INSTITUTE LECTURE SERIES

March 20, 2023 (Monday) | 6.00 pm |

Speaker: Professor Venkatasubramanian Ganesan

Talk Title: Understanding the "Phantastic" Brain in Schizophrenia: A Computational Psychiatry Narrative

About the Speaker

Dr. Venkatasubramanian is a Professor of Psychiatry at the National Institute of Mental Health And Neurosciences (NIMHANS), Bengaluru, India. His overarching research interest to learn the science that will facilitate a personalized approach to understand and treat severe mental disorders like schizophrenia. Prof. Venkatasubramanian leads a specialized clinical research service for schizophrenia at NIMHANS. He also leads the "Weak Intensity Stimulation for Enhancement and Reintegration" (WISER) Neuromodulation Program at NIMHANS.

His research works have led to more than 400 research publications and are recognized with several awards. He is an elected fellow of the National Science Academies (FNASc, FNA & FASc) as well as the National Academy of Medical Sciences (FAMS) of India. In 2018, Prof Venkatasubramanian was awarded the Shanti Swarup Bhatnagar Prize for Science and Technology for his contributions to medical sciences.

Abstract of the Talk

Predictive Processing is proposed as a unifying brain function that underwrites perception, action, and learning. This unified brain theory casts the brain as a "phantastic" organ that creates its mental images through prediction and inference [in Greek "phantastikos" means the ability to create mental images]. These predictive computational principles align with the concept of the Bayesian brain i.e., a statistical machine of hierarchical inference that predicts current and future events based on past experience. Computational psychiatry, leveraged by the advances in data modeling, neuroscience, and machine learning, utilizes the Bayesian Brain as one of the formal models of brain function to explain the symptoms of psychiatric disorders. For example, in schizophrenia, an imbalance in "predictive processing" can lead to faulty inferences. Deranged predictive processing can explain disorganized thought processes and communication disturbances in schizophrenia. Beyond schizophrenia, computational psychiatry approaches offer promising translational leads to understanding the spectrum of brain disorders spanning from neurodevelopmental aberrations (for example, autism) to neurodegenerative conditions (for example, dementia).

📍 RM-101 (Rajeev Motwani Building)

All are cordially invited to attend

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