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mlowings@ualberta.ca <mlowings@ualberta.ca>
Reply-To: mlowings@ualberta.ca
To: metabolomics.innovation@gmail.com

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MetaboNews

This month in metabolomics

May, 2024
Vol 14, Issue 5

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

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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

Conference Corner

20th Annual Conference of the Metabolomics Society

METABOLOMICS2024

OSAKA, JAPAN JUNE 16-20

Hope to see you in Japan!

Are you ready to join us in Osaka? Lots of announcements and helpful info below, complete your travel plans soon and we'll see you in Japan!

Website: www.metabolomics2024.org
Hosted by: The Metabolomics Society
When: June 16-20, 2024

Career Night – Job Fair and Round Table

Career Night is back in 2024 – always a high-energy, well-attended event!
Sunday evening will include a job fair for participants to learn about available positions and interact in a relaxed setting with potential employers. One-on-one interviews between employers and candidates may also be conducted during the conference

Calling for Employers

We are welcoming potential employers looking to fill positions in the next year. Both industry and academic employers are encouraged to sign up for a table at Career Night, including academic employers with postdoctoral position openings.

View the website to sign up for a table (free of charge!) – tables are available on a first-come basis.

As some participants may not be currently seeking new employment, Career Night also provides an interactive round table event for participants to develop rapport and expand their networks to ready themselves for future employment. View the website for the round table discussion topics.

Platinum Sponsor Lunch Presentations – Sign Up Available!

During the lunch period on Tuesday, Wednesday and Thursday you can join a presentation hosted by one of our Platinum Sponsors. Advanced sign-up is required to attend. You can update your registration record to attend these presentations. Follow the instructions below.

- **Click Here** to be directed to the site.
- Select "Sign in with your existing account" and enter your email address and password to log in.
- Click any blue "Edit" button to make your selections.
- Click "Next" until you reach the final page and click "Submit".

Registration

Registration is still open! Receive a discount by renewing or becoming a member of the Metabolomics Society BEFORE registering for the conference!

Japan Visa – Do Not Delay

Details for entry into Japan are available on the website. Most attendees will not require a visa, based on your country of residence. If you do need a Visa, you should apply now.

For all travelers to Japan, you are required to have a passport that is more than 6 months from expiration and has at least 1 blank page.

Agenda and Presentation Schedule

The conference agenda is available online, as well as the Session Schedule. Check the website for updates in the next few weeks!

Members' Corner

Board of Directors

Dear Society Members,

This last month has been a relatively quiet one for the board of directors (BoDs) for the Society. The most pressing matter has been finalising our conference in Osaka. You will see that the program has come together very nicely, with the science looking excellent and on Sunday we start with some very interesting workshops. Needless to say, I am very much looking forward to the meeting, though perhaps not the 14 h or so I will be encased in a large 'cigar'-like tube in order to travel from the UK to Japan L.

- The link to the Agenda for Metabolomics 2024 is here: https://www.metabolomics2024.org/agenda
- The link to the Session Schedule for the oral talks is here: https://www.metabolomics2024.org/session-schedule

For those in Osaka please consider coming to the Metabolomics Town Hall Meeting in Hall A on Monday 17 June 7-8 pm (local time). Here we shall be discussing what the Society has achieved over the last year and what our plans for the future.

I have previous mentioned in person and in MetaboNews that the Board of Directors are mere guardians of the Metabolomics Society, and that we all have our share of responsibilities for the future of our wonderful group. If you want to get involved in the Metabolomics Society and perhaps serve as one of the directors there are elections this year for seven director positions. Once the new BoD is formed, there will be a need to replace myself and Fabien as President and Secretary. More information on the election process will be highlighted in our Town Hall meeting. In addition, all members of the society will receive details of the Call for Nominations process and timings for the Voting Poll periods.

