Electron Cryo Microscopy in Structural Biology

26th – 29th April, 2021

Hosted on Zoom, signup on Eventbrite required

Organisers: Kyle Morris (eBIC) & Alistair Siebert (eBIC)

Day 1: Monday, April 26th

09:45–10:00	**Virtual arrival**: Introductions and welcome
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 – **Dimple Karia (Thermo Fisher Scientific)**
12:00–13:00	**Lunch break**
13:00–16:00	**Practical 1**: Cryogenic sample preparation for cryo-EM – **Kyle Morris (eBIC)**

Day 2: Tuesday, April 27th

09:00–10:00	**Lecture 4**: Image formation – **Dan Clare (eBIC)**
10:00–11:00	**Lecture 5**: Image processing – **Colin Palmer (CCP-EM)**
10:30–10:35	**Tea break**
11:00–12:00	**Lecture 6:** From 2D images to 3D density maps I: SPA – **Chris Aylett (Imperial)**
12:00–13:00	**Lunch break**
13:00–16:00	**Practical 2**: Screening samples in cryo-EM – **Peter Harrison (eBIC)**

Day 3: Wednesday, April 28th

09:00–10:00	**Lecture 7**: From 2D images to 3D density maps II: Cryo-ET – **Tanmay Bharat (Oxford)**
10:00–11:00	**Lecture 8**: Averaging and reconstructing 3D maps in cryo-ET – **Ben Himes (HHMI/UMassMed)**
10:30–10:35	**Tea break**
11:00–12:00	**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: Thursday, April 29th

09:00–12:00	**Practical 4**: Cryo-ET data collection demonstration – **Julika Radecke (eBIC)**
12:00–13:00	**Lunch break**
13:00–14:00	**Course WT DTP student talks and feedback**
14:00–15:00	**PDRA & PhD student talks**
15:00–15:40	**Lecture 10:** Anatomy and Variations on the Theme Spike – **Helen Duyvesteyn (STRUBI)**
15:40–16:00	**Wrap-up Q&A**

Please note that the practicals and feedback session are only accessible to WT doctoral training program students.