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## Metabolomics Society News

### Conference Corner



**METABOLOMICS2020**  
OCTOBER 27-29, 2020 **ONLINE**

The first virtual conference of the Metabolomics Society is shaping up with a full agenda! Don't miss the 12 Keynote Speakers plus over 40 scientific talks. Day 1 will consist of Workshops and Sponsor Studio sessions with in-depth applications and learning. Chat with our sponsors in the virtual exhibit hall, and view 200+ posters in the gallery! The conference is FREE to members of the Society, and attendance is limited. We are quickly nearing sold out status, be sure to register online soon to reserve your spot. *\*Even if you're already a member of the Society, you must register online for the conference to participate.* See you there!

[www.metabolomics2020.org](http://www.metabolomics2020.org)

### Members Corner

#### Board of Directors – Words from the Chair

This is my last “Notes from the Chair” as I am now the past President of the Society but I have one more Board of Directors teleconference to report on for September 2020. I started this column to keep members up to date with what is discussed at the monthly board meetings and I hope in a small way it's helped keep people better informed as to what the Society is up to, and also encouraged members to get involved with running the society.

As you might imagine 2020 has been a tough year for us all. For the Board of Directors in the past nine months we have tried to organise three different conferences as we responded to global events and the challenges of COVID-19. While I'm disappointed we can't meet in person this year, I am very pleased to say that the virtual Metabolomics Society meeting (27<sup>th</sup>-29<sup>th</sup> October) is shaping up to be a great event. A huge thank you to Horst Joachim Schirra who has taken on a lot of the organisation of the virtual meeting. With three weeks to go we already have 467 registrations with 322 abstracts submitted. I've spent the last week reviewing the abstracts for the Environmental stream and found the quality to be excellent. What has also been particularly pleasing about the online format is that we've seen an increase in abstracts from areas of the globe where we, as a society, are still under represented. It was particularly nice to see abstracts from Latin

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



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**

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**Membership Enquiries**

## Metabolomics Society News

America and Africa. The virtual meeting is shaping up to be a great meeting so I would encourage you to register – remember its free for members!

On the subject of Latin America, I took part in a teleconference with Latin American Metabolic Profiling Society (LAMPS) to discuss how LAMPS might affiliate with the society. It was great to hear how they were organising themselves across Latin America to make sure that people interested in metabolomics have access to the right technology and skills to apply metabolomics to their research areas. We hope to sign a memorandum of understanding between LAMPS and the Society soon. As outgoing President, I also had the enjoyable task to inform the recipients of this year's metabolomics Society Honorary Fellows. This is our most esteemed award and this year we have two excellent recipients – Warwick Dunn of Birmingham University, UK and Gary Siuzdak of the Scripps Institute, USA. Huge congratulations to both. Perhaps our most stylish awards go to the recipients of the President's medal - and it is an actual medal! This year we had such a tough time in deciding that we awarded two medals to Sastia Putri of Osaka University, Japan and Stacey Reinke of Edith Cowan University, Australia both for combined services to the field and the society.

We have also had another set of elections. This time it was the election of the officers to the society. A big thank you to all of the candidates and congratulations to Jessica Lasky-Su (President), Baljit Ubhi (Treasurer) and Fabien Jourdan (Secretary). Nichole, Krista and I are sure the society is in safe hands and I know the new officers have some great ideas for the Society.

I think that's all the news in what has been a very busy final month as President. Please do register for the virtual meeting, especially as we will soon start to display the posters. My final words are a huge thank you to the board over the past four years. While this last year has been particularly tough, we have all worked well together and it's been a huge privilege to work with you all.

Jules Griffin, Imperial College London, UK

*October 9, 2020*

*Metabolomics Society, Immediate Past President*

### Board of Directors – Words from the New Chair

Dear Society Members,

I am thrilled and honored to begin my service as the President of the Metabolomics Society. I feel tremendously grateful to have been given this amazing opportunity and to be taking it on with such a stellar team of board members and fellow officers. I hope that together we can build upon the outstanding work of our former officers and board by continuing to focus on the changing needs of the society, that now more than ever, encompass both developing transformative science and adapting to the challenges posed by the tremendous impact of COVID-19.

