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INFOSYS SCIENCE FOUNDATION



V. Ramgopal Rao

*Institute Chair Professor,
Department of Electrical Engineering
and Chief Investigator,
Centre of Excellence in Nanoelectronics,
Indian Institute of Technology, Bombay*

Prof. V. Ramgopal Rao completed his B.Tech. in Electronics and Instrumentation from Kakatiya University, M.Tech. in Microelectronics from IIT-Bombay and Dr. Ingenieur from Universitaet der Bundeswehr Munich, Germany. He was also a Post-doctoral Fellow at the University of California, U.S. (1997 – 1998).

He has received several awards some of which are the Swarnajayanti Fellowship (2004), the Shanti Swarup Bhatnagar Prize (2004), the IBM Faculty Award (2007),

the Techno-Mentor award from the Indian Semiconductor Association (2009), and the DAE-SRC Outstanding Research Investigator Award (2010).

He is a Fellow of the Indian National Academy of Engineering, of the Indian Academy of Sciences, and of the National Academy of Sciences. His research has led to multiple international patents that are used in the semiconductor industry, and to the formation of a start-up company, NanoSniff Technologies Pvt. Ltd.

Engineering and Computer Science

The Infosys Prize 2013 in Engineering and Computer Science is awarded to Prof. V. Ramgopal Rao for his wide-ranging contributions to nanoscale electronics, for integrating chemistry with mechanics and electronics to invent new functional devices, and for innovation and entrepreneurship in creating technologies and products of societal value.

Scope and impact of work

The primary focus of Prof. Ramgopal Rao's research has been the deep understanding of the impact of materials and device design on nanoscale electron transport, and utilizing this understanding in the engineering of semiconductor devices and systems to significantly improve their performance. He provided clear insights into device-circuit interactions involving lateral asymmetric channel devices and FinFETs, which laid the foundation for power reduction in integrated circuits used in mobile phones. His research on drain-extended MOS (DeMOS) has enabled integration of high voltage and high frequency applications in standard CMOS.

He is the Chief Investigator at the Center of Excellence in Nanoelectronics, which has emerged as the hub of multi-disciplinary activity, as well as the Indian Nanoelectronics Users Program involving 92 institutions, which has driven industry-academia partnerships in nanoelectronics and helped provide a significant impetus to the growth of the semiconductor industry in India.

Through his seminal papers, international patents, industrial collaborations, and technical leadership, his work has had a substantial impact on the semiconductor industry. Through multidisciplinary collaborations, he pioneered the judicious integration of organometallic molecules with nanoscale mechanical and electronic devices.

He combined the high selectivity of binding between these molecules with those found in gases, with the sensitivity in mechanical and electronic transduction in nanoscale devices to create a platform for chemical sensing with unprecedented performance.

Citation by the jury

Prof. V. Ramgopal Rao has made substantial contributions in the science and engineering of nanoscale electron devices and their use in semiconductor integrated circuits, which has led to significant performance improvements and industrial impact. His leadership in nanoelectronics at the national level has enabled industry-academia partnerships that have led to growth of this industry in India.

His creative insights on the chemistry of selective binding between organic and organometallic molecules and their integration with highly sensitive mechanical and electronic transduction in micro / nanodevices have led to a new platform for chemical sensing with unprecedented performance. He has gone further to translate science and engineering into innovative technologies and products by creating a commercial enterprise, to manufacture affordable health and security applications.



Ayesha Kidwai

Professor, Centre for Linguistics,
School of Language, Literature
and Culture Studies,
Jawaharlal Nehru University,
New Delhi

Prof. Ayesha Kidwai completed her M.A. and Ph.D. in Linguistics from Jawaharlal Nehru University. Her research interests include linguistic theory, with particular reference to the (generative) syntax and morphology of Indian languages, philosophy of language, gender and language, the politics of English, and the evolution of language. Her current research interests include the syntax of finite complementation and the properties of adjunction in natural language.

She has authored several papers and a few notable books such as *XP-adjunction in Universal Grammar: Scrambling and Binding in Hindi-Urdu*, and *In Freedom's Shade*, an English translation of Anis Kidwai's Urdu memoir *Azaadi Ki Chaon Mein*.

Humanities – Linguistics

The Infosys Prize 2013 in Humanities – Linguistics is awarded to Prof. Ayesha Kidwai for her exceptional contribution to the field of theoretical linguistics. Her research on syntactic relations in Hindi-Urdu has related wider debates in linguistics to the study of Indian languages and has extended our understanding of India's linguistic diversity.