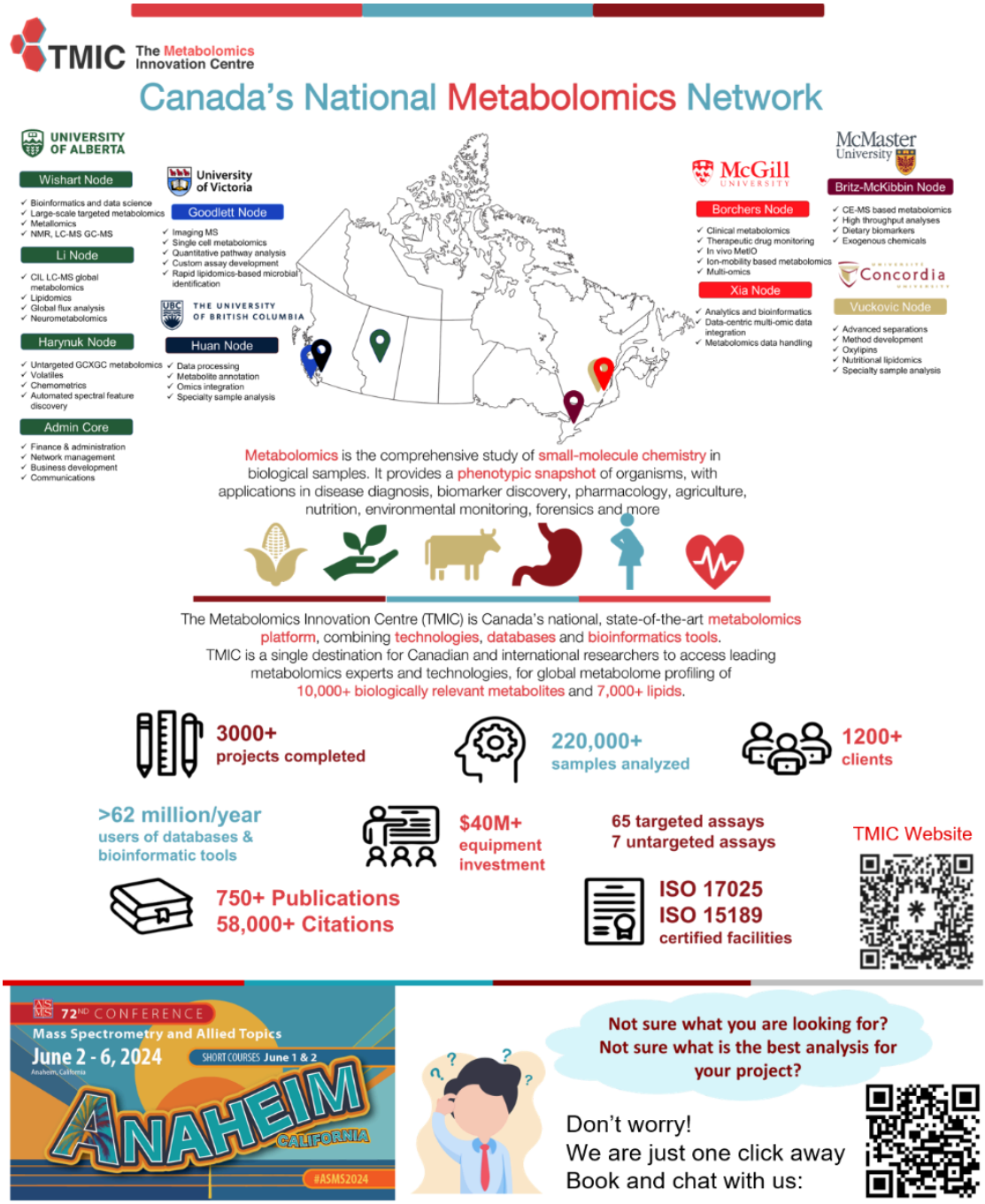
Please do consider getting involved. It has been a great experience and I – along with all the directors – have thoroughly enjoyed acting as temporary ‘custodians’.

With this I will close. I look forward to greeting you in Osaka next month.

All the very best.

Roy Goodacre, University of Liverpool, UK

President, Metabolomics Society



Visit our Booth #460 at ASMS 2024!

TMIC is Canada's only national metabolomics platform and the largest of its kind. As a core facility rooted in universities across Canada, TMIC offers the best of both academia and industry. Our experts are at the forefront of metabolomics research and are continually improving, expanding, and optimizing services and technologies. As a business, TMIC guarantees high-quality and reproducible data as well as high customer-service standards.

TMIC offers high throughput, low cost, and extremely comprehensive services for discovery research, chemical phenotyping, and analysis of biological pathways. Our technologies are compatible with a wide range of samples, including human and animal biofluids, cell extracts and cell culture media, tissue, water, air, soil, and can accommodate small volumes.

Swing by our booth at the 72nd ASMS Conference on Mass Spectrometry and Allied Topics. June 2 - 6, 2024 in Anaheim, California.

Early-career Members Network (EMN)

EMN Webinar Series
The EMN would like to once again thanks Prof. Gary Patti for his insightful and brilliant talks on forward and reverse approaches to study human metabolism in our April webinar. Next EMN webinar will occur on Wednesday 22nd of May 2024, 13:00 UTC, featuring Prof. Nicholas JW Rattray (University of Strathclyde, UK) and his PhD candidate Patricia Kelly (University of Strathclyde, UK).

They will talk about using metabolomics for biomarkers discovery in research, and their clinical translation into disease diagnosis in the areas of ageing, cancer and inflammatory bowel disease (IBD).

EMN Career Development Workshop
Calling all Early Career Members of the Metabolomics Society! We need your input to help us shape our Metabolomics 2024 workshop!

