NERC-MDIBL Environmental Genomics and Metabolomics

4-10 March 2018

Nicholson Building, University of Birmingham, UK

Course Programme*

*Please note this is a provisional course programme and the times of some events may change

Date	Time	Event		
Sunday March 4	4.00-5.00	**Registration** (Biosciences Building, Undercroft)		
	5.00-6.00	**Plenary lecture** (Lecture Theatre NG08, Biosciences Building) **Professor Susan Celniker** (Lawrence Berkley National Laboratory)		
	6.00-7.00	**Welcome reception** (Undercroft, Bioscience Building)		
Monday March 5	8.30-9.00	**Registration** (The Nicolson Building)		
	Combined Track (Nettlefold Room)			
	9.00-9.45	**Lecture**: Introduction to Environmental Genomics, Professor John Colbourne		
	9.45-10.30	**Lecture**: Introduction to Environmental Metabolomics, Professor Mark Viant		
	10.30-10.45	**Coffee Break**		
	10.45-11.45	**Lecture**: The challenges of working with big data and performing multi-omics studies, Professor Ben Brown		
	11.45-12.00	Attendees logon to wireless network and computer server		
	12.00-13.00	**Lunch**		
	13.00-13.45	**Ice-breaker session,** Cate Winder		
	Genomics Track (Nettlefold Room)		**Metabolomics Track** (Guest Room)	
	13.45-14.00	**Introduction to genomics track:** Joe Shaw & John Colbourne	13.45-14.00	**Introduction to metabolomics track:** Cate Winder
	14.00-15.00	**Workshop Presentation**: Library construction methods and QC, Steve Kissane	14.00-15.00	**Workshop Presentation**: Experimental design in environmental metabolomics, Rick Dunn
	15.00-15.55	**Workshop Presentation**: Introduction to automation systems, Steve Kissane	15.00-15.50	**Workshop Presentation**: Quality assurance and quality control, Rick Dunn
	15.55-16.05	**Coffee Break**	15.50-16.00	**Coffee Break**
	16.05-17.00	**Workshop Presentation**: Introduction to the sequence data workflow, Jana Asselman	16.00-17.00	**Workshop Presentation**: Sample preparation in metabolomics, Cate Winder
	18.00-19.00	**Evening Lecture** (Lecture Theatre NG08, Biosciences Building) **Professor Daniel Jacobson** (Oak Ridge National Laboratory)		
Tuesday March 6	**Genomics Track** (Nettlefold Room)		**Metabolomics Track** (Guest Room)	
	9.00-10.00	**Bioinformatics Training**: Introduction to R, Vignesh Dhandapani	9.00-10.00	**Workshop Presentation**: Analytical technologies – mass spectrometry, Rick Dunn
	10.00-10.45	**Bioinformatics Training**: Visualising of sequence data for quality, Craig Jackson	10.00-11.00	**Workshop Presentation**: Analytical technologies – NMR, Mark Viant
	10.45-11.00	**Coffee break**	11.00-11.15	**Coffee Break**

