and has currently 30 members. It is chaired by Dr. Maria Fedorova (TU Dresden, Germany). The vice-chair is María Eugenia Monge (CIBION-CONICET, Argentina) and the secretary is Prof. Matej Orešič (Örebro University, Sweden).

Model Organism Metabolomes Task Group

Model-Organism Pathway Databases in BioCyc.org

BioCyc is a genome and metabolic pathway web portal with a suite of metabolomics data analysis tools. BioCyc includes digital metabolic charts for each organism.

BioCyc has recently expanded its metabolic databases for model organisms to include:

- [Human](#)
- [Rat](#)
- [Mouse](#)
- [Worm](#)
- [Fly](#)
- [Yeast](#)

International Affiliates' Corner

Réseau Français de Métabolomique et Fluxomique (RFMF)

Visit: <http://www.rfmf.fr/>



RFMF webinars are back in 2024!

The RFMF webinars are returning in 2024. Four exciting sessions will be scheduled (2-3:30 pm, GMT+1) and will focus on specific topics: 14 March on lipids, 4 July on plants, 12 September on NMR and 12 December on holobionts. International speakers have already confirmed their contribution.

More details on the programme will be announced shortly. In the meantime, keep an eye on the dates!



Save the dates!
Join the free RFMF webinars!
2.00-3.30pm (GMT+1)
1 plenary speaker & 3 additional speakers

<https://meet.goto.com/>



March 14th - LIPIDS

Ondrej KUDA

Institute of Physiology, Academy of Sciences of the Czech Republic · Metabolism of Bioactive Lipids, Czech Republic



July 4th - PLANTS

Fidele TUGIZIMANA

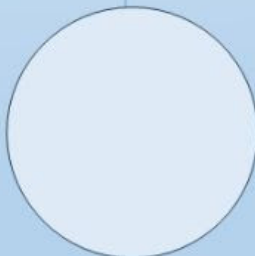
Research Scientist & Deputy HoD at University of Johannesburg, South Africa



September 12th - NMR

Elizabeth O'DAY

CEO, CSO & Founder of Olaris, Inc



December 12th - HOLOBIONTS

To be defined

To be defined

[Metabolomics Association of North America \(MANA\)](https://metabolomicsna.org)

Visit: <https://metabolomicsna.org>

New President

Join us in congratulating **Dr. Ewy Mathé**, Director of Informatics in the Division of Preclinical Innovation at NCATS/NIH, who will serve as the next MANA President starting January 1, 2024. MANA looks forward to the perspective and leadership that Dr. Mathé will bring as president and thanks outgoing president **Dr. Tom Metz** for all his invaluable contributions to the continued growth of the association.

New Directors

MANA is excited to welcome the following newly elected members to its Board of Directors, whose terms will begin January 1, 2024:

- **Yamile López Hernández**, National Council of Science and Technology (CONACyT, Mexico), Autonomous University of Zacatecas
- **Ryan Sheldon**, Van Andel Institute
- **Erica Forsberg**, Bruker

We are excited to work together with our new directors to build upon our on-going efforts to promote the growth and development of metabolomics, and we look forward to great new initiatives over the coming months.

The Board also expresses its appreciation for the outstanding contributions of outgoing Board members whose terms on the Board will end at the end of year: **Tom Metz**, **Mark Styczynski** and **Timothy Garrett**, whose efforts have been vital to many MANA events, programs, and interest groups. We appreciate their continued involvement in leading MANA efforts as the organization moves forward.

Netherlands Metabolomics Centre (NMC)

Visit: www.metabolomicscentre.nl/

On the **29th of February 2024**, the Netherlands Metabolomics Centre ([NMC](http://www.metabolomicscentre.nl/)) is organizing a one-day symposium on **[Metabolomics & Fermented Foods 2024](#)**. This meeting will be held at Danone Research & Innovation in Utrecht, the Netherlands and is meant to broaden our knowledge and network in the field of Metabolomics and Fermented Foods. We like to initiate an open discussion on how metabolomics is contributing to answering complex questions in the field of Fermented Food Products concerning monitoring health and food safety issues. The main focus will be on mammalian health and food production. We like to cover its potential and the pitfalls/limitations and to foster new (public-private) collaborations.



