

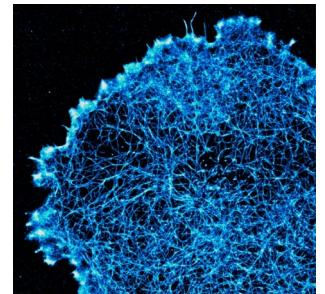
Imperial Membrane Receptor Network Seminar Series
Hosted by Professor Aylin Hanyaloglu & Dr Alejandra Tomas

Tuesday 22nd October @ 11am
Hammersmith Campus, ICTEM Level 5, Rooms 527 & 528

Professor Dylan Owen



**“Mapping the
nanoscale
organisation of
proteins in cells”**



**UNIVERSITY OF
BIRMINGHAM**

Professor Owen's lab works in three main areas: one, the development of methods for super-resolution fluorescence microscopy, with particular focus on statistical image analysis techniques. Here, they have developed a number of avenues for analysing protein distributions (nanoscale clustering) from single-molecule localisation super-resolution microscopy data. Two, studying the biophysics of cell membranes, in particular protein and lipid spatio-temporal organisation at the plasma membrane. They are particularly interested in the mechanisms that regulate membrane protein organisation including protein-protein interactions, the cortical actin cytoskeleton, lipid domains and membrane topography and three, understanding the role of nanoscale organisation in regulating signalling pathways, especially at the T cell immunological synapse. T cells must perform a delicate balance – they should activate when they detect minute amounts of foreign, potentially pathogenic peptides, but not activate in response to the body's own proteins. Much of the proteins responsible for making such decisions show complex nanoscale organisation, and aberrations in that architecture has links to autoimmune diseases including arthritis, lupus and diabetes.