

Cryo-EM Course

at the Laboratory for BioMolecular Structure (LBMS)

748

This course will be held as a virtual event.

June 3-6, 2025



Day 1 - Tuesday 3 June 2025

Time (EDT)	Speaker	Topic
10:00-10:05	Sean McSweeney (BNL)	Welcome
10:05-10:15	Liguo Wang (BNL)	Introduction to LBMS
10:15-11:00	Yifan Cheng (UCSF)	The evolution, deficiencies, and promise of cryo-electron microscopy
11:00-12:30	Paul Mooney (Ametek)	Introduction to electron microscopes and cameras
12:30-12:45		Discussion
12:45-13:30		Lunch break
13:30-14:30	Liguo Wang (BNL)	Introduction to negative staining and cryo-electron microscopy
14:30-15:30	Mike Martynowycz (HWI)	MicroED: theory, application and available software
15:30-15:45		Coffee break
15:45-17:00	Guobin Hu (BNL)	Single-particle sample preparation tutorial and demonstration (negative staining and cryogenic vitrification)

Day 2 - Wednesday 4 June 2025

Time (EDT)	Speaker	Topic
10:00-11:30	Fred Sigworth (Yale)	EM image formation and single particle reconstruction
11:00-12:00	Oliver Clarke (Columbia)	Model building, refinement, and validation
12:30-12:45		Discussion
12:45-13:30		Lunch break
13:30-15:00	Dongyan Tan (SBU)	Single-particle data analysis workflow tutorial and demonstration
15:00-15:10		Coffee break
15:10-17:00	Jake Kaminsky (BNL)	EPU single particle data collection tutorial and demonstration

Day 3 - Thursday 5 June 2025

Time (EDT)	Speaker	Topic
10:00-11:00	Grant Jensen (BYU)	Introduction to cryo-electron tomography
11:00-12:00	Yong Xiong (Yale)	In-situ single particle cryo-EM
12:00-12:15		Discussion
12:15-13:00		Lunch break
13:00-14:30	Jianfeng Lin (Yale)	In-situ sample preparation tutorial and demonstration
14:30-14:45		Coffee break
14:45-17:00	Phil Guo (McGill)	Cryo-ET data collection and reconstruction tutorial and demonstration

Day 4 - Friday 6 June 2025

Time (EDT)	Speaker	Topic
10:00-11:00	Yuntao Liu (UCLA)	Isotropic Reconstruction for Electron Tomography with Deep Learning
11:00-12:00	Jessica Heebner (ThermoFisher)	Segmentation of Cryo-Electron Tomograms
12:00-12:15		Discussion
12:15-13:00		Lunch break
13:00-14:00	Dorothee Liebschner (LBL)	AlphaFold2 in cryo-EM
14:00-15:30	Muyuan Chen (Stanford)	Subtomography averaging tutorial and demonstration in EMAN2
15:30-17:00	Jun Liu, Yong Xiong (Yale)	Discussion