DANDRITE
Danish Research Institute of Translational Neuroscience
Nordic EMBL Partnership for Molecular Medicine

AARHUS UNIVERSITY
DEPARTMENT OF MOLECULAR BIOLOGY AND GENETICS

Joint AIAS & DANDRITE Topical Seminar

by visitor Mathey H. Horrocks

Monday 18 April 2016
From 15:00 – 16:00

The AIAS Auditorium, building 1632
Høegh-Guldbergs Gade 6B, 8000 Aarhus C

Mathew H. Horrocks
Dept. af Chemistry
University of Cambridge, UK

Single-molecule techniques for studying the aggregates of proteins associated with Parkinson's and Alzheimer's disease

The pathological hallmark of Parkinson's and Alzheimer's disease is the presence of insoluble protein deposits in the brain, which are formed when specific protein molecules misfold and aggregate into highly ordered fibrils. Rather than the fibrils themselves being toxic, evidence now points towards the smaller, soluble oligomers formed in the initial stages of the process as being the culprit. It is vitally important to characterise these oligomers and determine how they are formed; however, they are highly heterogeneous, and present in much lower concentrations than either monomeric or fibrillar protein, making them difficult to study using traditional techniques. It is therefore advantageous to use single-molecule methodologies to study the processes involved in their formation and conversion into the less toxic fibrils. We have developed new methods for imaging and characterizing these important aggregates, and have applied them to studying them both in vitro and in biofluids.

Host: AIAS Fellow and Team Leader at DANDRITE Magnus Kjærgaard, Aarhus University