

# Contemporary approaches and applications of lipid membrane systems

**Dr. Fabrice Thalmann**

Institut Charles Sadron, UPR Strasbourg

[fabrice.thalmann@ics-cnrs.unistra.fr](mailto:fabrice.thalmann@ics-cnrs.unistra.fr)

## Main topics:

- 1) Introduction to lipid membranes, their biological role and some applications. Historical perspectives.
- 2) Determination of lamellar phases and membrane structure. Fluidity, elasticity and fluctuations. Interaction between membranes
- 3) Phase transitions in single component membranes. Thermodynamics and order parameter, calorimetry, deuterium NMR spectroscopy
- 4) Phase separations in membranes and their observations. Microscopies, FRET and ESR spectroscopy.
- 5) Numerical simulations of lipid membranes: what is possible today? Glimpses on the transmembrane protein problem, antimicrobial peptides.
- 6) Lipidomics: various questions on lipids and membranes. Biotechnological applications.

## Time:

17/01 , 24/01 , 31/01 , 7/02, 14/02 and 21/02, from 16:00 to 18:00.

## Place:

Auditorium de l'Institut Charles Sadron, 23 rue du Loess, 67034 Strasbourg