UNIVERSITY OF BIRMINGHAM | BIRMINGHAM METABOLOMICS TRAINING CENTRE

Certificate of Achievement

Elena Panzeri

has completed the course:

Metabolomics Data Processing and Data Analysis

Birmingham Metabolomics Training Centre
University of Birmingham

This online course explored the tools and approaches that are used to process and analyse metabolomics data, investigated the challenges that are typically encountered in the analysis of metabolomics data and provided solutions to overcome these problems.

Professor Warwick Dunn
Professor of Analytical and Clinical Metabolomics
Director of Mass Spectrometry, Phenome Centre Birmingham and
Director of the Birmingham Metabolomics Training Centre
School of Biosciences, University of Birmingham

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Name: Elena Panzeri

Course Title: Metabolomics Data Processing and Data Analysis

Study Requirement: 4 hours per week, across 4 weeks

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
- Processing Direct Infusion Mass Spectrometry data
- Processing liquid chromatography-mass spectrometry data
- Reporting standards and data repositories
- Data analysis, detecting outliers and drift, pre-treatment methods
- Data analysis, univariate and multivariate approaches, unsupervised and supervised methods
- Computational approaches for metabolite identification and translation of results into biological knowledge
- What are the future challenges for data processing and analysis in metabolomics.

Learning Objectives

- To demonstrate an understanding of the theoretical approaches applied to process NMR, DIMS and LC-MS data.
- To apply data processing workflows to process both DIMS and LC-MS data
- To develop a knowledge of the data standards and data repositories within the metabolomics field
- To apply and evaluate the statistical analysis methods that are commonly applied in the metabolomics field to identify and interpret metabolic differences.
- To learn about the experimental and computational approaches used to identify metabolites