Scope and impact of work

Prof. Kidwai's research ranges around a wide variety of syntactic topics, united by a preoccupation with the properties and effects of optional displacement operations in Universal Grammar.

Universal Grammar is the radical hypothesis, put forth five decades ago by Noam Chomsky, that the innate human linguistic ability is a domain-specific intelligence that must be modeled as a distinct Faculty of Language. This innate endowment, a system of principles and parametric options, forms the basis for the human knowledge and acquisition of any natural language, and is the source for both the relatedness of and differences between human languages. Prof. Kidwai's contributions to the field have been the study of the principles and parameters that must be hypothesized to explain the syntactic properties of a number of South Asian languages, including Hindi-Urdu, Bengali, Malayalam, Meiteilon and Santali.

The phenomenon of free word order found in many languages of the world – 'scrambling' – raises many intriguing questions for Universal Grammar, as such word order variation is apparently optional, and therefore difficult to characterize by grammatical rules. Prof. Kidwai's work in this intensively studied and debated domain proposes a novel theory of how the referential properties of scrambled noun phrases in Hindi-Urdu may be characterized once the discourse effects of these optional variations are taken into account. These proposals have had important implications for the hypothesized design of Universal Grammar as well as the displacement operations conjectured to be central to it.

Recently, Prof. Kidwai also distinguished herself as an ace translator, having rendered Anis Kidwai's moving Urdu memoir of the aftermath of partition, *Azaadi Ki Chaon Mein*, into English, *In Freedom's Shade*.

Citation by the jury

Prof. Ayesha Kidwai is an outstanding theoretical linguist. Her work has earned recognition from leading international experts, as it relates the general theoretical framework of the principles of Universal Grammar to some of the particular syntactic features of Indian languages like Hindi-Urdu, Santali, Meiteilon, Bangla and Malayalam, analyzing these within the structures of human cognitive systems and their general properties.

Central to these achievements is Prof. Kidwai's work on a wide range of adjunction phenomena. On the intensively studied and debated syntactic phenomenon of 'scrambling', her work proposes a novel theory of binding in extensive analytical investigation of Hindi and Urdu.

Prof. Kidwai has helped raise the respectability and significance of the field of theoretical linguistics by providing leadership and mentorship to young linguists in India. She has consistently stressed on the political and cultural importance of the study of India's linguistic diversity.



Nayanjot Lahiri

*Professor, Department of History,
University of Delhi*

Prof. Nayanjot Lahiri's qualifications include a M.A., M.Phil. and Ph.D. in History from the University of Delhi. Her research interests include Indian archaeology, archeological theory, heritage studies and ancient India.

She has several research papers and publications to her credit. Prof. Lahiri has authored many books such as *Finding Forgotten Cities: How the Indus Civilization Was Discovered*, *The Decline and Fall of the Indus Civilization*, *The Archaeology of Indian Trade Routes (up to c. 200 B.C.)*

and *Resource Use, Resource Access and Lines of Communication* and *Pre-Ahom Assam: Studies in the inscriptions of Assam between the fifth and the thirteenth centuries A.D.*

Her prior appointments include, Lecturer at the Department of History, Hindu College, University of Delhi (1982–1993) and Reader at the Department of History, University of Delhi (1993–2001).

Humanities – Archaeology

The Infosys Prize 2013 in Humanities – Archaeology is awarded to Prof. Nayanjot Lahiri for her outstanding contribution towards the integration of archaeological knowledge with the historical understanding of India from the earliest times. She is an exceptional scholar of proto-historic and early India. Her wide-ranging work on the past and present illuminates many aspects that include contemporary Indian society.

Scope and impact of work

Prof. Nayanjot Lahiri's research biography begins with a historical analysis of the ancient inscriptions of Assam (1991), which remains unparalleled in quality. Her work on resource mobilization and routes of access in proto-historic and early historic India (1992) deals with archaeological and historical data, and their geological dimensions and integration into the ethnographic aspects of their distribution.

She edited a volume on the decline of the Indus civilization and co-edited a special issue of *World Archaeology*, on the archaeology of Hinduism. She provided insight on Indian copper-bronze metallurgical data by using ethnographic and historical insights relating to the practices and traditions of metal craftsmen in the past.

A major offshoot of Prof. Lahiri's archival research in the history of archaeology is a detailed focus on the monument policy of British and independent India. One of her enquiries identified how Bodh Gaya was converted into a single religious site, in the late 19th and early 20th centuries, and through that process effectively lost its multi-cultural status. This is an important clue to understanding many archaeological sites of religious significance in India.

Citation by the jury

Prof. Nayanjot Lahiri has researched on diverse themes, and in each case, her emphasis has been to look at the details of the related historical universe and to ascertain how, if at all, the historical picture conveyed by archaeology is reflected in later contexts and traditions. She uses a large variety of sources to analyze the relevant data, and one of her academic achievements has been to add a rich ethnographic perspective to her study of trade and metals.

These studies gained further depth from the author's close understanding of the geography and geology of the concerned areas.

Ethnography, geography, geology all add to the rich historical texture of Prof. Lahiri's archaeological studies. In the case of the history of Indian archaeology her knowledge of the sources, including their socio-political nuances, is thorough and impeccable. The impact of Prof. Lahiri's research has gone a long way to establish the discipline of archaeology as an integral part of the broader world of historical and social science research.



Rajesh S. Gokhale

Director, CSIR – Institute of Genomics and Integrative Biology, New Delhi

Dr. Rajesh S. Gokhale did his M.Sc. in Biotechnology from the Indian Institute of Technology, Bombay and a Ph.D. in Molecular Biophysics from the Indian Institute of Science, Bangalore and then carried out postdoctoral work at Stanford University. Prior to his current appointment, he served as faculty at the National Institute of Immunology. He is the Co-founder of Vyome Biosciences, a biopharmaceutical company developing drugs for dermatology care utilizing genomics knowledge.

Dr. Gokhale has earned international recognition for his work in understanding tuberculosis pathogenesis, with a focus to understand complex cell envelope coat of mycobacterium, a unique feature of this pathogen.

He is the recipient of several awards including the Swarnajayanti Fellowship (2006–2011), the Shanti Swarup Bhatnagar Prize (2006) and the National Bioscience Award for Career Development (2009).

Life Sciences

The Infosys Prize 2013 in Life Sciences is awarded to Dr. Rajesh S. Gokhale for his work in the field of lipid metabolism in *M. tuberculosis*. He discovered fatty acyl AMP ligases in tubercle bacillus, their role in the generation of the lipid components of its cell wall and of their existence in other organisms, where they play a role in biosynthesis of complex molecules.

Scope and impact of work

Every minute, one person dies of tuberculosis in India. The disease is caused by the infection of lungs with mycobacteria and is spread through the air. Dr. Rajesh Gokhale's pioneering work showed that *Mycobacterium tuberculosis* (MTb), the bacteria causing the disease is capable of generating highly diverse set of cell wall lipids using very limited number of genes. The very thick lipid cell wall of this bacterium protects it from host defense mechanisms, and allows it to survive in a dormant form, impervious to drugs. To get to the bacteria, one needs to penetrate its fortress-like thick walls. Dr. Gokhale discovered that the genome sequence of MTb revealed many proteins with similarity to Polyketide synthases (PKS), which are large multifunctional enzymes, involved in the synthesis of the thick lipid walls.

Detailed elucidation of the biochemical mechanisms of the synthesis of complex lipids needed to form the lipid cell walls, unique only to the invader, but not the host, allows development of drugs that specifically target these enzymes. The current drugs to combat tuberculosis have to be taken each day for at least six months, posing a compliance challenge. Therefore, a single drug that can inhibit multiple targets holds great promise to be a very effective form of treatment for tuberculosis.

Citation by the jury

Dr. Rajesh S. Gokhale is an expert on polyketide synthases and, especially, on their role in the generation of the complex lipid structures in the *M. tuberculosis* cell wall. He is a leader in the study of the enzymology of polyketide synthases in tubercle bacilli. He is the discoverer of fatty acyl AMP ligases in *M. tuberculosis*, their role in the generation of the lipid components of its cell wall and of their existence in other organisms, where they play a role in complex organic biosynthesis. He also has an active program in understanding depigmenting disorder, Vitiligo in human skin, but he is most known for his biochemical studies in tubercle bacilli.



Rahul Vijay Pandharipande

*Professor, Department of
Mathematics, Eidgenössische
Technische Hochschule (ETH), Zurich*

Prof. Rahul Vijay Pandharipande got his A.B. degree from Princeton University in 1990 and earned his Ph.D. in Mathematics 1994 with Joe Harris from Harvard University. After spending four years at the University of Chicago, he moved to the California Institute of Technology, where he stayed till 2001. He joined Princeton University as a professor in 2002. He then moved to Europe in 2011, visiting Portugal for a year and then settling at ETH in Zurich.

He has received many academic honors including Fellowships from the Sloan Foundation (1999) and the Packard Foundation (2000), the Compositio Prize (2009) and the Clay Research Award (2013). He was an invited speaker at the International Congress of Mathematicians (2002).

Mathematical Sciences

The Infosys Prize 2013 in Mathematical Sciences is awarded to Prof. Rahul Vijay Pandharipande for his profound work in algebraic geometry. In particular, for his work on Gromov-Witten theory for Riemann surfaces, for predicting the connection between Gromov-Witten and Donaldson-Thomas theories, and for his recent work with Aaron Pixton that establishes this connection for Calabi-Yau 3-folds.

Scope and impact of work

Algebraic geometry occupies a central place in modern mathematics and has multiple conceptual connections with such diverse fields as complex analysis, topology and number theory. Initially, a study of systems of polynomial equations in several variables — the subject of algebraic geometry which starts where equation solving leaves off — becomes more important to understand the intrinsic properties of the totality of solutions of a system of equations, rather than to find a specific solution. This leads to some of the deepest areas in all of mathematics, both conceptually and in terms of technique.

For the last 15 years, Prof. Rahul Vijay Pandharipande has been a dominant force in this area for which he has also received the Clay Research Award in 2013. One of his first major achievements was a complete solution of Gromov-Witten theory of Riemann surfaces (in 2000, jointly with Andrei Okounkov). More precisely, they proved two famous conjectures, the 2-Toda conjecture for Gromov-Witten theory of P^1 and the Virasoro conjecture for general Riemann surfaces.

Another major contribution was his work with Davesh Maulik, Nikita Nekrasov, and Andrei Okounkov, in which they conjectured a totally unexpected relationship (now known as the MNOP conjectures) between Gromov-Witten theory and the Donaldson-Thomas theory of algebraic 3-folds. In a recent joint work with Aaron Pixton, Prof. Pandharipande has proved this conjecture for a very large class of 3-folds. This monumental result had a great impact on the disciplines of mathematics and physics.

Citation by the jury

Prof. Rahul Vijay Pandharipande is a leader in the field of algebraic geometry. During the last 15 years he has made profound contributions to Gromov-Witten theory. This theory introduced in the 1990s has forged deep connections between many areas of mathematics including algebraic geometry, symplectic geometry, representation theory, etc. He excels in doing explicit computations and in finding beautiful formulae and rich structures within these theories.

In order to carry out these calculations, he has also been led to make many theoretical advances that are not computational in nature. In 2000, with Andrei Okounkov, he provided a complete account of Gromov-Witten theory for Riemann surfaces and together with Davesh Maulik and Nikita Nekrasov they went on to formulate what is known as MNOP conjecture that provides a crucial link to Donaldson-Thomas theory. Prof. Pandharipande and his student, Aaron Pixton recently proved this conjecture for a large class of Calabi-Yau 3-folds.



Shiraz Naval Minwalla

Professor, Department of Theoretical Physics, Tata Institute of Fundamental Research, Mumbai, IBM Einstein Fellow, and Visiting Professor, Institute for Advanced Study, Princeton

Prof. Shiraz Naval Minwalla did his M.Sc. in Physics from the Indian Institute of Technology, Kanpur (1995), and a Ph.D. in 2000. He is currently the Professor at the Department of Theoretical Physics, TIFR.

His past appointments includes Associate Professor at the Department of Theoretical Physics, TIFR, Assistant Professor at the Department of Physics, Harvard University, Reader at the Department of Theoretical Physics, TIFR, and Junior Fellow, Harvard Society of Fellows.

He has been the recipient of awards such as the New Horizons in Physics prize (2013), Nishina Asia Award (2013), Shanti Swarup Bhatnagar Prize (2011), ICTP Prize (2010) and the Swarnajayanti Fellowship (2007). He is an Elected Fellow at the Indian Academy of Sciences (2011).

Physical Sciences

The Infosys Prize 2013 in Physical Sciences is awarded to Prof. Shiraz Naval Minwalla for his pioneering contributions to the study of string theory, quantum field theory and gravity, and for uncovering a deep connection between the equations of fluid and superfluid dynamics and Einstein's equations of general relativity.

Scope and impact of work

One of the central problems of theoretical physics is to understand the force of gravity within the framework of quantum mechanics. However, efforts to quantize Einstein's theory of general relativity using standard methods give neither a consistent nor a calculable theory of quantum gravity. Therefore, in recent years, there has been a huge effort to realize a theory of quantum gravity via a very different framework, that of 'string theory'.

