Cryo-EM Course

at the Laboratory for BioMolecular Structure (LBMS)

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	David DeRosier (Brandeis)	The evolution, deficiencies, and promise of cryo-electron microscopy
11:00-12:30	Wim J. Hagen (ThermoFisher)	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
14:30-16:00	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
11:30-12:30	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	Yong Xiong (Yale)	In-situ single particle cryo-EM
11:00-12:00	Raphael Park (Scripps)	Introduction to cryo-electron tomography
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
10:00-11:30	Ben Barad (OHSU)	From images to cellular models: Segmentation and segmentation-guided analysis with modern neural net tools
11:30-13:00	Muyuan Chen (Stanford)	Subtomography averaging tutorial and demonstration in EMAN2
13:00-13:45		Lunch break
13:45-14:45	Mike Martynowycz (HWI)	MicroED: theory, application and available software
14:45-15:30	Jun Liu, Yong Xiong (Yale)	Discussion