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Welcome to the July 2018 issue of MetaboNews! That's a Wrap Folks! This month follows the successful conclusion of the 14th Annual Metabolomics Society Conference in Seattle, USA. As always, do please reach out to the editors with suggestions, ideas and content at any time.

Metabolomics Society News

Metabolomics 2019

The 15th Annual Conference of the Metabolomics Society will be held in the World Forum conference centre in The Hague, The Netherlands, on June 23-27, 2019. The Hague is reachable within the hour from Schiphol Airport and situated close to the seaside.

Next year's Society's annual conference will put a strong emphasis on the applications of metabolomics and the latest technological developments. We will collaborate with International Affiliates to make as many travel grants available for young researchers as possible. The meeting will be co-organised with the EMN network and the Biobanking community in Europe, who are increasingly applying metabolomics in their research. Further details will be released regularly at <http://metabolomics2019.org/>.

A Call for Abstracts will open in late November/early December. We look forward to seeing you at the inspiring Metabolomics 2019 meeting in The Hague!



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



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

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info@metabolomicsociety.org

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membership@metabolomicsociety.org

Board of Directors

Words From the President

This month I have a good reason for being brief in that the June board meeting is set to take place in Seattle and at the time of typing that's just under one week away. Without wanting to second guess what we will discuss, one job that we have on the agenda is to start the elections for new directors of the Society to sit on the board. Director terms are for two years, and a director may be re-elected once. This means we have regular turnover on the board and we rely on our members to step up to the challenges of running the Society. So, if you enjoyed the meeting in Seattle or have ideas of how we can take the society forward, I urge you to think about standing as a director for the society. Meanwhile, I will get back to my conference preparations.

Members Corner

Early-Career Members Network (EMN)

EMN Webinar Series – 2018

Next EMN webinar with Prof. Kazuki Saito (RIKEN Center for Sustainable Resource Science, Japan) is scheduled for July 24th at 23:00 UTC. Stay tuned for details.

You can access the recorded videos of the past webinars on the [Metabolomics Society website](#). 2018 March (Dr. Lewis), April (Dr. Fiehn) and May (Prof. Siuzdak) webinars have been recently made available.

Task Groups Corner

Precision Medicine and Pharmacometabolomics Task Group

The Pharmacometabolomics and Precision Medicine Task Group of the Metabolomics Society has organized a workshop for our Metabolomics 2018 meeting in Seattle.

The session is scheduled for Monday 10:30 AM-12:15 PM. We will address important issues related to the inclusion of metabolomics data in large human studies. Speakers will include Rima Kaddurah-Daouk, David Wishart, Matej Oresic, Warwick Dunn, Richard Beger, Thomas Hankemeier, Vidya Velagapudi, Michael Schmidt, Susan Jenkins Suman, Will Thompson, among others. Many members of our society have signed up, so we look forward to engaging our community in important discussions that can shape the future of metabolomics in the medical field.

Communicated by Rima Kaddurah-Daouk, PhD
Professor, Duke Medical Center

THE AUSTRALIAN & NEW ZEALAND METABOLOMICS CONFERENCE 2018

FEATURING:
**'Introduction to
Metabolomics'
Lecture Series !**

**Join Us in Auckland
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Conference**

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A/Prof Sanjay Swarup
National University of
Singapore, SG



A/Prof Silas Villas-Boas
University of
Auckland, NZ



Prof David Wishart
University of
Alberta, CAN

ANZMET

www.anzmet.org

SpOtlight



WIKIPATHWAYS
Pathways for the People

The WikiPathways knowledge base: An open, collaborative and FAIR pathway database

Contributors: Denise Slenter¹, Kristina Hanspers², Anders Riutta², Marvin Martens¹, Chris Evelo¹, Alexander Pico², Egon Willighagen¹

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Metabolomics data can now be integrated more easily with biological pathways in the **open access WikiPathways** database ([wikipathways.org](http://www.wikipathways.org)). The Nucleic Acids Research Database Issue 2018 paper describes that our pathway knowledge base now covers most of the human genes which have a known function (**Figure 1**), with an increase in the unique metabolite annotations from 1213 to 3133 (between 2013 and 2017) (**Figure 2**),

and expanded the support to mapping identifiers with new databases, such as KNApSAcK, LIPID Maps, and the EPA CompTox Dashboard. WikiPathways is fully compatible with the pathway drawing and data analysis tool PathVisio and the network tool Cytoscape, allowing for the integration of various omics datasets. Various exports formats (e.g., GPML, GMT, RDF, BioPAX) create options for easy integration with other data.

