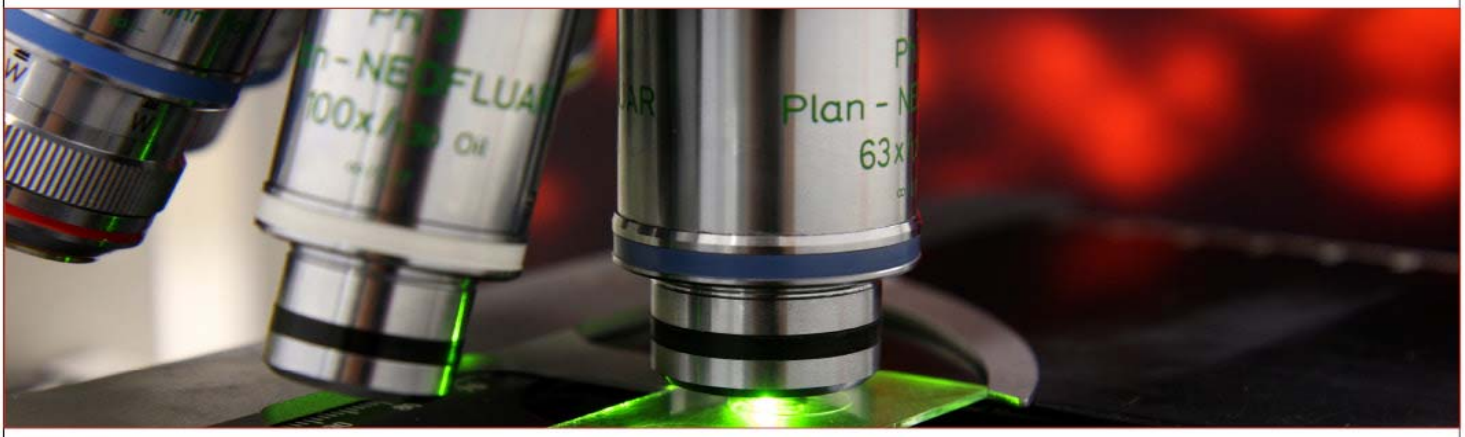
SÉMINAIRES ET CONFÉRENCES



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« SPATIO-DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS IN YEAST AND MAMMALS»

Clathrin-mediated endocytosis (CME) is the best-studied pathway by which cells selectively internalize molecules from the plasma membrane and surrounding environment. We study this process by live-cell microscopy in yeast and mammalian cells. The yeast studies have revealed a regular sequence of events necessary for endocytic vesicle formation involving some 60 proteins, which induce a highly choreographed series of changes in membrane geometry, ultimately resulting in scission and vesicle release. To analyze endocytic dynamics in mammalian cells in which endogenous protein stoichiometry is preserved, we targeted zinc finger nucleases (ZFNs) CRISPR guide RNAs to the clathrin light chain A and dynamin-2 genomic loci and generated cell lines expressing fluorescent protein fusions from each locus. We are particularly interested in effects of actin assembly and membrane curvature on this process. Lately, we are using genome-edited human stem cells to determine how this process gets modified during differentiation. At the same time, studies in yeast cells have recently focused on discovery of regulatory mechanisms for insuring the proper order and timing of events in the endocytic pathway, and how actin assembly forces are harnessed. Studying the yeast and mammalian systems in parallel is allowing us to translate what is learned from studies of one system to the other.

Faculté de médecine
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Le jeudi 1er juin, 12h00

Pavillon Roger-Gaudry
Salle : G-615

Invité par Stephen Michnick

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