CeNT CENTRE OF NEW TECHNOLOGIES

UNIVERSITY OF WARSAW

invites to a seminar by

Dr. Jeffrey Noel
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Toward understanding the dynamin molecular motor: a molecular python

29th of March 2018 at 12 p.m.

Venue: Centre of New Technologies, Banacha 2C,
Lecture Hall 0142 (Ground floor)

Host: Dr Hab. Joanna Sułkowska

Living cells are surrounded by lipid membranes that undergo fusion and fission with smaller membrane compartments to allow for materials to be trafficked in and out of the cell. A frontier of molecular biology is to understand the spatiotemporal membrane-protein interactions that enable these membrane remodeling processes such as such as endocytosis and mitochondrial fission. Dynamin is the best characterized member of the dynamin-related protein family, proteins that polymerize around tubular membranes into helical geometries and lead to fission of these tubes in a GTP dependent manner. Crystallography and cryo-EM have provided rich structural information about the shape of assembled membrane-dynamin complexes and have suggested a putative nucleotide dependent conformational change.

I will discuss the development of a coarse-grained model [1] of the motor function that is derived from various atomistic simulations and FRET experiments on single motor domains performed in our lab.

[1]. Noel, Jeffrey K, & Paul C Whitford. "How EF-Tu can contribute to efficient proofreading of aa-tRNA by the ribosome." *Nature communications* 7 (2016): 13314.