

Principle of imaging for membrane systems

30 Nov-03 Dec 2015

H.Benoit Lecture room, Institut Charles Sadron, Cronembourg, Strasbourg
(bât 75, 23 rue du Loess, Strasbourg)

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Presentation :

These lectures will provide an introduction to the principles of optical and electronic imaging of both model and biological membranes, and expose a few related recent developments.

Images are the material of choice for understanding the spatial and dynamical organisation of living systems. The past years have seen tremendous progress in terms of optical resolution, owing to the combined efforts of physicists (advanced optical imaging), chemists (advanced fluorescent dyes) and biologists (preparation and labelling of biological systems). Advance fluorescence spectroscopy provides further insight on the physical and chemical microenvironment of the regions of interest. In parallel, electron microscopy is today a powerful technique for the structural characterisation of biomolecules and biomolecular assemblies, and in particular membrane proteins complexes.

The lecturers will expose the foundations of these techniques to nonspecialist physicists and chemists. Special emphasis will be put on what can or cannot be actually seen (preparation techniques, spatial and temporal limits)

This session of lectures is supported by the European funded ITN SNAL network (<http://itn-snal.net>).

Lectures by:

Alain Brisson (CBMN, Bordeaux), Patrick Schultz (IGBMC, Strasbourg), Yves Mély (Pharmacie, Strasbourg), Pascal Didier (Pharmacie, Strasbourg), Olivier Haerberlé (MIPS Mulhouse), Jérôme Mutterer (IBMP, Strasbourg).

Schedule and topics :

12h of lectures on Monday, Tuesday, Wednesday afternoon and Thursday morning.

Mon 30/11 13h30 : Jérôme Mutterer (IBMP, Strasbourg) : *Digital images and ImageJ* (2h)

Mon 30/11 16h00 : Alain Brisson (CBMN, Bordeaux) : *Introduction to electron microscopies* (2h)

Tue 01/12 13h30 : Olivier Haerberlé (MIPS Mulhouse): *Principles of Microscopy* (2h)

Wed 02/12 13h30 : Patrick Schultz (IGBMC, Strasbourg) : *Cryo-electron microscopy of single molecules* (2h)

Wed 02/12 16h00 : Yves Mély (Pharmacie, Strasbourg): *Quantitative fluorescence microscopy techniques* (2h)

Thu 03/12 10h00 : Pascal Didier (Pharmacie, Strasbourg): *High resolution fluorescence microscopy* (2h)