

## ICTS Seminar

Title : Uncertainty Analysis in Reaction Networks and Systems

Speaker : Saswati Dana, Indian Institute of Science, Bangalore

Date : Thursday, January 5, 2017

Time : 11:30 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : With an increased popularity for systems-based approaches in biology, a wide spectrum of techniques has been applied to the simulation and analysis of biochemical systems which involves uncertainty and stochasticity. It is particularly concerned with modelling and analysis of metabolic pathways, regulatory and signal transduction networks for understanding intra-cellular pathway behavior. Typically, parameter estimation in ordinary differential equations models is used for this purpose when there is large number of molecules involved in the reaction system. However this approach is correct when the system is large enough to be deterministic in nature. But there are uncertainty involved in the system and the processes are stochastic in nature due to smaller population molecules participating in the pathway reactions. Analysed uncertainties in various intracellular-biochemical reaction networks through computational studies and mathematical models.