

# CELEBRATING WOMEN IN MATHEMATICS On MAY 31 - JUNE 01, 2022

## Program Details\*:

4 May 31, 2022 | 4:00 pm – 6:00 pm (Indian Standard Time)

- 1) Dr. Charu Goel, IIIT Nagpur, India
- o Welcome
- Presentation on "About Maryam Mirzakhani, the May 12 Initiative and Impression of Women Mathematicians from ancient times"

2) Dr. Nidhi Kaihnsa, Brown University, Providence, RI, United States <u>Title of talk:</u> *Polynomials and Chemical Reaction Networks* 

<u>Abstract:</u> In biochemical reactions, the interactions between species are represented by directed graphs and their dynamics over time is modelled with ordinary differential equations. Under some assumptions the ODEs are often parametric polynomials, the problem of understanding steady states of these systems is equivalent to understanding the solutions of the parametric polynomials. I will lay down the basic groundwork for this formalism and discuss some of the methods that are used to study multiple steady states of the dynamics via case study of dual phosphorylation networks.

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#### 1) Prof. Anuradha Sharma, IIIT Delhi, India

#### Title of talk: Mathematical Theory of Information Transmission

<u>Abstract:</u> The aim of this talk is to present basic mathematical theory for the reliable transmission of data across noisy communication channels.

### 2) **Prof. Rukmini Dey**, ICTS-TIFR, Bangalore, India <u>Title of talk:</u> *Introduction to Minimal surfaces*

<u>Abstract:</u> In this talk I will introduce zero mean curvature surfaces, called minimal surfaces, in Euclidean 3-space. These appear in nature as idealized soap films. We will talk about some mathematical aspects of these surfaces.

\* This will be an International event taking place in Online mode through WebEx.