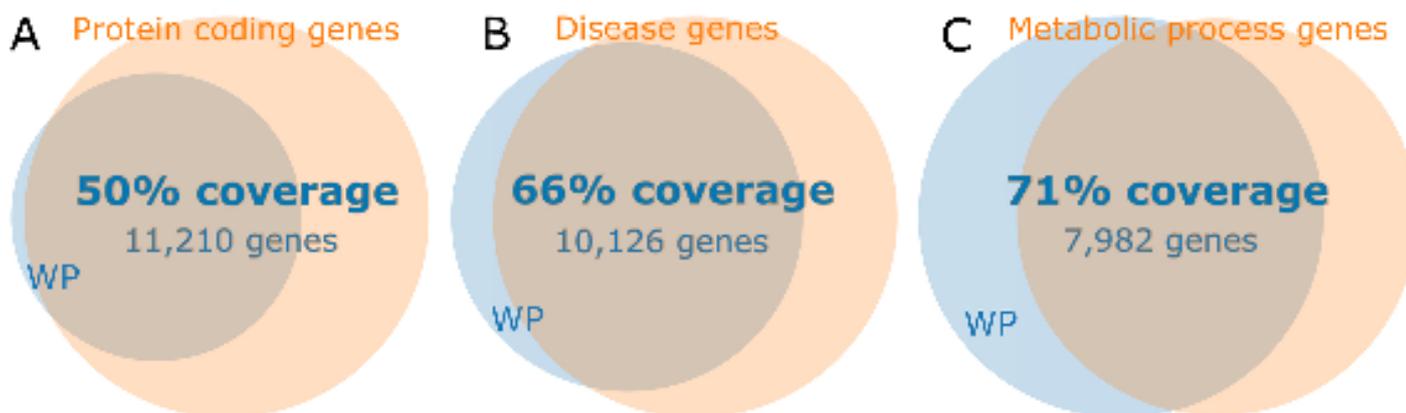


Figure 1: Overview of coverage of various gene spaces. WikiPathways (WP) currently covers 11,532 unique human genes. Venn diagram A shows that 50% of the protein coding genes (Ensembl: 22,376 genes) are found in WikiPathways (mapped with BridgeDb, Ensembl-release 85). B shows the 66% coverage of all disease genes (OMIM: 15,262 genes), which also illustrates that the vast majority of genes in WikiPathways are associated with a disease. The C diagram shows that WikiPathways covers 71% of all genes known to be involved in human metabolism (GO metabolic process: 11,296 genes).

Spotlight | WikiPathways

Due to the open and collaborative nature of the WikiPathways platform, our content keeps growing and is getting more accurate, making WikiPathways a reliable and rich pathway database.

There are now 2614 pathways in our database, covering 25 species, including three bacteria and six plants species. Pathways are encoded in GPML (XML) format and genes, proteins and metabolites are linked to other databases with the BridgeDb web service. All components are freely available, developed in open collaborations and distributed as open source or open data.

Furthermore, we introduce an OpenAPI documentation of our web services and useFAIR (Findable, Accessible, Interoperable and Reusable) approaches like BioSchemas, linked data, versioning and provenance registration to increase the interoperability and usefulness of the knowledge encoded in these pathways and experimental omics data.

The full article is available as an Open Access article:

Slenter, D. N. et al. WikiPathways: a multifaceted pathway database bridging metabolomics to other omics research. *Nucleic Acids Research* (2018) 46:D1, D661–D667.

<http://dx.doi.org/10.1093/nar/gkx1064>

The use of WikiPathways is free of charge and contributions from the (scientific) community are greatly appreciated!

If you have any questions, please contact our helpdesk: wikipathways-discuss@googlegroups.com.

