

Wellcome Trust Programme for Cellular Structural Biology

Electron Cryo Microscopy in Structural Biology - Course

21st November – 25th of November, 2016

Organisers: Prof Kay Grünewald and Dr Tzviya Zeev-Ben-Mordehai (STRUBI/OPIC)

Please report to the Wellcome Trust Centre for Human Genetics Reception, Old Road Campus, Headington.
All lectures in the Division of Structural Biology meeting room.

Day 1 – Monday, Nov 21st

10:00 – 10:30	Lecture 1: CryoEM introduction, news and views – Kay Grünewald
10:30 – 11:15	Lecture 2: The electron microscope: physics, optics, detectors – Mark Langridge
11:20 – 12:15	Lecture 3: Sample preparation – Joanne Lo
----- LUNCH AND Q&A -----	
13:00 – 16:00	Practical 1 (hands on): Negative staining and room temperature imaging (T12) Mark Langridge, Joanne Lo, Dimple Karia
	Practical 2 (hands on): Plunge freezing and cryo imaging (F30) Ben Vollmer, Lindsay Baker, Cornelia Cazey

Day 2 – Tuesday, Nov 22nd

10:00 – 10:45	Lecture 4: Image formation – Lindsay Baker
11:00 – 11:45	Lecture 5: Introduction to image processing – Juha Huiskonen
----- LUNCH AND Q&A -----	
13:00 – 16:00	Practical 1 (hands on): Negative staining and room temperature imaging (T12) Mark Langridge, Joanne Lo, Dimple Karia
	Practical 2 (hands on): Plunge freezing and cryo imaging (F30) Ben Vollmer, Lindsay Baker, Cornelia Cazey

Day 3 – Wednesday, Nov 23rd

10:00 – 10:45	Lecture 6: Single particle averaging – Juha Huiskonen
11:00 – 11:45	Lecture 7: Introduction to tomography – Tzviya Zeev-Ben-Mordehai
----- LUNCH AND Q&A -----	
13:00 – 15:00	Practical 3 (hands on): Single particle averaging (STRUBI meeting room) Juha Huiskonen, Abhay Kotecha, Michael Grange
15:00 – 16:00	Practical 4 (Demo): Visualisation software (STRUBI meeting room) Daven Vasishtan

Day 4 – Thursday, Nov 24th

10:00 – 10:45	Lecture 8: Subtomogram averaging – Daven Vasishtan
11:00 – 11:45	Lecture 9: Correlative & integrative imaging – Rainer Kaufmann
----- LUNCH AND Q&A -----	
13:00 – 16:00	Practical 5 (Demo): Tomographic data acquisition on 'Polaris', direct electron detector Lindsay Baker, Tzviya Zeev-Ben-Mordehai
	Practical 6 (Demo): FIB milling Christina Heroven, Valerie Mordhorst
	Practical 7 (hands on): Tomographic reconstruction (STRUBI meeting room) Ben Vollmer, Sai Li, Vojta Pražák

Day 5 – Friday, Nov 25th

10:00 – 11:30	Test cases from STRUBI
11:30 – 12:00	Conclusions and wrap-up