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UNIVERSITÄT
BERN

Conventional fluorescence microscopy, laser scanning microscopy and digital image processing

Course teachers: PD Dr. Fabian Blank (DBMR, LCI), Carlos Wotzkow (DBMR, LCI), Selina Steiner (DBMR, LCI), Dr. Yury Belyaev (MIC), Dr. Guillaume Witz (SciITS-MIC)

Date: Tuesday, 11.07.2023 until Thursday, 13.07.2023 / 3 days

Location: DBMR LCI Core Facility, Murtenstrasse 24, 3008 Bern

Max. number of participants: 20

ECTS / Evaluation: 1.5 / Poster

Content: Teaching of basics

1. *Sample preparation (Theory)*
 - a. The use of fixed samples (what is the ideal fixation method?)
 - b. Labelling of individual samples with immunofluorescence and fluorescent labeling
 - c. Mounting of samples (requirements for mounting media and coverslips etc.)
2. *Microscopy (Practical)*
 - a. Conventional Fluorescence Microscopy
 - b. Single-point confocal
 - c. Multi-point confocal
 - d. Live cell imaging
3. *Image processing (Practical)*
 - a. Visualize, process and analyze your data: We will focus on workflows employing FIJI and will touch on other software applications (e.g. QuPath)
 - b. Optimizing fluorescence signal quality (deconvolution, Huygens Remote Manager)

Prerequisites:

- *Master students:* Passing the exam of lecture “Advanced Microscopy”
- *PhD Students:* Basic knowledge in light microscopy (in particular fluorescence microscopy)
- **Participants have to pay a fee of CHF 300.- per person for this course. Students involved in the PhD program of the graduate School for Cellular and Biomedical Sciences (GCB) are eligible for refund by the GCB office.**
- Students are strongly encouraged to bring their own samples and/or datasets for imaging and processing.

For registration, please contact Fabian Blank: fabian.blank@unibe.ch



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