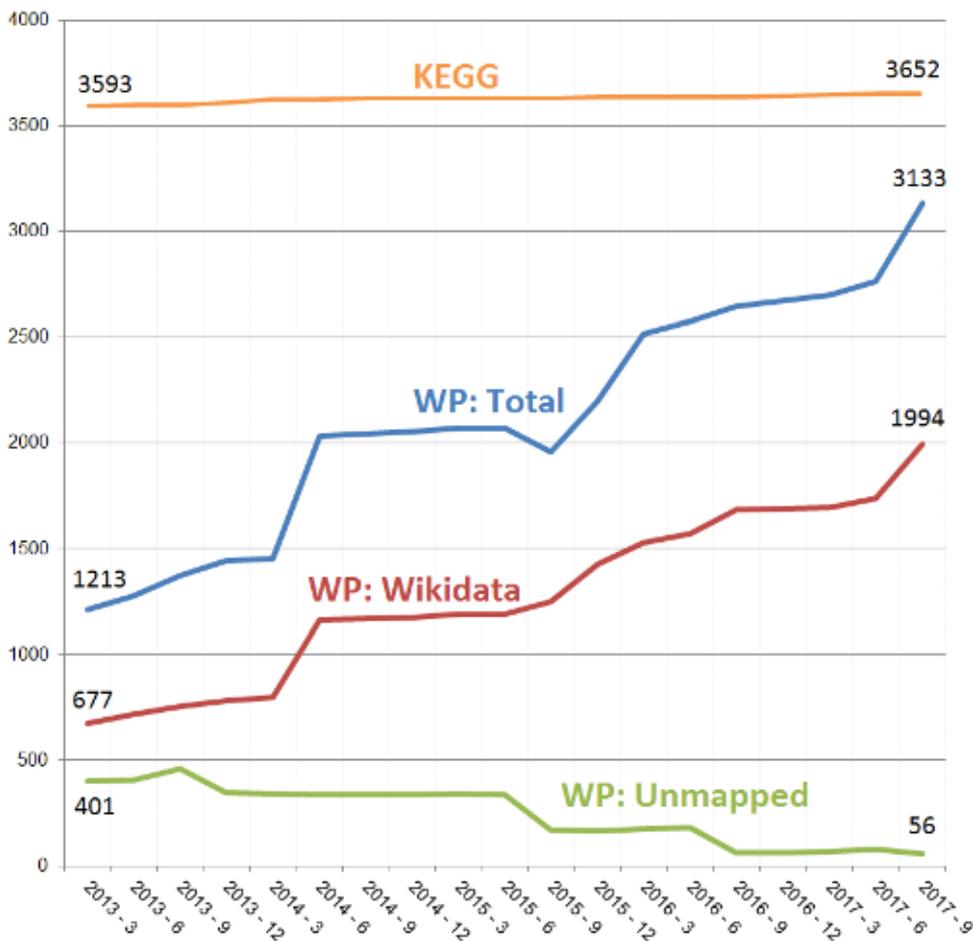


Figure 2: Metabolite coverage growth in WikiPathways. Taking KEGG as the standard, we plot the growth of WikiPathways (WP) coverage over the past five years. WikiPathways and KEGG unique human metabolite counts were calculated by extracting identifiers from archived WikiPathways releases and unifying to, ideally, Wikidata ID, otherwise ChEBI or HMDB. About two-third of all identifiers (blue line) could be mapped to a Wikidata (red line). Metabolite IDs that could not be mapped to these three databases, have decreased over the last five years (unmapped, green line).

Recent Publications

Recent Publications

Recently published papers in metabolomics

- [Comparative metabolomics elucidates postprandial metabolic modifications in plasma of obese individuals with metabolic syndrome](#)
- [Analysis of metabolic profiles of generalized aggressive periodontitis](#)
- [Metabolite profiles evaluated, according to sex, do not predict resting energy expenditure and lean body mass in healthy non-obese subjects](#)
- [Vitamin C in Cancer: A Metabolomics Perspective](#)
- [Consequences of blunting the mevalonate pathway in cancer identified by a pluri-omics approach](#)
- [Visualizing Energy Charge in Breast Carcinoma Tissues by MALDI Mass-spectrometry Imaging Profiles of Low-molecular-weight Metabolites](#)
- [Insights into myalgic encephalomyelitis/chronic fatigue syndrome phenotypes through comprehensive metabolomics](#)
- [Round robin study of formalin-fixed paraffin-embedded tissues in mass spectrometry imaging](#)
- [Higher Concentrations of BCAAs and 3-HIB Are Associated with Insulin Resistance in the Transition from Gestational Diabetes to Type 2 Diabetes](#)
- [Metabolomic Analysis by Nuclear Magnetic Resonance Spectroscopy as a New Approach to Understanding Inflammation and Monitoring of Pharmacological Therapy in Children and Young Adults With Cystic Fibrosis](#)
- [Preanalytical Processing and Biobanking Procedures of Biological Samples for Metabolomics Research: A White Paper, Community Perspective \(for “Precision Medicine and Pharmacometabolomics Task Group](#)



Metabolomics Events



23 Jul-17 Aug 2018

Metabolomics: Understanding Metabolism in the 21st Century

Venue: Online

Cost: Online

The course is primarily aimed at final year undergraduate science students and research scientists who are interested in learning about the application of metabolomics to understand metabolism. However, metabolomics is a new tool to the scientific community and this course will provide a valuable introduction to scientists at any stage in their careers. It is not essential to have any previous knowledge of the subject area but a reasonable knowledge and understanding of science would be beneficial.

Course Syllabus

- Metabolism and the interaction of the metabolome with the genome, proteome and the environment
- The advantages of studying the metabolome
- The application of hypothesis generating studies versus the use of traditional hypothesis directed research
- The use of targeted and non-targeted studies in metabolomics
- An interdisciplinary approach with case-studies from clinical and environmental scientific areas
- Important considerations in studying the metabolome
- Experimental design and sample preparation
- The application of mass spectrometry in metabolomics
- An introduction to data processing and analysis
- Metabolite identification

For further information and registrations details, please visit <https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/Metabolomics-MOOC.aspx> or contact bmtc@contacts.bham.ac.uk

Metabolomics Events



23-25 July 2018

**Multiple biofluid and tissue types:
From sample preparation to analysis strategies for metabolomics**

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences, University of Birmingham, Birmingham, UK

Limited bursaries are now available for PhD students funded by NERC, which make the registration for this course FREE to these students.

This 3-day course will provide a comprehensive overview of dealing with complex biological samples for LC-MS analysis. The course is targeted towards students and researchers who are actively applying metabolomics in their research. The course will be led by experts in the field and include:

- An overview of quenching and extraction strategies for different biological samples
- Hands-on sample preparation using different sample types
- Hands-on HILIC and reversed phase LC-MS data acquisition
- Solid phase extraction clean up methods
- An overview of data analysis and metabolite identification
- An opportunity to ask questions and seek advice to prepare samples in your own research

For further information and registrations details, please visit <http://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/introduction-metabolomics.aspx> or contact bmtc@contacts.bham.ac.uk

6-9 Aug 2018

1st Annual North American Mass Spectrometry Summer School

Venue:

University of Wisconsin-Madison, Madison, Wisconsin, USA

Organizers:

Josh Coon, Mike Sussman, Lingjun Li, and Dave Pagliarini

Thank you for your interest in the 1st Annual North American Mass Spectrometry Summer School held on the University of Wisconsin-Madison campus.

While we anticipate many of our participants to be graduate students or postdocs, we encourage anyone interested in learning more about mass spectrometry to apply.

Please keep in mind as you continue, that the following application only shows your interest in participating in the Summer School. Once completed, the Organizers will consider all applications and accept students on a rolling basis.



Metabolomics Events

The NSF- and NIGMS- funded [North American Mass Spectrometry Summer School](#) (August 6-9, 2018 at University of Wisconsin, Madison) invites applications for travel grants. **A maximum of 50 scholars will receive accommodation, and 10 scholars will receive funds to cover airfare.** Decisions will be based on scientific justification to receive training, scholarly excellence (for different levels of experience), funding need and alignment with NSF- and NIH- criteria (encouraging applications from scientists from underrepresented minorities). **Applications end by April 1st, 2018** but decisions are made on a rolling basis - apply early!

[Conference Flyer](#)

For more information about the Summer School, visit <https://uwmadison.eventsair.com/massspectrometry/reg/Site/Register>



26-28 Aug 2018

1st Nordic Metabolomics Conference

Venue:

Aula Nova, Örebro University, Sweden

Welcome to the 1st Nordic Metabolomics Conference, which is the inaugural annual meeting of the newly established Nordic Metabolomics Society.

The conference aims to highlight and discuss the latest metabolomics research in Nordic countries and abroad. The meeting will start with a welcome reception in the evening of Sunday, August 26th and end in the afternoon of August 28th. The meeting will also host the 1st General Assembly of the Nordic Metabolomics Society.

Most of the talks for the conference programme will be selected from the submitted abstracts.

Key dates and information

- Registration and abstract submission opens: March 1st, 2018
- Deadline for early bird registration: June 30th, 2018
- Abstract submission deadline: May 14th, 2018 (for poster abstracts, submission for oral abstracts is closed)
- Final programme posted: May 31st, 2018
- Over 15 travel awards of 5000 SEK will be available, supported by the Örebro University and the Nordic Metabolomics Society. You can apply for the award as apart of the abstract submission process. Eligibility: student or postdoc, with submitted abstract.

For more information, visit <https://www.oru.se/english/about-us/conferences/nordic-metabolomics-conference/>.



27-31 Aug 2018

Introduction to Ecometabolomics for Ecologists

Venue:

Institute of integrative biodiversity research (iDiv), Leipzig, Germany

- When: 27-31 August 2018 (full day)
- Cost: No participation fees; only travel and hotel costs
- Content: lectures, discussions, student presentations; hands on: sampling, laboratory experiments, data analysis

The course will provide an overview about the application of metabolomics in ecological and biodiversity research. We will explore the tools and approaches that are used to obtain, process, and analyse metabolomics data. The course will be delivered using a combination of lectures, computer-based practical sessions with test data sets, group discussions, and hands-on practical exercises in the lab. Especially PhD students who are interested in performing or already plan to implement metabolomic analysis for their ecological and biodiversity research are invited.

