"The endosome at atomic resolution"

Abstract:

Compartmentalisation is a defining feature of all eukaryotic cells, and we have evolved highly sophisticated protein machineries to control the flow of transmembrane molecules and membrane lipids between different organelles. Disruption of these processes are linked to numerous diseases including neurodegenerative disorders, pathogen invasion and cancer. We are determining how these trafficking machineries are assembled and regulated at the molecular level through a combination of structural biology, biophysical, and cell biology approaches. This seminar will describe our most recent work on critical protein sorting machineries – the retromer complex and the sorting nexins - regulating endosomal membrane recycling and cellular homeostasis. The role of retromer and its potential as a target in neurodegenerative diseases including Parkinson’s and Alzheimer’s will also be discussed.