Department of Chemical Engineering
Indian Institute of Technology, Hyderabad

The Department of Chemical Engineering is pleased to invite you to the seminar.

TITLE: MODULATION OF TNFR1 SIGNALING MEDIATED APOPTOSIS RESPONSE

SPEAKER: PROF. VISWANATHAN GANESH

AFFILIATION: IIT BOMBAY DEPARTMENT OF CHEMICAL EGINEERING

DATE & TIME: 20 JUNE 2024 3:00 PM-4:00 PM

VENUE: A-112

Abstract:

Cell-to-cell variability during TNFα stimulated Tumor Necrosis Factor Receptor 1 (TNFR1) signaling can lead to single-cell level pro- survival and apoptotic responses. This variability stems from the heterogeneity in signal flow through intracellular signaling entities that regulate the balance between these two phenotypes. In this talk, using systematic Boolean dynamic modeling of a TNFR1 signaling network, modulation of the signal flow path variability to enable cells favour apoptosis will be demonstrated. A computationally efficient approach "Boolean Modeling based Prediction of Steady-state probability of Phenotype Reachability (BM- ProSPR)" to accurately predict the network's ability to settle into different phenotypes will be presented. Model analysis juxtaposed with the experimental observations to unravel the underlying dynamical cross-talk will be discussed.

Regards

Prof. Balaji