

NERC-MDIBL Environmental Genomics and Metabolomics

5-10 March 2017

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
Monday March 5	4.00-5.00	Registration (Biosciences Building, Undercroft)
	5.00-6.00	Plenary lecture (Lecture Theatre NG08, Biosciences Building) Professor Chris Jiggins (Cambridge University) – Genomics of adaptation and speciation in tropical <i>Heliconius</i> butterflies
	6.00-7.00	Welcome reception (Undercroft, Bioscience Building)
Tuesday March 6	8.30-9.00	Registration (The Nicholson 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 (University of Birmingham & Lawrence Berkeley National Laboratory)
	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 & Nadine Taylor
	<div> <div>Genomics Track (Nettlefold Room)</div> <div>13.45-14.00</div> <div>Introduction to genomics track: Joe Shaw & John Colbourne</div> <div>14.00-15.00</div> <div>Workshop Presentation: Library construction methods and QC, Steve Kissane</div> <div>15.00-15.55</div> <div>Workshop Presentation: Introduction to automation systems, Steve Kissane & Zach Smith</div> <div>15.55-16.05</div> <div>Coffee Break</div> <div>16.05-17.00</div> <div>Workshop Presentation: Introduction to the sequence data workflow, Jana Asselman</div> <div>19.00-20.00</div> <div>Evening Lecture (Lecture Theatre NG08, Biosciences Building) Dr Andrew Whitehead (University of California, Davis) – Using evolution and genomics to discover fit genetic variants that contribute to pollutant tolerance</div> </div>	
	<div> <div>Metabolomics Track (Guest Room)</div> <div>13.45-14.00</div> <div>Introduction to metabolomics track: Ulf Sommer & Cate Winder</div> <div>14.00-15.00</div> <div>Workshop Presentation: Experimental design in environmental metabolomics, Ulf Sommer.</div> <div>15.00-15.50</div> <div>Workshop Presentation: Quality assurance and quality control, Rick Dunn</div> <div>15.50-16.00</div> <div>Coffee Break</div> <div>16.00-17.00</div> <div>Workshop Presentation: Sample preparation in metabolomics, Ulf Sommer.</div> </div>	
Wednesday March 7	<div> <div>Genomics Track (Nettlefold Room)</div> <div>9.00-10.00</div> <div>Bioinformatics Training: Introduction to R, Tom Hampton</div> <div>10.00-10.45</div> <div>Bioinformatics Training: Visualising of sequence data for quality, Doug</div> </div>	
	<div> <div>Metabolomics Track (Guest Room)</div> <div>9.00-10.45</div> <div>Workshop Presentation: Analytical technologies – mass spectrometry and NMR, Ulf Sommer</div> </div>	

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	10.45-11.00	Coffee break		
	11.00-12.00	Bioinformatics Training: Visualising of sequence data for quality (Continued), Doug Rusch	11.00-12.00	Guest Presentation: Copepods and climate change, Dan Mayor
	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)	13.00-14.55	Group 1
	14.15-15.55			Group 2
	15.55-16.05	Bioinformatics Training: Visualizing complex data, Tom Hampton		
	16.05-17.00	Coffee Break	14.55-15.05	Coffee Break
	16.05-17.00	Bioinformatics Training: Navigating the command line and more advanced R, Tom Hampton	15.05-17.00	Synthesis session: Experimental design, Cate Winder
Wednesday March 8	19.00-20.00	Evening Lecture (Lecture Theatre NG08, Biosciences Building), Dr Joe Shaw (Indiana University) – Genomes as indicators of environmental health		
	Genomics Track (Nettlefold Room)		Metabolomics Track (Guest Room)	
	9.00-10.45	Bioinformatics Training: Data analysis using R (Part 1), Jana Asselman with Doug Rusch	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), Jana Asselman with Doug Rusch	10.45-12.00	Workshop Presentation: Introduction to analysing metabolomics data, Jasper Engel & Cate Winder
	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), Jana Asselman with Doug Rusch	13.45-14.45	Computer Workshop: Hands-on data analysis, Jasper Engel & Cate Winder
			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
Thursday March 9	19.00-20.00	Evening Lecture (Lecture Theatre NG08, Biosciences Building) Professor Roy Goodacre (University of Manchester) – Metabolomics and the environment: towards an understanding of microbial adaptation		
	Genomics Track (Nettlefold Room)		Metabolomics Track (Guest Room)	
	9.00-10.45	Bioinformatics Training: Gene set enrichment, Tom Hampton	9.00-9.30	Workshop Presentation: Data analysis III
			9.30-12.00	Computer Workshop: Hands-on data analysis, Jasper Engel & Cate Winder
	10.45-11.00	Coffee Break		
	11.00-12.00	Bioinformatics Training: Pathways analysis, Tom Hampton	11.00-12.00	Computer Workshop: Hands-on data analysis, Jasper Engel & Cate Winder
	12.00-13.00	Lunch		
	13.00-15.25	Bioinformatics Training: Exploring	13.00-14.00	Guest Presentation: “Environmental genomics in the cold” Melody Clark,

		genome sequence variation, Benjamin Peter		British Antarctic Survey
			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, Cate Winder
	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
			16.30-17.00	Synthesis session: Review of data collected during laboratory session, Ulf Sommer
	18.00-19.00	Pizza and Networking		
	19.00-20.00	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 environment and health protection		
Friday March 10	Combined Track (Nicholson Building, Nettlefold Room)			
	9.00-12.00	Synthesis session: Designing multi-omics studies, Ben Brown, Albert Zhou & John Colbourne		
	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		