

# DANDRITE Topical Seminar

## In-tissue structural biology - Seeing inside mouse and post-mortem human Alzheimer's disease brain

A defining pathological feature of most neurodegenerative diseases is the assembly of proteins into amyloid that form disease-specific structures. I will present how using cryo-fluorescence microscopy (cryoFM)-targeted cryo-sectioning, cryo-focused ion beam scanning electron microscopy (cryoFIB-SEM) liftout and cryo-electron tomography (cryoET), we determined in-tissue molecular architectures in mouse model and post-mortem human tissues. Tomographic maps showed the architecture of  $\beta$ -amyloid and tau pathology. Subtomogram averaging of a microscopic region of pathology revealed the structure of a cluster of tau filaments from a single tomogram. These in situ structural approaches may be applied to address a broad range of neurodegenerative disease and neuroscience questions.

**Host:** Magnus Kjærgaard



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Date: **Tuesday 10 December 2024**  
Time: **09:00 – 10:00**  
Venue: **1871 - 120**  
Address: **Universitetsbyen 81,  
8000 Aarhus C**

**OPEN TO ALL INTERESTED.**