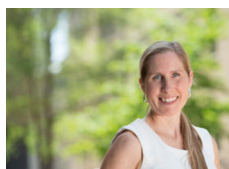
## Metabolomics Society News | Notes from the Chair

As metabolomics grows in popularity, I truly believe that the society has an unprecedented opportunity to expand our scientific impact to a wider spectrum of research domains. Essential to the success of this expansion is the expertise of analytical biochemists and others, including each and every one of you, who are at the heart of the metabolomics society today. I am eager to hear and learn you about your thoughts and insights that may help the society and/or advance metabolomics-based research. This begins with the society's first virtual conference that will take place at the end of this month. While this is not how we envisioned our annual society meeting, it has also provided new opportunities, including increased attendance of researchers worldwide, who otherwise would be unable to attend, with tracks that are tailored to three time zones, enabling all of us to participate during regular hours. As we continue on after the society conference, I encourage you to reach out with thoughts and innovations relevant to the society and as president I will strive to listen, inquire, and implement these ideas in the drive to better our society as whole, both in breadth and depth. I am determined that we can take advantage of the opportunities before us and flourish, even in the midst of this ongoing pandemic.

On a more personal note-a bit more about me. I am an epidemiologist by training that started my career over 20 years ago with a focus on identifying the genetic determinants of complex human diseases. During this time, I became interested in metabolomics and recognized the potential of this field for clinical translation. Since then, I have immersed myself in using metabolomic data generated in large cohorts to study human disease and integrating this with other omic data types, with the goal of having translational impact. I have had the privilege of working with experts involved in all aspects of this exciting field, including many incredible analytical chemists and biochemists that I have met through this Society, and it has been a tremendous and rewarding experience. I look forward to expanding this network and exploring what we can do together throughout this coming year!

Best,

Jessica Lasky-Su  
*Metabolomics Society, President*



### Early-Career Members Network (EMN)

#### New Committee

The EMN committee is delighted to welcome the following new members for 2020-2021:

- Dimitrios Damalas
- Evelina Charidemou
- Kehau Hagiwara
- Michelle Reid
- Purva Kulkarni
- Stefania Noerman
- Vinicius Veru Hernandes

Read all about them and the continuing members on the [Metabolomics Society website](#) or in our [Wiki page](#). We would like to thank the former members for their great initiatives. The new dynamic committee is motivated to maintain their efforts, bring them further and they have plenty of new ideas, so stay tuned!

## Metabolomics Society News

### EMN Participation to the Online Conference

The EMN is working hard to prepare two exciting workshops during the online conference:

- Professional Career Development: The Survival Kit
- Diversity, Equity and Inclusion: the impact of unconscious bias in science

We will also be holding a round table during which early career researchers will be able to send their feedback about the EMN and its initiatives, as well as their expectations for this coming year. Do not hesitate to join us for this lively virtual exchange.

### Early-Career Award

The Metabolomics Society is happy to introduce you to the Early-Career Members Network Award to recognize outstanding early-career achievements in the field of metabolomics. For 2020, the grantees are Georgia Sinclair, Guy Schleyer, Lili Herendi, Melanie Odenkirk and Purva Kulkarni. Congratulations to the winners!

## Other News

### 2020 Honorary Fellows

*An Honorary Fellowship is a significant lifetime award granted by the Board of Directors of the Metabolomics Society to recognize exceptional members of the community who have either made outstanding contributions to the Metabolomics Society over a sustained period of time, and/or made a pioneering and sustained contribution to the science of metabolomics at an international level. With up to two lifetime Fellowships awarded each year, the Board is pleased to recognize the following individuals as the lifetime Honorary Fellows of the Metabolomics Society for 2020:*

**Gary Siuzdak**, in recognition of his pioneering role in the development of the field of metabolomics by creating critical enabling technologies, applying them to address important scientific questions, and expanding the field through his outreach, training, and mentorship.

**Warwick Dunn**, in recognition of his active and continuous leadership and dedication to the Metabolomics Society and the broader metabolomics community through his commitment to annual conferences, task groups and committees of the society. His drive to develop and translate reporting standards for metabolite identification is highly admirable.

