

We are pleased to announce the first International Scientific Symposium on Metabolomics at the Technische Universität München in Germany

## HelmholtzZentrum münchen

German Research Center for Environmental Health

The Munich FUNCTIONAL METABOLOMICS Initiative

March 10–12, 2010

# Metabolomics

## The Impact of Metabolomics on the Life Sciences & More

Welcome to the  
**1st International Metabolomics Symposium in Germany**

**METABOLOMICS & MORE – THE IMPACT OF METABOLOMICS ON THE LIFE SCIENCES**  
**MARCH 10–12, 2010,**  
**FREISING-WEIHENSTEPHAN, GERMANY**

The MUNICH FUNCTIONAL METABOLOMICS INITIATIVE, represented by the Z I E L Research Center for Nutrition and Food Sciences of the Technische Universität München (TUM) as well as the Helmholtz-Center Munich, is pleased to announce the international symposium Metabolomics & More – the Impact of Metabolomics on the Life Sciences to be held from March 10–12, 2010, on the TUM-campus in Freising-Weihenstephan, Germany.

The conference will focus on new analytic methods, late-breaking discoveries, as well as challenges and pitfalls in metabolomics studies. Leading scientists will discuss the

value of metabolomics in basic science applications, in diagnostics, and in nutrition and food research.

This 2½ day conference is an excellent opportunity for you to meet with metabolomics experts from all over the world, share their views on break-through technologies, challenges, and pitfalls, and create an opportunity for networking, collaboration, sharing technical information, and building trustful relationships across borders and nationalities. We extend a warm welcome to all our colleagues in academia and industry who share our interest in metabolomics in all life science disciplines.

We are looking forward to meeting you in Freising-Weihenstephan in March 2010 at what promises to be a most stimulating and enjoyable event!

The Organization Team



### The Organization Team

- Prof. Dr. Hannelore Daniel, Chair of Molecular Nutrition, TU München
- Prof. Dr. Thomas Hofmann, Chair of Food Chemistry and Molecular Sensory Science, TU München
- Dr. Philippe Schmitt-Kopplin, Institute of Ecological Chemistry, German Research Center for Environmental Health (Helmholtz Zentrum München)
- Prof. Dr. Karsten Suhre, Professor for Bioinformatics (LMU), Institute of Bioinformatics and Systems Biology, German Research Center for Environmental Health (Helmholtz Zentrum München)

### About the Munich Functional Metabolomics Initiative

The Munich FUNCTIONAL METABOLOMICS Initiative is represented by a consortium of scientists from academia and industry. They are dedicated to promoting metabolomics research at all levels of complexity. The group unifies experts from analytics, structural biology, biochemistry, food chemistry,

human nutrition and eco-toxicology who study metabolites for the sake of understanding their structure, their concentrations, their interdependence and their dynamics in biological systems.

### About Z I E L Research Center for Nutrition and Food Sciences

The Research Center for Nutrition and Food Sciences is a central institution at the Technische Universität München (TUM). It operates under the auspices of the University Management of TUM and is headed by a team of three academic directors. Z I E L is organised in seven research units comprising Biochemistry, Nutritional Medicine, Biofunctionality, Microbiology, Physiology, Technology and Bioanalytics.

### About Helmholtz Zentrum München

The Helmholtz Zentrum München is the German Research Center for Environmental Health. It investigates chronic diseases which develop from the interaction of environmental factors and individual genetic disposition.

### Conference Registration Fees

The registration fee includes the admission charge to the scientific sessions, as well as coffee breaks and light lunch, conference materials including the programme and the book of abstracts. The Reception dinner (March 10) and the Bavarian evening (March 11) will be sponsored and are free of charge for all guests. Please register on our website: [www.metabolomics-and-more.de](http://www.metabolomics-and-more.de)

Payment	until December 31, 2009	from January 1, 2010
Non Student	290 Euro	390 Euro
Student	150 Euro	190 Euro

### Location

The TUM campus Freising-Weihenstephan is close to Munich airport and is about 30 km in the north of the city center of Munich, where you'll find a harmonious blend of culture, cuisine, arts, and architecture along with excellent shopping opportunities.

### Commercial Exhibition

Companies providing instruments and research reagents for analysis as well as food, biotech or pharma companies interested in the field of metabolomics are invited to present their current portfolio. Educational symposia on new developments or products are possible.

