## About the speaker

Professor Amitava Raychaudhuri is an eminent particle physicist. His research contributions span many areas of Particle Physics that includes grand unification, the Higgs boson, neutrino physics, extra-dimensional models, etc.

Professor Raychaudhuri was educated at Presidency College, Kolkata and at Delhi University. He obtained his Ph.D. in particle physics from the University of Maryland, USA in 1977. He is currently Professor Emeritus at the University of Calcutta. He has held faculty positions at the University of Calcutta for more than thirty years and was the Sir Tarak Nath Palit Professor of Physics since 1996. From 2005-2011 he was the Director of the Harish-Chandra Research Institute, Allahabad under the Department of Atomic Energy, India. He has held visiting appointments at the Universities of Oxford and Cambridge in the UK, at the University of California at Berkeley, and at CERN in Geneva. He is a recipient of several honours and distinctions among which are the Shanti Swarup Bhatnagar Award and the International Alumnus of the Year 2005 of the University of Maryland.

He is a Fellow of the three National Science Academies of India. He has been awarded D.Sc. by the University of Gour Banga and the University of North Bengal.

## Saha Institute of Nuclear Physics Alumni Association

*cordially invites you to attend the*

# 2nd Prof. Manoj Kanti Banerjee Memorial Lecture

on

# *The Mass of Small Things*

by


**Professor Amitava Raychaudhuri**
Professor Emeritus
Formerly, Sir Tarak Nath Palit Professor of Physics
Department of Physics,
University of Calcutta
Kolkata


Venue

**Meghnad Saha Auditorium**
Saha Institute of Nuclear Physics, Kolkata

at 3 p.m.

September 19, 2019

SINP Alumni Association (SINPAA)
SINP, Kolkata

Professor Manoj Kanti Banerjee
Born : 25 May, 1930 ; Died : 18 February, 2006

Manoj Kanti Banerjee (1930-2006) was a brilliant theoretical nuclear physicist, a great teacher and an intellectual leader. After graduating from Patna University, he completed his Master's degree in physics in 1951 from University of Calcutta with a blazing track record. Soon after in 1952, he was recruited as a lecturer by Professor M. N. Saha in the newly founded Institute of Nuclear Physics which later became the Saha Institute of Nuclear Physics. Few trained nuclear physicists were working in the country in those early days. Young Manoj learned the subject all by himself and taught the same in the just-founded Post-M.Sc. course, the only such course in India then at the Institute of Nuclear Physics. Within a few years, he established himself as one of the finest nuclear physicists. With students and like-minded colleagues to whom he appealed, he created a vibrant research group at the Saha Institute on nuclear many-body problem based on the Brueckner theory, nuclear reactions and nuclear structure. It was easily the finest nuclear theory group in India and comparable to the best anywhere.

An exceptional young researcher, restless to seek the unknown, Manoj left India in 1966 to join the University of Maryland at College Park as a Professor in Physics. His interest moved to meson-nucleon interaction; his lasting contribution in that field lies in developing the Chiral Confining Model for the nucleon which dynamically generates the confining bag. Professor Manoj Banerjee was awarded the senior Alexander Von Humboldt prize for his contribution to physics. He was a fellow of the American Physical Society, a fellow of the Indian Academy of Sciences and was in the editorial board of Physics Letters. He was also a Visiting Professor at the University of Manchester, England and other reputed institutions elsewhere. He retired from the University of Maryland in 2001 but continued his association with the University as a Senior Research Scientist and Professor Emeritus. He often visited India and was always in touch with the Saha Institute. In 1981, Manoj Banerjee was requested to return to the Institute as Director, but he declined the offer as he did not want to shoulder excessive administrative burden at the cost of serious scientific research. For him, administrative power mattered little. He was a true seeker. His friend and colleague Jim Griffin said of him, "for him, new truth was the ultimate treasure, ..... he was deeply, even intrinsically a scholar".

# The Mass of Small Things

## Abstract

Mass is a very familiar property. Yet, an understanding of the origin of mass of elementary particles through the Higgs-Englert-Brout mechanism was established only recently. In the very successful Standard Model neutrinos are massless. But experiments over the last two decades have conclusively established that neutrinos do have a non-zero but very tiny mass. What is its origin?

Another important manifestation of mass is through Dark Matter, which too does not have an explanation within the Standard Model. In this talk we take a trip through these issues without going into technical details.

## Programme

Welcome Address
**Professor Sudeb Bhattacharya**
President, SINPAA

Address by Guest of Honour
**Professor Gautam Bhattacharya**
Director, SINP

M K Banerjee Memorial Lecture
**Professor Amitava Raychaudhuri**

**Presentation of Memento**
President, SINPAA