***We congratulate both esteemed scientists and look forward to their continued contributions in the years to come.***

### 2020 Career Medals

*The Metabolomics Society seeks to recognize outstanding contributions to the field of Metabolomics through the presentation of Metabolomics Society Medals. They are open to all Society members who meet the eligibility criteria outlined below. While research contributions are of primary importance, other contributions, including to the teaching of metabolomics and/or service to the field or the society will also be strongly considered. There are up to two medals awarded each year in the following categories:*

- *The Metabolomics Society Medal is for mid-career members of the society and is open to those members who have been awarded a PhD 10-15 years prior to the closing date for nominations in each round.*
- *The President's Award recognizes outstanding achievements in metabolomics by younger members of the Society or society members. It is available for Society members who have been awarded a PhD no more than 5-10 years prior to the closing date prior to the closing date for nominations in each round.*

## Metabolomics Society News

*The Board of Directors is pleased to recognize the following individuals as the award recipients for 2020:*

### *The President's Award*

**Sastia Putri**, Osaka University, Osaka, Japan

**Stacey Reinke**, Edith Cowan University, Perth, Australia

*We congratulate both award recipients and look forward to their continued contributions in the years to come.*

### Election of Officers

Elections for the Metabolomics Society Officer positions ended on September 30<sup>th</sup>. It is with pleasure that we announce the candidates elected by the membership.

**President: Dr. Jessica Lasky-Su**

**Secretary: Dr. Fabien Jourdan**

**Treasurer (running unopposed): Dr. Baljit Ubhi**

Congratulations to all three officers who started their terms on October 1, 2020.

Finally, we thank all those Directors who are leaving the Board for their service and commitment to the Society over the last four years: Dr. Oliver Jones, Dr. Christophe Junot, Dr. Justin van der Hooft, Dr. Craig Wheelock. In accordance with the bylaws, Prof. Julian Griffin (Outgoing President), Dr. Nichole Reisdorph (Outgoing Treasurer), and Dr. Krista Zanetti (Outgoing Secretary) remain on the board in a non-voting, 'past-officer' capacity, to aid the transition to the new Officers.

Thank you to all who took part in the Director and Officer elections. As always, your active participation is important for the future of the Society!



## Dr. María Eugenia Monge



### Independent Researcher of CONICET

The National Scientific and Technical Research Council of Argentina

### Short Biography

Dr. María Eugenia Monge is an Independent Researcher of CONICET, the National Scientific and Technical Research Council of Argentina. In 2006, she obtained her Ph.D. from the University of Buenos Aires. Between 2007 and 2014, she held postdoctoral positions in Italy, France, and the USA. In 2014, she was recruited by CONICET to set-up a new laboratory at CIBION, where she leads the Bioanalytical Mass Spectrometry (MS) Group and the MS facility. She is co-author of >40 peer-reviewed publications (<https://orcid.org/0000-0001-6517-5301>). She has coordinated metabolomics courses for South American students and has participated in promoting awareness of metabolomics with the hope of strengthening the South American community. Since 2019, she has been a member of the Metabolomics Society, where she serves as a member of the Metabolomics Society Membership Committee, and the Metabolomics QA and QC Consortium (mQACC). She also served as guest editor for the journal *Metabolites*, and she is an editorial board member of *GigaByte*.

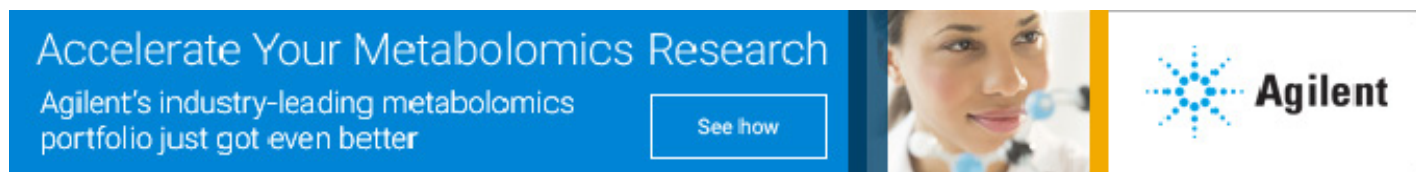
### Interview Q&A

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

I got involved in this field in 2012, when I accepted the offer to return to Argentina in 2014 and set up a new mass spectrometry (MS) laboratory at the Center for Bionanoscience Research (CIBION, <https://cibion.conicet.gov.ar>; created in 2012), with the goal of starting new research areas in fields that were underdeveloped in the country at that time.

During my doctoral thesis, I studied gas-phase fingerprints from volatile compounds released from polysaccharide gels using electronic noses in combination with chemometric tools to follow the release in correlation with the gel rheological properties.

