

Hands-on training course in metabolomics

Organised by Leiden University, TNO Quality of Life and the University College Dublin.

Introduction

Background

This Hands-on training course in metabolomics is directed towards researchers with some experience in metabolomics. The course will be a combination of lectures and practical sessions focusing on LC-MS data acquisition, data extraction and statistical analysis of large datasets. At the end of the course participants should be familiar with sample preparation, LC-MS data acquisition, LC-MS data interpretation, statistical analysis of metabolomics data sets and challenges associated with all of the above.

Target group

In view of the limited number of participants, PhD students and postdocs applying will be selected. Each participant should therefore indicate in 300-350 words the background of her/his project and why he/she will benefit from attending this course. Experience in metabolomics is essential.

Course contents

Course design

The course is a 3 1/2 days hands-on course with a maximum of 25 participants. The course will start on Monday afternoon with a plenary session with pronounced speakers from academia and industry on current applications of metabolomics. In the Tuesday-Thursday mornings, lectures on practical aspects of analytics, statistics and biological interpretation will be given and in the afternoon sessions with practical work in LC-MS and statistics are scheduled. Participants will be divided into 2-3 subgroups and create their own data during the course but datasets of the same structure will also be available

Programme topics

- **Topics of plenary lectures:**
 - Metabotyping and Nutrismetabolomics: Non-invasive approaches to predict individual human health trajectories (Sunil Kochhar, Nestle)
 - Metabolomics and gut health (John van Duyvenhoven, Unilever)
 - Ian Graham, Plant metabolomics (CNAP, University of York, UK), to be confirmed
 - The future of metabolomics (Jan van der Greef, Leiden University), to be confirmed
- **Topics of practical lectures:**
 - Sample handling
 - Best practices in analytical design
 - NMR
 - GC-MS
 - LC-MS
 - Data processing/data extraction
 - Data fusion
 - Overview statistical methods
 - Available software packages

- Databases for identification
- Bioinformatics
- Biological interpretation
- **Topics covered by the hands-on sessions**
 - Sample preparation
 - Influence of anti-coagulants on the results
 - QC strategy
 - Analysis by LC-MS: lipid analysis and polar compound analysis
 - Analysis in nominal/accurate mass mode
 - UPLC vs conventional HPLC
 - Targeted data processing
 - Peak picking
 - Data alignment
 - Scaling and influence on results
 - Supervised vs unsupervised statistical analysis
 - Model validation
 - Combination of the statistical results with analytical performance
 - Biological interpretation

Organisation

Course coordinators

- Rob Vreeken, Leiden University, Netherlands Metabolomics Centre, The Netherlands
- Ivana Bobeldijk, TNO Quality of Life, The Netherlands
- Lorraine Brennan, University College Dublin (UCD), Ireland
- Anne Nugent, University College Dublin UCD, Ireland

Lecturers/trainers

- Sunil Kochhar, Nestle, Switzerland
- John van Duynhoven, Unilever, The Netherlands
- Jan van der Greef, Leiden University, The Netherlands
- Age Smilde, University of Amsterdam, The Netherlands
- Rob Vreeken, Leiden University, Netherlands Metabolomics Centre, The Netherlands
- Theo Reimers, Leiden University, Netherlands Metabolomics Centre, The Netherlands
- Doris Jacobs, Unilever, The Netherlands
- Ivana Bobeldijk, TNO, Quality of Life, The Netherlands
- Lorraine Brennan, UCD, Ireland

General information

Date & duration

The course will be held from 24 - 27 November 2008 (3 1/2 days).

Language

The course will be conducted in English.

Location & accommodation

Lectures will be given at the facilities of the Netherlands Metabolomics Centre at the University of Leiden, 7th floor Gorlaeus Laboratories, Einsteinweg 55, Leiden, the Netherlands

LACDR/Gorlaeus Laboratories

Leiden University
Einsteinweg 55
NL-2333 CC Leiden
The Netherlands

A number of hotel rooms have been blocked for course participants close to the course location, but only until October 6th 2008. Accommodation costs are € 95 (single room) per night incl. breakfast, excl Tax.

Holiday Inn Leiden
Haagse Schouwweg 10
2332 KG Leiden
fax +31 71 53 55 553/ telephone +31 71 5355 300
e-mail hotel@holiday-inn-leiden.com

Participants have to book their own hotel room by filling in the [reservation form](#) and emailing it directly to the hotel.

Contact information

More information about the course contents can be obtained from:
Dr. Rob Vreeken

+31 715274225
E-mail: r.vreeken@lacdr.leidenuniv.nl

For organisational matters please contact:
Mrs. Loes Beijersbergen
+31 7105274220
e-mail: beijs_l@lacdr.leidenuniv.nl

Registration & course fee

The course fee is € 800 for NuGO, NMC and Lippene members and includes coffee/tea during the breaks, lunches, course material and two course dinners.

For industrial participants, the course fee is €1300.

The EC-funded Network of Excellence NuGO makes 10 grants available for NuGO affiliated scientists, these grants cover course fee and accommodation for 4 nights (application for such a grant can be done in the normal way via www.nugo.org)

The EC-funded Integrated project LIPGENE makes available 10 grants. (application for such a grant can be done by contacting lipgene@ucd.ie).

Please register by completing the on-line **registration form and** by sending your application abstract (300-350 words) to beijs_l@lacdr.leidenuniv.nl before **September 15th 2008**. If the number of applicants exceeds the maximum of 25, selection will be necessary. You will be notified on acceptance **after September 30th 2008 by email**. Instructions for payment, a letter of acceptance and further course details will be sent to you by e-mail.

Cancellation may be made free of charge until **October 15th 2008**. After this date the charge will be 25% of the fee paid or due until **October 31st 2008**. Substitutions may be made at any time until the start of the course provided the person can demonstrate a background in metabolomics.