MetaboNews

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The MetaboNews Team

The Metabolomics Innovation Centre metabolomics.innovation@gmail.com http://www.metabonews.ca/archive.html



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

Metabolomics Society News

Conference Corner

Metabolomics 2023 – Niagara Falls, Canada, June 18-22

The 19th Annual Conference of the Metabolomics Society will be held at the Niagara Falls Convention Centre in Niagara Falls, Canada from June 18-22, 2023. As one of North America's most popular family vacation destinations, home to important historical sites, charming villages, and award-winning wineries, Niagara Falls and the surrounding Niagara region offers an ideal location to host this conference with convenient access to airports in Toronto or Hamilton (Ontario), and Buffalo (New York).

The conference will cover major scientific themes ranging from recent technology advances in metabolomics, computational metabolomics, statistics & bioinformatics, metabolomic applications in health and disease, as well as metabolomic studies of plants, food, environment, and microbes. We are excited to announce five plenary lectures by Lorraine Brennan, Marja Lamoree, Gary Patti, Susan Murch, and Caroline Johnson.

Planning for the meeting is well underway with an outstanding lineup of workshops and a tentative conference agenda featuring three parallel scientific sessions. The conference website also includes details on visa requirements, travel directions to Niagara Falls, and hotel accommodations – most within a short walking distance to the conference centre, the entertainment district of Clifton Hill, and the majestic Horseshoe Falls!

Registrations and abstract submissions are now open with an oral abstract deadline of March 6, 2023. For more information and regular updates please visit <u>https://www.metabolomics2023.org/</u>

We look forward to welcoming you to Niagara Falls this summer!

SAVE THE DATE!



* Abstract Submissions NOW Open!

Conference Themes:

- Health and Disease
- Plant, Food, Environment and Microbes
- Computational, Statistics, and Bioinformatics
- Technology & Methodology Advances
- Mental Health, Drug Addiction, Medicinal Cannabis



February 2023 Metabolomics Society News



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

Membership Enquiries membership@metabolomicssociety.org

Members' Corner

Board of Directors

Dear Society Members,

I hope this finds you well. If like me you live in the northern hemisphere, it is this time of year that I like the most when the days start to draw out and I can start to enjoy longer walks with my dog – Scamp is a black Cocker Spaniel and is very aptly named! I find this time valuable and armed with a decent voice-to-text app on my phone I often make notes regarding future research directions and future research destinations.

Thinking of destinations, you are perhaps aware that our annual meeting cycles every three years between Europe, North America, and Asia-Pacific; this we have been doing regularly since 2005, well except when COVID-19 stopped us traveling! One of our missions for the Metabolomics Society is to nurture metabolomics globally. I've discussed this before and it is clear that our research field is now being developed and applied globally – and this is a real success of our society. It is therefore appropriate for our society to evolve and for us to revisit these regional boundaries. We discussed this at our Board of Directors (BoD) meeting in February and all agreed that the Americas will now include our conference meeting being held anywhere in North, Central, or South America. The Asia-Pacific is a



Abstract Submission for the 4th Annual Canadian Metabolomics Conference (CanMetCon) 2023 is open until March 31. Remember to secure your spot at discounted early bird price of \$150 CAD for students and \$250 CAD for all others until March 14. The program is now available at <u>canmetcon.com</u>



large area and so this region will stay as is. You will also see that our 2025 international meeting – due to it being held in Europe – will now be expanded to include Europe, Africa as well as the Middle East. If you are interested in hosting Metabolomics 2025, please have a look at our Expression of Interests form which can be downloaded here (link to

https://forms.gle/VUhwiZv7tQv3JFNr5). For those interested, please get your EoIs submitted before the end of March.

I appreciate that 2025 is a couple of years from now, and with Niagara Falls in Canada on this year's horizon, we should for now concentrate on that. Remember to get those Abstracts in for the 6th of March.

Finally, and perhaps most importantly, those of you who were at our Town Hall meeting in Valencia will remember we had detailed discussions on current and future affiliation with a journal or publisher. Those with long memories will know that from 2005-2015, the SpringerNature journal *Metabolomics* was the Official Journal of the Metabolomics Society, after which our society affiliated with MPDI's Metabolites in 2019. Over the last few months, the BoD has been discussing how we evolve our publication strategy for the future. At our last BoD committee meeting, we unanimously voted to disaffiliate with MDPI, so that we have the freedom to look at options that are suitable, and that our membership (i.e., you) feel happy with. Michael Witting who is Chair of our Publications Committee will be leading the society's future publication strategy. If you have any views on where you might like your society to go with respect to a journal or publishing group then please contact Michael.