[Nordic Metabolomics Society](http://www.nordicmetsoc.org)

Visit: www.nordicmetsoc.org

The new board of the Nordic Metabolomics Society was elected in November 2023. The new board members are:

- Guro F. Giskeødegård, Norwegian University of Science and Technology, Norway (chair)
- Alex Dickens, University of Turku, Finland (co-chair)
- Rikard Landberg, Chalmers University of Technology, Sweden (secretary/treasurer)
- Iman Zarei, University of Eastern Finland, Finland (early career scientist)
- Tuulia Hyötyläinen, Örebro University, Sweden
- Margrét Thorsteinsdóttir, University of Iceland, Iceland
- Matej Oresic, Örebro University, Sweden & University of Turku, Finland
- Katja B Prestø Elgstøen, Oslo University Hospital, Norway
- Karolina Sulek, Steno Diabetes Center Copenhagen, Denmark

The 4th Nordic Metabolomics Conference 2024 will take place 26th-28th August in Turku, Finland, at Turku Biocity Joki Conference Centre. Biocity Symposium, focusing on metabolism, will take place in the same venue after the conference: 29th-30th August.

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MetaboNews

Latest news and insights in metabolomics



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Season's Greetings



Warmest season's greetings to our readers from all of us at MetaboNews! May this joyous season be filled with happiness, prosperity, and moments of togetherness. Thank you for your continued support throughout the year. Wishing you a wonderful holiday season and a fantastic year ahead!

MetaboInterview

Helena Petrosova

**Adjunct Assistant Professor**

Department of Biochemistry and
Microbiology
University of Victoria

Group Leader

Mass spectrometry Imaging Unit
UVic Genome BC Proteomics Centre
[Proteomics Centre](#)

Biography

Helena Petrosova, Ph.D., is the Group Leader of a Mass spectrometry imaging unit at the UVic Genome BC Proteomics Centre and an Adjunct Assistant Professor in the Department of Biochemistry and Microbiology at the University of Victoria. Dr. Petrosova obtained her education at Masaryk University in the Czech Republic. Her training comprised fellowships at the Institut Pasteur, Paris, France, and the University of Toronto. Her research background is in the biology of spirochetes. Dr. Petrosova has over nine years of experience researching these bacterial pathogens utilizing molecular biology, comparative genomics, and mass spectrometry. Dr. Petrosova uses mass spectrometry to study the structure-function relationship of spirochetal lipids and the host and pathogen lipid interface in spirochetal infections. She is also involved in collaborative projects on neural development and metabolomics profiling of tumor microenvironments. Finally, her group provides mass spectrometry imaging as a fee-for-service for academic and industry partners.

How did you get involved in metabolomics?

It was not a straightforward process. I started my university studies wanting to be a geneticist. During my bachelor's degree, I became fascinated with a group of bacteria called spirochetes, which include the causative agents of syphilis, Lyme disease, and leptospirosis. I spent the following seven years studying these bacterial pathogens using molecular biology and genomics approaches. I entered the field of mass spectrometry during my second postdoctoral fellowship at the UVic Genome BC Proteomics Centre, focusing on proteomics. I started studying spirochetal lipids using mass spectrometry when Dr. David Goodlett became the new director of the Center. In 2022, the Centre acquired two mass spectrometry imaging instruments, a Bruker timsTOF flex MALDI-2, and a Spectroglyph transmission mode MALDI-2, with the generous support of the PacifiCan and CFI agencies, respectively. I was presented with an opportunity to

re-establish a [mass spectrometry imaging core](#) at the Centre. Currently, our mass spectrometry imaging group has six members. Most of our work is focused on characterizing lipids and metabolites in the spatial context of tissue, and we are engaged in diverse research on host-pathogen interactions, neural development, and profiling of tumor microenvironments.

What are some of the most exciting aspects of your work in metabolomics?

I am excited to apply my diverse research background to some outstanding biological questions in the spirochete research field. Spirochetes are challenging to grow in large quantities, which has hindered past research on their membrane lipids. This represents a significant knowledge gap, as lipids form the interface between the bacterial cell and its environment. Understanding how spirochetes use their lipids to adapt to the host environment and escape recognition by the host immune system can reveal novel strategies for combating spirochetal infections. Using novel mass spectrometry approaches, we recently characterized [the structural diversity](#) of an important endotoxin, lipid A, across the genus of *Leptospira* (the causative agent of leptospirosis). Our mass spectrometry imaging instrument is housed in a biosafety level 2 containment, allowing us to study infected tissues directly and obtain valuable spatial context to the host-spirochete interface.

