Tuesday 5th of February   **Venue: Neumünster Abbey**

14:00-15:00   Helpdesk: Registration

15:00 - 19:00   **SATELLITE MEETING for Bioimage Analysts**

15:00-16:30   Session 1: N-D Batch Image Analysis
                     3x Talks:
                     Fiji, CellProfiler, Knime
                       + Discussion   Salle José Ensch

16:30   *Coffee*   (Lounge Area nearby)

17:00-18:30   Session 2: Computational Infrastructures
                     3x Talks
                     Virtualized analysis workstations, Slurm clusters, HIVE
                     + Discussion   Salle José Ensch

Up to 19:00   Discussion, networking

19:00-   *Free Evening*

NEUBIAS 2019 at a glance

	Wednesday 6th of February		*Location*
09:00	INTRO	Keynote **SUSAN COX**	Auditorium
09:55	Session 1	3x Talks	
11:00	*Coffee*		(Abbaye)
11:30	Session 2	4x Talks + 8x Flash talks	Auditorium
13:00	POSTERS	*with Lunch*	(Cloister)
15:00	Session 3	2x Talks + PANEL DISCUSSION	Auditorium
17:00	*Coffee*		(Cloister)
17:30	Company Workshops #1: Carl Zeiss, Nikon, Leica		Vaulted Rooms
	+ OsSL	round 1	(Nic Klecker Space)
18:15	OsSL	round 2	(Nic Klecker Space)
19:00	OsSL	round 3	(Nic Klecker Space)
20:00		*Free Evening*	

	Thursday 7th of February		
09:00	Keynote	**KEVIN ELICEIRI**	Auditorium
09:45	Session 4	2 Talks + Platinum Sponsor Talk (ZEISS)	
10:55	*Coffee*		(Abbaye)
11:25	Session 5	3 Talks + Companies Techbites	Auditorium
12:50	POSTERS		(Cloister)
	Digital Posters by Companies	*with lunch*	(Cloister)
13:30:	NEUBIAS MC Meeting **on invitation**		*(Salle José Ensch)*
14:50	Company Workshops #2: Carl Zeiss, Nikon, Leica		Vaulted Rooms
15:35	Company Workshops #3: Carl Zeiss, Nikon, Leica		Vaulted Rooms
16:20	Coffee		(Cloister)
16:40	Session 6	2x Talks	Auditorium
17:30	CALL FOR HELP		Auditorium
19:30	*Bus Departure to Gala Dinner*		

	Friday 8th of February		
09:00	Keynote	**IVO SBALZARINI**	Auditorium
09:50	Session 7	3x Talks	
		3x STSMs Reports	
11:00	*Coffee*		(Reception / Krieps)
11:30	Session 8	6x Talks	Auditorium
13:15	Closing comments		
13:25	Lunch, end and departure		

NEUBIAS 2019 Symposium Detailed Program

Wednesday 6th of February 2019

08:00 – 08:50　　Registration
08:50 – 09:10　　Welcome by organizers and funders:
　　　　　　　　Andreas Girod, Aymeric Fouquier D'Hérouel (Univ. Luxembourg)
　　　　　　　　Sebastian Munck (NEUBIAS WG1 Lead).
　　　　　　　　Sean Sapcariu, Fonds National de la Recherche (FNR Luxembourg)

Session I　　　　*Chair: Siân Culley*

Keynote Lecture　　　　　　　　　　　　　　　*(Auditorium)*

09:10 – 09:55　　**SUSAN COX,** Kings College London (UK)
　　　　　　　　　Seeing and believing in localization microscopy

09:55 – 10:20　　*Siân Culley*, University College London (UK)
invited　　　　　　　**NanoJ-SQUIRREL: Super-resolution quality assessment and artefact detection in Fiji/ImageJ**

10:20 – 10:45　　*Florian Levet,* Institute for Interdisciplinary Neuroscience
invited　　　　　　　　　(Bordeaux, FR)
　　　　　　　　　Quantitative analysis of single-molecule localization microscopy: A Voronoï tessellation story

10:45 – 11:00　　*Anna Medyukhina,* Leibniz Institute for Natural Product Research and Infection Biology (Jena, DE)
selected　　　　　　**DeconvTest: an in silico microscopy framework to evaluate the accuracy of deconvolution**

11:00　　　　　　Coffee　　　　　　　　　　　　　　　(Abbaye)

Session II　　　*Chair: Virginie Uhlmann*

11:30 – 11:45　　*Youcef Kazwiny*, VIB Leuven (BE)
selected　　　　　　**Automatic cell tracking in Ca2+ imaging recordings of the enteric nervous system using B-Spline Explicit Active Surfaces; a Ca2+ imaging analysis package**