I'll close by reminding you that please get those nominations in for

- Honorary Fellows of the Metabolomics Society https://metabolomicssociety.org/awards/honoraryfellowships/
- Two Career Medals for *The Metabolomics Society Medal* and *The President's Award*

https://metabolomicssociety.org/awards/metabolomic s-society-career-medals/

The closing date is $24^{\mbox{th}}$ of February so time is running out.

All the very best. *Roy Goodacre, University of Liverpool, UK President, Metabolomics Society*

Early-career Members Network (EMN)

Webinar Series

The EMN would like to thank once again Dr. Theodora Katsila and Vivi Bafiti for their insightful and brilliant talks on exosomal metabolomics in health and disease to better understand inter-individual variability, drug resistance, and adverse drug reactions. Stay tuned for announcements sent over email and posted on our social media platforms for the upcoming webinar!

EMN Travel Award

The 2023 EMN Travel Award aims at providing support to Early-Career scientists to attend and actively participate in the 19th International Conference of the Metabolomics Society to promote their professional development. The Metabolomics Society strives to promote diversity, inclusion, equality, therefore we highly encourage applications from low- and middleincome countries. The application deadline is March 6th, 2023, at 12 pm UTC. All entries must be received before the stated deadline in order to be considered. To apply, please fill out the travel award application form. Decisions will be communicated to all applicants over email by April 16th, 2023, and winners will be announced on the Metabolomics Society website, social media platforms and in the MetaboNews newsletter. Click here to view the official announcement

To apply, fill the <u>EMN award application form</u> and the required documentation in one single pdf during the abstract submission process. For questions, please contact <u>info.emn@metabolomicssociety.org</u>

International Affiliates' Corner

<u>Metabolomics Association of North America (MANA)</u> Visit <u>https://metabolomicsna.org</u>

Mark your calendars for the 5th Annual MANA Conference! The 2023 conference will be held October 23-27, 2023 on the campus of the University of Missouri in Columbia, MO. Professor Lloyd Sumner will chair the meeting and is developing an exciting program that will appeal to many interests in metabolomics. This year, MANA is excited to partner with the International Lipidomics Society (ILS), and the 2023 conference will have dedicated sessions for lipidomics, and an evening workshop with the ILS. Check out the <u>conference</u> <u>website</u> for program updates.



Metabolomics and Human Health *Gordon Research Conference*

Examining the Intersection Between Systemic and Cellular Metabolism and Lifestyle Factors to Understand Health and Disease

March 12-17, 2023

Venue: Barga, Lucca, Italy

Chairs:	Steven S. Gross Lorraine Brennan
Vice Chairs:	Susan Jenkins Sumner Warwick Dunn

The Metabolomics and Human Health Gordon Research Conference (March 2023) will highlight state-of-the-art metabolomics technologies and how such technologies can be used to study human health. Places are limited and filling up, so we encourage early submission to avoid disappointment.

To apply, click <u>here</u>.



Xiuxia Du



Professor

Department of Bioinformatics and Genomics College of Computing and Informatics University of North Carolina at Charlotte <u>http://www.du-lab.org</u>

Biography

Xiuxia obtained her B.S. and M.S. in Electrical Engineering. A love for mathematics motivated her to pursue a D.Sc. degree in Systems Science and Mathematics. Research in her group has been very multidisciplinary by applying mathematics, statistics, signal processing, computer science, software

engineering, and data science to create computational algorithms, software tools, and web resources for mass spectrometry-based metabolomics and exposomics. Together, all of these informatics capabilities form the ADAP (abbreviation for Automated Data Analysis Pipeline) informatics and provide a comprehensive set of tools for researchers to make sense of the very complex mass spectrometry data that has been acquired from various studies for investigating the mechanisms of various diseases and negative health effect of exposures to various chemicals. In addition, research in the Du-Lab has been steadily expanding to include (1) harmonization of big metabolomics and exposomics data in public data repositories and (2) development of biosensors and the associated informatics for portable and low-cost biosensors that monitor exposures to various chemicals and heavy metals and their effects on human health. These researches and development have been funded by the National Science Foundation (NSF) and the National Institutes of Health (NIH).

