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. Aaron Ponti (D-BSSE, Basel)

Duration: 3 days

Date: Tuesday, 11.06.2019 until Thursday, 13.06.2019

Location: DBMR LCI Core Facility, Murtenstrasse 50, 3008 Bern

Content: Teaching of basics

1. Sample preparation
   a. The use of fixed samples (what is the ideal fixation method?)
   b. Labelling of individual samples with immunofluorescence and fluorescent stainings
   c. Mounting of samples (requirements for mounting media and coverslips etc.)

2. Microscopy
   a. Conventional Fluorescence Microscopy
   b. Single-point confocal
   c. Multi-point confocal

3. Image processing
   a. Optimizing fluorescence signal quality (deconvolution, Huygens Remote Manager)
   b. Image processing and image presentation (IMARIS, Bitplane)

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 entitled to ask for refund by contacting the GCB office (http://www.gcb.unibe.ch/about_us/contact/index_eng.html).

Exam: Poster or oral presentation or exam

ECTS: 1.5