

Electron Cryo Microscopy in Structural Biology

5th – 9th November, 2018

Organizer: Prof. Juha T. Huiskonen

Wellcome Centre for Human Genetics, Old Road Campus, Headington

A / B = Room A / B opposite the Canteen **S** = Strubi Meeting Room

Day 1: The Basics I – Monday, Nov 5th

9:45		Arrival: report at the reception
10:00–10:30	A	Welcome: Why cryogenic electron microscopy (cryo-EM)? – Juha Huiskonen
10:30–11:15	A	Lecture 1: The electron microscope – Beth MacLean
11:15–12:00	A	Lecture 2: Sample preparation – Dimple Karia
12:00–12:45		Lunch: Questions and answers session
12:45–13:00	S	Instructions: Reading assignment & practicals – Juha Huiskonen
13:00–16:00	S	Practical 1: Room temperature samples and imaging – Itziar Serna Martin, Reinis, Loic
	S	Practical 2: Cryogenic samples and imaging – Dimple Karia, Luiza Mendonca

Day 2: The Basics II – Tuesday, Nov 6th

9:45		Arrival: report at the reception
10:00–11:00	B	Lecture 3: Image formation – Lindsay Baker
11:00–12:00	B	Lecture 4: Image processing – Juha Huiskonen
12:00–13:00		Lunch: Questions and answers session
13:00–16:00	S	Practical 1: Room temperature samples and imaging – Itziar Serna Martin, Reinis, Loic
	S	Practical 2: Cryogenic samples and imaging – Dimple Karia, Luiza Mendonca

Day 3: Single Particles – Wednesday, Nov 7th

9:45		Arrival: report at the reception
10:00–11:00	A	Lecture 5: From 2D images to 3D density maps I – Lindsay Baker
11:00–12:00	A	Lecture 6: Fitting and building of atomic models – Luigi De Colibus
12:00–13:00		Lunch: Questions and answers session
13:00–16:00	S	Practical 3: Data processing I – Mohammad Bahar, Luigi, Weng, Serban

Day 4: Tomography – Thursday, Nov 8th

9:45		Arrival: report at the reception
10:00–11:00	A	Lecture 7: From 2D images to 3D density maps II – Tanmay Bharat
11:00–12:00	A	Lecture 8: Averaging 3D density maps – Daven Vasishtan
12:00–13:00		Lunch: Questions and answers session
13:00–16:00	S	Practical 4: Data processing II – Daven, Robert, Vojta, Luiza

Day 5: Case Studies – Friday, Nov 9th

9:45		Arrival: report at the reception
10:00–12:00	S	Practical 5: Understanding cryo-EM literature – Serban, Vojta, Weng, Helen
12:00–13:00		Lunch
13:00–13:30	A	Science talk: Prof. Susan Lea, Sir William Dunn School of Pathology
13:30–15:30	A	Short talks: Examples, challenges, and solutions – students and post docs
15:30–16:00	A	Wrap-up: Course feedback – Juha Huiskonen