



Volume Electron Microscopy by Automated Serial SEM

EMBL COURSE

We have moved our website to embl.org/events. The content below is no longer being updated.

EMBL Courses and Conferences during the Coronavirus pandemic

With the onsite programme paused, many of our events are now being offered in virtual formats.

Registration is open as usual for many events, with back-up plans in place to move further courses and conferences online as necessary. Registration fees for any events affected by the COVID-19 disruption are fully refundable.

More information for participants of events at EMBL Heidelberg can be found [here](#).

Programme

Got something to say? Tweet it with [#EMBLvolSEM](#)

Day 1 - Sunday 20 October 2019

Time	Speaker	Location
14:30	Bus from Holiday Inn Express to EMBL	
15:00 - 15:30	Registration & Welcome	EMBL, room 202
15:30 - 19:00	Students flash talk presentations	EMBL, room 202
19:15 - 20:45	Dinner	ATC Rooftop lounge
21:00	Bus from EMBL bus stop to Holiday Inn Express	

Day 2 - Monday 21 October 2019

Time	Speaker	Location
08:25	Bus from Holiday Inn Express to EMBL bus stop	
09:00 - 09:30	The challenges of 3D EM in Biology Yannick Schwab - EMBL Heidelberg, Germany	EMBL, room 202
09:30 - 10:30	Sample preparation Christel Genoud - Friedrich Miescher Institute for Biomedical Research, Switzerland	
10:30 - 11:30	Coffee Break	EMBL, room 202
11:30 - 12:30	Signal detection in SEMs Benjamin Titze - Friedrich Miescher Institute for Biomedical Research, Switzerland	EMBL, room 202
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 18:30	Practicals in groups (parallel tracks) Practical #1: Sample preparation for Volume SEM Location: EMCF (main building EMBL) Local contacts: Pedro Machado, Rachel Mellwig, Kimberly Meechan Trainer: Richard Webb (The University of Queensland, Australia) — Microwave processing (room 305A) — High pressure freezing and freeze substitution (rooms 327 and 305A) — X-ray MicroCT for targeting of regions of interest (room 312) — Trimming and mounting samples (room 325) Practical #2: SBEM Location: room 204 and 204a Local contact: Rachel Templin Trainers: Christel Genoud (Friedrich Miescher Institute for Biomedical Research, Switzerland), Stuart Searle (Katana,	

ConnectomX), Benjamin Titze (3view + SBEMimage), Ingo Gestmann and Tilman Franke (TFS)

- At the 3view (room 204)
- At the Volume Scope (room 204a)
- At the ConnectomX/Katana

Practical #3: FIB-SEM

Location: room 311

Local contacts: Nicole Schieber, Paolo Ronchi, Marianne Beckwith

Trainer: Shan Xu (HHMI-Janelia Research Campus, USA)

- Introduction
- At the Crossbeam 550 microscope - SEM
- At the Crossbeam 550 microscope - FIB

Practical #4: Array Tomography (ATUMtome, Leica Artos3D, Apreo SEM)

Location: room 319 (Zeiss XB540), room 204 (3view), room 204a (for microtomes and ApreoVS)

Local contacts: Mandy Boermel

Trainers: Meike Schurr (demo on the ATUMtom), Christian Stigloher, Heinz Horstmann (demo on the CDSUM), Leica (demo on the Artos 3D), Tilman Franke (Array Tomography recording on Apreo VolumeScope), Ralph Neujahr (Zeiss)

- Imaging with MAPS (room 204A)
- Microtomes for Array Tomography (room 204A)
- Imaging with Atlas (room 319)

Practical #5: Image analysis (MIB, Ilastik, BigDataProcessor2...)

