

Bern, 17 July 2019

Visit of EMBL Imaging Center in Heidelberg

On March 20 – 21, 2018 11 PhD students of the Cutting Edge Microscopy program made a journey to Heidelberg to visit the Imaging Center of the [European Molecular Biology laboratory \(EMBL\)](#). Fabian Blank, Yury Belyaev and Ruth Lyck accompanied the PhD students. In the morning of the March 21, specialists of the [Advanced Light Microscopy Facility \(ALMF\)](#) and the [Electron Microscopy Core Facility \(EMCF\)](#) introduced their applications of correlative light and electron microscopy (CLEM) and Cryo-EM Focused Ion Beam combined with Scanning Electron Microscopy (FIB-SEM). Further talks were on Super Resolution Microscopy und Lightsheet Microscopy. In the afternoon, workshops on exactly these techniques made a perfect complement to the presentations. Overall, the opportunity to gain insight into organization, special technical knowhow and equipment of the EMBL imaging center was very valuable and rewarding for all the participants.

19th International European Light Microscopy Initiative Meeting (ELMI), Brno, Czech Republic

The 19th International European Light Microscopy Initiative Meeting (ELMI, <http://www.elmi2019.eu/>) took place on June 4 - 7, 2019 in Brno, Czech Republic. About 400 participants from Europe and the whole world discussed recent advances in light microscopy for the life sciences. During the first day of the meeting, the representatives of imaging facilities met in a core facility session and discussed topics of common interest such as maintenance of equipment, ethics of imaging, image processing and career opportunities of facility staff. During the following two and a half days of ELMI, leading scientists in the field presented and discussed new developments in: quantitative phase imaging, advanced bioimage analysis, correlative light and electron microscopy, imaging DNA transcription, adaptive optics and deep tissue imaging. In addition to the extensive scientific program, more than 40 leading companies being active in microscopy instrumentation and related fields introduced cutting-edge technical developments in very informative workshops and during the booth presentations. Yury Belyaev has represented the MIC with the poster 'Construction of point spread function for deconvolution of serial block face electron microscopy images' describing a work performed at the Institute of Anatomy together with Benoit Zuber and Adolfo Odriozola, both University of Bern, and with Hans van der Voort, Scientific Volume Imaging (SVI, www.svi.nl). As usual, ELMI provided an excellent opportunity to network with colleagues from different countries.

New microscopes at University of Bern

New confocal microscope at the Vetsuisse Faculty

The Vetsuisse faculty has replaced the old and out-of-order Olympus FV1000 CLSM microscope at the Division of Experimental Clinical Research with an Olympus FV3000 microscope. The FV3000 is equipped with a Galvo scanner, resonant scanner for fast imaging, a motorised XY-stage, a live cell imaging incubator, 7 lasers (405, 445, 488, 515, 561, 594, 640), 4 GaAsp detectors and 6 objectives (4x/0.16, 10x/0.4, 20x/0.7, 30x/0.7 sil, 40x/0.6, 60x/1.3 sil). Additionally, it contains 4 widefield fluorescence filters (excitation 340-390nm, 470-495nm, 530-550nm, 590-650nm) and a Hamamatsu Flash 4.0 camera. The microscope is located at the 1st floor of the Vetsuisse building



Bremgartenstrasse 109a (room no. 119). Contact: Anna Oevermann and Camille Monney. See also MIC homepage [here](#).

New confocal microscope at the Theodor Kocher Institute (TKI)

The TKI has received a Zeiss LSM 800 confocal system. It has a motorised XY-stage, a live cell imaging incubator, 4 lasers (405, 488, 561, 640), 3 spectral GaAsP detectors and one transmission PMT detector and 4 objectives (5x/0.16, 10x/0.45, 40x/1.3 oil, 63x/1.3 w). Additionally, it comprises 3 wide field fluorescence filters (DAPI, GFP, and dsRed). The microscope is located in the room 015 of the TKI building at Freiestrasse 1, 3012 Bern. Contact: Ruth Lyck. See also MIC homepage [here](#).