I also find teaching and mentoring very rewarding. I am fortunate to mentor several very talented trainees who will become a part of the future of mass spectrometry imaging and metabolomics.

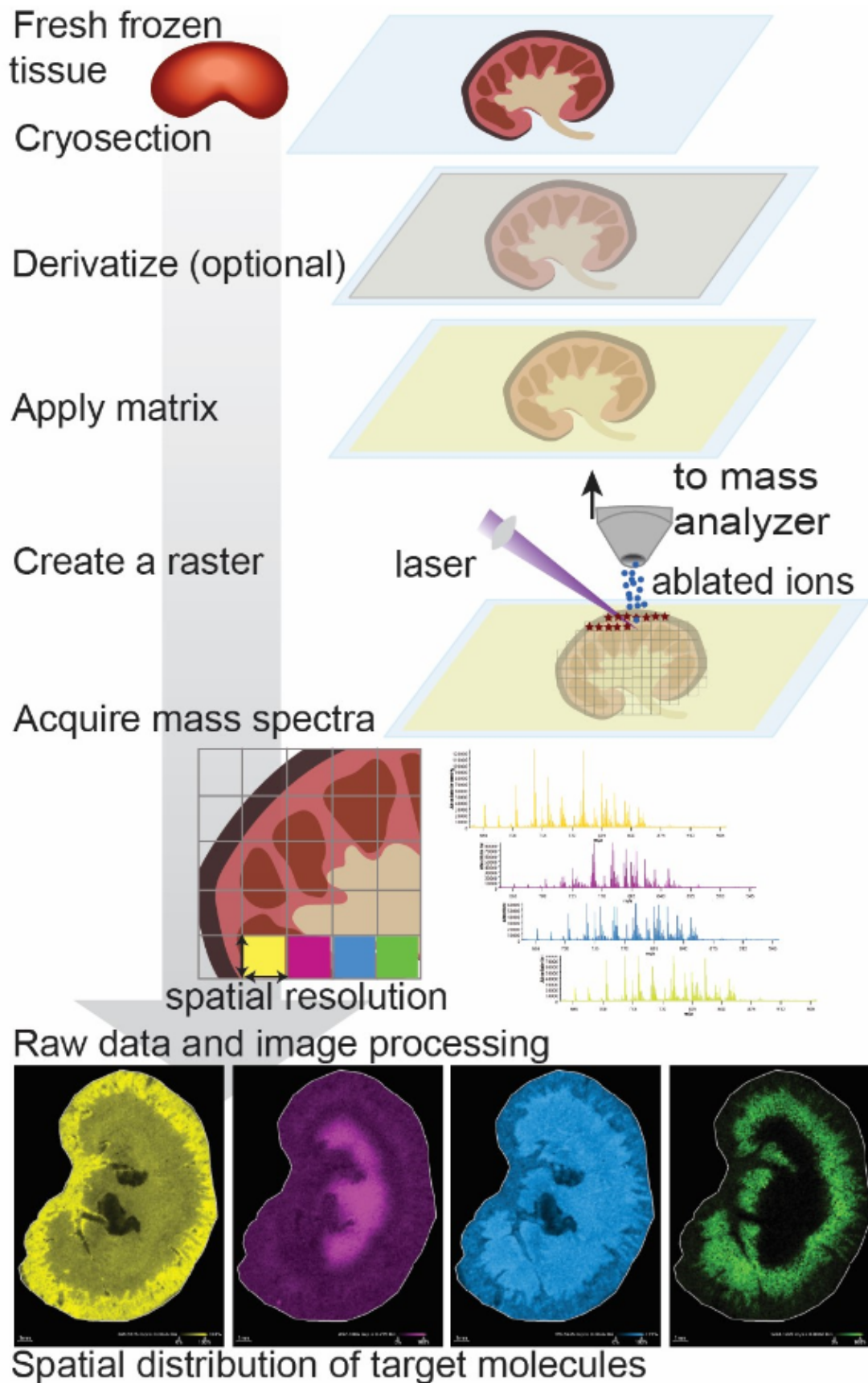


Figure 1: Mass spectrometry imaging workflow (MALDI)

A thin tissue section is sprayed with a matrix dissolved in an appropriate solvent. Solvent droplets enable the extraction of target molecules and allow them to co-crystallize with the matrix. A virtual raster is created over the tissue

section, and a laser is utilized to ablate the crystals at each raster pixel. Matrix desorbs the laser's energy and aids the formation of ions that are detected by a mass spectrometer. Images are created from the resulting mass spectra.