Interview Q&A

How did you get involved in metabolomics?

I did my postdoctoral research in computational proteomics in the group of Dr. <u>Richard D. Smith</u> at the Pacific Northwest National Laboratory. During this three-year period, I developed three separate sets of algorithms and software tools for: (1) identifying cross-linked peptides using tandem mass spectrometry, (2) estimating the false discovery rate of phosphopeptide identifications, and (3) analyzing label-free temporal bottom-up proteomics data. My experience in computational mass spectrometry opened the door for me to join the Department of Bioinformatics and Genomics at the University of North Carolina at Charlotte (UNCC) as an Assistant Professor in 2008 when the <u>North Carolina Research</u> <u>Campus</u> (NCRC) was being established. NCRC is a 350-acre research center located 20 miles north of UNCC. Eight universities from the state of North Carolina work collaboratively at NCRC with the central mission to empower human health through nutrition. As liquid chromatography (LC), gas chromatography (GC), and mass spectrometry (MS) are



essential analytical instruments for studying nutrient metabolism, I shifted my research focus from computational proteomics to computational metabolomics to better collaborate with researchers at NCRC. As years went by, research in my group has been gradually growing from developing data preprocessing algorithms for metabolomics to including the whole gamut of informatics tools and resources for mass spectrometry-based metabolomics and exposomics (Figure 1).

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

With a deep love for data and mathematics, developing computational algorithms, informatics software tools, and cloud resources for extracting information and knowledge from data has always been exhilarating for me, in particular, from the complex data acquired for untargeted LC-MS and GC-MS metabolomics and exposomics studies. Such studies are designed to make new discoveries and generate new hypotheses, which is made possible by the high resolving power of chromatography, and the high sensitivity and mass measurement accuracy of mass spectrometry. On a larger scale, this untargeted methodology empowers data-driven discovery science. In this context, my group has developed ADAP-BIG for processing raw untargeted metabolomics and exposomics big data that could involve thousands of biological or environmental samples, and ADAP-KDB for identifying, annotating, and prioritizing signals that ADAP-BIG has extracted from raw LC-MS and GC-MS data. My group's ongoing research and development activities include developing ADAP-Analytics and ADAP-Exposome that further facilitate the efforts to use machine learning to interpret the metabolomics

and exposomics results that ADAP-BIG and ADAP-KDB have produced (Figure 2).

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

As exposures to harmful chemicals affect human health through metabolism, one key metabolomics and exposomics initiative that UNCC is currently pursuing is establishing a Center for Environmental Health. The mission of the Center is to: (1) advance portable and low-cost measurement technologies for environmental monitoring and biological monitoring; (2) advance environmental health data science technologies for studying how environmental factors affect human health; and (3) carry out multidisciplinary translational research in precision environmental health. This Center will draw upon extensive environmental research that has been ongoing at multiple departments of UNCC for many years and the expertise of the UNCC faculty in data analytics in the College of Computing and Informatics and the School of Data Science. Through close collaborations with the Center's faculty, I hope to be able to contribute to the growth of the Center.

Another initiative I have been pursuing is generating benchmarking datasets for developing and evaluating software tools for mass spectrometry-based metabolomics and exposomics. This effort is being conducted in close collaboration with Profs. <u>Gary Patti</u> at Washington University in St. Louis and <u>Corey</u> <u>Broeckling</u> at Colorado State University. The dataset will be acquired on a combination of analytical platforms that covers mass analyzers including TOF and Orbitrap, separation methods including GC, reverse phase, HILIC, and ionization polarities



Figure 1. Components of an informatics pipeline for analyzing untargeted LC- and GC-MS metabolomics and exposomics data



including both positive and negative. Altogether, about 2,000 injections will be made to generate this dataset. The dataset features structured complexity and will provide the metabolomics and exposomics community with the needed benchmarking data to evaluate software tools with rigor and objectivity.

What is happening in the United States in terms of metabolomics?

The National Institutes of Health (NIH) of the United States had the vision about a decade ago to support the advancement of metabolomics for basic, translational, and clinical research through its <u>Common Fund</u> <u>Metabolomics Program</u>. Even though Phase II of this program is drawing to an end, active research is still ongoing. In particular, the Unknown Lipids Working Group and the Unknown Polars Working Group within this Phase II Metabolomics Program are carrying out an inter-laboratory comparison of compound identifications and unknown feature detection in untargeted metabolomics. This work has been led by Prof. <u>Charles Evans</u> with the participation of research labs from a number of universities across the US.