Many of you have applied for various jobs and interacted with potential employers and so we have just some questions for you. We are preparing a career development workshop for the early career members in metabolomics! We hope you will all join us for the workshop (W9) on Monday 17th at 8:15-10:15 am entitled: Planning your career: get ahead in Metabolomics by getting started!

To help us with our workshop, we would like to ask you to complete this 5-minute survey and tell

us about your experience of the recruitment process: https://shorturl.at/kHQ58. Thank you for your contribution and for making our workshop more relevant for the early career members of the Metabolomics Society.

MetaboArt Competition

This year, the EMN is again opening the MetaboArt competition to allow showcasing research projects in metabolomics through creative ideas. We strongly recommend the participation of scientists at any stage of their career, as we strongly believe that images can be more effective than words in explaining science research. Both, members and non-members of the Society are welcome to participate. You do not have to attend the conference to be eligible. Entries should be e-mailed to info.emn@metabolomicssociety.org. Click to learn more about the MetaboART Research Contest, and submit your entry by June 1! https://shorturl.at/osHIR

The winners of the MetaboART competition will be announced at the Metabolomics Society conference in Japan. The first three places will be awarded with gift-cards ranging from 70 to 30 dollars.

European School of Metabolomics

The MetSoc sponsored European School of Metabolomics took place over 22-26 April in Granada, Spain. EMN was represented by Breanna Dixon, who gave a short talk on EMN and MetSoc to all the participants. The week comprised of a number of talks and workshops from leading experts in the field, and provided a great opportunity for ECRs from across Europe to network and have questions about their research answered. The next meeting will take place in 2026, and expressions of interest for joining the organizing committee are sought, please contact Fenne Verheijen at f.w.m.verheijen@uu.nl.

Membership News for 2024

The Membership Committee is preparing a presentation for the MetSoc Conference in Japan next June, on the current state of the society memberships. It gathers data from March 2023 to March 2024 and includes demographic data, gender and income distribution, professional status and metabolomics experience. This analysis on the MetSoc status is part of initiatives looking for expanding our society memberships and retaining new registers.

The committee is also taking first steps in planning a virtual event for ECRs from different International Affiliates for a brainstorming session. More news about this reunion will be coming soon.

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Task Groups' Corner

Model Organism Metabolomes Task Group

BioCyc.org contains metabolic pathway databases for the following model organisms. BioCyc.org also contains a suite of metabolomics data analysis tools, including tools to visualize metabolomics data onto zoomable, animated metabolic network diagrams.

Escherichia coli
Bacillus subtilis (Major update released in April 2024)
Saccharomyces cerevisiae
Caenorhabditis elegans
Drosophila melanogaster (Curation effort began in 2023 -- contact: Steven Marygold, Cambridge)
Mus musculus
Rattus norvegicus
Homo sapiens

International Affiliates' Corner

Australia & New Zealand Metabolomics Society (ANZMetSoc)

Visit: https://anzmetabolomics.org/what-we-do

Save the date - AUS-oMicS Scientific Meeting 2025
The Australasian Proteomics Society, The Australian and New Zealand Society for Mass Spectrometry, The Australian and New Zealand Metabolomics Society and Australian Glycoscience Society will hold a fully integrated joint scientific meeting in Cairns, Queensland (Australia) in 2025.

Cairns is home to Australia's iconic Great Barrier Reef and this vibrant city will host the omics' conference from 18 - 22 May 2025, at the Cairns Convention Centre. More information about the event is to come.

Save the date, grab your snorkels and we hope to see you there!

Réseau Français de Métabolomique et Fluxomique (RFMF)

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

Next 2024 RFMF webinar in July on plant metabolomics and fluxomics
The next RFMF webinar will be held on 4 July via videoconference from 3 pm to 4.30 pm CEST.

For this specific topic on plants, we are delighted to have Fidele TUGIZIMANA (Uni Johannesburg, SA) on board as the keynote speaker. His presentation *Computational Metabolomics in Plant Science - Natural Products and Biostimulants* promises to be fascinating. Three young scientists will also be presenting their research: Ms Kgalaletso OTHIBENG (Uni Johannesburg, SA), Ms Carolina DALMEIDA (Uni Rio, BR) and M. Salek-ahmed SAJIB (IPS2, FR). We hope to see many of you!

Netherlands Metabolomics Centre (NMC)

Visit: www.metabolomicscentre.nl/

The **call for abstracts** for the **Benelux Metabolomics Days 2024** (annual conference of the NMC) is open!

This year, the **Benelux Metabolomics Days** will be held on **September 5 & 6, 2024** at Zebrastraat in Ghent, Belgium and will be partly co-hosted with the NuGO Association's annual congress, NuGO week 2024. Together with NuGO, we will organize the session "*The impact of metabolomics on nutrition research: past, present & future"*, engaging researchers to interact with each other's research fields. We are looking forward to a fruitful collaboration with NuGO and our partner Prof. Lynn Vanhaecke from the Laboratory of Integrative Metabolomics (LIMET).