11:45 – 12:00　　*Mikko Huttunen*, Laboratory of Photonics, Tampere Univ. (FI)
selected　　　　　　**Fast and accurate classification of multiphoton microscopy images from the dermoepidermal junction in human skin using deep learning**

12:00 – 12:15　　*Benjamin Schmid,* Optical Imaging Centre Erlangen, Univ. of Erlangen-Nuremberg (DE)
selected　　　　　　**AnimationComposer: Animating 3D/4D microscopy data using a natural language based syntax**

12:15 – 12:30 *selected*	*Minh Doan,* Broad Institute (Boston, MA, USA) **High and Deep Imaging Flow Cytometry: A Potential Diagnostic Tool for Hematological Disorders**
12:30 – 12:55	*FLASH TALKS (***Max 2'30")**
selected	*Gabriele Marchello*, **4D Image Analaysis Techniques in Liquid Transmission Microscopy for Soft Matter systems** *Soeren Strauss*, **MorphoGraphX 2.0: Next generation of 4D biological image analysis** *Martin Schorb*, **Python, KNIME, et al. to enable Automated Feedback Electron Microscopy** *Stefan Helfrich,* **KNIME Image Processing: Status Quo and Future Directions** *Beatriz Costa-Gomes*, A**LFRED: automated image analysis application to inform mathematical modelling of microtubule networks in nerve cells** *Martin Jones*, **Harnessing the power of the crowd for bioimage analysis** *Zoltan Cseresnyes*, **ACAQ: a Fiji and R toolkit targeted for automa ted confrontation assay quantification** *Fariba D.Khameneh*, **A Robust Computer Aided Approach for Scoring and Quantitative Evaluation of Whole Slide Digital Images of HER2 Immunohistochemistry in Breast Cancer** *Bram van den Broek,* **Live-cell fluorescence lifetime screening: microscopy and analysis workflow** *Laurent Thomas,* **Automatic regions of interest detection for smart microscopy applications in whole organism screening**
13:00 - 15:00	Lunch and POSTER SESSION I (Cloister)
Session III	*Chair: Khaled Khairy*
15:00 - 15:25 *selected*	*Dagmar Iber*, ETH Zuerich (CH) **From Networks to Function - Computational Models of Organogenesis**
15:25 – 15:50 *selected*	*Sébastien Tosi*, IRB Barcelona (ES) **BIAFLOWS: A collaborative framework to benchmark bioimage analysis workflows**
15:50 – 17:00	***Panel Discussion*** *Chair: Kota Miura*
17:00 - 17:30	Coffee (Cloister)

17:30– 20:00

Open source   *AND*   **Companies Workshop 1**
Software Lounge
(OsSL)

3 rotations: 3 parallel workshops:

17:30 - 18:20   17:30-18h15
     Carl Zeiss
     (Vaulted Rooms)

OsSL Round 1   17:30-18h15
(Nic Klecker Space)   Nikon
     (Vaulted Rooms)

     17:30-18h15
     Leica
     Microsystems
     (Vaulted Rooms)

18:20 - 19:10   OsSL Round 2   (Nic Klecker Space)

19:10 - 20:00   OsSL Round 3   (Nic Klecker Space)

20:00 onwards   *Free evening*

Thursday 7th of February 2019

Session IV   *Chair: Perrine Paul-Gilloteaux*

Keynote Lecture

09:00 – 9:45   **KEVIN W. ELICEIRI** University of Wisconsin (Madison, WI, USA)
The ImageJ Ecosystem: An Open and Extensible Platform for Biomedical Image Analysis.

9:45 – 10:10
invited
Carolina Wählby, Center for Image analysis - Univ. Uppsala (SE)
Analysis of time-series and large tissue samples; new possi bilities with deep learning and spatially resolved analysis of gene expression

10:10 – 10:35
invited
Wei Ouyang, SciLifeLab - KTH Stockholm (SE)
Democratizing deep learning for advanced microscopy with A-net and ImJoy

10:35 – 10:55
Platinum
Sponsor Talk
Marion Lang, Carl Zeiss Microscopy (DE)
Bringing it All Together - New Tools for Multimodal Microscopy in ZEN

Coffee   (Cloister)

Session V   chair: Jan Eglinger

11:25 – 11:50
invited
Jean-Yves Tinevez, Institut Pasteur (Paris, FR)
End-user Bioimage Analysis tools for very large images - From TrackMate to Mastodon.