In addition, the National Institute of Environmental Health Sciences (NIEHS) within NIH is funding the <u>Human Health Exposure Analysis Resource</u> (HHEAR), a centralized network of exposure analysis services and expertise for researchers to add or expand exposure analysis to their studies of human health. Well-established mass spectrometry-based methodologies are being utilized for analyzing biological and environmental samples from investigators across the US.

One recent effort that is also supported by NIH is the Nutrition for Precision Health (NPH), powered by the All of Us Research Program. This initiative is to develop machine learning algorithms to predict individual responses to food and dietary routines. This \$170 million NPH program will recruit a diverse pool of 10,000 participants who are part of the NIH's All of Us Research Program to inform more personalized nutrition recommendations. Metabolomics data will be acquired from groups of these participants and fuel the development of algorithms for the aforementioned prediction. The metabolomics efforts are being conducted at the Metabolomics and Clinical Assay Center which is led by Prof. Susan Sumner. In addition to metabolomics data, other types of data, including microbiome and metagenomics data, dietary assessment data, and clinical data, will also be acquired to build the predictive algorithms.

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

The ADAP preprocessing algorithms were incorporated into MZmine in 2017 and have been used by researchers in the US and other countries. Figure 3 shows usage based on data collected through Google Analytics.



Figure 3. Usage of ADAP algorithms within MZmine.

In collaboration with Prof. Susan Sumner's lab, my group started developing ADAP-BIG in 2020 to rigorously process LC-MS/MS data from an NIH study with more than four thousand biological and quality control samples. We were able to release the first version of the ADAP-BIG algorithm in the summer of 2020, thanks to the prior developments of ADAP algorithms since 2010 that ADAP-BIG could still use. The first version of the ADAP-BIG software tool with an extensive graphical user interface was released in early 2021. Currently, we are actively adding new capabilities to ADAP-BIG and making it more and more useful to the metabolomics and exposomics community. In parallel, we are constantly adding new functions to ADAP-KDB that can serve as a search engine that researchers could use for identifying and annotating metabolites and exposure compounds and as a cloud resource to carry out cross-species, crosssample sources, and cross-disease analysis by harmonizing metabolomics and exposomics data in the public data repositories such as the Metabolomics Workbench in the US and MetaboLights in Europe.

As you see it, what are metabolomics' greatest strengths?

Genetics and exposures to the environment work together to produce health outcomes, as reflected in the expression GxE=outcome. Metabolomics methods, both the untargeted and targeted ones, are essential to study the interactions between genes and the environment. Current chromatography, mass spectrometry, and Nuclear Magnetic Resonance (NMR) instruments are very powerful and allow researchers to examine biological and environmental samples in detail. In particular, LC-MS and GC-MS-based untargeted metabolomics holds great potential to advance discovery science.

What do you see as the greatest barriers for metabolomics?

As a bioinformatician, I see two great barriers for metabolomics. The first barrier is the tremendous challenge to recruit and retain professional software developers in academia. This is mainly due to the large salary differential between academia and industry. As a result of this challenge, software developments in many research labs in academia, especially in the labs of assistant professors, rely primarily on students who are learning how to write software tools. Compared to industry-quality software tools that are usually written by seasoned computer programmers, academia-developed software tools tend to need improvements in terms of user-friendliness, speed, robustness, and the feel of profession-level software tools. I have been fortunate to be able to recruit master's level students from the Department of Computer Science in my college which graduates the largest number of CS students among North Carolina

universities. Many of these students have had software development experience in the industry before coming to UNCC to pursue their master's degrees. The average length of time that such a student could work in my group is about a year to 18 months before they graduate. Consequently, my lab has been in a constant cycle of recruiting and training new students, which I think is not the most efficient way of utilizing the lab's resources. On the other hand, it has been very satisfying to me that my lab has been able to provide opportunities for students to learn and grow and I take it my responsibility to do so too

Another challenge concerns harmonizing data across labs. Many analytical methods have been developed over the years to specifically detect and measure a certain class of compounds and have contributed greatly to moving the field forward. However, very different experimental protocols and instrument methods also make it very hard, if not impossible, to compare data across labs, limiting the data's utility to the lab where the data is originally acquired.

What improvements, technological or otherwise, need to take place for metabolomics to really take off?

Despite the necessity to develop specific analytical methods for various studies, I think that standardization on both the experimental and computational sides is needed. Funding agencies, instrument manufacturers, and academia need to work together to make this possible and balance the benefits of standardization and developing specific analytical methods.

How does the future look in terms of funding for metabolomics?

Funding for metabolomics is determined by many factors including the availability of funding, priorities of research investments from the perspective of the funding agencies, and the prospect of the utility of metabolomics to advance human health and environmental health research. As researchers, we should do our best to carry out rigorous and reproducible research, execute quality control in every step of the work that we do, and aim to overcome challenges in our path to make metabolomics more and more valuable to advance basic, translational, and clinical research. From my observations and working with colleagues, the metabolomics community as a whole is working diligently towards this goal.

What role can metabolomics standards play?

I think that metabolomics standards play CRITICAL roles in advancing the field of metabolomics. These include standards in preparing samples for analysis, standards in running samples on analytical instruments, standards in processing and analyzing the resulting data, and standards in reporting the quantitative results and compound identifications and annotations.

Do you have any other comments that you wish to share about metabolomics?

Metabolomics is highly multidisciplinary that could involve biology, biochemistry, analytical chemistry, informatics, biostatistics, and others. As such, collaboration is key to advancing metabolomics. I have been very fortunate to have had the opportunity to learn from or collaborate closely with researchers like Profs. Susan Sumner, Gary Patti, Corey Broeckling, Charles Evans, Colin Kay, Timothy Fennell, Oliver Fiehn, David Wishart, Stephen Barnes, Peter Nemes, Dean Jones, Shuzhao Li, and others in doing metabolomics. I am thankful for having had the opportunity to step into the exciting field of mass spectrometry due to the opportunity to do a postdoc in Dr. Richard D. Smith's group and for the many specific guidance of Dr. Stephen Stein of NIST in metabolomics so far. Finally, I would not be here without the hard work of the students, postdocs, and staff from a wide range of disciplines who have worked in the Du-Lab. These experiences make me confident that metabolomics will continue to grow and find wider applications in human health and environmental health research, as long as the community continues advancing the field of metabolomics through fruitful collaborations.



Recent Publications

Recently published papers in metabolomics

- Review: Insulin resistance in Alzheimer's disease: The genetics and metabolomics links (Open access)
- Review: <u>Mass spectrometry for metabolomics analysis: Applications in neonatal and cancer screening</u>
- Review: Metabolomics-centered mining of plant metabolic diversity and function: Past decade and future perspectives
- <u>3D plasmonic coral nanoarchitecture paper for label-free human urine sensing and deep learning-assisted</u> <u>cancer screening</u>
- <u>A Matrix-Assisted Laser Desorption Ionization–Time of Flight Mass Spectrometry Direct-from-Urine-Specimen Diagnostic for Gram-Negative Pathogens (Open access)</u>
- <u>An exposome connectivity paradigm for the mechanistic assessment of the effects of prenatal and early life</u> <u>exposure to metals on neurodevelopment</u> (Open access)
- <u>Childhood adiposity, serum metabolites and breast density in young women (Open access)</u>
- Deciphering the role of platelets in severe allergy by an integrative omics approach (Open access)
- <u>Exploration of Extraction and Separation Techniques for Routine Trace Analysis of Organic Compounds in</u> <u>Water: Dispersive Liquid-Liquid Microextraction vs Liquid-Liquid Extraction (Open access)</u>
- <u>Functional metabolomics revealed the dual-activation of cAMP-AMP axis is a novel therapeutic target of pancreatic cancer</u>
- <u>Integrative multiomics analysis reveals host-microbe-metabolite interplays associated with the aging</u> process in Singaporeans (Open access)
- <u>Maternal consumption of a fermented diet protects offspring against intestinal inflammation by regulating</u> <u>the gut microbiota</u>
- <u>Rice flowering improves the muscle nutrient, intestinal microbiota diversity, and liver metabolism profiles of tilapia (Oreochromis niloticus) in rice-fish symbiosis (Open access)</u>
- <u>MiMeDB: the Human Microbial Metabolome Database (Open access)</u>
- <u>Spatial dynamic metabolomics identifies metabolic cell fate trajectories in human kidney differentiation</u> (Open access)
- Visualization and metabolome for the migration and distribution behavior of pesticides residue in afterripening of banana

