



## Metabolomics Society News



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

### General Enquiries

[info@metabolomicsociety.org](mailto:info@metabolomicsociety.org)

### Membership Enquiries

# Metabolomics Society News

Registrations were accompanied by 329 submitted abstracts from which we constructed a varied conference program, centered around three thematic streams and comprising 12 invited keynotes, 23 oral presentations, and 12 poster flash talks, as well as 4 workshops, 4 sponsor studios, and 5 sponsor talks. We are especially proud that we managed to put together a highly balanced lineup of keynote speakers in terms of scientific topics, gender, and geographical representation.

Day 1 of the conference kicked off with workshops from the Australian and New Zealand Metabolomics Network (ANZMN), the Epidemiology Task Group, two workshops from the Early members Network and four sponsor workshops. What impressed us was how, despite the virtual nature of the meeting, each workshop managed to keep the informal nature of the workshop. I think this was particularly evident for the Epidemiology Task Group workshop that took on the format of “fireside chat” covering members questions about epidemiology and how to get the best out of these sorts of studies. The sponsor workshops also demonstrated that those in industry have been busy pushing back the barriers in performance during the pandemic.

On days two and three we moved into the scientific sessions, kicked off by a Plenary from Jeremy Nicholson, recently moved to Murdoch University, Australia, where he told us how their new phenome centre was being deployed to tackle the impact of COVID-19. It was clear that Jeremy was not alone in applying metabolomics to COVID-19 and several labs had redeployed resources to tackle the pandemic. By distributing the sessions across the time zones, we were able to expand the geographical spread of our speakers making this conference the most geographical diverse yet. The talks were also equally diverse, ranging from new software developments in metabolomics and lipidomics to understanding algal blooms in the Antarctic and a talk on two-species mimicry in the orchid.

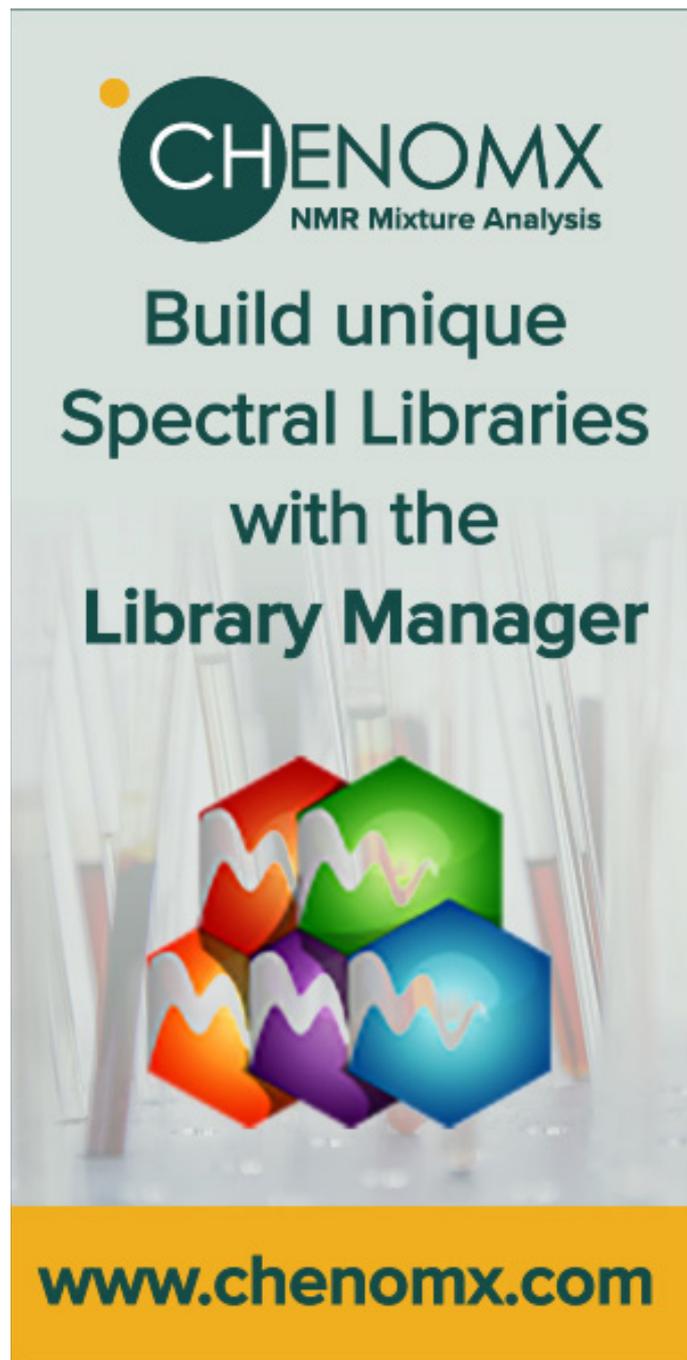
We do not want to finish this review without thanking all the people involved. First, thank you very much to our generous Gold and Silver sponsors without whom the event would not have been possible:

