Bern, 18 March 2019

Symposium of the Network of European Bioimage Analysts (NEUBIAS)

On February 6 – 8, 2019, Yury Belyaev, Light microscopy manager of the MIC, attended the NEUBIAS conference in Luxembourg. The NEUBIAS conference is a forum to exchange the newest findings, applications, and cutting-edge developments in bioimage analysis, machine learning, data mining, and storage. This event brings together an international, interdisciplinary community of about 250 leading scientists in the life and computer sciences.

In the plenary talks, various experts in the field presented the latest developments in super resolution, deep learning, visualization, analysis, and storage of large images. Ivo F. Sbalzarini from TU Dresden and MPI-CBG, Germany, reported on optimizing image size during the storage of big data. Anna Kreshuk from EMBL Heidelberg, Germany, showed latest features of the software *ilastik* for image segmentation. Carolina Wählby from Center for Image Analysis - Science for Life Laboratory, Uppsala, Sweden, informed the community about the application of deep learning in digital pathology.

Additionally to an excellent scientific program, there were two NEUBIAS signature sessions: Call 4 Help: BioImage Analysis (C4H) and Open-Source Software Lounge (OSSL). C4H brings together members of the bioimage community and life-scientists to present their problems and share their suggested solutions while OSSL provided the opportunity to meet the developers, specialists and power-users who demonstrated the latest updates of open-source software packages and tools.

The University of Bern was represented by Ana Stojiljkovic, PhD student of the Cutting Edge Microscopy PhD program from the Institute of Veterinary Anatomy, Mykhailo Vladymyrov, PostDoc at the Theodor Kocher Institute, and Yury Belyaev, the light microscopy manager of the MIC. Yury has represented the MIC with a poster entitled 'GPU and parallelization allows for faster deconvolution of large data sets in light microscopy'. Here, he described a project performed together with Stefan Tschanz from the Institute of Anatomy and Daniel Sevilla Sánchez from Scientific Volume Imaging (SVI), the Dutch company developing the Huygens deconvolution software.

ScopeM

The Scientific Center for Optical and Electron Microscopy (ScopeM, http://www.scopem.ethz.ch/) represents the merger of ETH Zurich's electron (EMEZ) and light microscopy (LMSC) facilities. ScopeM maintains state-of-the art microscopy equipment and supports a variety of interdisciplinary research and training programs as well as methodological research in microscopy. The services of ScopeM are also available for external users from academy including members of the University of Bern. Please contact Yury Belyaev, if interested in ScopeM services for further information.

COST Action "Correlated Multimodal Imaging in Life Sciences", CA17121

The European Cooperation in Science & Technology (https://www.cost.eu/) has launched an action entitled "Correlated Multimodal Imaging in Life Sciences", which might be of interest to members of the MIC community. For further information, please read here. Participation in ongoing COST Actions is explicitly an option and should be negotiated with the COST National coordinators, as described here.

Activity Report of Yury Belyaev, the light microscopy manager of the MIC

Yury Belyaev joined the MIC in November 2015. Since then, Yury has developed into an indispensable pillar of MIC services at Bühlplatz area and Vetsuisse. His assistance covers a broad range of subjects and is greatly appreciated amongst the MIC community.

Teaching. The activity portfolio of Yury includes the organization of trainings on basic and advanced fluorescence microscopy. In personal appointments, Yury introduces new users into microscope handling and gives advice and support in the setup of microscopic applications. PhD students of the *Cutting Edge Microscopy* program benefit from the professional network of Yury, which was central for the students' trip to the Nikon Imaging Centre in Paris in 2018 and is important in the organization of the study trip to the microscopy facilities of EMBL, Heidelberg, in March 2019. Since 2017, Yury contributes as a lecturer to the MIC lecture series on Advanced Microscopy and from 2019, Yury teams up with Ruth Lyck to offer a practical in microscopy for medical students.

Management of microscopes. Yury is a central partner for decisions regarding new microscope acquisition or upgrades of existing equipment. As an important contribution for the saving of costs, he gives advice for acquisition of the most suitable equipment and ensures transparency in price negotiations. In addition, Yury is well aware of instrument costs at the different suppliers and brands. For optimal utilization of instruments, it is a great benefit to the MIC community that Yury overviews the occupancy rate of the different microscopes and recommends utilization accordingly. In regular intervals or on request, Yury checks the proper working conditions of the light microscopes being under his supervision.

New developments in the field of light microscopy and scientific projects. With regard to new developments, Yury connects to imaging specialists in industry and in academia and points out the most recent developments in the field. In particular, he actively instigated and promoted the interdisciplinary project on a new technology entitled "*A deep learning approach to light field microscopy for volume imaging in life sciences*" between Paolo Favaro, Institute of Informatics, and Ruth Lyck, Microscopy Imaging Center. In addition, Yury successfully contributed to the publication "*Structural characterization of four different naturally occurring porcine collagen membranes suitable for medical applications*" of Jasmin Balmer and colleagues of the Institute of Veterinary Anatomy. Finally and likewise important is the advice of Yury for most excellent presenters at MIC events such as the MIC Research Day or the MIC Symposium.

Highlights and important dates of the MIC in 2019

MIC Mini-Symposium:	March 26, 2019 ***Multi-Dimensional Image Processing.*** Registration here.
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. ***Machine Learning in Imaging*** Registration here.
MIC Commission meetings:	May 9, 2019 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**

March 12, 2019
MIC Training: Fiji basics. Further information on the MIC webpage here and on ILIAS here.

March 25, 2019
MIC training: Writing your own ImageJ/Fiji Macros. Further information on the MIC webpage here and on ILIAS here.

May 15-16, 2019
MIC Training: Basics of wide field microscopy. Further information on the MIC webpage here and on ILIAS 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.

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

February 19 - 21, 2019, Berlin, Germany.
11th European Short Course on "Time-resolved Microscopy and Correlation Spectroscopy", offered by PicoQuant, Berlin, Germany. More information here.

March 18-19, 2019, Biozentrum, University of Basel, Switzerland.
Workshop. Automated microscopy and screening. Demo of the Acquifer Imaging Machine. Program see here.

March 18-19, 2019, EPFL, Lausanne, Switzerland.
Arivis workshop hosted by BIOP. Arivis is a software, which allows the display and analysis of large data sets. It also allows navigating through your data in true interactive Virtual Reality (VR). Please have a look at the workshop flyer for more information.

April 8 – 9, 2019, Mannheim, Germany.
European IN Cell User Meeting 2019. More information here.

April 9 – 11, 2019, Biocenter of Basel University, Switzerland.
Workshop. VisiScope Spinning Disk Superresolution Confocal System, Visitron Systems GmbH. For registration and personal appointments, please contact Pablo Radermacher.

May 13 – 17, 2019, EMBL, Heidelberg, Germany
Workshop. Fundamentals of Widefield and Confocal Microscopy and Imaging. More information here.

May 19 – 24, 2019, EMBL Heidelberg, Germany
EMBL Course – Advanced Fluorescence Imaging Techniques. 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.

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.

Previous MIC newsletters are available to you for download here**.**