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TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Biological Physics Seminar

Title : ARUMDA -- Building a Centre for Discovery Science, Human Health and Aging: Linking Biology, Public Health and Policy

Speaker : Prof. Ullas Kolthur, TIFR

Date : Thursday, 10 September 2026

Time : 11:30 AM (IST)

Abstract : This seminar will present two distinct, but complementary stories.

First, I will discuss our group's work on physiological plasticity and memory, examining how molecular switches, oscillations and stochastic processes interact across scales to generate emergent properties. We propose that this regulated "ordered chaos" is central to biological robustness, while loss of temporal coordination and fidelity of physiological transitions contributes to metabolic dysfunction and aging. These ideas open new opportunities for dialogue on complex systems, dynamics, networks and multiscale biological organization.

Second, I will introduce ARUMDA at TIFR, India's first multidisciplinary centre integrating fundamental biology, advanced analytics, clinical cohorts and population studies to generate India-specific life-course evidence. Building on initiatives in metabolic phenotyping, body composition, stable-isotope methods, metabolomics and diverse longitudinal cohorts, ARUMDA addresses national needs through globally competitive discovery science. Its emerging multi-omics platforms and India's first human metabolic chambers is advancing research on malnutrition, obesity, lean diabetes and aging, linking mechanistic insight to public-health action and policy.

Venue : Emmy Noether Seminar Room

Zoom Meeting: <https://icts-res-in.zoom.us/j/98648427670?pwd=Kw9WcXD3udddgCh9VnP2xlqoXOoVAb.1>

Meeting ID: 986 4842 7670

Passcode: 202030