- **Gold:** Biocrates, Bruker, Human Metabolome, LECO, Metabolon, Metabo-Profile, SCIEX, Thermo Fisher Scientific, Waters
- **Silver:** Agilent, Avanti Polar Lipids, BASF, BioNovoGene, Cambridge Isotope Laboratories, Metware, MilliporeSigma, Royal Society of Chemistry, SRI International (BioCyc), X-omics

Thank you to the Society’s Conference Committee (augmented by the Co-Chairs of Niagara Falls 2021) who served as the “LOC” of the conference, and the whole BoD for their support. Thank you to all the colleagues who were involved in reviewing abstracts and posters – your comments made a huge difference to the students, as they saw that “someone looked at my poster!” And an especially huge Thank You to Leslie LeClaire and Amy Bornhorst from A-S-K, our professional conference organizer, who were there to support every session and every talk and thus did not get any significant sleep for three days.

We would also like to acknowledge the following winners of prizes and awards connected to the conference:

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- Abstract winner: **Corey Giles**, The Baker Heart and Diabetes Institute. As the best submitted abstract his presentation was promoted to a keynote: *“Genome-wide study of the human lipidome and links to cardiovascular disease risk.”*
- Poster prizes: As the winners of the best posters in the three conference streams their posters were upgraded to flash talks.
  - Tomás Clive Barker Tejada, CEMBIO, Universidad CEU San Pablo
  - Songjie Chen, Stanford University
  - Denni Currin-Ross, The University of Queensland
  - Emily Daubney, The University of Queensland
  - Olga Demler, Division of Preventive Medicine, Brigham and Women’s Hospital

- M.M. Malikul Ikram, Osaka University
- Ines Lains, Mass Eye and Ear, Harvard Medical School
- Dania Malik, University of Pennsylvania
- Joan Miro-Blanch, Rovira I Virgili University
- Stefania Noerman, University of Eastern Finland
- Evan Pannkuk, Georgetown University
- Vera Plekhova, Ghent University
- Gabriel Reder, Stanford University Bioengineering Department
- Liesa Salzer, Helmholtz Zentrum Muenchen

- The *Metabolites* Best Poster Award (500SFr) for the best poster at Metabolomics 2020 goes to **Tomás Clive Barker Tejada** from Universidad CEU San Pablo (Spain) for his poster *“Metabolomics: a novel approach in the study of cow’s milk allergy”*.
- The winners with the most points for interactive participation during Metabolomics 2020 online are: **Carolina Gonzalez-Riano** (University San Pablo CEU), **Naba Al-sari** (Steno Diabetes Center Copenhagen) and **Laimdota Zizmare** (Eberhard Karls University of Tuebingen). The three of them have won a free student registration to Metabolomics 2021.

Congratulations to all our winners!

Now that the 2020 conference is behind us, we are working through the feedback we have received from you to make next year’s event even better. After the Society made the decision that the 2021 conference will be online as well, we have already started planning for what will be Metabolomics 2021 online. Stay tuned!

