# MetaboNews

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

# Metabolomics Society News

### Conference Corner

Dear Colleagues,

As you will be aware this year has been a tough year for many societies with annual meetings needing to be cancelled because of the restrictions in place concerning the COVID-19 pandemic. The Metabolomics Society is no exception to this. It was with great reluctance we decided to cancel the face-to-face meeting in Shanghai after exploring a number of options to relocate or alter timings, all of which proved impossible. This has been the right decision as the Society needs to put first the health of its members.

The Board has discussed how we might best address the loss of the face-to-face conference. We have devised what we feel is a novel conference format that will maintain the international bonds of research in metabolomics and cater to our more junior members across the globe. We are excited to announce **Metabolomics 2020 Online**, a virtual conference on **October 27-29**, **2020**. For those of you that are of my age or older, we plan a "Live Aid" format where sessions will be hosted in different time zones in collaboration with our regional networks. The first day will consist of workshops and days 2 and 3 will provide regular scientific sessions. Each session will consist of one plenary speaker followed by talks selected from submitted abstracts to maximize member interactions. We will also host virtual poster sessions two weeks before the main conference with the best posters invited to present their work at the virtual meeting. The meeting will be free to all registered members of the Society. Corporate sponsorships are also available and a vital part of the success of the virtual conference.

For further information about the virtual event please contact <a href="mailto:info@metabolomics2020.org">info@metabolomics2020.org</a>.

Again, many thanks for your continued support especially in this, a most difficult year.

Jules Griffin

Julian Griffin

President of the Metabolomics Society



### Metabolomics Society News | Members Corner & International Affiliates Corner

### Accelerate Your Metabolomics Research

Agilent's industry-leading metabolomics portfolio just got even better

See how





### Member's Corner

### Early-career Members Network (EMN)

#### **EMN** Webinars

We are delighted to announce the first in a series of short webinars given by Early Career scientists. Melanie Odenkirk will present "Structural-based Connectivity and Omic Phenotype Evaluations (SCOPE) Workflow for Lipid Data Interpretation"; and Purva Kulkarni will present "Towards precision diagnostics: Untargeted metabolomics for the diagnosis of inborn errors of metabolism in individual patients". These short webinars will take place on Thursday, July 16th, 2020 at 12:00 PM EST (4 PM GMT, 6 PM CEST) and each short webinar will last 20 minutes. To register, please use the following link.

Later in the month, Dr. Anne Bendt of the Singapore Lipidomics Incubator will present a webinar entitled "Clinical Applications of Mass Spectrometry Based Lipidomics". This webinar will take place on Thursday, July 23rd, 2020 at 8 PM Singapore time (8 AM EST, 12 PM GMT, 2 PM CEST). To register, please use the following <u>link</u>.

#### **Announcement Opportunity**

We are now accepting applications from early-career scientists who would like to join the EMN committee for 2020-2021. For more information: <a href="https://drive.google.com/file/d/1Bo9fCVmb50j86QJCQZ6anf2Sh72u-BLx/view">https://drive.google.com/file/d/1Bo9fCVmb50j86QJCQZ6anf2Sh72u-BLx/view</a>

#### **EMN Social Media**

Follow the EMN on Facebook and Twitter for updates and special events.



### Metabolomics Society News | International Affiliates Corner & Other News





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

#### **General Enquiries**

info@metabolomicssociety.org

#### Membership Enquiries

membership@metabolomicssociety.org

#### International Affiliates Corner

#### Swiss Metabolomics Society (SMS)

Visit www.swiss-metabolomics.ch

The 2020 Annual Meeting of the Swiss Metabolomics Society is going virtual! Tuesday October 6th, 2020

Prof. David Wishart has confirmed his participation. More information at: <a href="http://www.swiss-metabolomics.ch/">http://www.swiss-metabolomics.ch/</a>

#### Other News

#### Call for Nominations for Directors of the Metabolomics Society

It is the time of year for the Metabolomics Society to undertake the annual process of nominating and electing 11 new members to serve on the Society's Board of Directors. We strongly encourage all Society members to play a role in nominations and elections.

