Session 28: New and Notable

Session chairs: Anthony Watts (University of Oxford, UK) & Elena Pohl (University for Veterinary Medicine Vienna, Austria)

O-28.1 Invited speaker

Contemporary Interactive Tools for the Analysis of Biophysical Data Across Techniques

Maria Garcia Alai [1]

[1] EMBL, Hamburg, Germany

In our lab, we follow an integrative structural biology approach to investigate membrane remodeling in intracellular trafficking and endocytosis. We begin with AI-based structure prediction and identification of potential binding partners, followed by experimental validation using a range of biophysical techniques to assess interactions, stability, and complex formation. We design tools to help researchers evaluate sample quality, biomolecular interactions, and molecular assemblies efficiently and reproducibly. We have developed the eSPC platform (https://spc.embl-hamburg.de)—a collection of online, open-source, interactive tools for analyzing data from biophysical methods such as differential scanning fluorimetry (DSF), microscale thermophoresis (MST), mass photometry (MP), dynamic light scattering (DLS), and circular dichroism (CD). Additional modules are currently being expanded to include binding kinetics analysis using both surface-based methods (SPR, GCI, BLI) and solution-based techniques (NMR, stop-flow spectroscopy).