Where can I apply?

For Application please contact: Henriette.uth@idiv.de. Please add a short letter about why you want to take part in this course and what you expect to learn.

Furthermore, we will award two grants to cover travel and hotel costs. Don't hesitate to contact Henriette Uthe for more Information.

Deadline for application: 1 July 2018

For further information and registrations details, please visit https://www.idiv.de/ydiv/courses_and_training/introduction_to_ecometabolomics_for_ecologists.html



30 Aug - 1 September 2018

The Australian & New Zealand Metabolomics Conference

Venue:

University of Auckland, New Zealand

Featuring: The Introduction to Metabolomics Lecture Series!

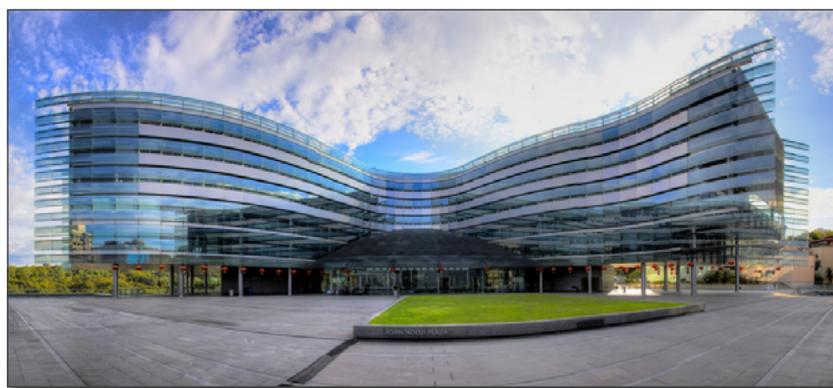
The essence of any conference lies in community-building. A meaningful conference is a safe, supportive and open environment aimed at fostering growth, awareness and learning – and should be attendee-driven. These key ingredients for ‘reengineering the traditional conference’ are the basis and inspiration behind developing ANZMET as the **first peer-driven scientific conference in Australia**. The conference hosts a blend of traditional presentations, roundtable discussions and peer sessions, providing a flat hierarchy and a rich & rewarding interpersonal process.

Following on from the success of the first ANZMET conference in 2016, and its satellite event/workshop held during the Metabolomics2017 conference in Brisbane, Australia, it is with great pleasure and excitement that we continue to develop the peer-conference model and reach out to the dynamic and supportive people of the Australian & NZ metabolomics community.

The ANZMET conference is designed from conception as a community-owned event and provides a **facilitated networking experience** where:

- (1) Attendees learn on the first day of each others interests, experience, scientific background, collaboration opportunities and other avenues for outreach
(The Round-table Discussion)
- (2) An open-forum format for rich discourse on spontaneous peer-selected topics
(The Peer Session)
- (3) The delivery of critical updates in the field **(Traditional Presentations)**
- (4) The tailored and vital exposure of young scientists to the wider research community
(Rapid-fire Postgraduate Presentation Sessions)

Registrations are **NOW OPEN!** Please visit <http://www.anzmet.org/>.



Metabolomics Events**MOVISS 9 - 12 September 2018****MOVISS – The Mountain Village Science Series****Venue:**

Vorau, Austria

MOVISS – the “Mountain Village Science Series” takes place in Vorau, Austria (Sep 9-12, 2018). MOVISS is different to the usual conferences. It is designed as a small, problem-driven meeting, full of discussions and questions about how to deal with metabolomics data reasonably. In this way, we hope to constructively engage some of the greatest minds collaboratively on solving some of the challenges of the metabolomics and bioinformatics community. Together with hiking tours and social program, MOVISS is planned to be friendly and relaxing meeting for scientists interested in the fields of metabolomics and statistics.

To register and for more information, go to www.MOVISS.eu and follow us on Twitter [@MOVISSmeet](https://twitter.com/MOVISSmeet). We will have a shuttle bus to take people to and from the airport; for details, please see the website.

**18 - 20 September 2018****Benelux Metabolomics Days and Kick-Off ELIXIR Metabolomics Community****Venue:**

Rotterdam, The Netherlands

Benelux Metabolomics Days

On September 19 and 20, 2018, NMC will organize for the first time the “Benelux” Metabolomics days in Rotterdam, The Netherlands. It is for the first time that researchers from Belgium, The Netherlands and Luxemburg meet, but of course this meeting will be very interesting and open to all other European researchers performing and applying metabolomics in their research. The entire meeting will be in English. It is our intention to organize annual Benelux meetings, in years that the global metabolomics conferences are not being held in Europe. Visit the conference website for more information and registration!

