NEUBIAS 2018 at a glance

Wednesday 31st of January 2018

08:45 – 09:30 | Keynote Lecture 1: **Gaudenz Danuser** | Auditorium
09:30 – 10:50 | Session 1 | Auditorium
              | Coffee | TBD
11:20 – 13:20 | Session 2 | Auditorium
13:20 -       | Lunch | followed by | TBD
14:30 - 15:15 | Companies Workshop 1 & 2 | TBD
15:15 – 17:15 | “Call For Help” Session | Auditorium
              | Coffee | TDB
17:45 – 18:15 | STSMs Reports | 3 x 10’ | Auditorium
18:15 – 18:45 | FLASH talks | 10 x 2,5’ | Auditorium

18:45 - 19:30 | Companies Workshop 3 & 4 | TBD

18:45 - 20:40 | Poster Session + NEUBIAS Booths | Drinks
20:45 | Departure to Cathedral Concert downtown | (for all)

Thursday 1st of February 2018

09:00 – 09:45 | Keynote Lecture 2: **Gene Myers** | Auditorium
09:45 – 11:00 | Session 3 | Auditorium
              | Coffee | TBD
11:30 – 13:30 | Session 4 | Auditorium
13:30 -       | Lunch | NEUBIAS
              | MC Meeting | TBD
15:00 - 15:45 | Companies WS 3-4 | (on invitation)
              | Coffee | 
16:15 – 16:35 | GOLD Sponsor Talk | Auditorium
16:35 – 17:00 | Nature Methods Chief Editor | Auditorium
17:00 - 18:00 | Panel Discussion | 
18:00 - 18:45 | Open source | Companies Workshop 1 & 2
18:00 - 20:30 | Software Lounge | TBD
20:40 | Departure to Gala dinner downtown | (for all)

Friday 2nd of February 2018

09:00 – 09:50 | Session 5 | Auditorium
09:50 – 10:35 | Keynote Lecture 3: **Marleen DeBruijne** | Auditorium
              | Coffee | TBD
11:30 – 13:00 | Session 6 | Auditorium
13:00 | Lunch Box | 
13:30 | Bus Departure to Budapest Airport | 
14:30 | Bus departure to Budapest Airport |
# NEUBIAS2018 Symposium Detailed Program

**Wednesday 31st of January 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>07:45 – 08:30</td>
<td>Registration</td>
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<tr>
<td>08:30 – 08:45</td>
<td>Welcome by Peter Horvath &amp; Sebastian Munck</td>
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<td></td>
<td>*Dr. Gyula Szigeti (Vice-President - National Research, Development</td>
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<td></td>
<td>and Innovation Office)*</td>
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## Keynote Lecture

**Chair: Sebastian Munck**

<table>
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<tr>
<th>Time</th>
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<th>Topic</th>
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<tr>
<td>08:45 – 09:30</td>
<td><strong>Gaudenz Danuser</strong>, UT Southwestern (Dallas, Texas, USA)</td>
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<td><strong>Discoveries of Cellular Mechanisms by Computer Vision</strong></td>
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<td></td>
<td><strong>Arrate Muñoz-Barrutia</strong>, University Carlos III (Madrid, Spain)</td>
<td></td>
<td><strong>Imaging and measuring cancer cell migration</strong></td>
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<tr>
<td>09:30 – 09:55</td>
<td><strong>Charles Kervrann</strong>, INRIA (Rennes, France)</td>
<td></td>
<td><strong>Computational methods for fluorescence microscopy and quantitative bioimaging</strong></td>
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<tr>
<td>09:55 – 10:20</td>
<td><strong>Klim Kolyvanov</strong>, Max Delbrueck Centre for Molecular Medicine</td>
<td>Berlin, Germany</td>
<td><strong>A computational approach to study transcriptional regulation in C. elegans</strong></td>
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<tr>
<td>10:20 – 10:35</td>
<td><strong>Assaf Zaritsky</strong>, Weizmann Institute (Tel-Aviv, Israel)</td>
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<td><strong>Long-range intercellular communication in collective cell migration</strong></td>
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<tr>
<td>11:20</td>
<td>Coffee</td>
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## Session II