#### • Expectations for Directors appointment

The Society is led through the voluntary efforts of the Board of Directors. While this provides motivated individuals a fantastic opportunity to contribute to the activities, communications, and ultimate growth of our metabolomics community, it also requires a time commitment of typically two hours per week. In addition to tasks orchestrated through the monthly Board Meeting, each Director is expected to serve on at least two committees or task groups, and, in many cases, to lead and chair such a group (for the current committees and task groups, see <a href="http://metabolomicssociety.org">http://metabolomicssociety.org</a>).

#### Nominations process

Please keep in mind that the Society is an international organization involved in a wide range of subjects in the field of metabolomics. Our directors will serve us best if they reflect the diversity of backgrounds, expertise, interests, and geographic distribution of the many individuals who comprise our membership.

#### In brief:

All individuals nominated must be current members of the Metabolomics Society.

- All non-student members are eligible to stand for the Board.
- At least two members of the Society must support the individual's nomination.
- 11 Director positions are available this year, including 4 positions where a current Director is up for re-election.

If you wish to nominate an individual to stand for election to the Board of Directors, please complete the <u>nomination form</u> no later than July 26.





# Dr. Jessica Lasky-Su

Associate Professor in Medicine Associate Statistician Brigham and Women's Hospital Harvard Medical School Boston, MA

# Short Biography

Dr. Lasky-Su is an Associate Professor in Medicine and Associate Statistician at Harvard Medical School and Brigham and Women's Hospital.

Over the last 20 years, Dr. Lasky-Su has focused on the analysis of genetics, genomics, and metabolomics data of various complex diseases with a primary focus on respiratory disease over the last 15 years. The accumulation of these efforts has resulted in a productive track record of over 150 original research articles.

Through the funding of multiple metabolomics-related grants, Dr. Lasky-Su has developed a "metabolomic epidemiology" research program at the Channing Division of Network Medicine that has been highly successful and synergistic in nature, and has developed into one of the largest and most impactful groups of metabolomic epidemiologists with a strong national and international presence and comprehensive publication record.

In addition to using metabolomics to study the etiology of several complex diseases, including body mass index, asthma, allergies, autism, bacteremia, and macular degeneration, Dr. Lasky-Su has also focused on using metabolomics data in conjunction with other omics data to study disease etiology using several approaches to integrative omics.

She serves in national and international leadership capacities, including the acting chairman of the Consortium of METabolomic Studies (COMETS), a board member of the International Metabolomics Society, and a governing board member of the "Metabolomics Workbench."



### Metabo Interview | Dr. Jessica Lasky-Su

# Interview Q&A

#### How did you get involved in metabolomics?

I was speaking with one of my colleagues who mentioned to me that I should look into metabolomics and stressed his belief that there was great potential here for complex diseases and precision medicine.

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

There are so many things I'm excited about when looking at the relationship between metabolomics and human disease. The potential to develop clinical tests for early disease detection and more effective treatments drive my excitement for the field. There have been many times where we have seen really compelling relationships between specific metabolites and human diseases that were completely novel but made biological sense. It made me realize that there is potential for some real "home runs" in terms of novel treatments to disease.

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

I have established a metabolomic working group in the greater Longwood Medical Area in Boston, Massachusetts that meets every week. Through this, epidemiologists working on metabolomics-based design, generation, and analysis of data, have a unique opportunity to discuss these details with other epidemiologists about the specifics of research that they are working on. It has really elevated the overall level of all group members in our understanding of metabolomics in an epidemiological-based context.

### What is happening in your country in terms of metabolomics?

There is so much happening that it is difficult to limit this to a few things! I will highlight the a few things that I have particularly high involvement in. I am the current chairman of the COnsortium of METabolomics Studies (COMETS), and NCI consortium that has provided tremendous opportunities for collaborative efforts for metabolomics data in population-based cohorts. COMETS has generated several amazing tools, including the ability to perform large-scale meta-analyses of metabolomics data, among many other potential high-impact projects.

Myself and a colleague, Krista Zanetti, created the metabolomics epidemiology task force, whose mission is to promote and support the investigative efforts of Epidemiologists who have generated large-scale metabolomics data in their cohorts. I am also on the governing board of the Metabolomics Workbench, with the goal of promoting deposition of metabolomics data and further analyses utilizing the workbench.