Several years ago, Prof. Juan Maldacena proposed the Anti-de Sitter / Conformal Field Theory (AdS / CFT) correspondence, a conjectured holographic relation between gravitational theory in the bulk of Anti-de Sitter space and a conformal quantum field theory that resides on its boundary. Enormous effort has been invested to unravel the implications of this correspondence.

Prof. Shiraz Naval Minwalla established that, in the long wavelength hydrodynamic limit, a black hole in Anti-de Sitter space is governed by exactly the same equations as the nonlinear Navier-Stokes equations of a fluid. This AdS / CFT-like holographic view of fluid dynamics is called the fluid / gravity map. It unifies two of the best-studied nonlinear partial differential equations in physics.

Using the fluid / gravity map, Prof. Minwalla established a connection between the classical area theorems of black hole physics and the positivity of the divergence of the entropy current in fluid dynamics. This correspondence led to the correct form of the most general equations of relativistic charged hydrodynamics and superfluid dynamics.

Citation by the jury

Prof. Shiraz Naval Minwalla is a leader in quantum gravity research. He has made deep contributions in the field of string theory, in particular to the study of the AdS / CFT correspondence. Prof. Minwalla uncovered an unexpected connection between the equations of fluid and superfluid dynamics and Einstein's equations of general relativity.

His work revealed that in the hydrodynamic limit, the geometry of a black hole in Anti-de Sitter space is governed by exactly the same equations as a relativistic Navier-Stokes fluid.

He is among those who initiated the study of three-dimensional Chern-Simons field theories coupled to fundamental matter fields in the large N limit. This led to the discovery of a surprising new non-supersymmetric strong-weak coupling duality between bosons and fermions coupled to Chern-Simons gauge fields.

Prof. Minwalla has made path-breaking contributions to the study of black holes in the context of the AdS / CFT correspondence, the enumeration of supersymmetric states in superconformal field theories, the study of noncommutative field and string theories, and correlation functions in supersymmetric field theories.



Aninhalli R. Vasavi

*Senior Fellow, Nehru Memorial
Museum and Library, New Delhi*

Prof. Aninhalli R. Vasavi did her M.A. and M.Phil. in Sociology from the University of Delhi, and her Ph.D. in Social Anthropology from the Michigan State University. She worked at the Indian Institute of Management, Ahmedabad, and the National Institute of Advanced Studies, Bengaluru, including a year as Dean of Social Sciences.

She is the founder and active member of Centre for Research and Education in Social Transformation, Kozhikode, an institute facilitating comprehensive learning for the Scheduled Caste and Scheduled Tribes.

Her work appears in academic journals such as *Journal of the Royal Anthropological Institute*, *South African Review of Sociology* and *Contributions to Indian Sociology*.

She has authored several books including, *Harbingers of Rain*, and has edited several books – *In an Outpost of the Global Economy*, with Carol Upadhyya and *Inner Mirror: Kannada Writings on Society and Culture*. Prof. Vasavi left IAS in 2011 to pursue her own research and to develop Punarchith, an organization for alternative learning that she helped set up in Chamarajanagar, Karnataka.

Social Sciences – Sociology and Anthropology

The Infosys Prize 2013 in Social Sciences – Sociology and Anthropology is awarded to Aninhalli R. Vasavi for her distinctive and pioneering research that spans a remarkable range covering four main areas: Agrarian society at the intersection of economy, culture and environment; school education in varied regional contexts; globalization and its impact on the moral economy of urban occupations; and social science as seen from the vantage point of Indian languages and regional cultures.

Scope and impact of work

Prof. Aninhalli R. Vasavi stands out as a rare scholar with a major impact on four different areas of social science research. Prof. Vasavi has made seminal contributions towards an environmentally-aware ethnographic perspective on agrarian economy and culture (*Harbingers of Rain, 1999*). Her book on farmers' suicides — *Shadow Space: Suicides and the Predicament of Rural India, Three Essays Collective, 2012* — brilliantly demonstrates how the individualization and alienation produced by industrial farming methods generate unbearable social suffering that goes far beyond mere indebtedness or drought.

Prof. Vasavi's research on primary education offers an insightful analysis of the cultural embeddedness of the school, the teacher and the child as simultaneously social and administrative entities. Her concept of 'school differentiation' appears in key reports written for international agencies and the governments of India, Karnataka and Rajasthan.

Prof. Vasavi is a pioneering contributor to the ethnography and political economy of the IT profession in India (*In an Outpost of the Global Economy, Routledge, 2008*, co-edited with Carol Upadhyaya). She is also the executive producer of a documentary trilogy on the IT industry in Bengaluru, *Coding Culture* (NIAS, 2006).