What key metabolomics initiatives are you pursuing at your research centre or institute?

The UVic Genome BC Proteomics Centre has been involved in hundreds of research and fee-for-service projects through Dr. Jun Han's metabolomics group. My mass spectrometry imaging group is aiming to follow Dr. Han's lead. Through the Centre, I am further involved in [The Metabolomic Consortium of BC](#) (MetaboBC) group, which connects local metabolomics researchers to solve research challenges and foster critical collaborations. Since the group is very diverse research-wise, I found the MetaboBC periodical meetings and seminars constructive and inspiring. With [Dr. Kyle Duncan](#) (Vancouver Island University), our mass spectrometry imaging unit forms the Imaging Core for the [MetaboHUB](#) research project recently funded by the Terry Fox Research Institute. This collaborative initiative, led by [Dr. Julian Lum](#), includes five cancer research laboratories located across Canada. We aim to use spatial metabolomics to define the impact of metabolomics perturbations in the tumor microenvironment on the function of immune cells. Last but not least, the Proteomics Center is one of the central nodes of TMIC, The Metabolomics Innovation Centre.

What is happening in Canada in terms of mass spectrometry imaging?

In November 2023, the first meeting of the newly formed International Mass Spectrometry Imaging Society was hosted in Montreal. The society connects European and North American researchers in the mass spectrometry imaging field, and it was an excellent opportunity to network and learn about the novel developments in the field. The conference was hosted by Dr. Pierre Chaurand of the University of Montreal. Dr. Chaurand is currently proposing to create a Canadian mass spectrometry imaging network, which would greatly benefit Canadian researchers.

How do you see your work in metabolomics being applied today or in the future?

Our work on microbial lipids has applications in the molecular typing of bacteria, surveillance, and diagnostics. We have, for example, shown that lipid A can be used to distinguish between pathogenic and non-pathogenic members of the genus *Leptospira*. Our [MetaboHUB](#) project focuses on cancers that are notoriously resistant to immunotherapy, such as ovarian and pancreatic cancer. This project will bring insights into the relationship between metabolism and function of immune cells in solid tumors. The ultimate goal is to find targets for interventions that would increase the chances of the patient's survival.

As you see it, what are mass spectrometry imaging's greatest strengths?

It is the only technique that allows us to map the spatial distribution at or near cellular resolution, of lipids and metabolites in the tissue, while maintaining the tissue morphology. Mass spectrometry imaging has been combined with other imaging modalities, such as spatial transcriptomics, to obtain a complete picture of biological pathways and their compartmentalization to functional tissue units. The potential applications of these methods are too many to list, and I am very excited about the future of this field.

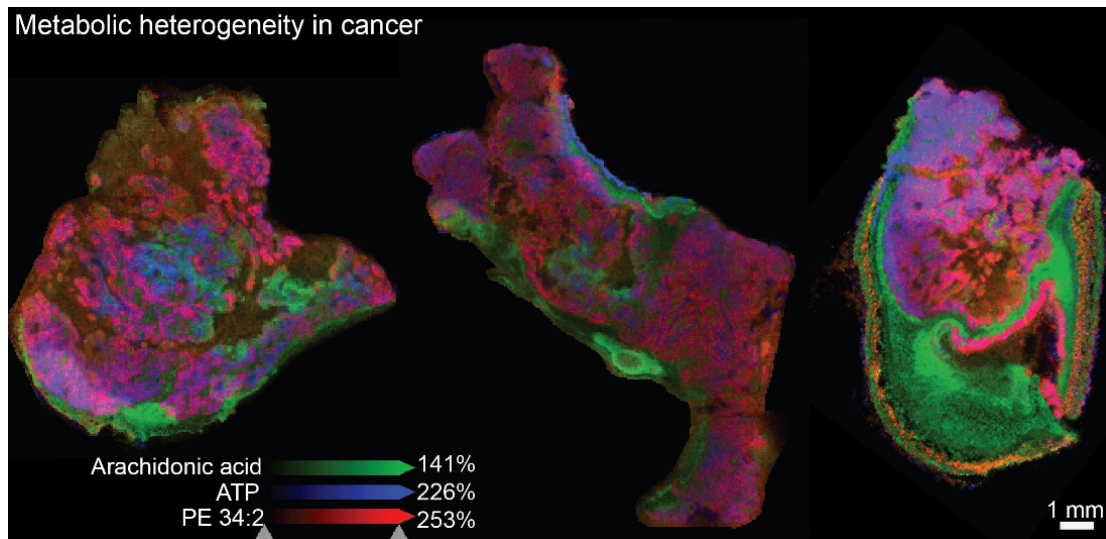


Figure 2: Spatial distribution of small molecules in tumors by mass spectrometry imaging: a model of pancreatic cancer.