New digital microscope at the Institute of Plant Sciences

The institute of Plant Sciences has installed a new Leica DVM6 digital microscope for efficient sample 2D and 3D measurements at high precision. It is mainly used to measure invertebrate traits such as length of mouthparts, body length or wing length for a large number of samples. The Leica DVM6 comes with a 3D software that allows to measure insect traits from different angles, e.g. body length as well as tibia length on the same sample. This microscope is also well suited to measure plant traits such as number of leaf hairs of high numbers of samples. Contact: Dr. Pauline Jullien. See also MIC homepage [here](#).

For detailed Information about all MIC instruments please visit our [MIC Website](#).

Highlights and important dates of the MIC in 2019

- MIC Retreat: September 18, 2019
for MIC commission members only.
- MIC Symposium: November 29, 2019.
Machine Learning in Imaging
Registration [here](#).
- MIC Commission meetings: August 22, 2019
December 12, 2019

Call for communication of events and presentations

The MIC aims to improve collaborations between researchers of the University of Bern. Please announce lectures of team members or guests to the [MIC coordinator](#) for publication on the MIC homepage and the MIC newsletter!

MIC Presentations, Trainings, Workshops, Demonstrations – upcoming events at the University of Bern

August 19, 2019

Seminar by [Tuan Leng Tay](#), University of Freiburg, Germany.

Title: Transcriptomics of microglial network organisation: from clonal expansion to resolution.

Where & when: Theodor Kocher Institute, 2nd floor, Club Room, at 11.15 am.

September 10 – 11, 2019

Training: Basics in confocal microscopy. More information see [here](#).

September 12, 2019

Seminar by Beate Neumann, EMBL, Heidelberg, Germany.

Title: Image-based high-throughput screening.

Where & when: Institute of Cell Biology, Baltzerstrasse 4, Room C161, at 11.15 am.

From September 20, 2019

Lecture Series on Advanced Microscopy, organized by the MIC. Further information on [KSL9256](#).



November 11 - 15, 2019

MIC Workshop, advanced histology and immunolabeling for paraffin and cryo-embedding and non-embedded cell cultures. More information [here](#).

November 28, 2019

Seminar by [Robert Prevedel](#), EMBL, Heidelberg.

Title: Visualising dynamic biological processes using light-field microscopy.

Where & when: Theodor Kocher Institute, Freiestrasse 1, 2nd floor, club room, at 4.00 pm.

**Trainings, Workshops, Demonstrations
– further events in Switzerland and abroad**

September 1 – 5, 2019, Berlin, Germany.

Microscopy Conference 2019. More information [here](#).

September 2 – 13, 2019, ETH Zürich, Switzerland.

13th Zurich Summer School on Biomedical Imaging. Further information see [here](#).

September 23 – 25, 2019, Ulm, Germany.

16th Confocal Raman Imaging Symposium. Further information see [here](#).

October 1 – 4, 2019, Engelberg, Switzerland.

Symposium on “3D microscopy”. Co-organized by MIC member Dimitri Vanhecke and administered by the Swiss Society for Optics and Microscopy (SSOM). Further information see [here](#).

October 14 – 17, 2019, Porto, Portugal.

NEUBIAS, the Network of European BioImage Analysts (www.neubias.org), offers two Training Schools on BioImage Analysis: [TS12](#) for Early Career Investigators (life scientists and facility staff) and [TS13](#) for Facility Staff (staff only, already comfortable with analysis workflows; focus is scripting with FIJI & Python). More information see [here](#).

October 7 – 16, 2019, Amsterdam, the Netherlands

Functional Imaging course, by the [European light microscopy initiative \(elmi\)](#). Registration deadline: 4 September 2019. More information see [here](#).

November 4 - 6, 2019, Lyon, France.

10th Imaging The Cell Symposium, by the French Society for Cell biology ([sbcf](#)). More information see [here](#).

November 21 - 22, 2019, Natural History Museum, Vienna, Austria

Conference on Multimodality Imaging in Life Sciences, by COMULIS and BioImaging Austria/CMI. More information [here](#).

February 29 – March 6, 2020, Bordeaux, France

4th conference of the Network of European BioImage Analysts (NEUBIAS). More information [here](#).

Previous MIC newsletters are available to you for download [here](#).