As a locally-rooted and globally reputed public intellectual, Prof. Vasavi has facilitated a productive engagement between Kannada writers and westernized social science in Kannada (edited volumes: *The Inner Mirror: Kannada Writings on*

Society and Culture; Kannada version: *Volagannadi, 2011*). To expand their horizons and talent pools, the social sciences in India must breach the English barrier, and bilingual scholars like Prof. Vasavi will play a crucial role.

Citation by the jury

Prof. Aninhalli R. Vasavi's wide-ranging, distinctive and pioneering research spans four fields: Agrarian society as the intersection of economy, culture and environment; school education in varied regional contexts; moral economy of globalized, glamorized occupations like the IT industry; and interface between (western) social sciences and (vernacular) intellectuals in India.

Her two most important contributions enrich our understanding of farmer suicides and rural schooling. Prof. Vasavi's path-breaking work shows how it is not just the immediate economic reasons (like debt or crop failure, which are familiar features of Indian agriculture) but transformed social experiences associated with them — especially individualization of formerly collectively managed risks — that cause farmer suicides.

Her concept of 'school differentiation' demonstrates how the presence of as many as 11 different types of schools shape choices of parents and teachers and determines the pedagogical experience of children.

Prof. Vasavi is notable for the spread of her research methodologies — from classical ethnography to documentary film-making — and her exemplary efforts to engage with work in Indian languages.

Engineering and Computer Science

Jury Chair



Pradeep K. Khosla

Pradeep K. Khosla is the Chancellor, University of California, San Diego, U.S. He also serves as the Chief Executive Officer for UC, San Diego. He has received several awards including the Light of India Award (2012), the ASME Computers in Engineering Lifetime Achievement Award (2009), and the inaugural Pan IIT American Leadership Award for Academic Excellence (2009). He was awarded the Philip and Marsha Dowd Professorship in 1998 at the Carnegie Mellon University, Pittsburgh, U.S. He has been elected as Member, National Academy of Engineering; Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and Fellow of the American Association of Artificial Intelligence (AAAI).

Jurors

R. A. Mashelkar

National Research Professor, President of Global Research Alliance, India

Venkatesh Narayanamurti

Benjamin Peirce Professor of Technology and Public Policy; Professor of Physics, Harvard University, U.S.

Arun Majumdar

Professor of Mechanical Engineering and Materials Science and Engineering, University of California, Berkeley, U.S.

Randal E. Bryant

Dean of the Carnegie Mellon University School of Computer Science, U.S.

Humanities

Jury Chair



Amartya Sen

Amartya Sen is the Thomas W. Lamont University Professor and Professor of Economics and Philosophy, Harvard University, Cambridge, U.S. Prof. Sen won the Nobel Prize in Economics in 1998 and was presented the 2011 National Medal of Arts and National Humanities by U.S. President Barack Obama. His other awards include the Bharat Ratna, the highest civilian honor awarded by the President of India; the Senator Giovanni Agnelli International Prize in Ethics; the Alan Shawn Feinstein World Hunger Award; the Edinburgh Medal; the Brazilian Ordem do Merito Cientifico (Grã-Cruz); the Presidency of the Italian Republic Medal; the Eisenhower Medal; Honorary Companion of Honour (U.K.), and the George C. Marshall Award.

Jurors

Akeel Bilgrami

Johnsonian Professor of Philosophy, Director of the Southern Asian Institute, and Founding Member of the Committee on Global Thought, Columbia University, U.S.

Dilip Chakrabarti

Emeritus Professor, Department of Archaeology, University of Cambridge, U.K.

Leila Seth

Retired Chief Justice of Himachal Pradesh, India

Sunil Khilnani

Avantha Professor and Director, King's India Institute, King's College, U.K.

Life Sciences

Jury Chair



Inder Verma

Inder Verma is Professor, Laboratory of Genetics, American Cancer Society Professor of Molecular Biology, and Irwin and Joan Jacobs Chair in Exemplary Life Science at the Salk Institute for Biological Studies, San Diego, U.S. He is a leading authority on the development of viruses for gene therapy vectors. He is a member of the National Academy of Sciences (U.S.), Institute of Medicine, American Academy for Arts and Sciences, American Philosophical Society and the Third World Academy of Sciences. A Foreign Fellow of the Indian National Academy of Sciences, he was appointed Editor-in-Chief of *Proceedings of the National Academy of Sciences* (PNAS) in 2011. He is the recipient of the 2010 Spector Prize by Columbia University and the 22nd Annual Cancer Research Award (2010) of the Pasarow Foundation.

