BOSE INSTITUTE COLLOQUIUM

January 15, 2026 (THURSDAY) at 4pm

Main Auditorium, Unified Academic Campus, Bose Institute

Prof. Raghavan Varadarajan, MBU, IISc, Bengaluru 560012, India

Raghavan Varadarajan

Dr. Raghavan Varadarajan is a Professor in the Molecular Biophysics Unit at the Indian Institute of Science (IISc), Bangalore. He is the President of the Indian Academy of Sciences (2025-2027), and co-founder of the vaccine start-up Mynvax.

Title and Abstract:

Enhancing the stability and efficacy of viral vaccines

Despite recent advances in the use of AI/ML for protein structure prediction and design, prediction of stabilizing mutations for complex, oligomeric proteins remains challenging. We have developed general approaches to rapidly isolate stabilized protein variants and applied these to isolate thermostable derivatives of an important domain of the Spike protein of SARS-CoV-2 and other sarbecoviruses. Several of these formulations can be stored at 37°C for several weeks without loss of protective efficacy. We have developed methods to map regions on the protein surface that are targeted by antibodies at near single residue resolution following immunization. This allows us to study how alterations in surface accessibility, oligomeric state and stability affect immunogenicity. Using related approaches, we have developed multiple influenza vaccine formulations to protect against seasonal and pandemic influenza. One of these has been shown to be safe and well tolerated in a Phase 1 clinical trial in Australia, and further clinical development in India is ongoing.