We encourage PhD's / postdocs working on the following: *plant metabolomics, single cell metabolomics, new instrumentation, metabolite identification, fluxomics, lipidomics, food & nutrition and microbial applications, environmental metabolomics, biostatistics, data analysis and chemometry, artificial Intelligence, biomedical applications, nutritional systems biology and metabolomics* to upload their abstracts **before May 31** to be able to present an oral presentation!

The programme committee is proud to announce the following confirmed keynotes: **Susan Sumner**, **Michael Witting**, **Julijana Ivanisevic**, **Wout Bittremieux**, **Sarah de Saeger**, **Celia Berkers**, Rob Vreeken, **Ingmar van Hengel**, Wout Boerjan, Eline Slagboom

Other News

Board of Directors – Election Opening Soon

The Metabolomics Society Directors are looking for new members to join the Board as the current term expires in a few months. There will be (7) open positions to fill, as well as an opening for a new President and new Secretary.

The Call for Nominations will open in late June. Please consider getting involved in the Metabolomics Society and helping guide the future of this great organization!

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MetaboInterview

Gabi Kastenmüller

Head of the Systems Metabolomics Group
Institute of Computational Biology
Helmholtz Munich

Systems Metabolomics-Kastenmüller Lab

Biography

Gabi Kastenmüller is heading a research group on Systems Metabolomics at the Helmholtz Zentrum München, Germany, and is an expert in the analysis, integration, and interpretation of metabolomics data. Having a background in chemistry and computer science, she moved into bioinformatics for her PhD, which she received from the Technische Universität München, Germany, in 2009. During her postdoctoral training at Karsten Suhre's lab and a four-months stay as a visiting scientist at Metabolon Inc., USA, she found her passion in metabolomics and was involved in the analysis of one of the first mass spectrometry-based metabolomics studies at large scale in two population-based cohorts. In 2011, she started her research group with the goal to understand the role of metabolism and metabolic individuality in the development and treatment of complex human diseases. Thereby, her team is particularly interested in a detailed, systems-level understanding of which factors shape and influence one's personal metabolome and its changes over time or during progression to disease. To address these questions, her group develops new strategies to analyze, integrate, and visualize results derived from metabolome-wide, proteome-wide, and genome-wide association analyses in large epidemiological cohorts within easy-to-use frameworks and resources.

How did you get involved in metabolomics?

I got very interested in metabolism during my PhD where I worked on predicting and comparing metabolic capabilities of microbial species based on their genomic sequences (available for ~250 species back then ;-)). At the time when I was about to finish my PhD work, Karsten Suhre joined our institute. The director of the institute, Hans-Werner Mewes, asked him to work on

metabolomics, which was still a young discipline and also a new topic for Karsten and the whole institute. But Karsten generated quite some impact in the field very quickly by applying metabolomics on epidemiological cohorts. I was fascinated by Karsten's work and the potential of metabolomics from the beginning. Also, as I had studied chemistry and computer science, for me, metabolomics sounded like the perfect combination of my core interests. So, I joined Karsten's group as a PostDoc and had the pleasure of being on board when he initiated the first series of genome-wide studies with metabolomics, which were mapping out the influences of genetic variation on human metabolomes in healthy individuals. Metabolomics has grabbed me since then! I am very grateful that I had the chance to see the field growing quite a bit over the past 15 years.

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

The aspects that I find most exciting are the individuality of human metabolomes and their changes over time – short-term and long-term, which can either be actively triggered by a physiological challenge (short-term) or an intervention (long-term) or just occur through aging. On the one hand, metabolism is highly dynamic exhibiting large short-term fluctuations in metabolite levels in response to stimuli such as exercise or food intake. Despite these large fluctuations, we and many others were able to show that subjects tend to stay within their individual "metabolic space" (doi: 10.1096/fj.11-198093). On the other hand, on a different time scale and without intervention or lifestyle changes, the personal metabolomes of adults remain quite stable over the years, as we have also shown previously (doi: 10.1007/s11306-014-0629-y, doi: 10.1038/s41598-018-27958-1). Interestingly, the instability of personal metabolomes was associated with worse health outcomes at later follow-up time points, suggesting this instability as an early alarm signal (doi: 10.1038/s41598-018-27958-1). In our work, we also try to dissect which parts of our personal metabolomes are determined by our genes (for instance through genome- and metabolome-wide association analyses (doi: 10.1038/ng.2982, doi: 10.1038/s41588-019-0567-8, doi: 10.1038/s41591-022-02046-0) and which parts are modifiable, for example through exercise or specific diets (doi: 10.3390/metabo12050445, doi: 10.3390/metabo12050445). Ultimately, we aim to combine the different pieces of information to suggest (personalized) prevention regimens for diseases such as Alzheimer's disease (doi: 10.1101/2024.01.23.23297820).

