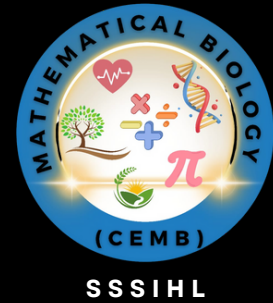




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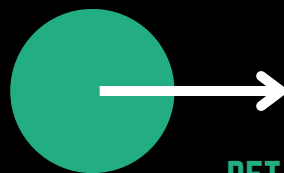
SPEAKER

DR. MOHIT KUMAR JOLLY



TOPIC

**What does not kill cancer
can make it stronger:
Investigating cancer as a
complex system**



DETAILS

7 June 2024

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TOPIC

What does not kill cancer can make it stronger: Investigating cancer as a complex system

ABSTRACT

Despite major advancements in past decades, cancer remains a formidable disease and claims millions of deaths per year. Two key processes underlie the clinical challenges of treating cancer – the ability of cancer cells to metastasize (spread from one organ to another) and to adapt efficiently when attacked with different therapies. These processes are driven by intricate web of interactions among molecules within a cell, and those among the tumor cells in their neighborhood. I will discuss how quantitative mathematical models incorporating these interactions, in integration with experimental and clinical data, can improve our understanding of the dynamics of these processes. Our work highlights how these two processes can drive each other, thus indicating how residual cancer cells may aggravate the disease. The insights gained from such interdisciplinary approach – creating ‘digital twins’ of cancer progression – can accelerate identifying new treatment strategies that can help us win some of the ongoing battles in our long-standing war against cancer.

SPEAKER

DR. MOHIT KUMAR JOLLY, IISC BANGALORE, INDIA

BIO

Mohit is an Associate Professor in Bioengineering at IISc, Bangalore. He earned his Bachelors and Masters from IIT Kanpur and PhD from Rice University, Texas USA all in Bioengineering, before moving to IISc in 2018. His research group works on developing computational models for cancer progression, in close collaboration with experimental and clinical collaborators. His work in physics of cancer has been recognized internationally; he was awarded the prestigious ICTP (International Center for Theoretical Physics) Prize 2023 and serves as the Editor-in-Chief at NPJ Systems Biology and Applications. He received the IIT Kanpur Young Alumni Award in 2022, and Rice University Outstanding Young Alumni Award in 2024.