Additionally, I characterized the chemical composition of the encapsulated flavours and the polysaccharides using GC-MS and MALDI-TOF-MS, respectively. In 2006, I obtained my Ph.D. in Inorganic, Analytical, and Physical Chemistry from the University of Buenos Aires, Argentina. After my doctoral studies, I conducted a brief postdoctoral stance in the research group of Pier Luigi San Biagio at the Biophysical Institute of Palermo-CNR, Italy, to work with e-noses, chemometric tools, and GC-MS. Between 2008 and 2011, I held a postdoctoral position in the research group of Christian George at IRCELYON-CNRS, France, to study photoinduced transformations of atmospheric aerosol particles.

**Metabo Interview** | Dr. María Eugenia Monge


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In 2010, the current director of CIBION offered me the possibility of joining the research staff of the center after applying for a researcher position at CONICET (the National Scientific and Technical Research Council of Argentina), to start a research group in a scientific area that was new in Argentina. For this purpose, in 2012, I moved from France to the US to work for 2 years as a research scientist in the group of Facundo Fernández at the Georgia Institute of Technology. There, I applied UPLC-HRMS, UPLC-QqQ-MS, UPLC-TWIM-HRMS, and ambient-MS instrumentation to address scientific biological questions in the fields of mass spectrometry-based metabolomics for biomarker discovery, and developed quantitative methods for biological and pharmaceutical sample analyses. At Georgia Tech, I also worked with great colleagues and friends in this field and served as co-advisor of a Ph.D. student.

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

Some of the most exciting aspects of my work in metabolomics include being the mentor of an interdisciplinary group, and training students and postdocs with little or no previous knowledge in mass spectrometry or metabolomics, but with solid background in analytical chemistry, cancer biology, or computing science. This gives me the possibility of sharing my passion for science, and my belief that MS-based technologies can be transformative for disease diagnosis and contribute to global health equity.

In particular, my research group applies MS for biomarker discovery and early disease detection, with special emphasis on untargeted metabolomics-based diagnostics. The applications we are currently working on include studies for early detection of genitourinary tumors, [1] in collaboration with Argentine biobanking systems and hospitals. We have profiled the exometabolome of two human ccRCC cell lines, and a non-tumor human renal cell line by means of a discovery-based metabolic footprinting approach using reverse phase UPLC-QTOF-MS combined with multivariate statistical analysis and showed that conditioned media can be used as a serum proxy to obtain human disease-related metabolic signatures. [2] As well, by means of a lipidomics-machine learning approach, we found two discriminant lipid panels with ccRCC diagnosis and early detection capabilities. Results from these studies are auspicious after validation in larger and different cohorts. Another exciting contribution of my research group is the development of open tools for preprocessing LC-MS data for quality control (QC) procedures in untargeted metabolomics workflows.

In line with this initiative, my research group has participated in an interlaboratory study administered by the Metabolomics Quality Assurance (QA) and QC Materials (MetQual) Program, led by the National Institute of Standards and Technology of the USA to provide affordable, stable, homogenous QA/QC materials to meet the needs of the metabolomics community. In addition, our group has contributed to bridge the fields of marine science and atmospheric chemistry with a novel TM-DART-QTOF-MS-based untargeted metabolomics workflow that differentiated seawater samples based on their collection depth and relative changes in their chemical composition, and we have analyzed the results in relation to their aerosol formation capabilities in an international collaborative effort. [3] This work was conducted in the frame of the H2020-MSCA-RISE network MARSU.

Overall, it is exciting to combine the knowledge from scientists with different expertise to address a scientific question.

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

One of the goals of CIBION is to develop alternative analytical strategies to improve the performance of existing diagnosis and prognosis methods that are currently implemented in the clinics. In this sense, we have different ongoing projects in the oncometabolomics field, mainly focused on the study of genitourinary tumors. [1] As well, we are currently designing a collaborative study to investigate dengue disease treatment [4] and progression with a combined pharmacometabolomics and biomarker discovery approach. These projects are feasible based on strong collaborations with national health centers and biobanking systems, including Hospital Italiano de Buenos Aires and "Biobanco Público de Muestras Séricas Oncológicas" from "Instituto de Oncología A. H. Roffo". My group is also involved in collaborative studies applying metabolomics workflows to address health-related scientific questions in the fields of cancer metabolism and molecular neurobiology, using *in vitro* and *in vivo* models.

