

Flow Cytometry Course Programme

Organisers: Stephen Couzens, Cardiff
Peter O'Toole, York
Derek Davies, CRUK

Local Organisers: Karen Chance and Karen Hogg

RMS Organisers: Clare Oxenbury and Gemma Bantock

Sunday 14th September

1830 Registration and Dinner in The Department of Biology, sponsored by Biostatus

Monday 15th September

Module 1 – Basics of Flow Cytometry

0900	Late Registration	
0915	<i>Welcome to York</i> P. O'Toole	K018
0930	Lecture: <i>Fluorochromes and Fluorescence (What is fluorescence? Energy transfer. Fluorescence quenching. Properties of the more important fluorochromes.)</i> P. O'Toole	K018
1015	Coffee	
1045	Lecture: <i>Introduction (What is flow cytometry? Basic layout of the flow cytometer. Sample preparations. Flow cells)</i> DR. R Stewart NESC	K018
1115	Lecture: <i>Antibody labelling and immunofluorescence (including introductions of spectral compensation)</i> Ian Dimmick	K018
1215	Lunch	
1315	Lecture: <i>Detectors & signal processing (logs and linear, cv, medians and means)</i> D Davies	K018
1400	Practical Demonstration 1: <i>The Flow Cytometers (including routine checks of performance – amplifier linearity, sensitivity)</i> D Davies, AN Other & the manufacturers' representatives	M049/50
1445	Coffee	
1515	Practical Demonstration 1: Continued	M049/50
1600	Lecture: <i>Multicolour design and compensation</i> Ian Dimmick	K018
1645	Lecture: <i>Data Analysis (Regions and Gating)</i> Derek Davies	K018
1715	Tour of the York University Biology Department with Peter O'Toole	
1800	End of Day	
1900	Dinner at Jumbo's Chinese Restaurant in York	
2100	Ghost Walk in York City Centre (Optional)	

Tuesday 16th September

Module 1 – Basics of Flow Cytometry (continued)

0900	Lecture: Immunofluorescence compensation; removing spectral Ian Dimmick	K018
0930	Practical Demonstration 2: <i>Multiparameter labelling – fluorescence compensation (Peripheral blood lymphocytes – direct conjugates – two and three colours – colour compensation)</i> Ian Dimmick & the manufacturers' representatives <i>files</i>	K018
1100	Coffee	
1130	Lecture: Introduction to DNA analysis (an examples and linear signalling) Derek Davies	K018 K018
1200	Lecture: <i>Measurement of cytoplasmic and nuclear antigens</i> W. Corver	K018
1300	Lunch	
1345	Practical Demonstration 3a: <i>Linear analysis-using cell cycle as example</i> D Davies + AN Other	M049/M052
14:15	Practical Demonstration 3b: <i>Combined measurement of DNA and a cytoplasmic antigen</i> Willem Corver + D Davies	M049/M052
1515	Coffee and Questions: Optional session including analysis of listed data files All lecturers	M052
1600 1800	End of Module 1 Dinner in Vanbrugh College	

Wednesday 17th September

Module 2 – Clinical Applications

Chair: Ricardo Morilla

0845	Registration (for those attending ONLY Advanced Course)	Atrium
0900	Lecture: <i>Overview of Clinical Applications</i> S. Phillips	M023

IMMUNOPHENOTYPING AND CELL COUNTING SESSION

0945	Lecture: <i>Immunophenotyping leukaemias and lymphomas</i> R. Morilla	M023
1045	Coffee and Trade Exhibition	
1115	Lecture: <i>Enumeration of CD34+ stem cells</i> S. Phillips	M023
1145	Discussion: Immunophenotyping Practical Basics R. Morilla and S. Couzens	M023
1215	Lunch and Trade Exhibition	
1315	Practical demonstration 4: <i>CD34+ Cells, Lymphocyte subsets</i> S. Phillips M049/50	
1415	Discussion using listed data: <i>Immunophenotyping leukaemia/lymphoma</i> R. Morilla & S. Couzens	M049/50
15:00	Coffee and Exhibition	
1520	Discussion using listed data - continued: <i>Immunophenotyping leukaemia/lymphoma</i> R. Morilla and S. Couzens	M049/50
1600	Lecture: Advanced Multicolour and Compensation I Dimmick	K018
1645	How to/NOT to compensate I Dimmick	K018
1730	End of Day (Module continues on Thursday)	
1800	Dinner in Vanbrugh College	