*Horst Joachim Schirra & Jules Griffin, Co-Chairs*

## Members Corner

### Early-career Members Network (EMN)

EMN participation in the online Metabolomics Society 2020 conference:

The EMN would like to express their gratitude to Dr Emma Williams, Kerry Boehner, Dr Baljit Ubhi and Dr Kehau Hagiwara for their participation in the Career Development Workshop and the invaluable advice they shared with the ECR metabolomics community. The EMN would also like to thank Dr Deborah Stroman for her inspiring talk during the Diversity, Equity and Inclusion workshop as well as Dr Candice Ulmer, Dr Jessica Prenni and Dr Kevin Iлека for the immensely constructive Q&A session. We are grateful to all our speakers and we hope you enjoyed it as much as we did!

# SpOtlight



## Microbiome Network in Germany, Austria, & Switzerland Established in the German Society of Metabolome Research

Spotlight article contributed by Therese Koal<sup>1</sup> and Jerzy Adamski<sup>2</sup>

<sup>1</sup> biocrates life sciences AG, Austria

<sup>2</sup> Helmholtz Center Munich, German Research Center for Environmental Health, Germany

### About the DGMet Society

The - Deutsche Gesellschaft für Metabolomforschung - (DGMet, German Society of metabolome research, <https://dgmnet.de/>) was founded in 2019. The aim of our Society is to foster research in metabolism and to function as an interaction platform for scientists in the field. For this reason, the Society organizes not only a general yearly conference and smaller workshops but there are at present four Society study groups (<https://dgmnet.de/research/working-groups/>):

- Microbiome
- Isotopic labeling and flux analysis
- Standards and reference materials
- Training and education

Moreover, DGMet offers an educational program for metabolic topics to support transfer of knowledge, technologies and protocols. DGMet aims to represent our research area and to engage in national decision-making processes.

### Microbiome Working Group

The Microbiome Working Group aims to establish a **network** for microbiome research across the German-speaking countries of Germany, Austria, and Switzerland (<https://dgmnet.de/research/working-groups/microbiome/>). We want to address the **academic and industrial research community** in the areas of the microbiome, metabolomics, analytical chemistry, microbiology, biotherapeutics, drug development, host-microbiome interactions, medical diagnostics, nutrition, pharmacology, gastroenterology, epidemiology, biotechnology, data analysis, and others.

Additionally, a key element of our work will be the support of national and international **collaborations** across the microbiome research community. Here we intend to:

- Link our microbiome group to other global **societies and groups** to gain visibility and strengthen

networking

- Keep the community informed about sources of suitable national and cross-country project **grant and funding options**
- Write **white papers** to support public relations
- Support and deliver a platform for the generation of new **knowledge and tools** for basic and applied microbiome research

The founding members in 2019 were Jerzy Adamski (Helmholtz Center Munich, Germany), Mathias Haag (Dr. Margarete Fischer-Bosch-Institute of Clinical Pharmacology, Stuttgart, Germany), Jennifer Kirwan (Berlin Institute of Health, Germany), and Therese Koal (biocrates life sciences AG, Austria). Jennifer and Therese are currently working as co-chairs of the working group. We are meeting online (under the current pandemic) once a month to develop our ideas and projects.

### Focus on Networking

One of our major aims for 2021 is that we would like to reach out to other interested societies, working groups, and individual scientists in academic and industry microbiome research groups around the globe who are interested in connecting with our group or becoming new members and helping us spread the word about the Microbiome Working Group.

If interested, please email Therese ([therese.koal@biocrates.com](mailto:therese.koal@biocrates.com)) or Jennifer ([Jennifer.Kirwan@mdc-berlin.de](mailto:Jennifer.Kirwan@mdc-berlin.de)).

