UNIVERSITÄT BERN

Medizinische Fakultät
Vetsuisse Fakultät
Phil.-Nat. Fakultät

Microscopy Imaging Center

Workshop

Title:	**Transmission electron microscopy practicals**
Date, duration:	On demand, 1 day
Location:	Institute of Anatomy old building, Bühlstrasse 26
Lecturer(s):	Prof. Dr. phil. nat. Benoît Zuber (ANA)
Number of participants:	2 – 4 students
Target audience:	Master and PhD students of the University of Bern. Lecture Series on Advanced Microscopy plus exam (KSL 9256)
Registration:	Send request to Benoît Zuber (zuber@ana.unibe.ch) cc: CEM Administration (cem.mic@unibe.ch)
KSL:	470968
Reward:	0.5 ECTS
Costs:	300 CHF (total costs per course) - PhD students enrolled in the Graduate School for Cellular and Biomedical Sciences (GCB) can apply for refund at the PhD program Cutting Edge Microscopy - Amount accounts for students of the University of Bern. Other participants, please request quote.
Learning goals:	Get familiar with the use of a modern transmission electron microscope and image processing. Depending on student interest, electron tomography or single particle analysis will be done. Note that this workshop is not designed to train users to independent usage of the microscope. Further training would be required.
Description:	Transmission electron microscopy enables the visualization of biological structures in fine details. Modern techniques include electron tomography and single particle cryo-electron microscopy. With the former technique, cell structure can be obtained down to molecular resolution. The latter technique is used to resolve the structure of proteins with near atomic resolution.

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Course structure:	The focus of the practicals is on image acquisition and processing, and not on specimen preparation. Thin sections of biological samples (e.g. brain) will be provided or purified protein preparation. A computer-driven field-emission gun electron microscope (FEI Tecnai F20) will be used. Automatic data acquisition will be. Some steps of image processing will be shown.
Assessment:	To be determined