



Indian Academy  
of Sciences



National College  
Basavanagudi



Bangalore  
Science Forum

tAcT  
THE ACADEMY TRUST

# ACADEMY PUBLIC LECTURE

3:30 pm, Thursday, 28th December 2023

Dr. H.N. Multimedia Hall, National College Basavanagudi



PROF. SUBIR SACHDEV

Herschel Smith Professor of Physics,  
Harvard University

Prof. Subir Sachdev is the Herschel Smith Professor of Physics at Harvard University and holds the Raman Chair Professorship at the Indian Academy of Sciences (IASc). He is globally recognized for his groundbreaking contributions to Condensed Matter Physics, particularly in the field of Quantum Phase Transitions. His extensive research has garnered many prestigious awards, including the Dirac Medal. Committed to pushing the boundaries of knowledge, Prof. Sachdev remains a guiding force in shaping the modern Condensed matter physics landscape.

The Raman Chair was instituted in 1972 by the Government of India to commemorate the memory of the founder of the Academy-Sir C V Raman. Eminent scientists are invited by the Council of the Academy to occupy the Chair, for periods of between six weeks to six months.

## Quantum Entanglement in Nature: Superconductors and Black holes

Entanglement is the strangest feature of quantum theory, which Einstein dubbed "spooky action at a distance". Quantum entanglement can occur on a macroscopic scale with millions of electrons, leading to "strange metals" and novel superconductors which can conduct electricity without resistance even at relatively high temperatures. Remarkably, related entanglement structures also arise across the horizon of a black hole, and give rise to Hawking's black hole entropy. The speaker will describe a simple model of many particle quantum entanglement which has shed light on long-standing problems in these distinct physical systems.

*Prof Umesh Waghmare, President, Indian Academy of Sciences will Chair and moderate the session.*

The Lecture will be followed by a High Tea

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# ALL ARE WELCOME