

## Einladung zu einem Kolloquium

Datum/Zeit: **Dienstag, 08.10.2024, 16.45 Uhr**

Referent: **Prof. Benesh Joseph**  
Freie Universität Berlin, Berlin, Deutschland

Titel: *Conformational Landscape of Membrane Proteins in Purified and Native Membrane Contexts: Insights from ESR Spectroscopy*

Ort: **HCI G7**

Progress in protein structure prediction has led to near-complete atomistic models of the proteomes of many organisms, though most of these models are still to be experimentally verified. Despite this progress, how large membrane protein complexes navigate their conformational space in a directed and often reversible manner remains elusive. Additionally, the kinetic barriers and the thermodynamic parameters underlying these conformational changes are least understood. Another overarching challenge is assessing the relevance of the experimentally resolved or predicted structures in their native surroundings. Building on our past and ongoing works, I will demonstrate the feasibility of addressing these fundamental questions using electron spin resonance (ESR) spectroscopy techniques. By focusing on key membrane protein complexes involved in transport and protein folding, I will illustrate the methodological developments and applications on how ESR spectroscopy can provide insights into their conformational heterogeneity, energetic landscapes, and functional mechanisms under in vitro and in situ conditions. These approaches not only enhances our understanding of membrane transport mechanisms but also bridges the gap between structures and their biological function.

**Gäste sind willkommen**