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

I see metabolomics as playing an important role in clinical and translational medicine. I truly hope to see the work of people in the metabolomics community having a broad impact on translational and precision medicine.

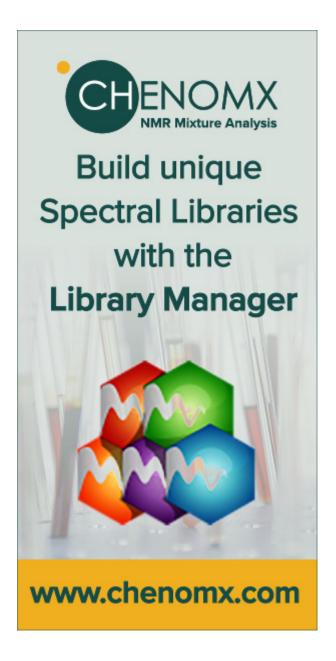
# As you see it, what are metabolomics' greatest strengths?

The potential to be used in clinical applications is tremendous and the fact that we have a general understanding of metabolic pathways.

# What do you see as the greatest barriers for metabolomics?

- 1) Metabolomics is qualitative which causes tremendous barriers to combining data together and necessitates further steps to be clinically relevant
- 2) Lack of standards in the field generally
  - a. The lack of standards in the identification of metabolites (e.g. tier 1, 2, 3, etc)
  - b. Lack of standards in nomenclature
  - c. Lack of laboratory standards
  - d. Lack of QC standards
  - e. Lack of a consistent library of internal standards





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

While I think that large-scale metabolomics is now a reality, there are several further steps that would propel this field forward including the following:

- 1) Developing approaches where metabolomics could be quantitative
- 2) Developing approaches where metabolites can be identified with increased accuracy
- 3) Developing a consistent way to reliably measure a broader range of metabolites
- 4) Developing higher standard for us as a community to replicate and validate results.

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

I think that this is always a difficult question to have perspective on and likely varies by area of the world.

#### What role can metabolomics standards play?

Standards is one of the critical things that are lacking now. This would play a huge role in validating findings and results from one lab to the next, and from group to group.

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

Metabolomics as a field has tremendous potential; however, I think it is imperative that we as a research community step up to the current standard that is being used in other "omics" research whereby scientific findings are robustly identified and replicated in independent populations before scientific findings are published. It is also imperative that we do more to establish and improve standards in multiple areas of this metabolomics research. It requires us to work together as a community to rise to this challenge. If we do, the potential for huge impact, particularly in clinical medicine, is tremendous.



# Recent Publications

Recently published papers in metabolomics

- <u>Metabolomic Markers of Colorectal Tumor With Different Clinicopathological</u> Featur<u>es</u>
- Metabolomics of Milk Reflects a Negative Energy Balance in Cows
- <u>Comprehensive Lipidomic and Metabolomic Analysis for Studying Metabolic</u> Changes in Lung Tissue Induced by a Vaccine Against Respiratory Syncytial Virus
- Placental Metabolomics for Assessment of Sex-specific Differences in Fetal Development During Normal Gestation
- A Comprehensive Targeted Metabolomic Assay for Urine Analysis
- Environmental Exposure to Phthalates and Dementia With Lewy Bodies: Contribution of Metabolomics
- <u>Toxicology of Tramadol Following Chronic Exposure Based on Metabolomics of the</u> Cerebrum in Mice
- <u>Use of Information Dependent Acquisition Mass Spectra and Sequential Window Acquisition of All Theoretical Fragment-Ion Mass Spectra for Fruit Juices</u>
   Metabolomics and Authentication
- metPropagate: Network-Guided Propagation of Metabolomic Information for Prioritization of Metabolic Disease Genes
- Aerobic Training Prevents Cardiometabolic Changes Triggered by Myocardial Infarction in Ovariectomized Rats
- Nutrient Sensing by Histone Marks: Reading the Metabolic Histone Code Using Tracing, Omics, and Modeling
- <u>Differences in Lipidomics May Be Potential Biomarkers for Early Diagnosis of</u> Pancreatic Cancer





# 15 Jul 2020

### ISMB 2020 CompMS - Save the date & call for proposals

#### Venue

Palais des congrès de Montréal, Montreal, Canada

Please join us during the ISMB 2020 conference for the Computational Mass Spectrometry (CompMS) COSI session on July 15, 2020 in Montreal, Canada.