Kick-off ELIXIR Metabolomics Implementation Study

Recently funding for a European ELIXIR Metabolomics community was acquired, uniting researchers in the UK, France, Belgium, The Netherlands, Germany, Sweden, Spain, Greece, Italy, Switzerland, Estonia and the ELIXIR-hub. ELIXIR is a European research infrastructure, that brings together life science resources from across Europe, which include databases, software tools, training materials, cloud storage, and supercomputers. The goal of the ELIXIR Metabolomics community is to work with experimental scientists and developers to provide the resources, analysis tools, and infrastructure that will help metabolite identification. The community will also establish an infrastructure of services, standards, and datasets to help researchers discover, annotate, and analyse metabolomics data from around Europe. On September 18 (evening) and 19 (morning), the kick-off of this Implementation Study will take place, just prior to the Benelux Metabolomics days.

More information: <https://www.elixir-europe.org/communities/metabolomics>



19-21 Sept 2018

Introduction to Metabolomics for the Microbiologist

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences
University of Birmingham, Birmingham, UK

Limited bursaries are now available for PhD students funded by NERC, which make the registration for this course **FREE** to these students.

This three-day course will introduce the attendees in how untargeted metabolomics can be applied to study microbial systems in academic and industrial research. The course will provide an overview of the metabolomics pipeline from experimental design to sample preparation and data acquisition to data analysis/interpretation.

The course will be 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 and data analysis.

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

Level:

The course is aimed at individuals with minimal experience of applying metabolomics in their research and no or limited experience of using a liquid chromatography – mass spectrometer. The attendees will leave the course understanding and being able to apply the metabolomics pipeline in their research.

For more information and to register, please visit <https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/introduction-metabolomics-microbiologist.aspx>

Metabolomics Events



27-28 Sep 2018

Introduction to Metabolomics for the Environmental Scientist

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences, University of Birmingham, Birmingham, UK

Bursaries for NERC funded scientists: While this course is open to all researchers with an interest in the environmental sciences, it is a NERC-funded Advanced Training Short Course and hence priority will be given to NERC funded scientists; this includes NERC PhD students (highest priority), NERC PDRA's and Fellows (next highest priority) and principal and co-investigators who currently hold NERC funding.

This 2-day NERC-funded Advanced Training Short Course will provide environmental scientists with an overview of the metabolomics pipeline. The course is intended for environmental scientist with little or no previous experience of metabolomics and who are interested to discover how this relatively new and powerful approach could be integrated into their research. Experts working in the NERC Metabolomics facility-NBAF-Birmingham will teach the course.

Topics covered:

- Introduction to environmental metabolomics with case studies
Experimental design and quality control
- Sample collection and preparation
- Overview of analytical laboratory techniques
(mass spectrometry and NMR spectroscopy)
- Overview of data processing and statistics for metabolomics
- Introduction to metabolite identification

For further information and registration details, please visit <https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/introduction-metabolomics-environmental.aspx> or contact bmtc@contacts.bham.ac.uk

SardegnaRicerche **1-5 Oct 2018**

4th Metabolomics Sardinian Summer School: "Nutritional Metabolomics"

Venue:

Polaris Technology Park, Pula, Sardinia, Italy

Course Objectives and Targets

Participants will attend theoretical sessions with lectures by experts, and hands-on data analysis aimed to deepen the theoretical and practical knowledge for using the main tools available to better understand the role of nutrition in health and disease. The School is mainly targeted to researchers at an early stage in their career (but not only), from Biological Sciences, Health Sciences and other different background (including bioinformatics) who are interested in learning about both technical and bioinformatics tools to be applied on Nutritional Metabolomics

Participants will learn about:

- How to design a metabolomics experiment;
- How to measure nutritional and metabolism biomarkers;
- How to find correlations between dietary habits and health.

Main Topics

- NMR and MS in Foodomics and Nutrition
- Ion Mobility techniques in lipids analysis.
- Statistics, Data fusion and Data integration
- Metabolomics, Microbiome and Nutrition
- Metabolomics: beyond biomarkers and towards mechanisms
- New challenges in Human Nutrition
- Lipidomics in Nutrition

Daily lectures and hands-on sections, plus poster and oral presentations from participants

Applications

The course is funded by the Regional Sardinian government and registration will be free of charge for all attendees. Selection will be based on CV and a letter stating the motivations for attending the course and future research plans of candidates. A letter of reference from the current supervisor must also be attached to the application. Registration includes course material, lunches and coffee breaks (not accommodation expenses). For selected participants contribution or reimbursement will be considered.