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

As I mentioned above, I was recruited by the CONICET to address health-related scientific questions by means of MS-based metabolomics, which was a new research field for the country in 2014. Since then, I was able to set-up a new mass spectrometry laboratory for bioanalytical applications in a recently created center, and train students and postdocs in an emerging field in Argentina.

**Metabo Interview** | Dr. María Eugenia Monge

I believe that technological developments utilized in metabolomics have not been distributed or shared equally in the world. Since I returned to Argentina in 2014, I've been engaged in coordinating and teaching metabolomics courses for South American students, and I have participated in promoting awareness of metabolomics and its advantages throughout different countries of Latin America with the hope of broadening and strengthening the South American metabolomics community. In line with this goal, I have participated in the past Latin American Metabolic Profiling Society (LAMPS) meetings. LAMPS is a young network that pursues strengthening collaborations across the continent as well as promoting emerging technologies and practices that help to make science more reproducible and open (<https://jwist.github.io/lamps/index.html>). Since 2019, I have also been a member of the Metabolomics Society Membership Committee, to contribute to design and implement strategies for increasing the representation of the South American community in the Society.

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

Today, metabolomics is a powerful tool to improve our current understanding of alterations in metabolic pathways in living organisms; to connect the phenotypes with health and disease statuses; to evaluate the effect of drug intake, diet, and the exposome on human health; to obtain readouts from metabolic fluxes and the microbiome in relation to health status; and to understand plant physiology and metabolism. As well, metabolomics provides tools to understand the marine and atmospheric chemistry, which directly impacts air quality, climate change, and human health.

In the future, I believe that metabolite panels are promising to translate metabolomics findings into the clinical setting under the shape of diagnostic tests, changing the current diagnosis paradigm. [5] In particular, MS-based technologies can be transformative for disease diagnosis and contribute to global health equity. As well, I would expect a better understanding of the role of microbial origin metabolites on disease diagnosis. In addition, I think that ambient-MS techniques [6] can provide more accurate assessments of tumor margins than classical histological methods, and may introduce a molecular diagnosis alternative to be implemented in the clinical setting worldwide through the coupling with machine learning methods. [7, 8]

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

Among the greatest strengths of metabolomics, I would include the collection of biochemically-based fingerprints of diagnostic or classification value; the identification of potential biomarkers that reflect actual biological processes; the fact that it is not necessary to have the genome sequence of all of the organisms involved in the study;

the possibility of using biofluids collected noninvasively or minimally invasively for diagnosing or studying human disease; the possibility of analyzing time-dependent metabolic patterns of change in response to disease, drug effects, or other stimuli to be measured. In addition, I consider very valuable the efforts of the metabolomics community towards producing transparent and reproducible science.

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

I believe that the greatest barriers are associated to limited replication and validation studies, mainly in the sub-field of biomarker discovery. The potential biomarker candidates suggested by different research groups should be validated in independent sample sets and compared through interlaboratory studies in larger and different cohorts using QA/QC practices established by the community before possible translation to the clinic. As well, biobanks are required worldwide to collect samples from individuals with different ethnicity, gender, and geographical regions, using standard operating procedures. Data pre-processing and processing steps, such as curation and normalization methods, should be clearly reported, and confidence levels of identified features in untargeted studies [9] should be indicated to allow further validation of results and interpretation of disease biology. Finally, data should be shared on public repositories to enrich the metabolomics community and allow for future data analysis. In low and middle-income countries, I consider that financial support, training in the use of sophisticated analytical platforms, and collaborative and overseas initiatives are needed to move the field forward.

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

I believe that metabolomics has already taken off in the central countries and is moving forward very fast. However, there are still limitations regarding the use of standards for harmonization and validation of results. I think the community is growing very fast and this growth needs to be supported by a solid consensus on best practices and reporting standards that would allow validation of results. In this sense, I believe that the metabolomics QA and QC consortium (mQACC) [10] is a great initiative, where I participate as a member on the Defining Best Practices working group.

The scenario in South America is different since technological developments have not been equally distributed worldwide, but I am positive about future contributions from this geographical area. I believe that collaborative and international initiatives for training and conducting research studies can lead to win-win opportunities.



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

In low and middle-income countries funding for metabolomics is limited, affecting the speed of the development of this field in the region. In Argentina, there is limited access to state-of-the-art instrumentation. In addition, we face more expensive instrumentation maintenance costs compared to developed countries.