	11.00-12.00	**Bioinformatics Training**: Visualising of sequence data for quality Craig Jackson	11.15-12.00	**Interactive session:** Sample preparation and analytical technologies, Cate Winder
	12.00-13.00	**Lunch**		
	Genomics Track (Nettlefold Room)		**Metabolomics Track** (401A, Biosciences building)	
	13.00-14.15	**Workshop presentation**: Review of the sequencing technology, it's strengths and weaknesses, **Professor Peter Kille** (University of Cardiff)	13.00-14.00	**Guest Presentation: TBC, Dr** Scott Haywood
	14.15-16.00	**Bioinformatics Training**: Visualizing complex data, Daniel Jacobson	14.00-16.00	**Group activity:** Experimental design, Cate Winder
	16.00-16.15	**Coffee Break**	16.00-16.15	**Coffee Break**
	16.05-17.00	**Bioinformatics Training**: Navigating the command line and more advanced R, Vignesh Dhandapani	16.15-17.00	**Group presentations:** Experimental design, Cate Winder
	18.00-19.00	**Evening Lecture** (Lecture Theatre NG08, Biosciences Building) **Professor Laurent Keller** (University of Lausanne)		
Wednesday March 7	**Genomics Track** (Nettlefold Room)		**Metabolomics Track** (Guest Room)	
	9.00-10.45	**Bioinformatics Training:** Data analysis using R (Part 1), Craig Jackson, with Jana Asselman	9.00-10.30	**Workshop Presentation**: Data processing, Ralf Weber
	10.45-11.00	**Coffee Break**	10.30-10.45	**Coffee Break**
	11.00-12.00	**Bioinformatics Training:** Data analysis using R (Part 2), Craig Jackson, with Jana Asselman	10.45-12.00	**Workshop Presentation**: Introduction to analysing metabolomics data, Jasper Engel
	12.00-13.00	**Lunch**		
	13.00-14.30	**Workshop presentation:** Computational tools to study genetic diversity in natural populations, Benjamin Peter	13.00-13.45	**Workshop Presentation**: Data analysis I, Introduction to data analysis, Jasper Engel
	14.30-15.30	**Bioinformatics Training**: Data analysis using R (Part 3), Craig Jackson, with Jana Asselman	13.45-14.45	**Computer Workshop**: Hands-on data analysis, Jasper Engel
			14.45-15.30	**Workshop Presentation**: Data analysis II, Jasper Engel
	15.30-17.00	**Tour**: Genomics and Metabolomics Facilities	15.30-17.00	**Tour**: Genomics and Metabolomics Facilities
	18.00-19.00	**Evening Lecture** (Lecture Theatre NG08, Biosciences Building) **Dr George Loizou** (Head of Computational Toxicology, Health and Safety Laboratory)		
Thursday March 8		**Genomics Track** (Nettlefold Room)	**Metabolomics Track** (Guest Room)	
	9.00-10.45	**Bioinformatics Training**: Gene set enrichment, Jana Asselman with Albert Zhou	9.00-9.30	**Workshop Presentation**: Data analysis III
			9.30-12.00	**Computer Workshop**: Hands-on data analysis, Jasper Engel
	10.45-11.00	**Coffee Break**		
	11.00-12.00	**Bioinformatics Training**: Pathways analysis, Jana Asselman with Albert Zhou	11.00-12.00	**Computer Workshop**: Hands-on data analysis, Jasper Engel
	12.00-13.00	**Lunch**		
	13.00-15.25	**Bioinformatics Training**: Exploring genome sequence variation, Benjamin Peter	13.00-14.00	**Guest Presentation**: Copepods and climate change, Dr Dan Mayor
			14.00-14.40	**Workshop Presentation**: Metabolite identification and databases, Ralf Weber
	15.25-15.35	**Coffee Break**	14.40-15.05	**Workshop Presentation**: Metabolomics standards initiative,

				reporting your results and using MetaboLights, Ralf Weber
	15.35-17.00	**Synthesis session**: "Why not use ____ as my model species?" John Colbourne	15.05-15.15	**Coffee Break**
			15.15-16.30	**Computer Workshop**: Hands-on metabolite identification, Ralf Weber
	17.30-18.30	**Special Double Bill Evening Lecture** (Lecture Theatre NG08, Biosciences Building) **Dr Adam Biales** (United States Environmental Protection Agency & **Dr Jean-Lou Dorne** (European Food Safety Authority) – Omics to Transform Environmental and Health Protection		
	18.30-19.30	**Pizza and Networking**		
Friday March 9	**Combined Track** (Nicholson Building, Nettlefold Room)			
	9.00-12.00	**Synthesis session**: Designing multi-omics studies, lead by Ben Brown, Albert Zhou & John Colbourne, (Jasper Engel and Cate Winder assisting metabolomics track)		
	12.00-13.00	**Lunch**		
	13.00-14.00	**Synthesis session**: How do I obtain grant funding for my project? Ipshita Ghose & Sohini Chakrabortee		
	14.00-14.30	**Question and answer session,** Course Trainers & Guest Faculty		
	14.30-15.00	**Closing ceremony**		
	15.00-16.00	**Optional bioinformatics help session**		