Cryogenic Electron Microscopy in Structural Biology

16th – 19th August 2022

In-person / hybrid event, signup on Eventbrite required

Organisers: Kyle Morris (eBIC) & Anna Rackley (eBIC)

Day 1: Tuesday

09:30–09:45	Arrival
09:45–10.00	Introductions and welcome – **Martin Walsh (Diamond Light Source)**
10:00–10:30	**Lecture 1:** Why cryogenic electron microscopy (cryo-EM)? – **Kyle Morris (eBIC)**
10:30–11:15	**Lecture 2**: The electron microscope – **Karen Davies (eBIC)**
11:15–12:00	**Lecture 3**: Sample preparation for cryo-EM – **Dimple Karia (Thermo Fisher Scientific)**
12:00–13:00	**Lunch break**
13:00–16:00	**Practical 1**: Cryogenic sample preparation for cryo-EM – **Peter Harrison (eBIC)**

Day 2: Wednesday

09:30–10:15	**Lecture 4**: Image formation in the electron microscope – **Dan Clare (eBIC)**
10:15–11:00	**Lecture 5**: Image processing theoretical introduction – **Colin Palmer (CCP-EM)**
11:00–11:15	**Break**
11:15–12:00	**Lecture 6:** From 2D images to 3D density maps in SPA – **Yuriy Chaban (eBIC)**
12:00–13:00	**Lunch break**
13:00–16:00	**Practical 2**: Screening samples in cryo-EM **– Peter Harrison (eBIC)**

Day 3: Thursday

09:30–10:15	**Lecture 7**: From 2D images to 3D density maps in cryo-ET – **Lindsay Baker (Oxford)**
10:15–11:00	**Lecture 8**: Averaging and reconstructing 3D maps in cryo-ET – **Pranav Shah (Oxford)**
11:00–11:15	**Break**
11:15–12:00	**Lecture 9**: Fitting and building of atomic models – **Agnel-Praveen Joseph (CCP-EM)**
12:00–13:00	**Lunch break**
13:00–16:00	**Practical 3**: Single-Particle Averaging data collection demonstration – **Vinod Vogirala (eBIC)**

Day 4: Friday

09:30–12:00	**Practical 4**: Cryo-ET data collection demonstration – **Davide Zabeo (eBIC)**
12:00–13:00	**Lunch break**
13:00–13:45	**Lecture 10:**
13:45–14:45	**PDRA & PhD student research talks**
14:45–15:45	**WT DTP student learning & feedback talks**
15:45–16:00	**Wrap-up Q&A**

Please note that the Practical and Feedback sessions are for the WT DTP students only.