TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Homi Bhabha Road, Mumbai-400 005

October 23, 2017

ASET Colloquium

Speaker : **Dr. Avinash Kale** ***(UM-DAE Centre for Excellence in Basic Sciences)***

Title : **Deciphering the structural dogma of biological systems using Integrative Structural Biology**

Date &Time : **Friday 27 October 2017 at 16:00 hrs.**

Venue : **Lecture Theater (AG-66.)**

Abstract :

Biological assemblies and machines often elude structural characterization and thereby hampering our understanding about their functioning mechanism. These assemblies adopt dynamic ensembles of conformations, each with the potential to interact with binding partners or perform the chemical reactions required for a multitude of cellular function. Recent advances in structural biology techniques like X-ray crystallography; NMR; Small Angle X-ray scattering along with computational methods like molecular dynamics and bioinformatics, are helping us to realize the dream of seeing; in atomistic details; the beauty of the domain dynamics / interactions of these biological assemblies. Integrative structural biology, typically uses all the relevant combination(s) of aforementioned approaches to advance our understanding of the formation of large macromolecular complexes and how their components interact in assemblies by leveraging data from many low-resolution methods. During my talk I will be demonstrating the power of Integrative Structural Biology approach with two case studies in deciphering the structural dogma of these two biological systems, paving way for new directions in future.

About the Speaker:
Dr. Avinash Kale did his Masters at IIT Bombay and Ph.D. from Rijksuniversiteit Groningen, Netherlands. He was a Post-doc at the University of Sheffield, UK and the University of Oulu, Finland. He worked at the Center for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad and BARC before joining CEBS in 2013. Dr. Kale is a member of Board of Studies, Biotechnology, D.Y. Patil University, Navi Mumbai, a member of Academic Committee, Department of Biophysics, University of Mumbai and a member of Advisory Board of Parikrama Education Group, Ahmadnagar.

Dr. Satyanarayana Bheesette
(Coordinator, ASET Forum)