Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Nature vs. Nurture: Is Allostery an Intrinsic Property of Membrane Proteins?

Baron Chanda

Washington University, MO

Allostery is a fundamental property of proteins and underlies their ability to integrate diverse molecular and physical inputs. But is allostery encoded entirely within a protein's structure, or can it emerge from interactions with its environment? Using ligand-binding measurements in defined membrane environments, we show that the lipid bilayer can strongly reshape the energetic coupling between ligand-binding sites in a membrane protein. These findings suggest that allosteric behaviour need not be an immutable, intrinsic property of the protein, but can emerge from the interplay between protein and membrane. I will discuss the mechanistic basis of this membrane-dependent allostery and its broader implications for how we think about the regulation of membrane proteins.

Tuesday, Nov 10th 2026

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFRH