

# SLM 2024

## SUPER-RESOLUTION LIGHT MICROSCOPY



June 12-14, 2024

Institute of Molecular Genetics  
of the Czech Academy of Sciences  
Videnska 1083  
CZ-142 20, Prague 4

## PRACTICAL COURSE





# SLM 2024. GOALS AND EQUIPMENT

Computational confocal methods – adaptive deconvolution and optical / mathematical reassignment.

Leica STELLARIS 8 - Lightning  
Evident SpinSR SORA  
Andor Dragonfly SRRF

Structured illumination methods – from classical SIM to Lattice SIM and DeepSIM.

DeltaVision OMX  
Zeiss Elyra7 Lattice SIM  
Nikon-Crest DeepSIM

Nanoscopy – STED and localization microscopy, best practice in deconvolution usage .

Zeiss Elyra7 PALM  
Leica SP8 STED 3X  
+ Huygens STED deconvolution







# SLM 2024 PROGRAM

## Day 1

WEDNESDAY, June 12, 2024:

## CONFOCAL IN SUPER-RESOLUTION

08:45-09:00 Introductory word, practical information & course organization. Ivan Novotný

09:00-09:40 Resolution in light microscopy; high-res. confocal microscope. Ivan Novotný

*coffee break*

10:00-10:40 Uncovered deconvolution magics. Ivan Novotny

10:40-11:20 SR in silico: basics of computational approaches. Michaela Blažíková

*lunch*

12:30-13:00 Lightning: an adaptive deconvolution for SR images. Leica / Specion

13:00-13:30 SRRF Stream: spinning disc implementation. Andor / OptiXs

13:30-14:00 SORA: SR solution for spinning disk. EVIDENT / SVEN Biolabs

### Afternoon practical sessions

14:00-15:50 Practical sessions (3 parallel groups):

Lightning (group1) | SORA (group2) | SRRF (group3)

*coffee break*

16:00-17:50 Practical sessions (3 parallel groups):

Lightning (group3) | SORA (group1) | SRRF (group2)

*coffee break*

18:00-19:50 Practical sessions (3 parallel groups):

Lightning (group2) | SORA (group3) | SRRF (group1)

**20:00 WrapUp, discussion and sandwich dinner**





# SLM 2024 PROGRAM

## Day 2

THURSDAY, June 13, 2024:

## STRUCTURED ILLUMINATION POWER

09:00-09:40 Structured illumination microscopy - SIM. Martin Čapek

09:40-10:10 Lattice SIM: new robust approach, Klaus Weisshart ZEISS

*coffee break*

10:30-11:00 Crest Optics: SIM solution for spinning disk, NIKON

11:00-11:45 Nonlinear SIM and image reconstruction, Rainer Heintzmann (online)

*lunch*

### Afternoon practical sessions

13:00-14:50 Practical sessions (3 parallel groups):

SIM (group1) | Lattice SIM (group2) | Crest Optics SIM (group3)

*coffee break*

15:00-16:50 Practical sessions (3 parallel groups):

SIM (group3) | Lattice SIM (group1) | Crest Optics SIM (group2)

*coffee break*

17:00-18:50 Practical sessions (3 parallel groups):

SIM (group2) | Lattice SIM (group3) | Crest Optics SIM (group1)

19:00-19:30 Solutions for nanoscopy, Abbelight (online)

**19:30-20:00 transfer to the restaurant**

**20:00 Social event**







# SLM 2024 PROGRAM

## Day 3

FRIDAY, June 14, 2024:

## NANOSCOPY

09:00-09:30 Stimulated emission depletion - STED microscopy. Ivan Novotný

09:30-10:00 Single molecule localization microscopy - SMLM. Michaela Blažíková

*coffee break*

10:30-11:15 Nanoscopy in biophysics. Paolo Bianchini (online)

11:15-11:30 ADVI mounting media for SR microscopy

*lunch*

### Afternoon practical sessions

12:30-14:20 Practical sessions (3 parallel groups):

STED (group1) | dSTORM/3D PALM (group2) | Deconvolution (group3)

*coffee break*

14:30-16:20 Practical sessions (2 parallel groups):

STED (group3) | dSTORM/3D PALM (group1) | Deconvolution (group2)

*coffee break*

16:30-18:20 Practical sessions (2 parallel groups):

STED (group2) | dSTORM/3D PALM (group3) | Deconvolution (group1)

**18:30 Final conclusion, closing remarks**



# SLM 2024

## PRACTICAL COURSE



# JOIN US !

