26. June 2023 – 30. June 2023

Introduction to Nutritional Metabolomics

Venue
Department of Nutrition Exercise and Sports, University of Copenhagen, Denmark

Overview
The course will provide a general overview of LC-MS based untargeted metabolomics from study design to results and will be exemplified with its specific application in nutrition. It will be delivered using a mixture of lectures, hands-on data preparation and analysis, computer-based practical sessions, and discussions. Visits to wet labs and instructions on human sample preparation procedures is included but there is no practical lab work.

The students will go through common steps in a typical metabolomics study using a real-life case. This case study includes plasma (or urine) samples from a nutritional intervention. The sample preparation and analysis on UPLC-QTOF has been conducted and the students will further process and analyze the acquired data with various freeware tools (e.g. R, XCMS, MZmine etc). They will finally work on identification of relevant metabolites using manual analysis assisted by several web-based databases and structure elucidation tools. The course will conclude by presentations of reports generated by the students based on the case study.

The students should expect a fairly technical course with a strong focus on the hands-on data analysis abilities and data interpretation skills. Programming skills are not a prerequisite for entering the course and students are guided through the exercises. However, for students that are not familiar with R we expect them to explore the self-study curriculum based on short videos and texts that cover essential programming concepts.

The project work has a high workload and hence evening work can be expected during the course week.

Fee
There is no fee for the PhD students under the Open Market in Denmark. Other participants are to pay a course fee of 700 EUR. The fee must be paid no later than the 9th of June 2023. Each student must pay and arrange their own travel and accommodation in Copenhagen during the course.

Course link
https://phdcourses.ku.dk/DetailKursus.aspx?id=110456&sitepath=NAT