Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Colloquium

Determining the structure of large cellular assemblies using an integrative approach

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Molecular structures of cellular assemblies are key to our understanding of biological processes in the cell. Currently, these structures cannot always be determined by any single experimental method. Hence, we use integrative approach to determine the structure by combining data from different experiments, physical theories, and statistical inference.

As an example, we recently determined the structure of the yeast centrosome, a cell organelle that separates chromosomes during cell division. Data from experiments such as X-ray crystallography, Forster Resonance Energy Transfer (FRET), electron microscopy (EM), Small Angle X-ray Scattering (SAXS), genetic interactions, bioinformatics, and physical principles was combined in an integrative approach to determine the structure. The resulting structure provides insights into how centrosomes are assembled during the cell cycle.

Tuesday, Dec 4th 2018

4:00 PM (Tea/Coffee at 3:30 PM)

Seminar Hall, TIFR-H