

Bern, 20 May 2019

New scanning electron microscope at the Department of Chemistry and Biochemistry (DCB)

A new Gemini 450 scanning electron microscope (SEM) from Zeiss is in operation at the DCB since April 2019. The Zeiss Gemini 450 SEM has a field emitter which makes it very flexible in current (max. 40 nA) and voltage (500 eV – 30 keV). Detectors for secondary electrons (SE), back scattered electrons (BSE, 6 segments), in-lens SE and BSE, and scanning transmission electron (STEM) open various imaging options including material contrast and topography. The resolution goes well below 1 nm. A Spicer magnetic field compensation is installed to improve high resolution images. Element distribution in samples is analyzed by an EDX detector (Oxford Instruments Ultim Max 65). The instrument is located at the DCB, room S64 (ground floor, south), and operated by Beatrice Frey (Tel. 4318, beatrice.frey@dcb.unibe.ch). More information on the machine is listed on the [MIC webpage](#).

New coating machine for SEM sample preparation has been installed at Vetsuisse

A new high vacuum coating unit is available at the Division of Veterinary Anatomy. The Safematic CCU-010 allows to sputter samples with thin layers of platinum, gold or carbon in order to make them conductive. Additional sputter targets can be provided upon request (Tungsten, Palladium, Chromium etc.). Deposition rate and final film thickness are monitored automatically with a quartz crystal. The CCU-010 is also equipped with a glow discharge setup. Samples may be mounted on either a standard rotary stage or a planetary gear table. The device is freely programmable and user-friendly.

Imaris licenses in 2020

Imaris software (Bitplane) is used by a number of research groups at University of Bern for analysis of microscopy data. To obtain best conditions with Bitplane, the MIC offers bundled administration of Imaris licenses. Currently, the negotiations for the Imaris licenses in 2020 are ongoing. Research groups interested in newly joining this service of the MIC should contact Ruth Lyck (ruth.lyck@mic.unibe.ch) or Yvonne Omara (yvonne.omara@mic.unibe.ch).

MIC Mini-Symposium on Multi-Dimensional Image Processing

On March 26th, 2019 a one-day MIC Mini-Symposium on Multi-Dimensional Image processing took place. It gathered thirteen speakers including bioimage analysts from the EMBL Heidelberg and the EPFL, representatives of companies active in image processing and data management as well as researchers from the University of Bern. The names of presenters and topics of the talks are listed in the program that can be downloaded from the [MIC webpage here](#). All speakers made a fantastic job by introducing their work to a diverse audience of researchers, who were able to gather many ideas allowing to improve and simplify their imaging projects. If you want more information on part of the software presented, feel free to contact Guillaume Witz from [MIC](#) and [ScITS](#) (guillaume.witz@math.unibe.ch).



Swiss Microscopy Core Facilities have joined SSOM and LS2

In Switzerland, microscopy and imaging core facilities are interconnected in the [SwissBioImaging](#) network with the aim to share knowhow and resources. To increase visibility, SwissBioImaging has formed the new [Microscopy Core Facility](#) section of the Swiss Society for Optics and Microscopy ([SSOM](#)) and the new [Microscopy Intersection](#) at Life Sciences Switzerland, [LS2](#). At SSOM, a collective membership of the Microscopy Imaging Center of the University of Bern is envisaged. At LS2, collective membership for Universities are not offered. However, individual members of LS2 can join the intersection microscopy without additional fees. Read the mission statements of the Microscopy Core Facility section at SSOM [here](#) and of the Microscopy Intersection at LS2 [here](#).

News from ScITS

The Faculty of Science of the University of Bern supports in 2020 another Science IT Support (ScITS) proposal with strategical funds. Thus, ScITS will have resources to put additional focus on support for applied machine learning in research and closer involvement of stakeholders such as the MIC.

In 2019 and 2020, the Faculty of Science will support a university-wide “Competence Network Digitalisation” with strategic funds, a project headed by the Computer Science department. ScITS will take over a pivotal role in this network.

Highlights and important dates of the MIC in 2019

MIC Research Day:	July 3, 2019. Registration here .
MIC Summer School:	July 3 – 5, 2019.
MIC Retreat:	September 18, 2019.
MIC Symposium:	November 29, 2019. <i>Machine Learning in Imaging</i> 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

June 2019

Various [ScITS trainings](#) on digital skills (Python, Linux, GPU, Git, ...). Further information [here](#).

June 11 - 13, 2019

MIC Workshop, conventional fluorescence microscopy, laser scanning microscopy and digital image processing. With a special day on June 13, 2019: Deconvolution and HRM, introduction and Hands-On. More information [here](#).



From September 20, 2019

Lecture Series on Advanced Microscopy, organized by the MIC. Further information will be posted on the MIC webpage [here](#) and on ILIAS [here](#).

November 11 - 15, 2019

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

**Trainings, Workshops, Demonstrations
– further events in Switzerland and abroad****May 21, 2019, Olten, Switzerland.**

Seminar on biomarkers: From Sub-Cellular to Live Cells. Offered by Bucher Biotec AG. More information [here](#).

June 4 – 7, 2019, Brno, Czech Republic.

Conference. 19th international ELMI meeting. More information [here](#).

June 9 – 15, 2019, Amsterdam University, The Netherlands.

FEBS advanced course “Functional imaging of nuclear organisation and signaling”. More information [here](#).

June 11 – 14, 2019, Venice, Italy.

IVSLA International School on Nanoscale Optical Microscopy. More information [here](#). This course is offered in the frame of the European Light Microscopy Initiative ([elmi](#)).

June 18 – 23, 2019, ETH, Zurich, Switzerland.

Workshop. Fundamentals of image analysis, including basic macro programming in ImageJ/Fiji as well as other software solutions, offered by the Scientific Center for Optical and Electron Microscopy ([ScopeM](#)). More information [here](#).

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. The application deadline is on Monday, 22 April 2019. 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](#). Deadline for application is May 24, 2019.

November 4 - 6, 2019, Lyon, France.

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

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