Organizing Committee

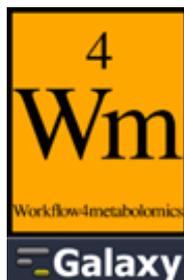
- Atzori Luigi, Università Cagliari, Cagliari, Italy (latzori@unica.it)
- Caboni PierLuigi, University of Cagliari, Italy (caboni@unica.it)
- Griffin Jules, University of Cambridge, Cambridge, UK (jlg40@cam.ac.uk)
- Pieroni Enrico, CRS4, Pula, Italy (ep@crs4.it)

Summer School Secretariat: nutrimet2018@gmail.com

For detailed information about the Summer School in Sardinia, visit:

[Nutritional Metabolomics School 2018](#)

Metabolomics Events



8-12 Oct 2018

Workflow4Experimenters 2018 Course:

Analyze your LCMS, GCMS and NMR data with Galaxy and the Workflow4Metabolomics online platform

Venue:

Paris, France

During this “Bring Your Own Data” one-week course at the center of Paris (France), you will use Galaxy and the Workflow4Metabolomics online platform (W4M) to analyze your own LC-MS, GC-MS, or NMR data set. Morning sessions will be dedicated to methodology and tools. Afternoon sessions will be devoted to tutoring on your data.

Invited speakers: Christoph Steinbeck (Friedrich Schiller University - Jena) and Julien Bocard (University of Geneva)

Organization: Infrastructures for bioinformatics (ELIXIR-FR, IFB) and metabolomics (MetaboHUB).

Registrations: <http://workflow4metabolomics.org>

Contact: contact@workflow4metabolomics.org



8 Oct - 2 Nov 2018

Metabolomics Data Processing and Data Analysis

Venue: Online

This online course will explore the tools and approaches that are used to process and analyse metabolomics data, we will investigate the challenges that are typically encountered in the analysis of metabolomics data and provide solutions to overcome these problems. The course will be delivered using a combination of short videos, articles, discussions, and online workshops with step-by-step instructions and test data sets. We will provide quizzes, polls and peer review exercises each week, so that you can review your learning throughout the course.

Course Syllabus:

- 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
- Processing of NMR data

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- Processing direct infusion mass spectrometry data
- Processing liquid chromatography-mass spectrometry data
- Reporting standards and data repositories
- Data analysis, detecting outliers and drift, and pre-treatment methods
- Univariate data analysis
- Multivariate data analysis (including unsupervised and supervised approaches)
- The importance of statistical validation of results
- Computational approaches for metabolite identification and translation of results into biological knowledge
- What are the future challenges for data processing and analysis in metabolomics

Level:

The course would be ideally suited to MSc/PhD students or scientists who are in the early stages of analysing metabolomics data. No previous knowledge of the data processing and statistical analysis approaches is assumed, but a basic understanding of the metabolome, and the analytical techniques applied in the metabolomics field would be beneficial. A pre-course recommended reading list will be provided.

For further information and to register, please visit <https://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/Metabolomics-Data-Processing-and-Data-Analysis.aspx>



22 Oct 2018

Introduction to Metabolomics for the Clinical Scientist

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences
University of Birmingham, Birmingham, UK

This 1-day course in partnership with the Phenome Centre Birmingham will provide clinicians with an overview of the metabolomics pipeline, highlighting the benefits of the technique to the medical field. The course will provide an:

- Introduction to experimental design and sample collection
- An overview of both the analytical and computational methods applied in the field
- Case studies and panel discussions with the experts

For further information and registrations details, please visit <http://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/introduction-metabolomics.aspx> or contact bmtc@contacts.bham.ac.uk

Metabolomics Events



19-21 Nov 2018

Metabolomics with the Q Exactive

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences
University of Birmingham, Birmingham, UK

This 3-day course will introduce you to using the Q Exactive mass spectrometer in your metabolomics investigations. The course is aimed at students and researchers with minimal previous experience of applying LC-MS in metabolomics. The course will be led by experts in the field and include lectures, laboratory sessions and computer workshops to provide:

- An introduction to metabolomics and using the Q Exactive mass spectrometer in your studies
- Polar and non-polar sample preparation for profiling and targeted studies
- Data acquisition for profiling and targeted studies
- Data processing and data analysis
- Introduction to metabolite identification

The course will finish with a question and answer session with a panel of experts.

For further information and registrations details, please visit <http://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/introduction-metabolomics.aspx> or contact bmtc@contacts.bham.ac.uk



22-23 Nov 2018

Metabolite identification with the Q Exactive and LTQ Orbitrap

Venue:

Birmingham Metabolomics Training Centre, School of Biosciences, University of Birmingham, Birmingham, UK

Limited bursaries are now available for PhD students funded by NERC, which make the registration for this course **FREE** to these students.

