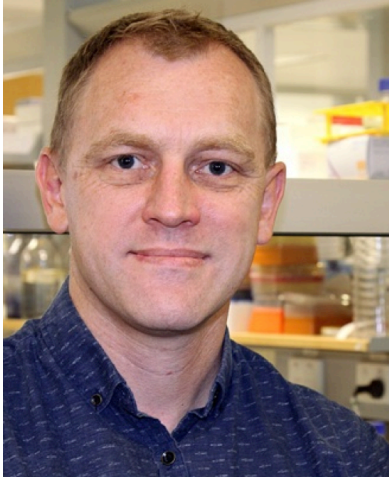## Special Seminar

Tuesday 12th of December
12-1pm
Bio21 Institute Auditorium
30 Flemington Road, Parkville

A/Prof Brett Collins
The Institute for Molecular Bioscience,
The University of Queensland

The architecture of the membrane associated retromer-sorting nexin complex revealed by cryo-electron tomography

Biogrphy: Assoc. Prof. Brett Collins is an NHMRC Career Development Fellow at the Institute for Molecular Bioscience, The University of Queensland. His lab is interested in understanding how molecular interactions between proteins and lipids control intracellular membrane trafficking. Trafficking is essential for normal cellular function and is involved in many different diseases, but is emerging as particularly important in neurodegenerative diseases such as Alzheimer's and Parkinson's. The lab is focussed on dissecting the molecular choreography of membrane transport through structural biology and biophysical approaches. Current interests include (i) endosomal trafficking by the retromer complex and the sorting nexin protein family, (ii) the formation of plasma membrane structures called caveolae, and (ii) the mechanisms of synaptic vesicle fusion controlled by SNARE proteins.

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.

ALL WELCOME. Please join us for a light lunch after the seminar!
Further information: Matthew Dixon (matthew.dixon@unimelb.edu.au)