Infosys Prize 2018

Infosys Science Foundation announced the winners of the Infosys Prize 2018 in the fields of mathematical, physical, biological, engineering and computer and social sciences, and humanities. The Prize, given annually, celebrates the success of the recipients in their fields by recognizing their achievements. The following are the winners of the Infosys Prize 2018.

Mathematical Sciences: The Prize for Mathematical Sciences is awarded to Nalini Anantharaman, Professor and Chair of Mathematics, Institute for Advanced Study, University of Strasbourg, France for her work related to 'Quantum Chaos', specifically for the effective use of entropy in the study of semi-classical limits of Eigen states in quantum analogs of chaotic dynamical systems and for her work on the delocalization of Eigen functions on large regular graphs. The quantum world is one of the deepest secrets of the universe and mathematics is the language that helps us understand this world. Mathematicians and physicists have been trying for decades to unravel the mysteries of this subatomic world. Professor Nalini's work impressively explores the deep relationship between classical and quantum systems and the unexpected use of entropy to prove some of the hard results.

Physical Sciences: The Prize for Physical Sciences is awarded to S. K. Satheesh, Professor, Centre for Atmospheric & Oceanic Sciences, Indian Institute of Science, Bengaluru and Chairman, Divecha Centre for Climate Change, for his pioneering work in the field of climate change. His studies on black carbon aerosols – the dark, light absorbing, microscopic particles in air – which greatly influence the energy balance of the atmosphere, have enabled a better understanding of the role of these particles on climate change, precipitation, and human health in the Indian subcontinent. Professor Satheesh's work on measuring, quantifying, and analysing the impact of black carbon aerosols is important not only to climate science, but also to society to mitigate and cope with climate change, possibly the most important threat to humanity.

Life Sciences: Roop Mallik, Associate Professor, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, has been awarded the Prize in the field of Life Sciences. He has done pioneering work on molecular motor proteins, which are crucial for the functioning of living cells. Mallik has identified and measured forces needed to transport large particles inside cells, and demonstrated their role in fundamental processes such as targeting pathogens for their destruction and moving lipid droplets for fatty acid regulation in the liver. Conditions such as obesity and diabetes are straining healthcare systems around the world. Along with medication, understanding the metabolic processes at the cellular level is crucial if we are ever to find a solution. Among other things, Professor Mallik's research provides insights that will improve therapies for such diseases.

Engineering and Computer Science: The Prize for Engineering and Computer Science is awarded to Navakanta Bhat, Professor and Chair Person, Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, His work on the design of novel biosensors based on his research in biochemistry and gaseous sensors push the performance limits of existing metal-oxide sensors. The prize recognizes his efforts to build a state-of-the-art infrastructure for research and talent training in nanoscale systems and for developing technologies for space and national security applications. Professor Bhat has devised gas sensors with ultra-precise detection accuracies necessary for space and environmental monitoring, especially useful for India's growing space, atomic energy and security programs.

Social Sciences: The Prize for Social Sciences is awarded to Sendhil Mullainathan, Professor of Computation and Behavioural Science, and George C. Tiao Faculty Fellow, at The University of Chicago Booth School of Business. The award is in recognition of his path-breaking work in behavioural economics. Mullainathan's research has had substantial impact on diverse fields such as development, public finance, corporate governance and policy design. A significant part of this work is relevant to India. He is currently working on big data and machine learning issues and applications in economics. Prof. Mullainathan is a very versatile economist who uses his training in computation and the developments in machine learning and big data to develop guidelines in the field of empirical methodology for the future. This computational ability combined with his use of behavioural psychology in analysing economic phenomena make him creative and unique.

Humanities: The Infosys Prize for Humanities is awarded to Kavita Singh, Professor and Dean, School of Arts & Aesthetics, Jawaharlal Nehru University, New Delhi**,** for her extraordinarily illuminating study of Mughal, Rajput and Deccan art, as well as her insightful writing on the historical function and role of museums and their significance in the increasingly fraught and conflicted social world in which visual culture exists today. Professor Singh's work shows the significance of museums in highlighting the social impact of art, and thereby relates visual culture to large contemporary questions of secularity, modernity, and political conflict, including the conflicts around repatriation that have been generated by a colonial past.

– Based on Infosys Science Foundation Press Release, 2018