**What role can metabolomics standards play?**

Standards play a crucial role to overcome some of the present barriers that I have previously described. They would allow replication and validation of results and translation of discoveries to the clinical setting. Validation of results in independent sample sets and through interlaboratory comparisons using QA and QC practices is required. These actions combined with data sharing would also support reproducibility of results and transparency.

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

I believe this is an exciting field that allows broadening our knowledge by addressing biological problems through a synergistic approach constructed with interdisciplinary teams. Personally, I hope that the Latin American region will soon grow in the field, and I appreciate this opportunity to share my thoughts very much.

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# Recent Publications

## Recently published papers in metabolomics

[From birth to overweight and atopic disease: multiple and common pathways of the infant gut microbiome](#)

[Recommendations for standardizing nomenclature for dietary \(poly\)phenol catabolites](#)

[Candidate serum metabolite biomarkers of residual feed intake and carcass merit in sheep](#)

[Excretory/Secretory Metabolome of the Zoonotic Roundworm Parasite \*Toxocara canis\*](#)

[Comprehensive Targeted Metabolomic Assay for Urine Analysis](#)

[Urinary metabolic signatures reflect cardiovascular risk in the young, middle-aged, and elderly populations](#)

[Capillary electrophoresis-Mass spectrometry at Trial by Metabo-ring: Effective electrophoretic mobility for Reproducible and Robust Compound Annotation](#)

[Rapid Screening of Urinary 1-Hydroxypyrene Glucuronide by Multisegment Injection-Capillary Electrophoresis-Tandem Mass Spectrometry: A High-Throughput Method for Biomonitoring of Recent Smoke Exposures](#)

[Effect of very low-protein diets supplemented with branched-chain amino acids on energy balance, plasma metabolomics and fecal microbiome of pigs](#)

[FADS genetic and metabolomic analyses identify the  \$\Delta 5\$  desaturase \(FADS1\) step as a critical control point in the formation of biologically important lipids](#)

[Automating and extending comprehensive two-dimensional gas chromatography data processing by interfacing open-source and commercial software](#)

[Rumen Microbiome and Metabolome of Tibetan Sheep \(\*Ovis aries\*\) Reflect Animal Age and Nutritional Requirement](#)

[Metabonomic Profile of Macrosteatotic Allografts for Orthotopic Liver Transplantation in Patients With Initial Poor Function: Mechanistic Investigation and Prognostic Prediction](#)



# Metabolomics Events

**27-29 Oct 2020**

**Metabolomics 2020**

**Venue**

Online

**Overview**

The 16<sup>th</sup> Annual Conference for the Metabolomics Society will be held online 27<sup>th</sup>-29<sup>th</sup> October. REGISTRATION OPEN! Attendance is limited, and free to Society members - don't delay and register online today.

**Conference Link**

<http://metabolomics2020.org>

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**14 Sep - 4 Dec 2020**

**Metabolomics: Understanding Metabolism in the 21<sup>st</sup> Century**

**Venue**

Online

**Overview**

Metabolomics is an emerging field that aims to measure the complement of metabolites (the metabolome) in living organisms. The metabolome represents the downstream effect of an organism's genome and its interaction with the environment. Metabolomics has a wide application area across the medical and biological sciences. The course provides an introduction to metabolomics, describes the tools and techniques we use to study the metabolome and explains why we want to study it. By the end of the course you will understand how metabolomics can revolutionise our understanding of metabolism.

**Course Link**

<https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/2020/metabolomics-mooc.aspx>

## Metabolomics Events

### 12 Oct - 6 Nov 2020

#### Metabolomics Data Processing and Data Analysis

##### Venue

Online, Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

##### Overview

This online course explores the tools and approaches that are used to process and analyse metabolomics data. You will investigate the challenges that are typically encountered in the analysis of metabolomics data, and provide solutions to overcome these problems. The materials in this course are delivered via the FutureLearn platform over a four week period, with an estimated learning time of four hours per week. Each week you will work through a number of steps to complete the learning material. A step may include a short video, an article, an exercise with step-by-step instructions, a test or a discussion to interact with your peer or the educators. All of the course material is uploaded to the FutureLearn platform so that you can complete the steps at a convenient time for you.