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

Helmholtz Munich does not have a specific focus on metabolomics but has been among the first institutions using metabolomics at the scale of epidemiological cohorts and the first to report on genetic influences on the human metabolome in healthy cohorts. I guess it does not really qualify as a "key initiative" but at that time my group started to build interactive web-based resources, presenting the numerous results from our large-scale metabolome- and genome-wide studies in an easily accessible format (gwas.eu/si). Our idea has been to support researchers from different fields in generating hypotheses based on the results and initiating

follow-up studies by taking the burden of handle large data sets from them. In collaboration with Claudia Langenberg, who has led a series of large metabolomics and proteomics studies recently, we continued building such resources (omicscience.org). It is great to see that meanwhile, more and more groups provide this kind of online supplement together with their publications on large-scale results. Beyond this type of online supplements, we also try to make other high-dimensional data or complex results available and more digestible such as time-resolved metabolomics data in response to standardized challenges, which can serve as a reference for the “normal” metabolic dynamics in healthy subjects (humet.org). Another example is our ADatlas (adatlas.org) – an integrative molecular atlas of Alzheimer’s disease which we constructed by integrating a very large set of different omics association results.

What is happening in your country in terms of metabolomics?

In Germany, we have many internationally renowned metabolomics researchers. I think, the German metabolomics landscape covers most of the current research topics in metabolomics and lipidomics such as metabolic flux analysis using isotope-labeling, metabolomic/lipidomic standards, computational metabolomics (including application of artificial intelligence), single cell and spatial metabolomics, and more. So, I think a lot is happening in our country. I just feel that, as metabolomics researchers in Germany, we are still not acting so much as a unit on the national level, which would be important to make our field more visible in particular when it comes to research politics and lobbying for more national funding of metabolomics, for example.

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

It would be amazing to see some kind of metabolomics approach as a routine clinical method for “imaging” metabolism in the future. It will provide much more detailed information on the metabolic state of an optimally not-yet patient than classical clinical chemistry. Some of our current research on the individuality of metabolism and its determinants could then be funneled into prevention or treatment strategies tailored to the subject. This could also involve tracking of the individual’s response to treatment through metabolomics. I know I’m just dreaming ;-) Disregarding the still required technological developments, I guess we would need a more fundamental change in the way medical care is thought in our societies first though. But maybe results from metabolomics research could at least provide the scientific evidence for the discussion as most of the age-related non-communicable diseases have been shown to involve some sort of metabolic dysfunction early in the disease process, in part explaining comorbidities (doi: 10.1038/s41591-021-01266-0). It could also help to focus more on (early) disease mechanisms rather than (later) symptoms classified by organs … Still dreaming ;-).

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

In my opinion, the greatest strength of metabolomics is that it captures the net effects of genetic factors and influences from the environment including lifestyle as well as their interactions. While this is a big strength, it also makes the interpretation of metabolomics results sometimes extremely complex as it is difficult to disentangle where the effect comes from. Is a metabolite influenced by the diet? The genes? The microbiome? A combination of them? The other main advantage of metabolomics, at least for human metabolomics research, is that the easily accessible biofluids blood, and urine are, at the same time, maybe the most relevant "tissues" for metabolites. Many metabolites are produced in one organ, the liver, for example, and are to be consumed in another organ, the brain, for example. Considering metabolites as words of the body's chemical language, blood is the most important communication channel with information from all organs. This is different in the case of other omics layers such as epigenomics, transcriptomics, or proteomics, where the molecules are usually produced in the tissue where they are supposed to act (with exceptions of course, for example, immune/inflammation-related protein signals).

What do you see as the greatest barriers for metabolomics?

I guess many people would say it's a lack of standardization and diversity of platforms making comparison of values difficult across studies. But actually, I think that also other barriers exist that might be equally important. For example, in many multi-omics studies that I have seen, metabolomics was left out completely or was kind of an outsider. Maybe this is a bit provocative, but I guess one reason for this is that bioinformaticians don't like to handle metabolomics data because they have not been taught how to do it and have hardly seen any metabolomics data during their studies – at least considering the curricula I know of. Indeed, metabolomics data are often more difficult to interpret, especially when jointly analyzed with other omics data: Metabolites cannot be easily mapped back to genes, usually we do not get a complete "ome" picture but only a limited set of metabolites, and mapping them back to existing biochemical knowledge leaves a lot of gaps, on the one hand, and many unmappable metabolomic features, for which we do not have specific biochemical knowledge, on the other hand.

