



Processing and Analysis of Microscopic Images in Biomedicine (PAMIB), April 17-21, 2023

	Monday 17	Tuesday 18	Wednesday 19	Thursday 20	Friday 21
8:30 - 9:00	Registration	X	X	X	X
9:00 - 9:45	Digital image formation	Segmentation methods	Evaluation of colocalisation in microscopic images	3D/4D image visualization and analysis in Imaris (distant online lecture)	Estimation of volume and surface (Point Grid, Cavalieri's principle, Fakir) - virtual and/or physical sections <hr/> Estimation of length and particle numbers (Slicer, Disector) - virtual sections 9.00-12.30 (2 parallel groups)
	<i>Michaela Blažíková</i>	<i>Martin Čapek</i>	<i>Martin Čapek</i>	<i>Daniel Reisen</i>	
9:50 - 10:35	Digital image terminology	Fiji: Using segmentation for detection of structures in various microscopic images	Fiji: Evaluation of colocalisation in microscopic data	Imaris: Examples of interactive image analysis and visualization (online - using cloud computers)	
	<i>Michaela Blažíková</i>	<i>Martin Čapek</i>	<i>Martin Čapek</i>	<i>Daniel Reisen</i>	
10:35 - 10:55	coffee	coffee	coffee	coffee	coffee
10:55 - 11:40	Introduction into Fiji 1	Fiji: Artificial Intelligence (AI) approaches to image segmentation	Pattern: Evaluation of clustering and colocalisation of point patterns	FRAP data analysis	3D analysis: Scale setting, 3D image filtration and measurement in Fiji <hr/> Triangulated surfaces reconstruction 9.00-12.30 (2 parallel groups)
	<i>Jan Valečka</i>	<i>Martin Čapek</i>	<i>Vlada Philimonenko</i>	<i>Michaela Blažíková</i>	
11:45 - 12:30	Introduction into Fiji 2	Fiji: Macros - Introduction into IJM language	Image acquisition conditions and deconvolution	Fiji: FRAP data analysis	
	<i>Jan Valečka</i>	<i>Jan Valečka</i>	<i>Ivan Novotný</i>	<i>Michaela Blažíková</i>	
12:30 - 13:30	Lunch	Lunch	Lunch	Lunch	Eval + Certificates 12.30-13.00
13:30 - 14:15	Guidelines for processing and presenting microscopy images in scientific publications	Fiji: Using macros for data processing and analysis Segmentation methods	Huygens: Image deconvolution I	3D image processing and geometrical modelling	Informal lunch with pizza 13.00-14.00
	<i>Michaela Blažíková</i>	<i>Jan Valečka</i>	<i>Ivan Novotný</i>	<i>Jiří Janáček</i>	
14:20 - 15:05	Image analysis in Fiji	Tracking - principles and algorithms	Huygens: Image deconvolution II	Fiji: Image filtration / Morphological image processing and analysis	
	<i>Michaela Blažíková</i>	<i>Martin Čapek</i>	<i>Ivan Novotný</i>	<i>Jiří Janáček</i>	
15:10 - 15:55	Fiji: Stand-alone practical tasks	Fiji: Tracking - practicals	Huygens: Image deconvolution III (stand-alone practical tasks)	Stereological methods and measurement	
	<i>Michaela Blažíková</i>	<i>Martin Čapek</i>	<i>Ivan Novotný</i>	<i>Barbora Radochová</i>	
16:00 - 16:20	Short participant test	Short participant test	Short participant test	Short participant test	

Theoretical Lectures

Practicals in One Group

Practicals in Two Parallel Separated Groups