

ICTS Biophysics seminar

Title : Tales of cells sensors: through a cellular-biophysics lens

Speaker : Swadhin Chandra Jana (NCBS – TIFR, Bengaluru)

Date : Tuesday, 05th March 2024

Time : 10:00 AM (IST)

Abstract : Our cells, either short or long-lived, comprise non-membrane-bound compartments, e.g., ribosome and centrosome, and organelles, such as mitochondrion and cilium. Have you ever pondered: How are those nano-to-micro size compartments birth-homeostasis-death regulated? And what are the consequences of those compartments' deregulation?

Cases in point, a centrosome, the major cytoskeleton-organising and signalling centre of a eukaryotic cell, is made of amorphous peri-centriolar matrices that encapsulate two nanocylinders ($\sim 3\text{-}10 \times 10^6 \text{ nm}^3$), called centrioles. These centrioles' numbers are tightly regulated in every cell of our body, and after cells exit the cell cycle, the same nanocylinders template the cilia. The cilia are micro-protrusions, which are also called sensing hairs and cells' propellers. The alteration/deregulation of these structures at various ages of our lives causes several human diseases (collectively affecting 1:3 individuals).

Given the above-mentioned knowledge, I will discuss the newly uncovered mechanisms and unexplored biophysical questions on how centrosome-cilia birth and functions are regulated in time and space.

Venue : Offline: AKR meeting room

Online: Please click the below link to join the seminar.

<https://icts-res-in.zoom.us/j/93476518327?pwd=dm5hTFRKL3pzYi90dzg1N3IrTk1vQT09>

Meeting ID: 934 7651 8327

Passcode: 202403