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## Recent Publications

Recently published papers in metabolomics

- [MarkerDB: an online database of molecular biomarkers](#)
- [Personalized nutrition and healthy aging](#)
- [Metabolic abnormalities in G6PC3-deficient human neutrophils result in severe functional defects](#)
- [In vivo gamma-aminobutyric acid increase as a biomarker of the epileptogenic zone: An unbiased metabolomics approach](#)
- [Rewired phenolic metabolism and improved saccharification efficiency of a Zea mays cinnamyl alcohol dehydrogenase 2 \(zmcad2\) mutant](#)
- [The hexosamine biosynthesis pathway is a targetable liability in KRAS/LKB1 mutant lung cancer](#)
- [Plasma Metabolomics Analysis Identifies Abnormal Energy, Lipid, and Amino Acid Metabolism in Abdominal Aortic Aneurysms](#)
- [PPAD Activity Promotes Outer Membrane Vesicle Biogenesis and Surface Translocation by Porphyromonas gingivalis](#)
- [Catechin gallate acts as a key metabolite induced by trypsin in Hylocereus undatus during storage indicated by omics](#)
- [Association between urinary organophosphate flame retardant diesters and steroid hormones: A metabolomic study on type 2 diabetes mellitus cases and controls](#)
- [Effect of diet and intestinal AhR expression on fecal microbiome and metabolomic profiles](#)
- [A Workflow for Missing Values Imputation of Untargeted Metabolomics Data](#)



# Metabolomics Events

## Postponed Until 2021

### The Third Annual Canadian Metabolomics Conference

#### Venue

Edmonton, Alberta, Canada

#### Overview

The Third Annual Canadian Metabolomics Conference has been postponed until 2021. The conference will highlight work by leading researchers, including new technologies and approaches for metabolomics research, and applications in various fields. The conference will feature networking opportunities and a poster session designed for trainees to present their work. Our goal is to highlight the exceptional metabolomics science that is being done in Canada and abroad, and foster Canada's leadership role in the global research community.

We look forward to seeing you in 2021!

#### Conference Link

<https://www.canmetcon.ca/>

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## 12 & 14 Jan 2021

### Targeted Therapies and Companion Diagnostic Tests - From Development to "Market Access"

#### Venue

Webinar Training Session

#### Overview

- Understand the definitions and regulatory framework governing these products. Impact of new European DM regulations and DMDIV
- How to proceed with the analytical validation
- How to demonstrate clinical validity and prove clinical utility
- What development strategy to adopt

#### Webinar Link

<http://metabolomicssociety.org/images/events/Flyer%202021Test-Diagnostiques-Compagnons.pdf>

## Metabolomics Events

### 13 Jan 2021

Comprehensive lipidomics unveils peroxisomal lipid dyshomeostasis and low circulating plasmalogens as biomarkers in a monogenic form of mitochondrial disorder

#### Venue

Online

**Institution:** University of California, Davis, Davis, California

**Time:** 10:00 to 11:30 AM (Pacific)

**Presenter:** Christine Des Rosiers, Université de Montréal

#### Registration Link:

<https://ucdavis.zoom.us/meeting/register/tjYrc-2srDIvHtQMXNdKRDxgfM8eygGtynpxr>

### 25-29 Jan 2021

Hands-on LC-MS Data processing and Statistics 2021 (Online)

**Where:** Online, course starts at 8:30 AM Pacific Standard Time

**Registration:** [Link](#)

**Pay by Credit Card:** [Link](#)

**Email:** Jeannette Martins, [jmartins@ucdavis.edu](mailto:jmartins@ucdavis.edu)

**Phone:** +1-530-754-5357

The course is completely redesigned for an online format and will also be recorded for the participants to view at a later time. All software training has transitioned to a virtual machine environment so training can be done from any location. Virtual machines are hosted by Amazon Web Services and can be accessed using either a PC or a Mac computer. To guarantee the same hands-on quality that you would experience in our face-to-face course, every unit is taught using interactive tools such as polling, using the annotation tool, utilizing non-verbal feedback, live questions, chat, and group work in breakout rooms.

For details, visit the [course website](#).