11:50 – 12:15
invited
Marion Louveaux, Center for Organismal Studies, Heidelberg (DE)
An example of successful use of neural networks to segment plant cell membranes in light sheet microscopy images

12:15 – 12:30
selected
David Hörl, Ludwig-Maximilians-Univ. (Munich, DE)
BigStitcher: Reconstructing high-resolution image datasets of cleared and expanded samples

12:30 – 12:50   *Companies Techbites 2' per sponsor*

12:50 - 14:50   POSTER SESSION II   (Cloister)
and
Lunch with Companies Digital Poster Session   (Cloister)
by Vironova, Cytomine, KMLVision

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14:50 - 15:35	3 parallel workshops:	
	Carl Zeiss	(Vaulted Rooms)
	Nikon	(Vaulted Rooms)
	Leica Microsystems	(Vaulted Rooms)
15:35 - 16:20	Carl Zeiss	(Vaulted Rooms)
	Nikon	(Vaulted Rooms)
	Leica Microsystems	(Vaulted Rooms)

16:20 - 16:40   Coffee

Session VI   *Chair: Raphaël Marée*

16:40 – 17:05   *Anna Kreshuk*, EMBL Heidelberg (DE)
invited   **On the way to deeper ilastik**

17:05 – 17:30   *Khaled Khairy,* St Jude's Children Research Hospital (Memphis, TN, USA)
selected   **Bioimage Analysis at Scale with Priors and Model Contraints:**
Applications to EM and In-Vivo Light-Sheet Imagery

17:30 – 19:30   ***"Call For Help"   aka Shout your problem, Analysis Clinics....***
Chair: Laure Plantard, Simon Noerrelykke, Szymon Stoma

Interactive Session: *Life Scientists and BioImage Analysts facing Image Analysis Roadblocks in their research projects have submitted their problem, Developers and Analysts will address them, build and benchmark solutions. 10' per project with plenary discussion*

19:30   Bus departure to Gala Dinner

Dinner

Return Bus from 23h (about 45min drive) to a selection of Hotels (Belval Campus + Train station + Belle Vue).

Friday 8th of February 2019

Session VII   *Chair: Robert Haase*

Keynote Lecture

09:00 – 9:45   **IVO SBALZARINI**, Max-Planck Institute for Cell Biology and Genetics, TU Dresden (DE)
Coping with Big Image Data by Content-Adaptive Image Representation

9:45 – 10:00   *Florian Jug*, MPI for Cell Biology and Genetics (Dresden, DE)
selected   **Content-Aware Image Restoration for Light and Electron Microscopy Facilitates Quantitative Data Analysis**

10:00 – 10:15   *Virginie Uhlmann,* EMBL-EBI (Cambridge, UK)
selected   **Sparse Dictionary Learning for Bioimage Analysis of 2D Shapes**

10:15 – 10:30   *Christian Tischer,* EMBL Heidelberg (DE)
selected   **Whole-organism cellular correlation of a gene-expression atlas with ultrastructural morphology in Platynereis dumerilii**

STSM reports   *Chair: Julia Fernandez-Rodriguez*

10:30 – 11:00   *Arianne Bercowsky-Rama,* EPFL (Lausanne, CH)
Harnessing cell-lineaging in the zebrafish embryo in the context of large images.

Michael Barbier, Univ. Antwerp (BE)
Automated brain region recognition in fluorescently labelled brain tissue slices

Szymon Stoma, ETH Zuerich (CH, Hostlab)
Machine learning for Embryo selection for in-vitro fecundation, and organization of a bio image analysis facility

Coffee   (Cloister)

Friday 8th of February 2019 (END)

Session VIII	*Chair: Joyce Kao*

11:30 - 11:40
invited

Julia Fernandez-Rodriguez, University of Gothenburg (SE)
"COMULIS (COST Action CA17121**): Correlated Multimodal Imaging in Life Sciences", a new network to bridge (pre) clinical imaging and correlative Light Electron microscopy**

11:40 - 12:05
invited

David Rousseau, University of Angers (FR)
New costs and bottlenecks in the Era of machine learning for bioimaging

12:05 - 12:30
invited

Pekka Ruusuvuori, Tampere University (FI)
3D reconstruction and machine learning based analysis of tumors from histological images

12:30 - 12:45
selected

Elisabeth Wetzer, Centre for Image Analysis, Uppsala Univ (SE)
Towards automated multiscale Glomeruli detection and analysis in TEM by fusion of CNN and LBP maps

12:45 - 13:00
selected

David Bunk, Ludwig-Maximilians-Univ. (Munich, DE)
Facilitating limited ground-truth biomedical image analysis by deep learning based image augmentation

13:00 - 13:15
selected

Felipe Delestro, ENS / INSERM / CNRS (Paris, FR)
A multiple cell tracking method dedicated to the analysis of memory formation in vivo

13:15 - 13:25

End Message, followed by Lunch and Departure