This 2-day course will provide a hands-on approach to teach the latest techniques and tools available to perform metabolite identification. We will apply these tools on the Q Exactive and LTQ Orbitrap mass spectrometry family. The course is targeted towards students and researchers who are actively applying metabolomics.

The course will be led by experts in the field and include significant hands-on experience using both the Q Exactive and LTQ Orbitrap instruments to perform:

- Data dependent acquisition
- Data independent acquisition
- MS/MS and MSⁿ data acquisition

The course will finish with a session on the tips and tricks from the experts and an opportunity to ask questions.

For further information and registration details, please visit <http://www.birmingham.ac.uk/facilities/metabolomics-training-centre/courses/metabolite-identification.aspx> or contact bmtc@contacts.bham.ac.uk

If you know of any metabolomics lectures, meetings, workshops, or training sessions that we should feature in future issues of this newsletter, please email Ian Forsythe (metabolomics.innovation@gmail.com).

Metabolomics Events



3-8 Feb 2019

Understanding Human Diseases Through Metabolomics: Interactions Among the Genome, Proteome, Gut Microbiome and Nutrition (Gordon Conference Series on Metabolomics and Human Health)

Venue:

Four Points Sheraton / Holiday Inn Express
1050 Schooner Drive
Ventura, CA, USA

Application Information

Applications for this meeting must be submitted by January 6, 2019. Please apply early, as some meetings become oversubscribed (full) before this deadline. If the meeting is oversubscribed, it will be stated here. Note: Applications for oversubscribed meetings will only be considered by the conference chair if more seats become available due to cancellations.

Conference Description

Metabolomics is the comprehensive study of the metabolome, the repertoire of biochemicals present in cells, tissues, and body fluids. The study of metabolism at the global or “-omics” level is a rapidly growing field that has the potential to have a profound impact upon medical practice. At the center of metabolomics, is the concept that a person’s metabolic state provides a close representation of that individual’s overall health status. This metabolic state reflects what has been encoded by the genome, and modified by diet, environmental factors, the gut microbiome among other influences. The metabolic profile provides a quantifiable readout of biochemical state from normal physiology to diverse pathophysiologies in a manner that is often not obvious from gene expression analyses. In this Gordon Conference series, we highlight state of the art metabolomics technologies and their applications to the study of human health and disease.

We will cover most recent developments in the field covering applications of metabolomics for deeper understanding of disease mechanisms, disease heterogeneity and disease progression; variation in treatment outcomes and enablement of precision medicine approaches; connections between metabolome, proteome and genome and atlases being created; effects of exposome, diet and gut microbiome on human metabolome and health. We will highlight large consortia initiatives which enable epidemiology and clinical studies, functional genomics, nutrigenomics, pharmaceutical applications including toxicology studies, systems pharmacology, environmental exposures effects on health (exposome) and beyond. We invite established as well as early career members to attend this meeting from academia industry and regulatory agencies.

For further information, please visit:

<https://www.grc.org/metabolomics-and-human-health-conference/2019/>

Metabolomics Jobs & Collaborations

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

Jobs Offered

Job Title	Employer	Location	Posted	Closes	Source
Postdoctoral Researcher in High-Throughput Metabolomics	Karolinska Institute International Open Laboratory	Maebashi, Japan	18-May-18	31-Jul-18	Metabolomics Society Jobs
Various Positions			18-Jun-18		Metabolomics Society Jobs
Postdoctoral Researcher Position	UCSF	San Francisco, USA	01-Mar-18	Until filled	Metabolomics Society Jobs
Senior Scientific Officer (Lipidomics/ Metabolomics)	Nanyang Technological University	Singapore	12-Feb-18	Until filled	Metabolomics Society Jobs
Postdoc Position in Cheminformatics and Computational Metabolomics	Friedrich-Schiller-University	Jena, Germany	09-Feb-18		Friedrich-Schiller-University
Tenure Track Faculty Position in Food and Nutritional Metabolomics	The Ohio State University	Columbus, USA	02-Feb-18	02-Aug-18	Metabolomics Society Jobs
Ph.D. Position on Mass Spectrometry-Based Analysis of Metabolites	University of Basel	Basel, Switzerland	31-Jan-18	Until filled	Metabolomics Society Jobs
Various Positions			04-Jul-18		Metabolomics Association of North America
Postdoctoral Fellow in Metabolomics and Exposomics	Icahn School of Medicine at Mount Sinai	New York, USA	26-Jan-18	Until filled	Metabolomics Society Jobs
Senior Research Assistant in Metabolomics	Icahn School of Medicine at Mount Sinai	New York, USA	24-Jan-18	Until filled	Metabolomics Society 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). Upon review, a limited number of job submissions will be selected for publication in the Jobs Wanted section.

- *There are currently no listings*
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