

MUI Lecture Series

Membrane Traffic Dynamics - a Biophysical Approach

Prof. Aurelien Roux
University of Geneva

20 November 2017

5:00 pm

CCB - M.01.470

Innrain 80, 6020 Innsbruck

The research focus of Aurelien Roux (Dept. Biochemistry, University of Geneva) is on the mechanical and dynamic properties of lipids and proteins involved in membrane traffic. Specifically, how do these properties produce efficient membrane deformation, lipid and protein sorting within traffic intermediates, and fission of separating membranes?

During his PhD he worked in collaboration with cell biologists (Bruno Goud's lab, Curie Institute, Paris) and physicists (Patricia Bassereau's lab, Curie Institute, Paris) to understand how membrane properties (e.g. bending rigidity, tension, and composition) facilitate or interfere with various stages of membrane traffic within cells. He pursued his post-doctoral work in Pietro de Camilli's laboratory where he studied the mechanism of membrane tubule formation and fission by dynamin.

His long-term goal is to understand how protein and lipid assemblies coordinate to perform cell functions involving membranes: endocytosis, cell division, cell migration and others. These functions are based on essential physico-chemical abilities of membranes: deformation, fusion, fission, fluidity and permeability. He intends to understand how proteins exploit the peculiar physical properties of lipid membranes in order to proceed with their function.



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