

Seminar

November 21 at 2.15 pm,
Rydberg Lecture Room,
Physics Dept. Professorsgatan 1

Optical superresolution microscopy of molecular mechanisms of disease

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The self-assembly of proteins into ordered macromolecular structures is fundamental to a variety of diseases, for example in neurodegeneration, where misfolded proteins aggregate into toxic fibrillar shapes.

This talk is divided into two parts.

In the first, we will give an overview of optical technologies developed in the group that help us gain insights into protein self-assembly reactions *in vitro* and in live cell models of disease. In particular, we wish to understand how proteins nucleate to form functional or toxic structures and to correlate such information with biological phenotypes.

In the second part of the talk, we highlight recent work on alpha synuclein, a protein whose aggregation is linked to Parkinson's disease. Using a combination of optical and other biophysical methods, we show that the protein plays a complex role during neuronal signalling.



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