ATP – adenosine triphosphate, PE – phosphatidylethanolamine.

Image credit: MSI group (UVic Genome BC Proteomics Centre) and Dedhar laboratory (BC Cancer Research Centre).

What do you see as the greatest barriers for mass spectrometry imaging?

The two main barriers can be applied to all research. The first one is the constant pressure to publish more to be successful, which leads to decreased quality of research papers. Due to the vast number of manuscripts in the review process, it is challenging to recruit knowledgeable reviewers, which perpetuates this unfortunate cycle. This leads to the second barrier: the reproducibility of published work. A defined set of analytical guidelines would greatly benefit the mass spectrometry imaging community. Lastly, mass spectrometry imaging is fairly novel, and some researchers might not yet be aware of its capabilities. Paired with the cost of the related infrastructure, this might be the most significant barrier to the routine implementation of this technology.

What improvements, technological or otherwise, need to take place for mass spectrometry imaging to really take off?

I am coming back to the previous question. Mass spectrometry imaging is a novel research technique that is gaining real traction as related instrumentation becomes more available. This

growth is very exciting for the field but also emphasizes the need for standardized guidelines. An excellent first step, in my opinion, would be defining a minimum amount of information for the publication of mass spectrometry imaging experiments. In addition to analytical standards, these guidelines would ideally include detailed information on sample collection, storage, and preparation. Through the MetaboHUB project, we have generated several related standard operational procedures that we would eventually like to share and discuss with the community.

How does the future look in terms of funding for mass spectrometry imaging?

We are very fortunate and grateful for funding from PacifiCan, Terry Fox Research Institute, Genome BC, Genome Canada, and CFI, which currently supports our mass spectrometry imaging unit. I hope these agencies will continue to show interest in supporting metabolomics and mass spectrometry imaging research. The results of our research will contribute to demonstrating the potential of mass spectrometry imaging to the funders and researchers outside of the field.

What role can mass spectrometry imaging standards play?

Very important! A basic mass spectrometry imaging experiment yields only mass-to-charge ratios of lipids and metabolites and their relative abundance, which may be sufficient for initial untargeted experiments. Using standards allows us to increase confidence in analyte identification and is absolutely necessary for quantification with mass spectrometry imaging. Furthermore, reproducibility is everything in analytical chemistry, and mass spectrometry imaging is an analytical method. Standards, controls, and quality control samples are all essential for a reproducible experiment.

Do you have any other comments that you wish to share about mass spectrometry imaging?

Mass spectrometry imaging is a powerful technique that can support research in various research fields, including infectious diseases, cancer, drug development and testing, biomarker discovery, and many others. Beyond human health, mass spectrometry imaging is applied to veterinarian medicine, toxicology, agriculture, and environmental research. Unfortunately, a significant cost-associated barrier exists in setting up a mass spectrometry imaging platform in a research laboratory. I invite researchers and industry partners who can benefit from this method to [contact us](#) with their projects. We are open to research collaboration and fee-for-service work and are happy to share our expertise.

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Recent Publications

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- [Novel research and future prospects of artificial intelligence in cancer diagnosis and treatment](#) (Open access)
- [Recent advances in high-throughput biofluid metabolotyping by direct infusion and ambient ionization mass spectrometry](#) (Open access)
- [Unraveling plant-microbe interactions using integrated omics approaches](#)

Articles:

- [3D superstructure based metabolite profiling for glaucoma diagnosis](#) (Open access)
- [A Data Deposition Platform for Sharing Nuclear Magnetic Resonance Data](#)
- [A Preclinical Model of Obesity-Independent Metabolic Syndrome for Studying the Effects of Novel Antidiabetic Therapy Beyond Glycemic Control](#) (Open access)
- [Automated identification and quantification of metabolites in human fecal extracts by nuclear magnetic resonance spectroscopy](#) (Open access)
- [Dually biofortified cisgenic tomatoes with increased flavonoids and branched-chain amino acids content](#) (Open access)
- [Exploring the humification process of municipal sludge in hyperthermophilic composting through metagenomic and untargeted metabolomic](#)
- [Imaging tumor lactate is feasible for identifying intermediate-risk prostate cancer patients with postsurgical biochemical recurrence](#) (Open access)
- [Long-term exposure from perinatal life to food-grade TiO₂ alters intestinal homeostasis and predisposes to food allergy in young mice](#)
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- [Surgery-induced gut microbial dysbiosis promotes cognitive impairment via regulation of intestinal function and the metabolite palmitic amide](#) (Open access)
- [Universal method for the isolation of microvessels from frozen brain tissue: A proof-of-concept multiomic investigation of the neurovasculature](#) (Open access)

