

DANDRITE Topical Seminar

Monday 29 July 2019
11.15 – 12.00

MBG conference room, building 3130, room 303
Gustav Wieds Vej 10C, 8000 Aarhus C



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CryoEM of macromolecular machines at energized membranes

Electrochemical proton gradients across energized membranes play central roles in numerous cellular processes. These gradients are established by large membrane-embedded protein complexes. V-type ATPases are responsible for acidification of intracellular compartments including endosomes, lysosomes, the Golgi, and exocytic vesicles. Electron transport chain complexes energize the inner membranes of mitochondria and the plasma membranes of bacteria to drive production of cellular ATP during oxidative phosphorylation. Many of these protein complexes are highly dynamic, complicating their structural analysis. We have isolated a number of these assemblies from bacterial, yeast, and mammalian sources, and examined them by electron cryomicroscopy (cryoEM) to understand their function and regulation. In order to facilitate this process, we have also developed new biochemical, specimen preparation, and computational approaches for cryoEM.