

NERC Biomolecular Analysis Facility

NBAF-Birmingham – Metabolomics Node

1st Metabolomics Masterclass Training

Monday 28th March 2011

12.30 pm – 12.45 pm	Welcome attendees at Reception (School of Biosciences)
12.45 pm – 1.00 pm	Welcome and Course Overview, Prof. Mark Viant (MV) (Lecture Room SG18)
1.00 pm – 2.00 pm	Introductory lecture on Environmental Metabolomics, Dr. Jake Bundy, Imperial College London (Lecture Room SG18)
2.00 pm – 2.20 pm	Coffee Break
2.20 pm -3.20 pm	Lectures on Experimental Design (MV), Sample Preparation (Dr Ulf Sommer, US), and (3) Safety Training (Dr Jon Byrne, JB) (all Lecture Room SG18)
3.20 pm -5.30 pm	Laboratory Session – Demonstration of extraction of metabolites from tissue samples (US & JB, 4 th Floor laboratory).

Monday Evening: Get-together meal 6 pm onwards

Tuesday 29th March 2011

9.00 am - 12.00 pm	Laboratory Session – hands-on metabolite extraction of samples by participants (US & JB, 4 th Floor Lab).
12.00 pm - 1.00 pm	Lunch

1.00 pm – 2.30 pm	Lectures on analytical tools used for metabolomics – mass spectrometry (MS) and NMR spectroscopy, with a 10-min break. (MV, US & JB, Lecture room SG18)
2.30 pm – 2.50 pm	Coffee Break
2.50 pm - 5.30 pm	Demonstration of MS and NMR analyses (US & JB)

Participants split into two groups of 6, walking first to the respective MS or NMR facilities, and swapping half way through the afternoon. Both groups will be shown the respective sample setup, data acquisition and initial data processing (where appropriate).

Tuesday overnight:

NMR: Samples will be analysed automatically.

MS: SIM-stitching processing started.

Wednesday 30th March 2011

9.00 am – 10.30 am	Lectures on spectral/signal processing in NMR and MS (JB & US) and on statistics (MV), with a 10-min break.
10.30 am – 10.50 am	Coffee Break
10.50 am - 1.00 am	Hands-on processing of datasets and multivariate analysis (PCA) of spectra collected the previous day at MS and NMR facilities (JB & US, NBAF-B Facility room 418, room 409).
1.00 pm – 2.00 pm	Lunch
2.00 pm - 3.00 pm	Debrief (MV); Q&A (all; Lecture Room 808)

(Lunch, dinner and coffee will not be provided)