The ISMB conference is the world's largest bioinformatics/computational biology conference. Every year it brings together scientists from computer science, molecular biology, mathematics, statistics, and related fields and provides an intense multidisciplinary forum for disseminating the latest developments in bioinformatics/computational biology. The conference fosters fresh dialogues, collaboration and learning opportunities, and is a gathering which shapes the future of the field.

At the heart of the scientific program are ISCB's Communities of Special Interest (COSIs), enabling community involvement and bolstering ISMB's reputation as the leading conference in the field. The CompMS COSI promotes the efficient, high quality analysis of mass spectrometry data through dissemination and training in existing approaches and discussion of new, innovative approaches. The CompMS initiative aims to exploit synergies between different application domains, in particular proteomics and metabolomics.

A strong scientific and technical program showcases the best international developments in bioinformatics and computational biology, making ISMB 2020 a must attend event.

Date: July 15, 2020 (CompMS COSI) / July 13–16, 2020 (ISMB)

#### Conference link

https://www.iscb.org/ismb2020



# 15, 22, 29 Jul & 9 Aug 2020

See What's in Your Food: Food Safety Webinar Series with LECO

#### Venue

Webinar

#### **Overview**

How efficient is your workflow when it comes to food samples? Are you sure you're seeing everything your sample has to offer? Learn how LECO has been expanding what is possible when it comes to food safety analyses with this free series of webinars.

All our webinars will be approximately 30 minutes long with a Q&A session at the end.

### Automated Thermogravimetric Moisture Determination of Meat and Semi-Solid Food Products

One of the most common moisture determination methods is a manual mass loss on drying using an air oven following the AOAC Moisture in Meat Method (950.46). Lloyd Allen will talk about how an automated thermogravimetric moisture instrument, such as the TGM800, meets the AOAC Official Method's requirements for sample mass, oven temperature, and air flow requirements while also reducing operator and analysis times, improving precision and workflow efficiency.

Instrument: TGM800

Presented by: Lloyd Allen, LECO Corporation

Date: July 15, 2020 | Time: 10:00 am EST (GMT-04:00)

### Optimization of Combustion Methods for the Determination of Low-Level Nitrogen/Protein in Food

Combustion techniques for determining nitrogen/protein in foods are gaining popularity due to shorter analysis times, ease of operation, and improved safety characteristics, but it is limited by the amount of sample an instrument is capable of analyzing at one time. Low-level nitrogen samples present a challenge to analyze due to sample characteristics and method limitations. Lloyd Allen, from LECO, will be discussing how to optimize methods for low-level nitrogen determination with combustion instruments.

Instruments: FP928, FP828P

Presented by: Lloyd Allen, LECO Corporation

Date: July 22, 2020 | Time: 10:00 am EST (GMT-04:00)

#### Food Safety: A Journey Beyond the MOSH&MOAH Hump in Food Determination

The current analytical method for the quantitative determination of Mineral Oil Saturated Hydrocarbons (MOSH) and Mineral Oil Aromatic Hydrocarbons (MOAH) is LC-GC-FID, but the chromaticagraphic profile obtained is too often just a hump of unresolved substances. However, GCxGC-TOFMS/FID is the most promising solution to characterize MOSH and MOAH in detail and to detect markers that can help identify and act on the source of contamination. Giorgia Purcaro will introduce the challenges of MOSH/MOAH analysis and talk about what adding a GCxGC-TOFMS analysis to your process can do for your results.

