

## **ICTS Special Colloquium**

Title : Reading the mind of cells as they make developmental decisions.

Speaker : Sharad Ramanathan, Harvard University, USA

Date : Thursday, 20 July 2017

Time : 3:00 PM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore.

Abstract : I will describe some of our recent experimental and computational work to determine the sequence of events that lead to the development of the human cortex. We do so by generating and analyzing single cell transcriptomics data obtained during the course of development. I will demonstrate that measuring the levels of a few key genes is sufficient to track the developmental decision of cells and in fact monitoring the dynamics of expression of all the genes is un-informative. The dynamics of expression of these few genes allow us to continuously track what lineage the cell is 'thinking' of choosing well before the master regulators of the chosen lineage are turned on. By monitoring the dynamics of these genes in differentiating cells, we show that fundamental assumptions about how mammalian cells process gradients of morphogenetic signals and chose a fate have to be reconsidered.