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Metabolomics Events



Bits & Bites # 01: Mastering Lipidomics: From Biology to Advanced Techniques

January 25, 2024

Venue: Online

Bits & Bites 2024 is a flexible learning experience tailored for busy researchers seeking condensed yet impactful sessions. Now in its fourth year, this series continues to bridge the gap for those unable to commit to 1- or 2-week intensive courses.

10-part short course series will feature in-depth topics in untargeted metabolomics such as mass spectrometry applications, mass spectrometry imaging, statistics with both MetaboAnalyst and R, GNPS, MS-DIAL, and so many others. Each short course can be taken individually or you can select multiple Bites. Participants will gain a deeper insight into current software, methods, and pitfalls. Each session starts promptly at 9 a.m. (Pacific Time) and will take approximately 4 hours. The courses will be conducted in a highly interactive manner, with the use of freely available software and databases. The tuition is \$175 USD per Bite, except for #10. The tuition for #10 is \$350 USD as it will take approximately 8 hours.

This 1st course (for 2024) is taught by Dr. Tong Shen from UC Davis, and the title is "Mastering Lipidomics: From Biology to Advanced Techniques".

[Check for more details](#)

Metabolomics in Life Science

January 30 – 31, 2024

Venue: Umeå University, Sweden

The Metabolomics in Life Science conference will highlight the latest advancements, breakthroughs, and applications in the field of NMR- and MS- based metabolomics research in Sweden/the Nordics and beyond. Bringing together researchers from around the world, the conference will serve as a platform for participants to share their knowledge, present research findings, and engage in insightful discussions in the metabolomics area. Attendees can expect presentations covering many aspects of metabolomics, from precision medicine, plant metabolomics to the use of advanced computational/AI strategies within the field. The wide range of techniques and application areas aims to spark interesting scientific discussions, high-light synergies between different technologies/application domains and form new collaborations.

The conference is a joint effort between two SciLifeLab units located in Umeå, the Swedish NMR Centre (SNC) and the Swedish Metabolomics Centre (SMC). Check out more information at the conference [website](#).

Register by December 22, 2023

MANA SODAMeet

February 13, 2024

Venue: Online

The goal of SODA is to provide a community-driven resource of actively-maintained software, test datasets used for software benchmarking, and results produced by software. SODAMeets is a platform where data generators and computational scientists can share their use of software/data. During SODAMeets (every 2 months), two speakers will present on software or data they would like to share with the community, emphasizing how these software/data are used. Speakers will be requested to fill out a form on our SODA website so that we collect relevant information on these software/data presented.

Join the web seminar

World Critical Care and Anesthesiology Conference 2024 (WCAC24)

March 09 – 10, 2024

Venue: Bangkok, Thailand

World Critical Care and Anesthesiology Conference 2024 (WCAC24) is the 6th Edition educational event which is designed to advance knowledge and expertise in critical care and anesthesiology that rotates between continents and is organized in collaboration with national and international Anesthesiology and

Critical Care societies and associations. The conference is targeted to the international Critical Care Medicine community as well as other healthcare professionals involved in multidisciplinary critical care surgical challenges; For every community, there continues to be a need for surgical and medical teams to evaluate and treat severely injured patients. Check out more information at the conference [website](#).

- Abstract Submission Deadline extended: **January 15, 2024**
- Speaker and Presenter's Registration Deadline extended: **January 30, 2024**

[Learn More Here](#)

European school of Metabolomics

April 22 – 26, 2024

Venue: Granada, Spain

After the success of EUSM 2022, the European School of Metabolomics will hold it's 2nd conference in Granada, Spain. The school is designed to bring together early-stage researchers to discuss current technology as well as scientific obstacles being faced in the labs. Invited speakers from Europe will provide lectures on general MS, NMR, fluxomics, bioinformatics, and data processing. Workshops will include topics such as single-cell metabolomics, issues with publishing, and dealing with PhD life. As a smaller-scale conference, EUSM 2024 provides opportunities to network with other young scientists in metabolomics and create lasting connections. Check out more information at the conference [website](#).

