



BIOCENTER OULU, Light Microscopy Core Facility Course

BASICS IN CONFOCAL AND LIVE CELL MICROSCOPY

- Place** Biocenter Oulu Meeting Room 487B and the BCO imaging facility, 4th floor of the Main Building of the Medical Campus, University of Oulu, Aapistie 5A, P.O.Box 5000, FIN-90014 Oulu, Finland
- Time** 13th to 15th June, 2012
- Credits** 1 ETCS
- Organisers** Biocenter Oulu Doctoral Programme and Biocenter Oulu Light Microscopy Core Facility, University of Oulu, Aapistie 5A, P.O.Box 5000, FIN-90014 Oulu, Finland, URL: <http://www.oulu.fi/biocenter/lm>
- Aim** To get acquainted with light and fluorescence imaging methods of fixed specimens and cultured living cells using laser scanning and spinning disc confocal and bright field/fluorescence microscopes. Learn to apply suitable techniques for analysis of microscopic images and time lapse movies.
- Information** Veli-Pekka Ronkainen, Biocenter Oulu, Aapistie 5A, FIN-90014, University of Oulu, Finland, tel. +358 8 537 6080, e-mail: veli-pekka.ronkainen@oulu.fi
The course consists of lectures, independent learning, microscopy demonstrations and computer-based image analysis.
- Registration** Registration is obligatory. Only 18 participants are accepted. The application with a short description of the applicant's project should be sent by email to Veli-Pekka Ronkainen (veli-pekka.ronkainen@oulu.fi) by 25th May, 2012. The course is open for all, but preference will be given to Ph.D. students and researchers whose project benefits the topics carried out during the course.

PROGRAM

Wednesday, June 13th, 2012, Meeting Room 487B, Biocenter Oulu 4th Floor, Aapistie 5A

Lectures:

- 9.00-9.15 Opening words and introduction to the course
Sinikka Eskelinen, Biocenter Oulu
- 9.15-10.30 Basics in light microscopy
Sinikka Eskelinen, Biocenter Oulu
- 10.30-11.45 Advanced light microscopy techniques
Veli-Pekka Ronkainen, Biocenter Oulu
- 11.45-13.00 Lunch
- 13.00-14.15 Image processing and analysis
Mika Kaakinen, Antti Viklund, Biocenter Oulu
- 14.15-16.00 Introduction to demonstrations
Veli-Pekka Ronkainen, Lauri Eklund, Mika Kaakinen, Biocenter Oulu

Thursday, June 14th, 2012, Gathering in the meeting room 487B, Biocenter Oulu 4th Floor, Aapistie 5A at 8.45 a.m. for demonstrations.

9.00-16.00 Demonstrations

Demonstration 1. Laser scanning confocal microscope, room 423A:
Fixed and multi-labelled samples: monolayer cells and 3D imaging of thick specimens
Janne Capra, Lauri Eklund

Demonstration 2. Spinning disc confocal microscope, TIRF, FRAP, room 422A:
Live cell fluorescence and time lapse overnight imaging, molecular dynamics
Veli-Pekka Ronkainen

Demonstration 3. Time lapse microscope, room 421A:
Light microscopy basics, phase contrast, DIC
Time lapse overnight imaging with transmission light, wound healing cell migration assay
Mika Kaakinen

Friday, June 15th, 2012, Meeting Room 487B/computer class, Biocenter Oulu 4th Floor, Aapistie 5A

9.00-12.00 Computer-based image analysis of captured images and time lapse movies
Mika Kaakinen, Antti Viklund