



Institute of Experimental  
Botany of the AS CR, v. v. i.

## Imaging Facility

# Institute of Experimental Botany ASCR - IFIEB, Prague

[www.ueb.cas.cz/if](http://www.ueb.cas.cz/if)

invites you to the workshop

## Multi-modal light microscopy imaging in plant research

October 18-19, 2023



The two-day course **Multi-modal light microscopy imaging in plant research** is focused on live-cell confocal fluorescence microscopy. The course is intended for plant researchers, PhD students and highly motivated pregraduate students. After a theoretical introduction, participants will have an opportunity to compare, at a glance, light microscopy modalities of the IFIEB.

### Hands-on include

- i) long-term non-invasive imaging utilizing plant-optimized vertical-stage confocal microscope
- ii) ultrafast simultaneous two-channel imaging on spinning disk microscope, SRRF, perfusion chamber
- iii) high-resolution imaging with Airyscan 2 with multiplex mode, Vaheat
- iv) image analysis, Virtual reality

Special emphasis will be given to the tips and tricks for sample preparation and experimental design. Participants are encouraged to discuss their experiments and bring their own samples.

Workshop is free of charge for students and academic, however **registration is required**.

Please send e-mail to

[ifieb@ueb.cas.cz](mailto:ifieb@ueb.cas.cz)

The course is supported by the National Infrastructure for Biological and Medical Imaging (Czech-Biolmaging, Ministry of Education, Youth and Sports – Large Research Infrastructure, LM2023050).



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### Preliminary Program

#### Day 1

- 09:30 - 09:45 Introduction and organization details  
09:45 - 10:45 Pavel Krist - Introduction to fluorescence microscopy / Partner' lecture  
10:45 - 11:00 Coffee break  
11:00 - 11:20 Kateřina Malínská – At the crossroads of light microscopy methods for plant research / Theory  
11:20 - 12:00 Lunch break  
12:00 - 14:00 Hands-on session A (4 parallel groups)  
14:00 - 16:00 Hands-on session B  
16:00 - 17:00 Imaging of participants' samples

#### Day 2

- 09:30 - 10:00 Kateřina Schwarzerová - Actin, peroxisome and beyond / Invited lecture  
10:00 - 10:30 Jan Petrášek - The nanodomain organization of PINFORMED auxin efflux carriers  
10:30 - 10:45 Coffee break  
10:45 - 12:45 Hands-on session C  
12:45 - 13:30 Lunch break  
13:30 - 15:30 Hands-on session D  
15:30 - 16:00 Final discussion, feedback form

### Hands-on parallel sessions

- LONG-TERM IMAGING** Adriana Jelínková/Ivan Kashkan: vertical-stage microscopy; long term imaging with tile-scan or tracking algorithm; application of gravistimulus; live cell staining.
- FAST&GENTLE** Jan Petrášek/Matěj Drs: spinning disc microscopy experimental setup; ultrafast simultaneous two channel imaging; deconvolution; SRRF; perfusion chamber.
- HIGH RESOLUTION** Kateřina Malínská/Pavel Krist: sample preparation; high-resolution microscopy with Airyscan 2 detector with multiplex mode; photo manipulation; Vaheat.
- IMAGE ANALYSIS** **Maurizio Abbate**/Pavel Krist: data processing and visualization in Arivis; Virtual reality.

**Institute of Experimental Botany ASCR, Building B1, Imaging facility, Rozvojova 263, Prague 6, Czech Republic**

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