Jurors

Detlef Weigel

Director, Department of Molecular Biology, Max Planck Institute for Developmental Biology, Germany

Geneviève Almouzni

Deputy Director and Head of Unit – Nuclear Dynamics and Genome Plasticity, Institut Curie, France

Owen Witte

Director, UCLA Broad Stem Cell Research Center, U.S.

Neal Rosen

Director, Center for Mechanism-Based Therapeutics, Memorial Sloan-Kettering Cancer Center, U.S.

Arthur Horwich

Sterling Professor of Genetics and Professor of Pediatrics, Yale University; Investigator, Howard Hughes Medical Institute, U.S.

Mathematical Sciences

Jury Chair



Srinivasa S. R. Varadhan

Srinivasa S. R. Varadhan is Professor of Mathematics and Frank J. Gould Professor of Science at the Courant Institute of Mathematical Sciences, New York University (NYU), New York, U.S. He was awarded the National Medal of Science (2011) by the U.S. government and the Padma Bhushan (2008) by the Government of India. He is a winner of the Abel Prize (2007), the Leroy Steele Prize (1996), the Margaret and Herman Sokol Award of the Faculty of Arts and Sciences, NYU (1995) and the Birkhoff Prize (1994). He holds honorary degrees from the Université Pierre et Marie Curie in Paris (2003), the Indian Statistical Institute in Kolkata, (2004) and the Chennai Mathematics Institute (2008).

Jurors

Gopal Prasad

Raoul Bott Professor of Mathematics, University of Michigan, U.S.

Ingrid Daubechies

Professor, Department of Mathematics, Duke University, U.S.

Ravindran Kannan

Researcher at Microsoft Research and First Adjunct Faculty of Computer Science and Automation Department, Indian Institute of Science, India

Richard Taylor

Professor, School of Mathematics, Institute of Advanced Studies, U.S.

Haïm Brezis

Professor, Pierre and Marie Curie University, France, and Visiting Distinguished Professor, Rutgers University, U.S.

Physical Sciences

Jury Chair



Shrinivas Kulkarni

Shrinivas Kulkarni is the John D. and Catherine T. MacArthur Professor of Astronomy and Planetary Science at the California Institute of Technology (Caltech), Pasadena, U.S. His primary interests are the study of compact objects (neutron stars and gamma-ray bursts) and the search for extra-solar planets through interferometric and adaptive techniques. He is the Interdisciplinary Scientist for the Space Interferometry Mission and co-principal investigator of the Planet Search Key Project. He was awarded the Jansky Prize of Associated Universities, Inc. (2002), the Alan T. Waterman Prize (1992), the Helen B. Warner Award (1991), a fellowship from the David and Lucile Packard Foundation (1990–1995) and the Presidential Young Investigator Award (1988–1993). He was elected Fellow, of the National Academy of Sciences (2003), the Royal Society of London (2001) and the American Academy of Arts and Sciences (1994).

Jurors

T. V. Ramakrishnan

Year of Science Professor; Emeritus Professor of Physics, Banaras Hindu University, Varanasi, India; Distinguished Associate, Centre for Condensed Matter Theory, Indian Institute of Science, India

Ramesh Narayan

Thomas Dudley Cabot Professor of the Natural Sciences, Harvard University, U.S.

Harry B. Gray

Arnold O. Beckman Professor of Chemistry and the Founding Director of the Beckman Institute, California Institute of Technology, U.S.

Goverdhan Mehta

National Research Professor and Jubilant-Bhartia Chair Professor, School of Chemistry, University of Hyderabad, India

Social Sciences

Jury Chair



Kaushik Basu

Kaushik Basu is the Chief Economist and Senior Vice President, World Bank, Washington DC, U.S. He is on leave from the post of the Professor of Economics and the C. Marks Professor of International Studies, Cornell University, Ithaca, U.S. The former Chief Economic Advisor to the Government of India, he was awarded the Padma Bhushan in 2008. He is the President of the Human Development and Capabilities Association. He has held advisory posts with the International Labour Organization, World Bank, and the Reserve Bank of India. Among the books he has authored are *Beyond the Invisible Hand: Groundwork for a New Economics* (2011, Princeton University Press and Penguin) and *Prelude to Political Economy: A Study of the Social and Political Foundations of Economics* (2000, Oxford University Press).

Jurors

Avinash Dixit

John J. F. Sherrerd '52 University Professor of Economics Emeritus, Princeton University, U.S.