##### Topics Covered

- An introduction to metabolomics
- An overview of the untargeted metabolomics workflow
- The influence of experimental design and data acquisition on data analysis and data quality
- An overview of processing NMR data
- Processing direct infusion mass spectrometry data with a hands-on exercise
- Processing liquid chromatography-mass spectrometry data with hands-on exercises
- Reporting standards and data repositories
- Data analysis, detecting outliers and drift, and pre-treatment methods
- Univariate data analysis with a hands-on exercise
- Multivariate data analysis (including unsupervised and supervised approaches) with hands-on exercises
- The importance of statistical validation of results
- Computational approaches for metabolite identification and translation of results into biological knowledge with hands-on exercises
- What are the future challenges for data processing and analysis in metabolomics

##### Course Link

<https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/2020/Metabolomics-Data-Processing-and-Data-Analysis.aspx>

### 17-20 Nov 2020

#### Hands-on Data Analysis for Metabolic Profiling

##### Venue

Online, Imperial College London, London, United Kingdom

##### Overview

**This course will be run as an online course, with Live lectures and tutorials using MS Teams.**

## Metabolomics Events

We offer comprehensive, hands-on training in processing and analysing metabolomics data from LC-MS and NMR technologies.

Attendees will have the opportunity to:

- Learn directly from internationally recognised leaders in the field
- Benefit from practical training in computational techniques and statistical methods

### Course Aims

This 3.5 day course provides a comprehensive overview of data analysis for metabolic profiling studies focussing 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.

### Course Link

<http://www.imperial.ac.uk/continuing-professional-development/short-courses/medicine/biomedical/hands-on-data-analysis/>

## 30 Nov - 18 Dec 2020

### Quality Assurance and Quality Control in Metabolomics

#### Venue

Online, Birmingham Metabolomics Training Centre, University of Birmingham, United Kingdom

#### Overview

The application of quality assurance and quality control in the metabolomics field is vital to ensure the collection of high quality data. In this course you will explore the importance of quality assurance and quality control in both untargeted and targeted metabolomics studies. We will explain the difference between quality control and quality assurance and how to apply in your studies and laboratories. You will evaluate the types of quality control samples that can be applied in metabolomics, what is the most appropriate quality control sample to use in your research, and how to apply the data in your quality assurance procedure to produce robust and reproducible data.

#### Topics Covered

- What are quality assurance and quality control and how do they differ
- What is the importance of quality assurance in metabolomics
- The types of quality assurance and quality control in untargeted and targeted metabolomics
- The importance of quality control samples
- The types of quality control samples applied in untargeted and targeted metabolomics
- Preparation of quality control samples in untargeted and targeted metabolomics
- Analytical studies including untargeted and targeted metabolomics
- Processing data in untargeted and targeted metabolomics
- Recommended quality assurance procedures in untargeted and targeted metabolomics
- Reporting quality assurance procedures in untargeted and targeted metabolomics

### Course Link

<https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/2020/Quality-Control-and-Quality-Assurance-in-Metabolomics.aspx>



## Metabolomics Events

### 15 & 17 Dec 2020

#### Biowaivers and Bioequivalence Studies

##### Venue

Webinar Training Session

##### Overview

The objective of this training is to familiarize R&D directors, responsible for galenic or clinical development, the people from regulatory affairs to the concepts of bioequivalence for a generic.

##### Webinar Link

<http://metabolomicsociety.org/images/events/Flyer%202020-Biowaivers.pdf>

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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

And much more.

##### Webinar Link

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

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

## Metabolomics Events

Abstract submission deadline: 6 November 2020.

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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## 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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## 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.

### 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 Ian Forsythe ([metabolomics.innovation@gmail.com](mailto:metabolomics.innovation@gmail.com)).

## Jobs Offered

Job Title	Employer	Location	Posted	Closes	Source
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>
Skilled data scientist within metabolomics	MS-Omics	Vedbæk, Denmark	6-Oct-20		<a href="#">MS-Omics Careers</a>
Various Positions			26-Oct-20		<a href="#">Metabolomics Association of North America Jobs</a>
PhD & Postdoc positions in Marine Metabolomics	Weizmann Institute of Science	Rehovot, Israel	9-Sep-20	1-Nov-20	<a href="#">Metabolomics Society Jobs</a>
Postdoctoral Researcher in Computational Metabolomics & Large-Scale Mass Spectrometry Data Analysis	Institute for Biomedicine, Eurac Research	Bolzano, Italy	9-Sep-20	30-Oct-20	<a href="#">MetaboNews</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>
Postdoctoral Associate	Yale School of Public Health	New Haven, CT, USA	5-Feb-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
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