Wednesday 17th September

Module 3 – Applications in Cell Biology

Chair: Michael Ormerod

0845	Registration (for those attending ONLY Advanced Course) Atrium	
0900	Lecture: <i>Analysis of micro-organisms and sub-micron particles</i> G. Nebe von Caron	K018
0945	Lecture: Cell cycle analysis: the DNA histogram M. Ormerod	K018
1030	Coffee and Trade Exhibition	
1100	Lecture: <i>Combined measurement of DNA and cytoplasmic antigens</i> W. Corver	K018
1145	Practical Demonstration 5a: <i>Combined Measurement of DNA and Cytoplasmic Antigens</i> W. Corver	
	and	M049/52
	Practical Demonstration 5b: <i>Studying Bacteria</i> G. Nebe von Caron	
1315	Lunch and Trade Exhibition	
1400	Lecture: <i>Measurement of cell proliferation: the dye dilution method</i> A. Robins	K018
1445	Lecture: BrdUrd/anti-BrdUrd method M. Ormerod	K018
1530	Coffee and Trade Exhibition	
1600	Lecture: <i>Advanced Multicolour and compensation</i> I Dimmick	K018
1645	Practical: <i>How to/NOT to compensate</i> I Dimmick	K018
1730	End of Day (Module continues on Thursday)	
1800	Dinner in Vanbrugh College	

Thursday 18th September

Module 3 – Applications in Cell Biology (continued)

Chair: Brian Shenton

0900	Lecture: <i>Measuring Antigen density</i> A. Robins	K018
0945	Lecture: <i>Studying apoptosis by flow cytometry</i> D. Davies	K018
1030	Coffee	
1100	Practical Demonstration 8: <i>Measurement of cell cycle parameters using BrdUrd/Anti-BrdUrd</i> D. Davies and AN Other from DD lab	M049/52
1130	Lecture: <i>Analysis and sorting of mammalian stem cells</i> D Davies	K018
1200	Practical Demonstration 9: <i>Apoptosis</i> D. Davies and AN Other from DD lab a) <i>Live/dead</i> b) <i>Sub-G1 Peak</i> c) <i>Tunel assay for DNA strand breaks</i> d) <i>Annexin V labelling</i> e) <i>Dye uptake</i> f) <i>Mitochondrial membrane potential</i>	M049/52
1315	Lunch	
1400	Lecture: <i>Measurement of functional parameters</i> M. Macey	K018
1430	Lecture: <i>Measurement of intracellular cytokines</i> Karen Hogg	
1500	Coffee	
1530	Lecture: <i>Fluorescent proteins and flow cytometry</i> P. O'Toole	K018
1600	Lecture: <i>Bead Arrays</i> B Shenton	K018
1700	End of Day (module continues on Friday)	
1800	RMS Cytometry Section AGM	
1730	Course Dinner at ASK in York City Centre	

Friday 19th September

Module 2 – Clinical applications (cont.)

Chair : Marion Macey

0930	Lecture: <i>HIV and Aids</i> M Helbert	M023
1000	Lecture: <i>NEQAS</i> L Whitby	M023
1030	Coffee	
1100	Lecture: Lymph node flow cytometry: multi-disciplinary diagnosis S.Couzens	M023
1130	Lecture: Detection of minimal residual disease tbc	M023
1200	Lunch	
1245	Lecture: <i>New probes (from Alexa to QD's, New FP's and DNA dyes)</i> <i>tbc?</i>	K018
1315	Lecture: <i>New Technologies Imaging and Cytometry</i> P O'Toole	K018
1345	Q&A session	K018
1430	Coffee and Close	

Friday 19th September

Module 3 – Cell Biology

Chair: Brian Shenton

0930	Lecture: <i>Using Flow Cytometry in Immunological Research</i> M Coles K018	
10:00	Lecture: <i>Stem cells in peripheral blood</i> DR. R Stewart NESCI	K018
1030	Coffee	
1100	Lecture: <i>Analysis of rare events</i> D. Davies And Practical Demonstration: <i>High speed Cell Sorting</i> (30 mins for each and swap at 11.30)	K018
1200	Lunch	
1245	Lecture: <i>New probes (from Alexa to QD's, New FP's and DNA dyes)</i> <i>tbc</i>	K018
1315	Lecture: <i>New Technologies Imaging and Cytometry</i> P O'Toole	K018
1345	Q&A session	K018
1415	Coffee and Close	