Metabolomics Events

FEATURED EVENT

March 12-17, 2023

Metabolomics and Human Health Gordon Research Conference Examining the Intersection Between Systemic and Cellular Metabolism and Lifestyle Factors to Understand Health and Disease Venue: Barga, Lucca, Italy Learn More Here

Overview

<u>Chairs:</u> Steven S. Gross and Lorraine Brennan <u>Vice Chairs:</u> Susan Jenkins Sumner and Warwick Dunn The Metabolomics and Human Health Gordon Research Conference (March 2023) will highlight state-of-the-art metabolomics technologies and how such technologies can be used to study human health. Places are limited and filling up, so we encourage early submission to avoid disappointment. To apply click <u>here</u>.

March 2, 2023 at 9 AM PT

Early Career Members (ECM) Virtual Job Fair Venue: Online Learn More Here

Overview

Hiring new lab members? Looking for a new position? Gathering information for the next step in your career? Join the MANA (Metabolomics Society of North America) ECM Virtual Job Fair! As an employer or recruiter, you'll get the opportunity to meet potential candidates. As someone who is in the market, this is a great opportunity for you to meet potential employers from different tracks (i.e., Academia, Industry, or Government/Nonprofit). We will help employers and potential candidates meet effortlessly in a virtual capacity via Zoom!



April 11, 2023

MANA SODAMeet Venue: Online Learn More Here

Overview

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. SODAMeetsis 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.

April 27, 2023

Bits & Bites # 03: Mass Spectrometry Imaging 101: Sample Preparation *New course* Venue: Online Learn More Here

Overview

This 9-part short course series will feature in-depth topics in untargeted metabolomics. Each short course can be taken individually or you can select multiple Bites. You 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 highly interactive manner, with use of freely available software and databases. The tuition is \$175.

This 3rd course is taught by Dr. Elizabeth Neumann from UC Davis, and no prior knowledge or software is required. Short description of the course: Have you ever looked at some mass spectrometry images and thought: "That is so cool! Can I do that?" Yes. Yes, you can! In this short course, we will cover the basics of sample preparation for mass spectrometry imaging analysis. We will start from the tissue and move all the way through the start of the data acquisition. This short course will include a mixture of video, PowerPoint content, and group discussion. By the end of the course, every researcher will have enough knowledge to start their own mass spectrometry imaging journey.

June 15-16, 2023

4th Annual Canadian Metabolomics Conference (CanMetCon) Venue: Prince of Wales Hotel, Niagara-on-the-lake, Ontario, Canada <u>Learn More Here</u>

Overview

Just before the 19th Annual Conference of the Metabolomics Society, The Metabolomics Innovation Centre is organizing a conference where leading scientists in metabolomics will share their knowledge and updates. This year's conference will focus on scientific themes in "Exposomics", advancing the understanding of exposures in Medicine, Agriculture/Food/ Cannabis, Environment/Industrial Settings, and Clinical Epigenomics. The early-Bird registration and Abstract Submission for CanMetCon 2023 is now OPEN!

Early-bird fee for students is \$150 CAD, and \$250 CAD for all others. All fees are in \$CAD and are subject to applicable taxes and fees.

- March 15, 2023: Early-bird registration deadline
- March 31, 2023: Abstract submission deadline

The program and sponsorship packages are now available on the website.

June 18-22, 2023

19th Annual Conference of the Metabolomics Society Venue: Niagara Falls, Ontario, Canada <u>Learn More Here</u>

Overview

Save the date! Visit the website for updates over the coming weeks.

- Abstract submission is OPEN!
- March 6, 2023: Oral abstract deadline
- May 16, 2023: Poster abstract deadline

Check the website for topics and requirements.

Take Your **Metabolomics Workflow** to the **Next Level**

End-to-end metabolomics solutions

Learn more





June 26-30, 2023

Introduction to Nutritional Metabolomics Venue: Department of Nutrition Exercise and Sports, University of Copenhagen, Denmark Learn More Here

Overview

The course will provide a general overview of LC-MS-based untargeted metabolomics from study design to results and will be exemplified by its specific application in nutrition. It will be delivered using a mixture of lectures, hands-on data preparation and analysis, computer-based practical sessions, and discussions. Visits to wet labs and instructions on human sample preparation procedures are included but there is no practical lab work.

