



भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद

Physical Research Laboratory, Ahmedabad

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**Second Dr. Bibha Chowdhuri  
Memorial Lecture**

on

**Wednesday, 09 February 2022**

**@ 16:00 hrs**



**Dr. Bibha Chowdhuri (1913-1991)**

**“Prevention is  
Health, and  
Wealth”**

**Dr. Gagandeep Kang, FRS**

**Professor, Division of Gastrointestinal  
Sciences, Christian Medical College,  
Vellore, India**



<https://youtu.be/tw77DsilHtl>



## Second Dr. Bibha Chowdhuri Memorial Lecture

**Title: “Prevention is Health, and Wealth”**

**Speaker: Dr. Gagandeep Kang,**

**Professor, Division of Gastrointestinal Sciences, Christian Medical College, Vellore, India.**

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### Abstract

Vaccines and vaccination have made a fundamental contribution to healthcare, decreasing, controlling and wiping out disease. These health effects translate to positive economic outcomes for individuals, healthcare systems and to society. However, the damage and consequences of diseases are rapidly forgotten, when the diseases are not seen in large number. Further, the full benefits of vaccines are not recognized and they are often undervalued and/or underused. Poorer countries think they cannot afford them, though new vaccines or increased vaccination coverage could improve the health of the population. Understanding the full value and potential impact of vaccines is critical to public health.

### The Speaker

Prof. Kang is a physician scientist working on vaccines and public health, particularly focused on children and enteric infectious disease in India. Her inter-disciplinary research on the transmission, development and prevention of enteric infections and their sequelae in children in India has led to new insights and practical approaches to prevention. She has worked with colleagues at the Christian Medical College (CMC) and other institutions in India to build national rotavirus and typhoid surveillance networks to estimate disease burden and inform policy. She established laboratories to support vaccine trials and conducted phase 1-3 clinical trials of vaccines, a comprehensive approach that has supported two Indian WHO pre-qualified vaccines. She is investigating the complex relationships between infection, gut function and physical and cognitive development, and seeking to build a stronger human immunology research in India. Based at CMC for most of her career, she has established strong training programmes for students and young faculty in clinical translational medicine aiming to build a cadre of clinical researchers studying relevant problems in India. From 2016 to 2020, she had been the executive director of the Translational Health Science and Technology Institute, Faridabad, an autonomous institute of the Department of Biotechnology, Government of India, where she developed vaccine science and clinical research as key focus areas. She is an elected Fellow of all the Indian science academies, is the first Indian woman to be elected to Fellowship of the American Academy of Microbiology and to the Royal Society.



## Dr. Bibha Chowdhuri Memorial Lecture



Dr. Bibha Chowdhuri (1913-1991) was the first women particle physicist of India. During 1938-42, she worked with Prof. D.M. Bose and made a pathbreaking study of identifying a cosmic particle having mass close to 200 times that of the electron by exposing photographic emulsion at high altitudes. They published four papers in Nature. These works form the basis of the more precise determination of the mass of pi-meson by Prof. C.F. Powell for which he was awarded the Nobel Prize in 1950. Later, Prof. Powell acknowledged Bose and Chowdhuri's pioneering contribution in his book.

She joined the cosmic ray research laboratory of P.M.S. Blackett (Nobel Prize winner in 1948) at the University of Manchester in 1945, to pursue a Ph.D. Degree and worked on Extensive Air Showers in cosmic rays and obtained a Ph.D. in 1952. From Manchester she moved to Tata Institute of Fundamental Research (TIFR) during 1949-1953. During 1954-59 she performed research work at Ecole Polytechnique, Paris, University of Michigan and M.I.T in the US. She joined Physical Research Laboratory (PRL) in 1959 as CSIR SRF and in 1961 as a Pool Officer for the study of Cosmic Ray Air Showers and worked at the Kodaikanal observatory-

She joined PRL as a Fellow in 1966. She worked on detecting high energy muons associated with extensive air showers at Kolar Gold Field in collaboration with scientists at TIFR. She left PRL 1976 and continued to work in Kolkata in collaboration with scientists at SINP, VECC, University of Calcutta and IACS.

Although Dr. Bibha Chowdhuri has made pioneering contributions in studies of cosmic rays, she was largely forgotten until recently. A book titled 'A jewel unearthed: Bibha Chowdhuri' by two leading science historians, Rajinder Singh and Suprakash C Roy brought her work in the limelight. In 2019 IAU has named a white yellow dwarf star as Bibha in honour of Dr. Bibha Chowdhuri.

Since Dr. Bibha Chowdhuri spent most of her work life at PRL it is only fitting that PRL organises an annual memorial lecture in her name. This memorial lecture will be an occasion to celebrate eminent women researchers in the field of Science, Technology, or Social Science.

