

Sample preparation course for 3D scanning electron microscopy

Location: Max-Planck-Institute of Experimental Medicine, Göttingen, Germany

Dates: 12-16 April 2021

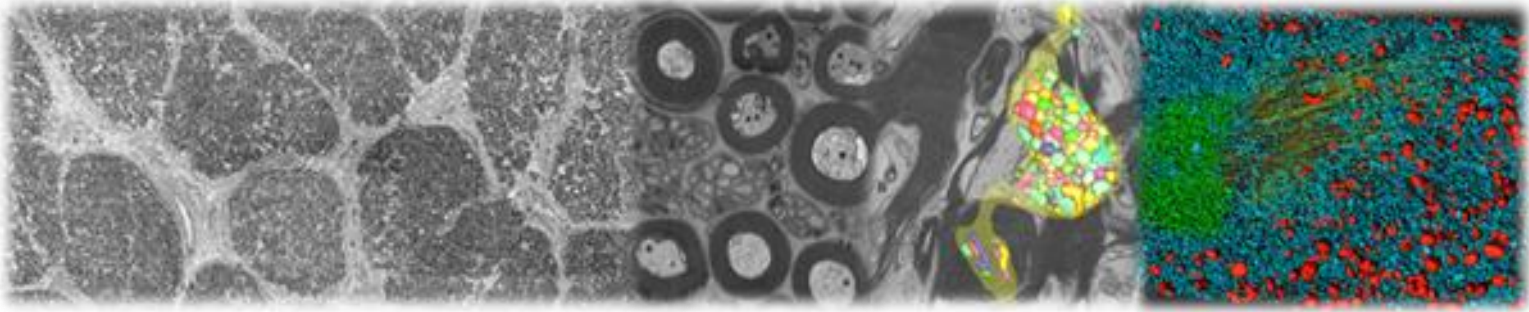
www.em-sample-prep-workshop.de

3D scanning electron microscopy has become an important tool to answer scientific questions in life science. The aim of the course is to provide hands-on experience concerning sample preparation for the main serial imaging techniques in scanning electron microscopy (SEM): microtome-based serial block-face SEM, focused ion beam SEM and array tomography. Chemical fixation (bench processing and microwave-assisted processing) as well as high-pressure freezing and freeze substitution for scanning electron microscopy will be performed. The combination of theoretical and practical sessions will give the participants the possibility to assess the potentials of each sample preparation technique and decide which are most suitable for their own scientific project and research question. The course will also cover data processing and analysis, as these tools are essential to all 3D electron microscopy techniques.

The course provides a great opportunity to discuss and exchange ideas among experienced researchers in their field and trigger new networks.

Audience

The course addresses a large audience within the life sciences including (but not limited to) neurosciences and cell biology. Ideally participants should have prior experience in cellular electron microscopy, but not necessarily in 3D electron microscopy techniques. The course is intended for early career researchers (PhD students and postdocs) as well as facility staff, who are planning to work with 3D scanning electron microscopy methods.



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Modules

- **High-pressure freezing, freeze substitution**
- **Chemical fixation and embedding**
- **Array tomography, ultramicrotomy**
- **Image processing, image analysis and visualization**

Organizers: Anna Steyer, Wiebke Möbius, Torben Ruhwedel

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