**Chair: TBD**

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<th>Time</th>
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<th>Topic</th>
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<tbody>
<tr>
<td>11:20 – 11:45</td>
<td><strong>Irene Fondón</strong>, University of Seville (Spain)</td>
<td></td>
<td><strong>Automatic CDR Estimation for Early Glaucoma Diagnosis</strong></td>
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<tr>
<td>11:45 – 12:10</td>
<td><strong>Loïc Royer</strong>, Chan Zuckerberg Biohub (San Diego, CA, USA)</td>
<td></td>
<td><strong>Adaptive light-sheet microscopy for long-term, high-resolution imaging in living organisms</strong></td>
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<tr>
<td>12:10 – 12:25</td>
<td><strong>Jeremy Pike</strong>, XXX University of Birmingham (UK)</td>
<td></td>
<td><strong>Persistent Homology as a tool to probe structure in single molecule localization microscopy datasets</strong></td>
</tr>
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</table>
12:25 – 12:40
Mark Winter, Drexel University (Philadelphia, PA, USA)
selected
Live cell & organelle microscopy:
the browser is the microscope

12:40 – 12:55
Jagadish Sankaran, National University of Singapore
selected
ImFCS-an ImageJ plugin for Imaging FCS data analysis
and visualization

12:55 – 13:20
John Bogovic, HHMI Janelia Farm (USA)
invited
Methods and Tools for Neural Anatomy Reconstruction
from Light and Electron Microscopy

13:20 –
Lunch
Room TBA

followed by

14:30 - 15:15
Companies Workshop 1 or 2
Room TBA

“Call For Help”
aka Shout your problem, Analysis Clinics....
Chair: Laure Plantard, Simon Noerrelykke, Szymon Stoma

15:15 – 17:15
Interactive Session: Life Scientists and BiolImage Analysts facing
Image Analysis Roadblocks in their research projects have submit
ted their problem, Developers and Analysts will address them, build
and benchmark Solutions. 10’ per project with plenary discussion

17:15
Coffee !!!

17:45 – 18:15
NEUBIAS: Short Term Scientific Missions Reports

Victor Caldas - Imaging symbiotic networks across scales

Alex Hargreaves - Analysis Workflows to resolve Aniline Blue Assay for
Sperm Chromatin Condensation

Patricia Garcia-Cañadilla -
Detailed characterization of scar and fibrous
tissue in hearts using high resolution phase-contrast X-ray imaging
FLASH TALKS

18:00 – 18:30

selected

Allan Sauvat, ColocalizR: an R-based application for colocalization analysis in High-throughput

Florian Levet, Polygon-based Colocalization Analysis for Multicolor SMLM Data

Juan Manuel Garcia Arcos, Bleb-based migration has inverted contact guidance on nanogrooves

Devrim Ünay, Robustness of Local Invariant Feature Descriptors extracted from fixed-grid locations in Laser Scanning Microscopy Images

Tong Li, MAARS: a novel high-content acquisition software for the analysis of mitotic defects in fission yeast

Leandro Aluisio Scholz, Tracing biofilaments: The trials and tribulations of newcomers to the area of image analysis

Anastassia Mikhailova, Automated analysis of T-cell contacts and the formation of the immune synapse in medium throughput approaches.

Martin Maška, A Model-Based Generator of Synthetic 3D Time-Lapse Sequences of Single Motile Cells with Growing and Branching Spikes

David Hörl, A Software Framework for Image Analysis Driven Microscope Control

Poster Session PARALLEL TO Companies Workshops

18:40 – POSTERS Session - START

+ NEUBIAS Booths
+ Drinks

- 20:40 POSTERS Session - END

20:45 Departure to Cathedral, Concert.
Thursday 1st of February 2018

**Keynote Lecture**  
*Chair: Florian Jug*

09:00 – 9:45  
**Gene Myers**, MPI for Cell Biology & Genetics (Dresden, Germany)  
Computational Optics

**Session III**  
*Chair: TBA*

9:45 – 10:10  
**Natasa Sladoje-Matic**, CIA - University of Uppsala (Sweden)  
invited  
**Improved distance measures between images and their performance in biomedical applications**

10:10 – 10:35  
**Virginie Uhlmann**, École Polytechnique Fédérale de Lausanne (CH)  
invited  
**Continuous Representations in Bioimage Analysis: a Bridge from Pixels to the Real World**

10:35 – 11:00  
**Ajay Limaye**, Australian National University (Canberra, Australia)  
invited  
**Drishti/Drishti Prayog - Volume Exploration and Presentation Tool**