### Call for Abstracts and Posters

The Programme Committee wishes to request contributions to the Scientific Symposium "Metabolomics & More". You are invited to submit an abstract for the poster sessions. All abstracts for posters must be prepared in English and submitted online at [www.metabolomics-and-more.de](http://www.metabolomics-and-more.de) not later than January 31, 2010.

### Hotel Reservation

A number of hotel rooms have been blocked for the conference participants. Please log on to our website: [www.metabolomics-and-more.de](http://www.metabolomics-and-more.de)

### Sponsored by

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### Wednesday, March 10

from 13:00 Registration  
15:00 - 15:10 Welcome and Introduction (Organizers)

#### Session 1 Analytics for and in Metabolomics

15:10 - 15:50 **NMR based Screening Approaches in Biofluids**  
*Dr. Hartmut Schäfer*, Bruker BioSpin GmbH, Germany

15:50 - 16:30 **Targeted Metabolomics for Biomarker Discovery in Clinical Diagnostics**  
*Dr. Klaus Weinberger*, Biocrates Life Sciences AG, Austria

16:30 - 17:10 **Targeted and Untargeted Metabolomics and Lipidomics: Tools and Applications**  
*Prof. Dr. Lothar Willmitzer*, Max Planck Institute of Molecular Plant Physiology, Germany

17:10 - 17:30 Coffee Break

#### Evening Session

17:30 - 18:10 **Plenary Lecture: Metabolomics – Bringing Solutions to the Challenges of Health and Agricultural Sustainability**  
Prof. Bruce German, UC-Davis, USA

18:10 - 18:50 **Plenary Lecture: 2nd Generation Metabolomics – Progressing from Metabolome Analyses to Proof of Clinical, Nutritional and Toxicological Utility**  
Dr. Arno Krotzky, metanomics GmbH, Berlin, Germany

18:50 - 19:10 Welcome Address Organizers and Prof. Dr. Horst Domdey, Bio-M

19:10 - 19:40 Welcome Address President TUM: Prof. Dr. Dr. h.c. mult. W. A. Herrmann

19:40 - 20:10 Welcome Address President & CEO Helmholtz Zentrum München: Prof. Dr. Günther Wess

from 20:10 Welcome Mixer and Running Dinner at Z I E L

### Thursday, March 11

from 08:30 Registration

#### Session 1 Analytics for and in Metabolomics continued

09:00 - 09:40 **Lipidomics – Novel Tools and Applications**  
*Prof. Dr. Markus Wenk*, National University of Singapore

09:40 - 10:20 **Measuring the Blood Metabolome by Ion Mobility Mass Spectrometry**  
*Prof. Dr. Herbert H. Hill*, Washington State University, USA

10:20 - 11:00 **Mass Spectrometry-Based Therapeutic Metabolomics from Biofluids and Tissues**  
*Prof. Gary Siuzdak*, Scripps Center for Mass Spectrometry, USA

11:00 - 11:30 Coffee Break

#### Session 2 OMICS & Genotype/Systems Biology/Natural Variation

11:30 - 12:10 **mQTL – The Missing Link between Metabolome-Wide Association Studies and Systems Biology**  
*Dr. Marc-Emmanuel Dumas*, Imperial College London, UK

12:10 - 12:50 **Individual Human Phenotypes in Metabolomics Research**  
*Prof. Dr. Claudio Luchinat*, University of Florence, Italy

12:50 - 14:00 Lunch and Posters

#### Session 2a OMICS and Genotype continued

14:00 - 14:40 **High throughput Intracellular Metabolomics and what Concentration Data tell us**  
*Prof. Dr. Uwe Sauer*, Institute of Molecular Systems Biology, Zurich, Switzerland

14:40 - 15:20 **Genetics meets Metabolomics: New Insights on Genetically Determined Metabotypes**  
*Prof. Dr. Karsten Suhre*, Institute of Bioinformatics and Systems Biology, Helmholtz Zentrum München, Germany

15:20 - 16:00 **Metadata Integration using Quantitative Metabolomics and Proteomics in Genome Annotation and Systems Biology**  
*Prof. Dr. Wolfram Weckwerth*, Department for Molecular Systems Biology, University of Vienna, Austria

16:00 - 17:00 Coffee and Posters

#### Session 4 Metabolomics in Nutrition & Food

17:00 - 17:40 **The Role of Metabolite Profiling in Nutritional Research**  
*Prof. Dr. Elaine Holmes*, Imperial College London, UK