Patricia Uberoi

Vice-Chairperson and Honorary Fellow, Institute of Chinese Studies, India

Nandini Sundar

Professor of Sociology, Delhi School of Economics, Delhi University, India

Satish Deshpande

Professor of Sociology, Delhi School of Economics, Delhi University, India

Trustees



Srinath Batni

President of the Board of Trustees, Infosys Science Foundation and Member of the Board, Infosys Limited

Batni was inducted to the Infosys Board in May 2000. He is also the Director of Infosys China and Infosys Australia. He is currently the Head of Delivery Excellence. From 1996–2000, he served as the Senior Vice President and Head, Retail and Telecommunications.



V. Balakrishnan

Trustee, Infosys Science Foundation

Balakrishnan joined Infosys in 1991 and has served as the Company Secretary and Senior Vice President – Finance. He also served as Head of BPO, Finacle and the India Business Unit. He was the Chief Financial Officer of Infosys from 2006–2012.



K. Dinesh

Co-founder, Infosys Limited and Trustee, Infosys Science Foundation

A co-founder of Infosys, Dinesh was the Head of Quality, Information Systems and the Communication Design Group till June 2011.



S. Gopalakrishnan

Executive Vice Chairman, Infosys Limited and Trustee, Infosys Science Foundation

A co-founder of Infosys, Gopalakrishnan is currently Executive Vice Chairman of Infosys. He served as CEO and Managing Director from 2007–2011 and was as the Executive Co-Chairman from 2011–2013. He has received several awards including the Padma Bhushan from the Government of India.



K. V. Kamath

Lead Independent Director, Infosys Limited and Trustee, Infosys Science Foundation

Kamath started his career in 1971 at ICICI, an Indian financial institution that founded ICICI Bank. After working for the Asian Development Bank for a few years, he rejoined ICICI Bank as its Managing Director and CEO in 1996. He is the Lead Independent Director of Infosys. He was awarded the Padma Bhushan in 2008.



T. V. Mohandas Pai

Trustee, Infosys Science Foundation

Pai served as the Chief Financial Officer of Infosys from 1994–2006. He led efforts in the areas of Human Resources and Education and Research from 2006–2011 and is passionate about education reform.



N. R. Narayana Murthy

Founder and Executive Chairman, Infosys Limited and Trustee, Infosys Science Foundation

Murthy founded Infosys along with six other software professionals in 1981. He was awarded the Padma Vibhushan by the Government of India, the Légion d'honneur by the Government of France, and the CBE by the British government.



Dr. Omkar Goswami

Founder and Chairman, CERG Advisory Pvt. Ltd., Independent Director, Infosys Limited, and Trustee, Infosys Science Foundation

Dr. Goswami is the Founder and Chairman of Corporate and Economic Research Group (CERG) Advisory Private Limited. He has been a consultant to the World Bank, the International Monetary Fund (IMF), the Asian Development Bank and the Organisation for Economic Cooperation and Development (OECD).



S. D. Shibulal

Chief Executive Officer and Managing Director, Infosys Limited and Trustee, Infosys Science Foundation

A co-founder of Infosys, Shibulal took over as CEO in 2011. He is responsible for evolving the company's business model towards achieving Infosys' aspirations of becoming the next generation global consulting and IT services corporation.



Bhavna Mehra

General Manager, Infosys Science Foundation

Mehra manages the ISF, focusing on expanding the inspirational and aspirational value of the Infosys Prize, and organizing the Infosys Science Foundation Lectures. She formerly managed strategic initiatives for Infosys, including its relationship with the World Economic Forum.

THE INFOSYS SCIENCE FOUNDATION

Securing India's scientific future

The Infosys Science Foundation is a not-for-profit trust set up in 2009 by Infosys and some members of its Board. It confers the Infosys Prize to honor outstanding achievements across six categories of research: Engineering and Computer Science, Humanities, Life Sciences, Mathematical Sciences, Physical Sciences and Social Sciences. A jury comprising eminent leaders in each of these fields evaluates the achievements of the nominees against the standards of international research, placing the winners on par with the finest researchers in the world.

The prize consists of a gold medal, a citation and a purse. The prize money was increased from ₹50 lakh to ₹55 lakh in 2013. With the giving of the Infosys Prize 2013, the Foundation celebrates its fifth year. In keeping with its mission of spreading the culture of science, the Foundation has instituted the Infosys Science Foundation Lectures — a series of public talks, mostly by jurors and laureates of the Infosys Prize. These talks and interactions aim to inspire young researchers and students by igniting a spark of curiosity and opening up a world of possibilities.

INFOSYS SCIENCE FOUNDATION

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