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

To remove the barriers mentioned before, first, metabolomics should become a topic more equitable compared to other omics in bioinformatics curricula. Second, we would need new, more "classical" biochemistry work to understand those parts of the metabolome better that had not been explored in the last century before research kind of stopped pursuing this type of experiment. And of course, I also find it important to work on improvements regarding standardization, robustness, costs, and the practical usability (for example through miniaturization) of metabolomics technologies.

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

My feeling is that in general getting funding becomes harder and harder. As acceptance rates drop one has to spend too much time on writing grants (that one could invest better in doing the work). In the worst case, you have to go for grant calls that do not really fit to what you think would be the right way to go. When it is about specific funding for metabolomics, I think Germany is not the best country to be actually. Maybe I just missed it, but I cannot remember any national call where it was mainly about metabolomics over the past decade. I think other European countries, for example The Netherlands and France are doing much better in that regard. Also, it has always been difficult to attract funding for infrastructure or resources such as online databases. Usually, you have already a hard time to get funded for setting them up; but it gets really complicated to get money for keeping them updated or just sustaining them as such. Of course, I understand that this type of work does not sound so fancy …

What role can metabolomics standards play?

A big one, I think – but I also think that, as a community, we should not "over-emphasize" the issue too much. Analytical chemists tend to be perfectionists ;-). In parallel to the standardization efforts, we might want to consider other routes to deal with imperfect data, for example by coming up with better statistical/computational approaches to align data across platforms and studies (doi: 10.3390/metabo9060109, 10.1038/s41467-024-45838-3). Often it is not the best approach but a cheap and practical one that wins the race at the end. So, let's not block ourselves by discussing only the issues that still need to be solved; let's rather focus on the strengths metabolomics has already.

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

I am optimistic that metabolomics will get its role in clinical routine in some form some day. It's just too informative for detailed monitoring of metabolic health within a subject over time to just stay on the research level ;-)

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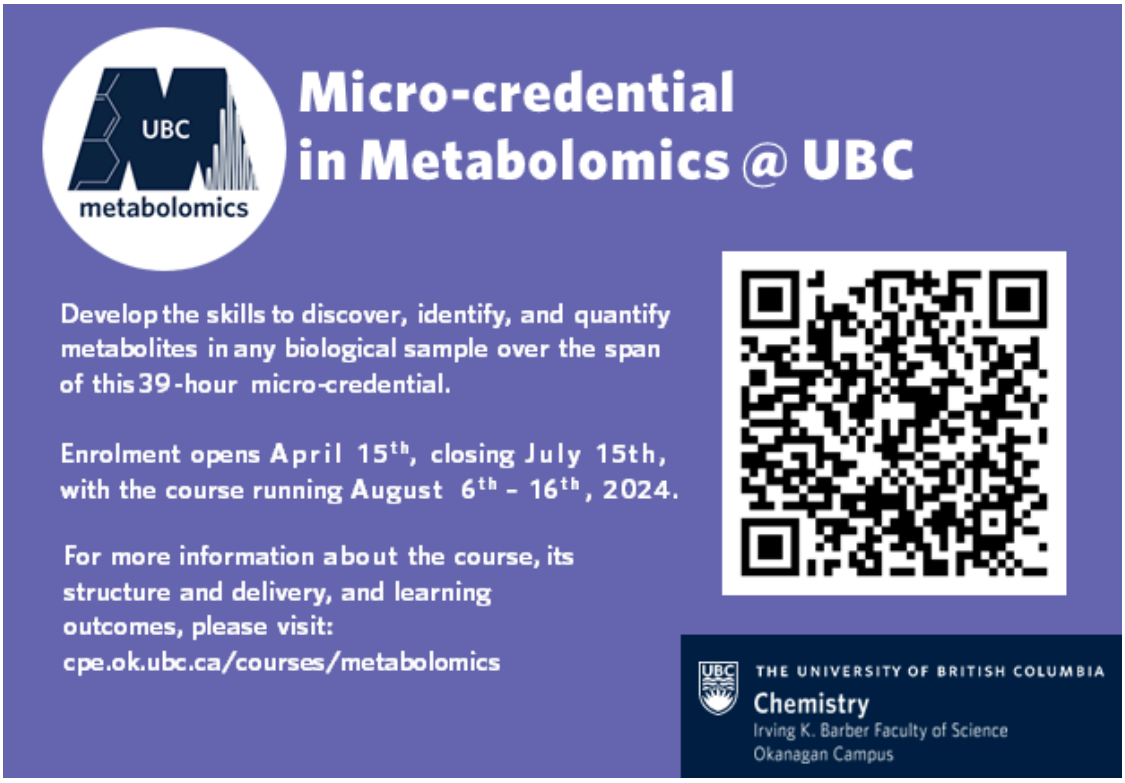

The Metabolomist Podcast

The Metabolomist Podcast Season III is back!

