Cancer is one of the most devastating diseases worldwide. It remains a challenge to treat owing to its heterogeneous nature, wherein multiple distinct subpopulations of cells are found within a single tumor. This intratumoral heterogeneity is one of the key causes of tumor relapse, drug resistance, and treatment failure. Hence, the identification of molecular signatures to categorize diverse cancer subtypes, decipher their molecular underpinnings, and design effective treatment strategies has been crucial. Over the years, Prof. Bushra’s research group has been putting efforts into identifying and understanding these specific alterations that contribute to the development of cancer. Their overarching goal is to translate the mechanistic understanding of these tumor-specific alterations to decode the emergent properties of cancer, such as drug resistance, immune evasion, and metastases. In her talk, she will share the inroads that they have made into the molecular understanding of two specific subtypes of prostate cancer, that are prevalent in India and globally. The speaker will also elaborate on how their findings led to the identification of actionable genetic alterations or molecular pathways that paved the way for precision therapeutic interventions and strategies for disease management.

About C.N.R Rao endow Lecture Series
This lecture series was made possible by a generous donation by Prof. C.N.R. Rao, Linus Pauling Professor at JNCASR, Bangalore. The objective is to give one faculty member of the IIT Kanpur, each year, the honor of delivering a lecture to the institute’s community, sharing the excitement of his/her research with them. Prof. Rao was a Professor of Chemistry at IIT Kanpur from 1963-76. During this period, he also served as the Dean of Research and Development. He also served as the chairman of BoG at IIT Kanpur from 2003 to 2006. Prof. Rao was born on June 30, 1934, in Bangalore. In 1958, he completed his Ph.D. from Purdue University and became a research chemist at the University of California at Berkeley. During 1984-89, he served as the Director of IISc Bangalore. He was the founder president of Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bangalore. He received Bharat Ratna, the highest civilian award in India in the year 2014. He is the recipient of most of the major scientific awards and is a member of all major scientific organizations. He is a foreign member of the US National Academy of Sciences, American Academy of Arts and Sciences and also a Fellow of the Royal Society (London).