Instruments: Pegasus® BT 4D, GCxGC ECD/FID Presented by: Giorgia Purcaro, University of Liege Date: July 29, 2020 | Time: 10:00 am EST (GMT -04:00)



### Application of Two-Dimensional Gas Chromatography with Mass Spectrometric Detection for Analysis of Pesticide Residues in Foodstuffs

The Czech Agriculture and Food Inspection Authority has been using GCxGC-TOFMS for the analysis of pesticide residues in food of plant origin since 2005. Radim Stepan will talk about the advances in the instruments and the analyses they have used for pesticide residue analysis in cooperation with the University of Chemistry and Technology Prague.

Instruments: Pegasus® BT 4D, GCxGC ECD/FID

Presented by: Radim Stepan, Czech Food & Agriculture Inspection Agency

Date: August 5, 2020 | Time: 10:00 am EST (GMT-04:00)

Register for all webinars here.

### 24 Jul 2020

### Cancer and Immuno-Metabolism Symposium

#### Venue

University of Kentucky's Center for Environmental & Systems Biochemistry

#### **Overview**

Hear and meet researchers who use stable isotope labeling and other approaches to investigate metabolism in many physiological systems – such as immune cells, cancers and brain metabolism. Poster sessions and exhibitors will offer additional learning and networking opportunities.

For more information, contact Alicia Colliver at: ajduna0@uky.edu

View details here.

# 14-16 Sep 2020

### Metabolomics Association of North America (MANA) 2nd Annual MANA Conference

#### Venue:

Online

#### Confirmed speakers

- Joshua Rabinowitz, Princeton University
- Nima Sharifi, Cleveland Clinic
- Charles Serhan, Harvard University
- Wassim Labaki, University of Michigan

#### Overview

The conference will feature oral presentations, poster sessions and interactive forums with live discussion of key challenges in different metabolomics subfields.

Abstract submission deadline: July 17, 2020

#### Course link

Information and registration: https://www.mana2020.org



# 23-25 Sep 2020

Multiple Biofluid and Tissue Types, From Sample Preparation to Analysis Strategies for Metabolomics

#### Venue:

Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

#### **Overview**

This 3-day course provides a theoretical overview and hands-on training to apply multiple sample preparation and UPLC-MS methods to characterise the metabolomes of complex biological samples using the mass spectrometer (Xevo QToF G2-XS - a maximum of 4 people working on the instrument in a session). The course is led by experts in the field who have experience of the analysis of microbial, plant and mammalian samples, and illustrates the different approaches that are available to analyse a range of biological samples and applying complementary liquid chromatography approaches to maximise the coverage of the metabolome.

### **Topics** covered

- Introduction to dealing with the complexity of biological samples using UPLC-MS
- Overview of different sample collection, sample quenching and sample extraction methods
- The challenges of working with cellular and tissue samples
- Overview of different UPLC methods including HILIC and reversed phase methods
- Hands-on sample preparation of plasma, urine, cell and tissue samples
- Monophasic and biphasic solvent extraction methods to target polar and non-polar metabolites
- SPE and liquid-liquid sample clean-up methods
- Hands-on HILIC and reversed-phase liquid chromatography
- Hands-on UPLC-MS analysis for untargeted studies (maximum of 4 people)
- Overview of data analysis and metabolite identification
- Problem solving and tips and tricks session with the experts

#### Course link

More information available here.

### 7-9 Oct 2020

### Introduction to Metabolomics for the Microbiologist

#### Venue

Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

#### **Overview**

This three-day course introduces how untargeted metabolomics can be applied to study microbial systems in academic and industrial research. The course provides an overview of the metabolomics pipeline, experimental design, sample preparation and data acquisition. The course is led by experts in the field of metabolomics and will include lectures, hands-on laboratory sessions in sample preparation and data acquisition and computer workshops focused on data processing



#### **Topics Covered**

- Introduction to metabolomics, both targeted and untargeted approaches
- Experimental design and the importance of quality control samples in untargeted metabolomics
- Analytical strategies applied in metabolomics with a focus on mass spectrometry
- Hands-on laboratory sessions focused on sample preparation and to include metabolic quenching and extraction procedures, intracellular and exometabolome samples and polar and non-polar extraction methods
- Hands-on laboratory sessions focused on sample analysis for untargeted metabolomics studies using an Acquity UPLC coupled to a Xevo QToF mass spectrometer
- Hands-on workshop focused on data processing and data analysis
- Hands-on workshop focused on an introduction to metabolite identification
- Question and answer session with the experts

#### Course link

More information available here.

