

Super-Resolution Microscopy Seminar

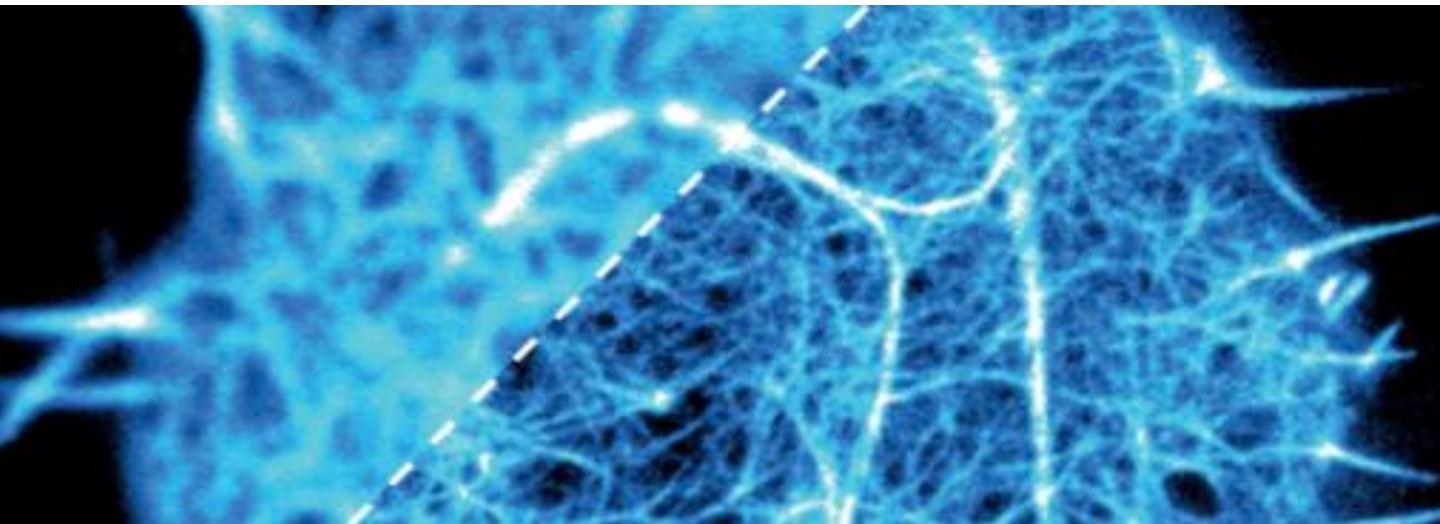
Tuesday, September 15th, 10.00-11.00
BMB Seminar Room

Prof. Christian Eggeling

Weatherall Institute of Molecular Medicine
Oxford University



“Lipid membrane bioactivity – novel insights from optical super-resolution (STED-FCS) microscopy”



Abstract:

Molecular interactions in the plasma membrane of living cells are key in cellular signalling. Especially, lipids or diffusional restrictions by the cortical cytoskeleton are considered to play a functional part in a whole range of membrane-associated processes. The direct and non-invasive observation of such interactions in living cells is often impeded by principle limitations of conventional far-field optical microscopes, specifically with respect to limited spatio-temporal resolution. Here, I show how novel details of molecular membrane dynamics can be obtained by using advanced microscopy approaches such as the combination of super-resolution STED microscopy with fluorescence correlation spectroscopy (STED-FCS). These include new insights into the lipid “raft” theory, and on the role of plasma membrane and cytoskeleton organization in the triggering of immune cells, specifically during T-cell activation.

Hosts: Mathias P. Clausen (FKF), Daniel Wüstner (BMB)