17:40 - 18:20 **Deciphering Nutrition and Lifestyle Interactions with Metabolomics**  
*Dr. Laurent Fay*, Nestlé Research Center, Switzerland



#### Session 3 Data Analysis/Databases

##### Learning to Survive in the Data Jungle

*Dr. Fritz Huber*, LipoFIT Analytic GmbH, Regensburg, Germany

##### Metabolite Identification and Quantification: New Approaches to an Old Problem

*Dr. David Wishart*, Department of Computing Science and Biological Sciences, Edmonton, Alberta, Canada

##### Towards a Standardized Metabolomics Repository

*Dr. Oliver Fiehn*, UC-Davis Genome Center, California, USA

#### Evening Programme

19:00 - 23:00 Bavarian Evening

### Friday, March 12

#### Session 4a Metabolomics in Nutrition & Food continued

09:00 - 09:40 **The Elephant in the Room: Applications of Metabolomics to assess Dietary Intake**  
*Prof. Dr. John Mathers*, Human Nutrition Research Centre, University of Newcastle, UK

09:40 - 10:20 **Towards a Research Roadmap for Nutritional Metabolomics**  
*Prof. Dr. Mike Gibney*, University College Dublin, Ireland

10:20 - 10:50 Coffee Break

#### Session 6 Metabolomics & Disease

10:50 - 11:30 **Changes of Metabolite Levels due to Oncogenes and Inhibitors**  
*Prof. Dr. Gerhard Wagner*, Harvard Medical School, USA

11:30 - 12:10 **Defining the Role of the PPARs in Diabetes, Obesity and Cancer by Metabolomics of Systemic Metabolism**  
*Dr. Julian Griffin*, University of Cambridge, UK

12:10 - 12:50 **Genetic and Environmental Determinants of Lipidomic Abnormalities in Vascular and Metabolic Diseases**  
*Prof. Dr. Gerd Schmitz*, Universität Regensburg, Germany

12:50 - 14:00 Lunch and Posters

#### Session 8 Metabolomics & Biomarkers

14:00 - 14:40 **MuFuMet presents HuMet**  
*Prof. Dr. Hannelore Daniel*, Z I E L, TU München, Germany

14:40 - 15:20 **The Use of Biochemical Profiling for Biomarker Discovery**  
*John Ryals, Ph.D.*, CEO, Metabolon, Inc., USA

15:20 - 16:30 Coffee and Posters

#### Session 10 Metabolomics goes Dynamic

16:30 - 17:10 **Isotopologue Profiling of Metabolic Crosstalk**  
*PD Dr. Wolfgang Eisenreich*, Department of Biochemistry, TU München, Germany

17:10 - 17:50 **Metabolic Dysregulation Discerned by Stable Isotope Resolved Metabolomics (SIRM)**  
*Dr. Teresa Fan*, Department of Chemistry, University of Louisville, USA

17:50 - 18:00 Closing Session

#### Session 5 European Initiatives

##### France – Metabolomics & Fluxomics Centre

*Prof. Jean-Charles Portais*, Ingénierie des Systèmes Biologiques et des Procédés, Toulouse, France

##### Netherlands Metabolomics Centre – a new European Research Initiative

*Prof. Dr. Thomas Hankemeier*, Netherlands Metabolomics Centre & Leiden University, The Netherlands

#### Session 7 Short Oral Presentations

N.N. (Short Oral Presentation)

N.N. (Short Oral Presentation)

N.N. (Short Oral Presentation)

#### Session 9 News Corner

**Metabolomic Analysis with LECO TOF Systems – New Statistical Features**  
*Christian Zühlke*, Leco Instrumente GmbH, Germany

**Orbitrap Mass Spectrometry Technology Applied to Metabolomics**  
*Martin Hornshaw, PhD*, Thermo Fisher Scientific, UK

**NMR- and integrated Tools for Food Quality Control and Research**  
*Dr. Manfred Spraul*, Bruker BioSpin GmbH, Germany  
Vendor Presentation



## General Information

**Conference Date:** March 10-12, 2010

#### Organizers

- The Munich Functional Metabolomics Initiative
- Z I E L Research Center for Nutrition and Food Sciences, Freising-Weihenstephan, Germany
- Helmholtz Zentrum München, German Research Center for Environmental Health

#### Location

Technische Universität München, Campus Freising Weihenstephan, Germany (close to Munich airport)

**Please contact us and visit our official homepage**

[www.metabolomics-and-more.de](http://www.metabolomics-and-more.de)

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