Coffee break

**Session V**  
*Chair: TBA*

11:30 – 11:55  
**Anna Kreshuk**, HCI, University of Heidelberg (Germany)  
invited  
**ilastik: latest developments and future plans**

11:55 – 12:20  
**Christian Dietz**, University of Konstanz (Germany)  
invited  
**KNIME Image Processing: Integrating and Enhancing Open Source Bioimaging Software**

12:35 – 12:50  
**Beth Cimini**, The Broad Institute (Boston, MA, USA)  
selected  
**High-Throughput Morphological Analysis of Complex Systems Using CellProfiler and CellProfiler Analyst**

11:45 – 12:00  
**Richard Domander**, The Royal Veterinary College (London, UK)  
selected  
**The BoneJ2 anisotropy plugin - a case study in best practices in research software engineering**

12:00 – 13:05  
**Federico Barabas**, KTH Royal Inst. of Techn. (Stockholm, Sweden)  
selected  
**Open-source python software in super-resolution fluorescence microscopy: from instrument control to quantitative data analysis**
13:05 - 13:30  Tobias Pietzsch, Max Planck Institute for Cell Biology and Genetics (Dresden, Germany)

TrackMate, MaMuT, Mastodon -- Evolution of Track Editing Tools in Fiji

13:30 – Lunch

NEUBIAS Management Committee (on invitation only)

15:00 - 15:45  Companies Workshop 3 or 4

15:45  Coffee

16:15 – 16:35  Gold Sponsor Session  
Chair: TBA

Sebastian Rhode, Carl Zeiss Germany

New Tools and Developments for Image Handling and Processing inside the ZEN world

16:35 – 17:00  Special Session  
Chair: Peter Horvath

invited Natalie De Souza, Nature Methods, Chief Editor (NY, USA)

Imaging and image analysis at Nature Methods

16:35 – 17:00  Panel Discussion  
Chair: Kota Miura

OsSL in PARALLEL TO Companies Workshops

18:00 - 20:30

3 rotations:

Open source 18:00 - 18:50
Software Lounge 19:40

Standing (and drinking...) over the shoulders of (Open source) giants...

ilastik, Fiji, KNIME, Cytomine, Drishti/Drishti Prayog, CellProfiler, QuimP, Advanced Cell Classifier, DeBIAS, ClearVolume/Mastodon/Sciview, CellTool, CPI scripting, GcoPS, DiversePathJ, SIMCheck, ImFCS, BoneJ2, Open Source Python for Super-resolution, more..

20:45  Departure to Gala dinner
Friday 2nd of February 2018

Session V

09:00 – 09:25

Peter Horvath, University of Uppsala (Sweden)

invited

Life beyond the pixels: single-cell analysis using machine learning and image analysis methods

09:25 – 09:50

Florian Jug, Max Planck Institute for Cell Biology and Genetics (Dresden, Germany)

invited

Content-Aware Image Restoration and Quantitative Downstream Analysis

Keynote Lecture

09:50 – 10:35

Marleen De Bruijne, Erasmus MC Rotterdam (the Netherlands) / University of Copenhagen (Denmark)

invited

Machine learning imaging biomarkers

Coffee

Session VI

11:05 – 11:30

Jason Swedlow, University of Dundee (Scotland, UK)

invited

The Image Data Resource: a platform for publishing, integrating and mining biological imaging data at scale

11:30 – 11:45

Vannary Meas-Yedid, Institut Pasteur (Paris, France)

selected

Computer-assisted Inflammation Analysis of Kidney-Graft biopsy to improve risk stratification in allograft rejection.

11:45 – 12:00

Lijuan Zhang, Vienna Biocenter Core Facilities (Vienna, Austria)

selected

COST Action: BioBrillouin

12:00 - 12:15

Martin Jones, The Francis Crick Institute (London, UK)

selected

Battling Big Data in Electron Microscopy

12:15 - 12:30

Ella Bahry, Max Delbrück Center for Mol. Medicine (Berlin, Germany)

selected

Correlative Light-Electron Microscopy Based High Resolution Nuclear Atlas of C. elegans Dauer

12:30- 12:45

Paul Villoutreix, Weizmann Institute (Tel Aviv, Israel)

selected

The Embryo Digital Atlas

12:45- 13:00

Juliana Pfeil, Technical Univ. of Applied Science (Widau, Germany)

selected

Computer vision for empowering of mobile microscopy in blood analysis

13:00

End Message, Lunch Box and Departure Buses to Airport from 13:30