

# Séminaire de Biologie des Plantes

**Les séminaires ont lieu sur le Campus Montpellier SupAgro/INRA de La Gaillarde  
(2, place P. Viala Montpellier)**

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**Jeudi 6 mai 2010  
Salle 106 (Cœur d'Ecole) à 14h00**

**Eric Hosy**

(Institut des neurosciences de Bordeaux)

## **Why to study channel diffusion and how?**

Transmembrane proteins are often concentrated in specialized membrane domains. In synapses, the number of neurotransmitter receptors inside synapses is regulated by two mechanisms: endo/exocytotic processes and traffic in and out of synapses by lateral diffusion in the plasma membrane. Recently, work done in our laboratory has revealed an important role in the rapid mobility of AMPA receptors in the regulation of short term synaptic plasticity in neuronal cell culture. In the plant field, molecular relocalisation of LCHII proteins depends on diffusion and is regulated by phosphorylation.

Fluorescence recovery after photobleaching (FRAP) has been extensively used to study diffusion of molecules, by tracking the movement of a population of molecules but not individual trajectories. During the past decade, knowledge on the role and properties of receptor diffusion made an important step forward thanks to the development of single molecule and Quantum dot tracking (SPT). These new optical microscopy techniques of super-resolution have given access to more precise localization of an order of magnitude (~ 10 / 20 nm) opening the way for the characterization of biological processes at the molecular level. Through this seminar I will briefly present these different techniques, their application in brain research and their potential for the plant research.

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Séminaires à venir :

- Jeudi 18 mai : Michael Riemann, Université de Karlsruhe & National Institute of Agrobiological Sciences of Tsukuba (contact Emmanuel Guiderdoni, [emmanuel.guiderdoni@cirad.fr](mailto:emmanuel.guiderdoni@cirad.fr))
- Jeudi 27 mai : Andreas Weber (contact Alicia Sivitz, [sivitz@supagro.inra.fr](mailto:sivitz@supagro.inra.fr))
- Jeudi 3 juin: Alain Vavasseur, Cadarache (contact Rémy Gibrat, [gibrat@supagro.inra.fr](mailto:gibrat@supagro.inra.fr))