[Register by December 22, 2023](#)

5th Annual Canadian Metabolomics Conference (CanMetCon) 2024

April 25 – 26, 2024

Venue: Vancouver, Canada

Registration is open now!

- Early Bird Registration [open](#)
- Call for [Abstracts](#)

Early Bird registration fees are CAD 150 for students and CAD 250. All fees are subject to applicable taxes and fees. Your registration fee includes a welcome reception on April 25, breakfast and lunch on April 25–26, and light refreshments during morning and afternoon coffee breaks

NIST SRM 1950 Beyond the Certificate of Analysis: mQACC Call to Provide Qualitative and Quantitative Data

Certified reference materials (CRM) values provide a known and standardized reference point against which the results of a metabolomic study can be compared. However, the certification of hundreds of individual metabolites is a cumbersome and time-consuming process. The Standard Reference Material (SRM) 1950, Metabolites in Frozen Human Plasma, is by far the most used reference material by the metabolomics community. NIST SRM 1950 provides certified and/or reference values for select metabolites and lipids such as fatty acids, electrolytes, vitamins, hormones, and amino acids. The metabolomics community would greatly benefit from consensus values and identification of metabolites and lipids in SRM 1950 that are not tied to a single analytical platform or method. This increases the accuracy, reliability, harmonization, and meaningful comparisons of metabolomic studies utilizing the material. Additionally, having more values and information available for SRM 1950 metabolites and lipids would allow researchers to investigate a broader range of analytes in their studies, which in turn could lead to a better understanding of the underlying biology of the metabolic processes. To that end, the Reference and Test Materials Working Group of mQACC is actively collecting information on qualitative identifications and quantitative values of metabolites and lipids in NIST SRM 1950 beyond those listed on the NIST Certificate of Analysis. Any data from instrumental platforms with compound identification (LC-MS, GC-MS, NMR) are welcome to participate. The data was combined in order to produce a publicly available database of community-generated 1) consensus concentration values for quantified metabolites and lipids of critical interest within the community and 2) compounds identified but not quantified in SRM 1950.

More information and an example reporting form can be found at <https://www.mqacc.org/srm1950>

Metabolomics Jobs

If you have a job to post, please email the MetaboNews team at metabolomics.innovation@gmail.com

We may remove a listing after 6 months if we do not receive a confirmation that it is still necessary. However, if you would like us to repost it, please contact us.

| Job Title | Employer | Location | Source |
|--|--|---------------------------|---|
| Canada Research Chair (CRC) Tier 2 in Metabolomics | Schulich School of Medicine and Dentistry, Western University | London, ON, Canada | Western University |
| Chemical Biologist/Ecologist | The Monell Chemical Senses Center | Philadelphia, PA, USA | The Monell Chemical Senses Center |
| ORISE Postdoctoral Fellowship in Pharmacology/Toxicology | National Center for Toxicological Research U.S. Food and Drug Administration | Jefferson, AR, USA | Metabolomics Society |
| ORISE Postdoctoral Fellowship in Neuroscience/ Neurotoxicology | National Center for Toxicological Research U.S. Food and Drug Administration | Jefferson, AR, USA | Metabolomics Society |
| Post-Doctoral Fellow | Department of Medical Microbiology & Immunology, University of Alberta | Edmonton, AB, Canada | University of Alberta Careers |
| Operations Assistant | NovaMT and TMIC Li Node at the University of Alberta | Edmonton, Alberta, Canada | Dr. Liang Li (please contact liang.li@ualberta.ca) |
| Postdoctoral Research Fellow (LC-MS and Data Science for Metabolomics) | The Li Lab and the Li Node of TMIC, University of Alberta | Edmonton, Alberta, Canada | University of Alberta |

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Thank you for being a part of MetaboNews! Your input means a lot to us, and we're eager to hear your thoughts on how we can improve our newsletter. We've put together a brief, anonymous survey with just two mandatory questions that won't take more than a minute of your time. Your feedback is invaluable, so please take a moment to share your opinions with us.

[Fill Out Your Survey Here](#)

If you have any questions, don't hesitate to contact us at metabolomics.innovation@gmail.com

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