The Metabolomist podcast is a forum designed to connect metabolomics scientists and share their stories. Host Alice Limonciel and her guests aim to convey their passion for small molecules and lipids, discussing the challenges in detecting and quantifying them, as well as their successes in mapping the future of this dynamic field. Season III of The Metabolomist will focus on concrete applications of metabolomics and how this tool will impact society over the next 5 to 10 years.

THE METABOLOMIST

New episode
Physical markers & treatment of mental illness

> Life events, trauma, drug use, can precipitate the first episode of [mental] illness, and these can be more easily tracked at the protein/ metabolite level than with genetic predisposition, which is obviously very static.
>
> **-Sabine Bahn**

LISTEN NOW

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Recent Publications

Reviews:

- Fecal microbiota transplantation: current challenges and future landscapes
- Integrating Machine Learning in Metabolomics: A Path to Enhanced Diagnostics and Data Interpretation
- Metabolomics Application in Understanding the Link Between Air Pollution and Infant Health Outcomes: A Narrative Review
- Metabolomic pathways in food allergy (Open access)

Articles:

- Acylcarnitines in depression: association with diagnostic status, symptom severity and profile in the the Netherlands study of depression and anxiety cohort
- Bile acid metabolism is altered in learning and memory impairment induced by chronic lead exposure
- Diet-omics in the Study of Urban and Rural Crohn disease Evolution (SOURCE) cohort (Open access)
- GCMS-ID: a webserver for identifying compounds from gas chromatography mass spectrometry experiments (Open access)
- Identification of coronavirus disease marker compounds in sweat with comprehensive two dimensional gas chromatography using multiloop splitter-based non-cryogenic artificial trapping modulation system (Open access)
- Identifying plasma metabolic characteristics of major depressive disorder, bipolar disorder, and schizophrenia in adolescents (Open access)

- Integrated unbiased multiomics defines disease-independent placental clusters in common obstetrical syndromes (Open access)
- Legacy effects of premature defoliation in response to an extreme drought event modulate phytochemical profiles with subtle consequences for leaf herbivory in European beech (Open access)
- Metabolic characterization of sphere-derived prostate cancer stem cells reveals aberrant urea cycle in stemness maintenance
- Metabolomics perspectives into the co-exposure effect of polycyclic aromatic hydrocarbons and metals on renal function: A meet-in-the-middle approach
- NMR metabolomic modeling of age and lifespan: A multicohort analysis
- Short-term exposure to antibiotics begets long-term disturbance in gut microbial metabolism and molecular ecological networks (Open access)
- Racial Differences in Vaginal Fluid Metabolites and Association with Systemic Inflammation Markers among Ovarian Cancer Patients: A Pilot Study (Open access)
- Ten metabolites-based algorithm predicts the future development of type 2 diabetes in Chinese (Open access)
- Untargeted metabolomics identifies metabolic dysregulation of sphingolipids associated with aggressive chronic lymphocytic leukaemia and poor survival (Open access)

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Metabolomics Events

Imperial College London Metabolomics training course: Hands-on Data Analysis for Metabolic Profiling

June 10 – 14, 2024

Venue: in-person at London Hammersmith campus, UK

This 5-day course provides a comprehensive overview of data analysis for metabolic profiling studies focusing on data from NMR spectroscopy and Liquid Chromatography-Mass Spectrometry. It combines lectures and tutorial sessions using open-source software to ensure a thorough understanding of the theory and practical applications.

Registration is open and standard registration is extended until **May 31, 2024.**

Learn more about the course

MANA SODAMeet

June 11, 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

20th Annual Conference of the Metabolomics Society Metabolomics 2024

June 16 – 20, 2024

Venue: Osaka, Japan

20th Annual International Metabolomics Conference of the Metabolomics Society will be held on June 16-20, 2024 in Osaka, Japan. The conference is the official annual meeting of the Metabolomics Society, and the largest metabolomics meeting worldwide.

- Oral Abstract deadline: Closed on March 14, 2024 (extended from March 7)
- Poster Abstract deadline: Closed on May 16, 2024
- **Late registration: Open from May 21 - until On-Site**

Scientists in academia, government, industry, and others working in the field of metabolomics are invited to submit abstracts in the following scientific themes:

- Metabolomics in Human Health and Disease
- Plants, Food, Environment and Microbes
- Technology Advancements
- Computational Metabolomics, Statistics & Bioinformatics
- Industry Spotlight: Metabolomics in Pharma and Biotech

Learn more here

16th Mass Spectrometry School in Biotechnology and Medicine

July 7 – 13, 2024

Venue: Dubrovnik, Croatia

The MSBM program is taught through a combination of lectures, workshops and tutorials. It is suitable for attendees from a wide variety of backgrounds, and the standard core syllabus covered every year is as follows:

