preliminary

Microscopy methods in biomedicine 14-18th October 2019

		Monday, Oct.14	Tuesday, Oct.15	Wednesday, Oct.16	Thursday, Oct.17	Friday, Oct.18
	8:15-8:45	REGISTRATION	X	X	X	X
	8:45-9:00	Introductory word				
LECTURES	9:00-9:45	**Light microscopy instrumentation**	**Fluorophores**	**Resolution and superresolution in fluorescence microscopy overview**	**Image formation in transmission electron microscope**	**Introduction to image deconvolution**
		Pavel Krist	*Jan Sýkora*	*Ivan Novotný*	*Oldřich Benada*	*Ivan Novotný*
	9:45-10:30	**Contrast-enhancing techniques in optical microscopy**	**Introduction to live cell imaging**	**Superresolution in light microscopy: STORM, SIM, STED**	**Scanning electron microscopy**	**Image acquisition by two-photon microscopy**
		Martin Čapek	*Ivan Novotný*	*Ivan Novotný*	*Oldřich Benada*	*David Vondrášek*
	10:30-11:00	*Coffe break*				
	11:00-11:45	**Resolution and image formation in light microscopy**	**Spining disc confocal microscopy**	**Quantitative phase microscopy**	**Preparing samples for TEM**	**Optical projection tomography**
		Ivan Novotný	*Michaela Efenberková*	*Martin Čapek*	*Jana Nebesářová*	*Martin Čapek*
	11:45-12:30	**Basics of fluorescence microscopy and immunolabeling**	**Light Sheet microscopy**	**Computative high resolution methods**	**Preparing samples for SEM**	**Introduction to image processing**
		Pavel Hozák	*Helena Chmelova*	*Michaela Efenberková*	*Jana Nebesářová*	*Jiří Janáček*
	12:30-13:30	LUNCH	**LUNCH WORKSHOP**	LUNCH	LUNCH	LUNCH
	13:30-14:15	**Multi-dimensional laser confocal microscopy**	**FRAP + FCS**	**Methodolgy for correct microscopy**	**Advanced electron microscopy techniques**	**Image analysis and visualization in 3D**
		Pavel Hozák	*Michaela Efenberková*	*Ivan Novotný*	*Vlada Filimonenko*	*Jiří Janáček*
PRACTICAL DEMONSTRATION	14:30-17:30 4x 45 min	**Fluorescence macroscope** (AxioZoom.V16, room 0.175)	**Confocal Spinning disc** (Dragonfly, room 0.171)	**Superresolution: STED** (STED, room 0.174)	**TEM demonstration**	**Preparation of digital photographic documentation for publication**
		ZEISS-Pavel Krist	*Ivan Novotný*	*Ivan Novotný*	*Jana Nebesářová*	*Oldřich Benada, 45 min*
		Confocal Microscope (STED, room 0.174)	**Light Sheet** (Zeiss Z.1, room 0.173)	**Quantitative Phase Microscope** (Qpi, room 0.175)	**SEM demonstration**	**Recap + Evaluation approx. 15 min**
		Ivan Novotný	*Helena Chmelova*	*Martin Čapek*	*Oldřich Benada*	
		Fluorescence microscope (Leica DM6000, room 0.172)	**Photo-kinetic: FRAP** (OMX, room 0.174)	**Superresolution: SRRF** (Dragonfly, room 0.171)	**HPF, FS and ultramicrotomy**	
		Helena Chmelová	*Michaela Efenberková*	*Andor-Alexandr Pospěch*	*Dominik Pinkas*	
		Adjusting the microscope: Köhler illumination and Phase contrast + DIC (room 0.173)	**Live cell imaging** (DV, room 0.171)	**Superresolution: SIM** (OMX, room 0.174)	**EM immunolabeling: detection, clustering and colocalization**	
		Pragolab-Martin Kopecký	*Anastasiya Klebanovych*	*Michaela Efenberková*	*Vlada Filimonenko*	