### 1-4 Feb 2021

5<sup>th</sup> HBP Student Conference on Interdisciplinary Brain Research

#### Venue

Virtual

Registration will open from September 2020 free of charge.

#### Call for Submissions

We invite original high-quality submissions describing innovative research in all disciplines addressed in the HBP. These contributions can emphasize theoretical or empirical works relating to a wide spectrum of fields including but not limited to: neuroscience, computer science, robotics, medicine, psychology, cognitive science or philosophy. We particularly encourage submissions with a potential to inspire collaboration in the research community by introducing new and

## Metabolomics Events

relevant problems, concepts, and ideas, even if the work is at an early stage of development.

Registration deadline: 14 January 2021.

View announcement [here](#).

Further information on abstract submission and the [conference](#).

For any further questions, please contact [education@humanbrainproject.eu](mailto:education@humanbrainproject.eu).

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## 4 Feb 2021

### Network inference, visualization, and module detection in metabolomics data

#### Venue

Online

**Institution:** University of California, Davis, Davis, California

**Instructor:** Dr. Jan Krumsiek, Cornell University

**Registration:** [Link](#)

#### Required software:

- R, version 3.6.3 or higher
- GeneNet package
- igraph package
- RCy3 package
- Modentify package + dependencies: <https://github.com/krumsieklab/MoDentify>

**Participant prerequisites:** Basic knowledge of data analysis in R is required for this course, since we will directly start by reading a metabolomics data matrix and applying statistical models to it.

**Short description of the course:** In this short course, we will implement typical steps of network analysis in metabolomics data. We will start from a metabolomics data matrix and walk through every step of the process, all the way to network visualizations and the identification of regulated network modules. For this, we will use Gaussian Graphical Models, a correlation-based statistical model which has been widely used in metabolomics datasets. The networks will be visualized using the igraph package and the RCy3 Cytoscape interface. A simple version of a module identification algorithm will be implemented from scratch. At the end of the course, the participants will be able to reproduce the major steps of network analysis contained in several publications from the Krumsiek lab.

For more information, please visit the [Bits & Bites: Short Course Series 2021 website](#).

## Metabolomics Events

### 1 April 2021

#### Introduction to Bayesian Statistics in Metabolomics

##### Venue

Online

**Institution:** University of California, Davis, Davis, California

**Instructor:** Dr. Christopher Brydges, UC Davis

**Registration:** [Link](#)

##### Required software:

- JASP (can be downloaded for free from <https://jasp-stats.org>). The current version is 0.14, but it may well be updated between now and April.

**Participant prerequisites:** Basic knowledge of statistics (e.g., know what a t-test and a correlation are). No coding experience needed, and there is no coding taught in this session.

**Short description of the course:** Bayesian statistics are a useful method for estimating effect sizes and testing the strength of evidence in favor one hypothesis over another - things that p-values and traditional statistics can't do. However, they are under-utilized in metabolomics research. This short course will provide a brief refresher on traditional statistics, teach the basic principles behind Bayesian statistics, learn how to conduct basic Bayesian analyses in JASP (free, open-source software available from <https://jasp-stats.org/>) and learn how to report the results in the style of a journal article.

For more information, please visit the [Bits & Bites: Short Course Series 2021 website](#).

### 6-7 April 2021

#### Targeting CNS Tumor Metabolism Symposium

##### Venue

NIH Campus, Bethesda, Maryland

##### Overview

This is the first conference that focuses on the tumor metabolism and it is expected to be a didactic and collegial learning environment. Metabolic investigations for these tumors have been conducted in isolation and the goal of this meeting is to bring together the clinicians with the experts in metabolism to increase the utilization of metabolic investigations in the clinical settings. This will, in turn, enhance partnerships and advance the treatment for patients.

In addition to oral and poster presentations selected from the submitted abstracts, the conference will feature invited lectures from an internationally recognized faculty, including keynote talks from Craig Thompson, MD (President and CEO of Memorial Sloan Kettering Cancer Center) and Paul Mischel, MD (Distinguished Professor, University of California San Diego).