### 2-4 Nov 2020

### Metabolomics with the Q Exactive

#### Venue

Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

#### Overview

This 3-day course introduces you to using the Q Exactive mass spectrometer in your metabolomics investigations. The course is led by experts in the field of metabolomics and includes lectures, laboratory sessions and computer workshops to provide a detailed overview of the metabolomics pipeline applying the Q Exactive mass spectrometer.

### **Topics** covered

- Introduction to Metabolomics on the Q Exactive, the metabolomics workflow, and case studies using the Q Exactive
- Using the Q Exactive family of instruments in your metabolomics investigations
- Experimental design and the importance of quality control samples
- Sample preparation including polar and non-polar preparation methods on biofluids (urine and plasma) and tissue samples
- Preparation of samples for profiling and targeted analyses on the Q Exactive
- Hands-on data acquisition for profiling and targeted studies, setting up the Vanquish UHPLC coupled to the Q Exactive MS
- Data processing workshop
- Data analysis workshop (univariate and multivariate analysis)
- Introduction to metabolite identification applying Data Dependent Analysis and Data
- Independent Analysis
- Question and answer session with a panel of experts
- Tips and tricks
- Problem solving

#### Course link

More information available <u>here</u>.



### 5-6 Nov 2020

### Metabolite identification with the Q Exactive and LTQ Orbitrap Elite

#### Venue

Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

#### **Overview**

This 2-day course will provide a hands-on approach to teach the attendees about the latest techniques and tools available to perform metabolite identification in non-targeted metabolomics studies. The course will be led by experts working within the fields of metabolomics and chemical analysis and will include a significant proportion of hands-on experience of using mass spectrometers, software tools and databases. A maximum of four people will be working on each mass spectrometer in a session. We will apply these tools on the Q Exactive and LTQ-Orbitrap family of mass spectrometers.

### **Topics Covered**

- Importance of mass spectral interpretation
- Types of data which can be collected on the QE and LTQ-Orbitrap (*m/z*, retention time, MS/MS, MSn)
- Conversion of raw data to molecular formula and putative metabolite annotations MS/MS experiments in metabolic phenotyping for on-line data acquisition using the QE (DDA, DIA, all-ion)

#### **Topics Covered**

- MS/MS and MSn experiments for sample fractions using the LTQ-Orbitrap
- Mass spectral libraries (using mzCloud)
- Searching mass spectral libraries
- Tools for mass spectral interpretation
- Reporting standards for metabolite identification
- Question and answer session with the experts

#### Course link

More information available <u>here</u>.

# 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/



# 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 Monday, June 15, 2020, 11:59pm CST.

#### Course link

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

# 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.

#### Course link

https://www.wur.nl/en/Education-Programmes/Wageningen-Academy/Plant/Course-Data-analysis-for-Metabolomics.htm



### **Metabolomics Jobs**

# Metabolomics Jobs & Collaborations

If you have a job you would like posted, please email Shelby Soke (soke@ualberta.ca).

# Jobs Offered

Job Title	Employer	Location	Posted	Closes	Source
Various Positions			7-July-20		Metabolomics Association of North America Jobs
Postdoctoral scholar	University of California San Francisco (UCSF)	San Francisco, CA, USA	24-June-20	31-Dec-20 or until filled	Metabolomics Society Jobs
Are you a skilled metabolomics expert/ analytical chemist?	MS-Omics	Vedbaek/ Copenhagen, Denmark	26-May-20	1-Sep-20	Metabolomics Society Jobs
Postdoctoral Researcher in Metabolomics/ Computational Metabolomics	Institute for Biomedicine, Eurac Research	Bolzano, Italy	13-May-20	Until filled	Metabolomics Society Jobs
Postdoctoral Associate	Yale School of Public Health	New Haven, Connecticut	5-Feb-20	Until filled	Metabolomics Society Jobs



### **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 Shelby Soke (<u>soke@ualberta.ca</u>). Upon review, a limited number of job submissions will be selected for publication in the Jobs Wanted section.