October 23-27, 2023

5th Annual MANA Conference Venue: Columbia, MO, USA Learn More Here

Overview

The 2023 conference will be held October 23-27, 2023 on the campus of the University of Missouri in Columbia, MO. Professor Lloyd Sumner will chair the meeting and is developing an exciting program that will appeal to many interests in metabolomics. This year, MANA is excited to partner with the International Lipidomics Society (ILS), and the 2023 conference will have dedicated sessions for lipidomics, and an evening workshop with the ILS. Check out the conference website for program updates.

November 17-25, 2023

14th European Nutrition Conference (ENC) FENS 2023 Venue: Belgrade, Serbia Learn More Here

Overview

The 14th European Nutrition Conference will be held in Belgrade, the capital city of Serbia. The theme of the conference is "Food, Nutrition, and Health: Translating science into practice". Around this theme, the conference will deliver a high-quality program, featuring international speakers across plenary sessions and symposia. Other features of the program will be discussions and debates, industry symposia, panel sessions, and networking opportunities including several specifically catering to early career researchers. Early Bird Registration is from **February 15 -July 10, 2023**.



Metabolomics Jobs

If you have a job to post, please email the MetaboNews team at <u>metabolomics.innovation@gmail.com</u>. 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	Deadline	Source
Research Technician	McGill University	Montreal, Quebec, Canada	March 3, 2023	<u>McGill University</u>
Postdoctoral Research Associate - Pharmaceutical Sciences	St. Jude Children's Research Hospital	Memphis, Tennessee, USA	Until filled	<u>Metabolomics</u> <u>Association of North</u> <u>America</u>
Postdoctoral Position in Big Data Analytics for Metabolomics and Exposomics	Du-Lab Research, North Caroline at Charlotte	Charlotte, North Carolina, USA	Until filled	<u>Du-Lab</u> (please contact xiuxia.du@uncc.edu)
Senior Research Associate	Corteva	Johnston, Iowa, USA	Until filled	<u>Metabolomics</u> <u>Association of North</u> <u>America</u>
Doctoral Candidates	HUMAN – Harmonising and Unifying Blood Metabolomics Analysis Networks	Europe	Until filled	<u>HUMAN Doctora</u> l <u>Network</u>
Mass Spectrometry Specialist in metabolomics lab (Research Assistant III)	Li's Metabolomics Lab at the Jackson Laboratory for Genomic Medicine	Farmington, Connecticut, USA	Until filled	<u>Metabolomics</u> <u>Association of North</u> <u>America</u>
Research Technician in Mass Spectrometry	The Wishart Lab and the Wishart Node of TMIC, University of Alberta	Edmonton, Alberta, Canada	Until filled	<u>University of Alberta</u>
Assistant Professor in Mass Spec and/or Metabolomics	Michigan State University	East Lansing, Michigan, USA	Oct. 27, 2024	<u>Michigan State</u> <u>University</u>
Research Scientist, Metabolomics	The Sarafan ChEM-H Metabolomics Knowledge Center, Stanford University	Stanford, CA, USA	Until filled	<u>Stanford University</u>

Job Title	Employer	Location	Deadline	Source
Senior Scientist	Metabolomic Technologies Inc.	Edmonton, Alberta, Canada	Until filled	<u>MetaboNews Jobs</u>
Scientist	Center for Proteomics and Metabolomics at St. Jude Children's Research Hospital	Memphis, Tennessee, USA	Until filled	St. Jude Children's <u>Research Hospital</u>
Postdoctoral Fellows (Metabolomics, Proteomics, and Informatics - Microbial Infections)	University of Calgary	Calgary, Alberta, Canada	Until filled	<u>Lewis Research</u> <u>Group</u>
Research Specialist, Emory Integrated Metabolomics and Lipidomics Core	Emory University	Atlanta, Georgia, USA	Until filled	Emory University
Postdoctoral Fellow in Food Safety/Non-Targeted Analysis	US FDA's Center for Food Safety and Applied Nutrition (CFSAN)	College Park, Maryland, USA	Until filled	<u>Metabolomics</u> <u>Association of</u> <u>North America</u>
Postdoctoral Position in Metabolomics and Proteomics Data and Development of Cardiovascular Disease in Women	Brigham and Women's Hospital	Boston, Massachusetts, USA	Until filled	<u>Brigham and</u> <u>Women's Hospital</u>
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	Until filled	<u>University of</u> <u>Alberta</u>
Various Positions	Various	Various (within North America)	Various	<u>Metabolomics</u> <u>Association of</u> North America