

## Processing and Analysis of Microscopic Images in Biomedicine (PAMIB), March 31 - April 4, 2025

	Monday 31	Tuesday 1	Wednesday 2	Thursday 3	Friday 4
8:30 - 9:00	<b>Registration</b>	X	X	X	X
9:00 - 9:45	Digital image formation and terminology <i>Michaela Blažíková</i>	Image acquisition conditions and deconvolution <i>Ivan Novotný</i>	Tracking - principles and algorithms <i>Michaela Blažíková</i>	3D/4D image visualization and analysis in <b>Imaris</b> <i>Daniel Reisen</i>	Estimation of volume and surface (Point Grid, Cavalieri's principle, Fakir) - virtual and/or physical sections ----- Estimation of length and particle numbers (Slicer, Disector) - virtual sections <b>9.00-12.30 (2 parallel groups)</b>
	Introduction into Fiji 1 <i>Jan Valečka</i>	<b>Huygens</b> : Image deconvolution I <i>Ivan Novotný</i>	Fiji: Tracking - practicals <i>Michaela Blažíková</i>	<b>Imaris</b> : Examples of interactive image analysis and visualization (using cloud computers) <i>Daniel Reisen</i>	
9:50 - 10:35					
10:35 - 10:55	coffee	coffee	coffee	coffee	coffee
10:55 - 11:40	Introduction into Fiji 2 <i>Jan Valečka</i>	<b>Huygens</b> : Image deconvolution II <i>Ivan Novotný</i>	Evaluation of colocalisation in microscopic images <i>Martin Čapek</i>	FRAP data analysis <i>Michaela Blažíková</i>	3D analysis: Scale setting, 3D image filtration and measurement in Fiji ----- Triangulated surfaces reconstruction <b>9.00-12.30 (2 parallel groups)</b>
	Image analysis in Fiji <i>Michaela Blažíková</i>	<b>Huygens</b> : Image deconvolution III (stand-alone practical tasks) <i>Ivan Novotný</i>	Fiji: Evaluation of colocalisation in microscopic data <i>Martin Čapek</i>	Fiji: FRAP data analysis <i>Michaela Blažíková</i>	
11:45 - 12:30					
12:30 - 13:30	Lunch	Lunch	Lunch	Lunch	EVAL + Certificates 12.30-13.00
13:30 - 14:15	Fiji: Stand-alone practical tasks <i>Michaela Blažíková</i>	Segmentation methods <i>Martin Čapek</i>	Pattern: Evaluation of clustering and colocalisation of point patterns <i>Vlada Philimonenko</i>	3D image processing and geometrical modelling <i>Jiří Janáček</i>	Informal lunch 13.00-14.00
	Guidelines for processing and presenting microscopy images in scientific publications <i>Jan Valečka</i>	Fiji: Using segmentation for detection of structures in various microscopic images <i>Martin Čapek</i>	Fiji: Macros - Introduction into IJM language <i>Jan Valečka</i>	Fiji: Image filtration / Morphological image processing and analysis <i>Jiří Janáček</i>	
15:10 - 15:55	NIS Elements: Demo of simple analyses and advanced automatized tasks <i>Michaela Blažíková</i>	Fiji: Artificial Intelligence (AI) approaches to image segmentation <i>Martin Čapek</i>	Fiji: Using macros for data processing and analysis <i>Jan Valečka</i>	Stereological methods and measurement <i>Barbora Radochová</i>	
	Short participant test	Short participant test	Short participant test	Short participant test	

Theoretical Lectures

Practicals/Demo in One Group

Practicals in Two Parallel Separated Groups