**Abstract submission deadline is Tuesday, December 1, 2020, 11:59pm CST.**

##### Course link

<https://www.soc-neuro-onc.org/SNO/2020METAB/Home.aspx>

## Metabolomics Events

# 15-16 Apr 2021

### Data Analysis for Metabolomics

#### Venue

Wageningen Campus, The Netherlands

#### Overview

Event postponed from June 4-5, 2020 to now April 15-16, 2021

Metabolomics experiments based on mass spectrometry (MS) or nuclear magnetic resonance (NMR) produce large and complex data sets. This course will introduce approaches to process and analyze data and design high-quality experiments. Through hands-on workshops and lectures highlighting the different concepts you will get a thorough basis for tackling the challenges in metabolomics data analysis.

For information and registration click [here](#).

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**Metabolomics Jobs**

# Metabolomics Jobs

If you have a job you would like posted, please email Ian Forsythe ([metabolomics.innovation@gmail.com](mailto:metabolomics.innovation@gmail.com)).

## Jobs Offered

Job Title	Employer	Location	Posted	Closes	Source
Various Positions			15-Dec-20		<a href="#">Metabolomics Association of North America Jobs</a>
PhD Research Project Opportunities, Centre for Integrative Metabolomics and Computational Biology	Edith Cowan University	Joondalup, Australia	13-Dec-20	28-Feb-21	<a href="#">Edith Cowan University</a>
Postdoctoral Scholarship - Metabolomics in Diabetes Research	Lund University	Lund, Sweden	24-Nov-20	Until Filled	<a href="#">Lund University</a>
Postdoctoral Position	NIH	Rockville, Maryland, USA	20-Nov-20	Until Filled	<a href="#">Metabolomics Society Jobs</a>
Post-Doctoral Position with influence of multiple 'omics' datatypes on the development of respiratory and/or neurological disease	Brigham and Women's Hospital	Boston, MA, USA	20-Nov-20	31-May-21	<a href="#">Metabolomics Society Jobs</a>
Postdoctoral Fellow – Biosensors Device Development	University of Alberta	Edmonton, Canada	23-Oct-20	Until Filled	<a href="#">Wishart Research Group</a>
Postdoctoral Position in Nuclear Magnetic Resonance (NMR) Spectroscopy	University of Alberta	Edmonton, Canada	23-Oct-20	Until Filled	<a href="#">Wishart Research Group</a>
Laboratory Assistant/ Technician – Biosensors Device Development	University of Alberta	Edmonton, Canada	23-Oct-20	Until Filled	<a href="#">Wishart Research Group</a>
Senior Bioinformatician/ Cheminformatician Position	University of Alberta	Edmonton, Canada	23-Oct-20	Until Filled	<a href="#">Wishart Research Group</a>
Junior Scientist in Metabolomics	Fundación MEDINA	Granada, Spain	15-Jul-20	Until Filled	<a href="#">MEDINA</a>
Postdoctoral scholar	University of California San Francisco (UCSF)	San Francisco, CA, USA	24-June-20	31-Dec-20 or Until Filled	<a href="#">Metabolomics Society Jobs</a>
Postdoctoral Fellowship in MALDI Imaging Mass Spectrometry	U.S. Food and Drug Administration	Jefferson, AR, USA	6-May-20	Until Filled	<a href="#">Metabolomics Society Jobs</a>

## Metabolomics Jobs

# Jobs Wanted

This section is intended for very highly qualified individuals (e.g., lab managers, professors, directors, executives with extensive experience) who are seeking employment in metabolomics.

We encourage these individuals to submit their position requests to Ian Forsythe ([metabolomics.innovation@gmail.com](mailto:metabolomics.innovation@gmail.com)). Upon review, a limited number of job submissions will be selected for publication in the Jobs Wanted section.

- [Dr. Nara Consolo](#) - Seeking a position involving the application of NMR-based metabolomics in animals/ animal production; it could be a Researcher position or an Assistant Professorship
-