- Mass spectrometry basics
- Introductions to main classes of mass analysers – ToF, ion traps, quadrupoles, FTMS etc.
- Ionization sources – ESI, MALDI etc.
- Ion mobility
- Separations methods – LC, CE, HILIC, fractionation etc.
- Tandem MS – CID, ECD, UVPD, SRM, MSM, DDA, DIA etc.
- Mass spectrometry systems – e.g. LC-ESI-QToF, IMS-MSMS etc.
- Proteomics – bottom-up, top-down, quantitative etc.
- Other omics – lipidomics, metabolomics, glyomics etc.
- MS data processing and Informatics

Registration is open now and will close on **June 12, 2024.**
For more information, please visit msbm.org or send an email to msbm.dubrovnik@gmail.com

Learn more here

International Theoretical and Practical Course: "Making Metabolomics Matter: Targeted Approaches for Translational and Precision Medicine"

July 22 – 26, 2024

Venue: Facultad de Química, Universidad Nacional Autónoma de México (UNAM). Cto. Escola S/N, C.U., Coyoacán, 04510 Ciudad de México, CDMX (In-person)

The course will include education and hands-on training in metabolomics, from experimental design and sample preparation, to running the instrumentation, analyzing the data, and interpreting the results. The principal objective is to emphasize how metabolomics (the most recent omics discipline) could help in the understanding of metabolic perturbations which are the origin of several diseases. Due to its heterogeneity and a complex genetic background, in some populations, such as Mexican and Latin American populations, personalized medicine could be a feasible alternative for getting more adequate diagnosis and treatments. By applying innovative biotechnology products, the students will learn how targeted metabolomics uses the FAIR principles for scientific data, which is Findability, Accessibility, Interoperability and Reusability (FAIR), with pivotal importance for large studies trying to find biomarkers for the diagnosis or prognosis of multiple diseases.

Course Coordinators: Dr. Yamilé López Hernández and Dr. Osbaldo Resendis Antonio.

Learn more here

Micro-credential in Metabolomics

August 6 – 16, 2024

Venue: University of British Columbia (Online)

This learning opportunity is designed for professionals who have typically earned an undergraduate degree or college diploma in a science or engineering discipline and are engaged in continuing professional development.

Participants successfully completing the course will have knowledge, skills, and competencies in:

- Metabolomics tools, instruments, software and methodologies
- Experimental design, standardization, and eliminating bias in metabolomics
- Data generation, curation, integrity and quality assessment
- Compound identification and discovery
- Univariate and multivariate statistical approaches
- Biochemical pathway mapping, metabolite clusters, and metabolomics data interpretation
- Scientific literature reporting metabolomics findings
- Applications of metabolomics

Enrollment Period: **April 15 - July 29, 2024**

For more information please visit: **cpe.ok.ubc.ca/courses/metabolomics**

Learn more here

Bits & Bites # 06: Using the GNPS for Metabolomics Data Analysis and Visualizations

September 12, 2024

Venue: Online

This course is taught by Prof. Mingxun Wang, UC Riverside. The level of the course intermediate, requiring no GNPS account but no specific software or prior programming experience. In this short course, participants will get familiar with GNPS (Global Natural Products Social Molecular Networking) a web-based mass spectrometry ecosystem, and learn how to look at your data using classical molecular networking. Explore GNPS Tools for MassIVE data navigation, including classical molecular networking, data selection, mastering molecular network workflows, interactive LC/MS visualization, and compound identification. Uncover insights into intricate mass spectrometry data efficiently. Exciting material to be covered with new additions to GNPS, that will be launched in the Wang Lab in 2024.

The tuition is $175 per Bite and will take approx. 4 hours.

Check for more details

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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

Metabolomics Jobs

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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
Technical Core Director for LC/MS/MS, IRMS, and GMCS analyses	UT Health San Antonio	San Antonio, TX, USA	UT Health San Antonio
Post-Doc Fellowship in Cancer Epidemiology	American Cancer Society	Atlanta, GA, USA	American Cancer Society
LC-MS Metabolomics Research Scientist - 1 year contract	Novo Nordisk	Måløv, Denmark	Novo Nordisk
Laboratory Technician in Metabolomics	The Molecular Discovery Platform at CeMM	Vienna, Austria	CeMM

Scientific Analyst	University of Arizona	Tucson, AZ, USA	University of Arizona
Scientist, Research Data	University of Arizona	Tucson, AZ, USA	University of Arizona
Senior Scientist, Life Sciences	University of Vienna	Innere Stadt, Vienna, Austria	University of Vienna
Post Doctoral Position in Human Nutrition: Metabolomics-based exploration	The French National Research Institute for Agriculture, Food, and the Environment (INRAE)	France	INRAE
Postdoctoral Fellow – Microsampling devices for lipidomics	Concordia University	Montreal, QC, Canada	The Metabolomics Innovation Centre (TMIC)

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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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