Location: ATC computer training lab

Local contacts: Julian Hennies, Martin Schorb

Trainers: Ilya Belevich (University of Helsinki, Finland), Anna Kreshuk and Christian Tischer (EMBL Heidelberg)

- BigDataProcessor2
- Multi-modal EM data registration and viewing
- MIB
- ILASTIK

18:30 - 19:30	Dinner	EMBL Canteen
19:30 - 20:50	Round table discussion	EMBL, room 202
21:00	Bus from EMBL bus stop to Holiday Inn Express	

Day 3 - Tuesday 22 October 2019

Time	Speaker	Location
08:25	Bus from Holiday Inn Express to EMBL bus stop	
09:00 - 10:00	Introduction to Serial Block-Face Electron Microscopy (SBEM) Benjamin Titze - Friedrich Miescher Institute for Biomedical Research, Switzerland	EMBL, room 202
10:00 - 11:00	Enhanced FIB-SEM Technology for Connectomics and Cell Biology Discoveries Shan Xu - HHMI-Janelia Research Campus, USA	EMBL, room 202
11:00 - 11:30	Coffee Break	EMBL, room 202
11:30 - 12:30	3D MultiSEM imaging for large-scale connectomics Meike Schurr - Max Planck Institute for Brain Research, Germany	EMBL, room 202
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 18:30	Practicals in groups (parallel tracks)	
18:30 - 19:30	Dinner	EMBL Canteen
19:30 - 20:50	Round table discussion	EMBL, room 202

21:00 **Bus from EMBL bus stop to Holiday Inn Express**

Day 4 - Wednesday 23 October 2019

Time	Speaker	Location
08:25	Bus from Holiday Inn Express to EMBL bus stop	
09:00 - 10:00	FIBSEM2: Data processing and applications in the life sciences Julian Hennies and Yannick Schwab - EMBL Heidelberg, Germany	EMBL, room 202
10:00 - 11:00	SBEM 2 Graham Knott - EPFL, Switzerland	EMBL, room 202
11:00-11:30	Coffee break	EMBL, room 202
11:30 - 12:30	Correlative Array Tomography Christian Stigloher - University of Würzburg, Germany	EMBL, room 202
12:30 - 13:30	Lunch break	EMBL Canteen
13:30 - 18:30	Practicals in groups (parallel tracks)	
18:30 - 19:30	Dinner	EMBL Canteen
19:30 - 20:50	Round table discussion	EMBL, room 202
21:00	Bus from EMBL bus stop to Holiday Inn Express	

Day 5 - Thursday 24 October 2019

Time	Speaker	Location
08:25	Bus from Holiday Inn Express to EMBL bus stop	
09:00 - 09:45	Correlative Light and Volume EM Lucy Collinson - The Francis Crick Institute, UK	EMBL, room 202

	Sample preparation for volume-SEM following cryo-fixation	
09:45 - 10:30	Richard Webb - The University of Queensland, Australia	EMBL, room 202
10:30 - 11:00	Coffee break	EMBL, room 202
	Assorted vendors presentations	
11:00 - 12:30	- TFS: Emine Korkmaz - ConnectomX: Stuart Searle - Leica: Thorben Kurz - Jeol: Katsuyuki Suzuki - Gatan: Roland Ries	
	Lunch and remote live demo MultiSEM with Zeiss	
12:30 - 13:30	Anna Lena Eberle - Zeiss, Germany	EMBL room 202
13:30 - 18:30	Practicals in groups (parallel tracks)	
18:40	Bus from EMBL bus stop to Neckarmünzplatz via Holiday Inn Express	
19:30 - 22:00	Dinner @ Kulturbrauerei	downtown

Day 6 - Friday 25 October 2019

Time	Speaker	Location
08:25	Bus from Holiday Inn Express to EMBL bus stop	
09:00 - 09:45	Biological imaging: From images to models and numbers Ilya Belevich - University of Helsinki, Finland	EMBL, room 202
09:45 - 10:30	Image processing II: Automating image analysis by machine learning Anna Kreshuk - EMBL Heidelberg, Germany	EMBL, room 202
10:30 - 11:00	Coffee break	EMBL, room 202
11:00 - 11:45	Multi-modal and multi-scale image data exploration Christian Tischer - EMBL Heidelberg, Germany	EMBL, room 202

11:45 - 12:30	Targeting in 3D - Platynereis microCT and 3DEM Rachel Templin - EMBL Heidelberg, Germany	EMBL, room 202
12:30 - 13:30	Lunch	EMBL Canteen
13:30 - 18:30	Practicals in groups (parallel tracks)	
18:30	End of course	
18:45	Bus from EMBL bus stop to Heidelberg main station, Holiday Inn Express, Crown Plaza (Lufthansa Shuttle)	