

## **Biographical Sketches of Workshop Speakers and Session Chairs**

<https://www.nap.edu/read/21810/chapter/16>

### **Indo-U.S. Workshop on Challenges of Emerging Infections and Global Health Safety: Summary of a Workshop (2016)**

#### **Chapter: Appendix F: Biographical Sketches of Workshop Speakers and Session Chairs, Pages 183-202**

**Rakesh Bhatnagar** is a professor in the School of Biotechnology at JNU, New Delhi. He has been working in the field of anthrax for the past 20 years. He has to his credit the development of genetically engineered vaccine against anthrax. The technology of recombinant anthrax vaccine has been transferred to Panacea Biotec Ltd. and the vaccine has successfully undergone Phase I and Phase II human clinical trials. Also, his research group pioneered the expression of Protective Antigen gene in a plant system, which marks the first milestone towards developing edible vaccine against anthrax. DNA vaccine against rabies has been developed in his laboratory and is ready for technology transfer. Further research is being done to develop DNA vaccine against anthrax. His laboratory is also engaged in study of programmed cell death in prokaryotes. His research group has recently initiated research in other important infectious disease systems like Mycobacterium, Brucella; aiming to open avenues for their control. He received his Ph. D. (Biochemistry) from the National Sugar Institute, Kanpur.

**Karen Byers** is an assistant professor of medicine in the Division of Infectious Diseases and Clinical Director for the Division and director of the Surgical Infectious Diseases Unit. Dr. Byers completed her internal medicine training at Temple University Hospital and completed a 3-year fellowship in infectious diseases at the University of Virginia, where she received a masters degree in epidemiology. She was recruited to join the UPMC staff in February 2001. Dr. Byers' research interests include influenza and surgical infections. Her previous work has focused on infection control, nosocomial pathogens, and HIV. Dr. Byers is involved in the UPMC Health Systems planning for bioterrorism, SARS and pandemic influenza.

**Christopher Todd Davis** is an associate editor of virology reports at the Centers for Disease Control and Prevention (CDC), Influenza Division. Dr. Davis joined the Influenza Division at the Centers for Disease Control and Prevention as a postdoctoral researcher in 2005. His research interests include studies to characterize the evolution and antigenicity of avian, swine and human influenza viruses. As lead of the Zoonotic Virus Team, Dr. Davis directs molecular epidemiologic research activities for animal influenza viruses and conducts small animal studies to determine, among other things, the consequences of influenza virus evolution on antigenic properties and the pandemic potential of these viruses. As part of the Influenza Divisions' pandemic planning/response, this team utilizes molecular and virologic approaches to characterize and select vaccine candidates for potential use in influenza vaccine manufacturing. In addition, Dr. Davis's research aims to designs novel molecular assays for the detection and quantification of various influenza virus subtypes and continues to work towards improving international surveillance and laboratory capacity by training

collaborators in various laboratory techniques, viral sequencing, and phylogenetics. Dr. Davis earned his Ph.D. from the University of Texas Medical Branch.

**Pawan K. Dhar** is a professor and head of the Synthetic Biology Group at Shiv Nadar University and director of the Centre of Systems and Synthetic Biology, University of Kerala. He has over 15 years of experience in systems and synthetic biology. Previously, he held senior scientific positions at RIKEN Genomics Sciences Centre, Japan, Bioinformatics Institute, Singapore, Keio University in Japan and Manipal University. Professor Dhar has published 75 peer-reviewed scientific papers and has represented India at key global synthetic biology meetings. His work on making functional proteins from naturally non-expressed DNA sequences has shown a new way of doing biology and generated socially useful applications. Dr. Dhar is the founding editor-in-chief of the Springer's System and Synthetic Biology journal. He serves on the Department of Biotechnology (Government of India) review panel of bioenergy and marine synthetic biology. He also serves on the external board of referees for European Science Foundation.

**Shiv Chandra Dubey** is a veterinary microbiologist having specialization in animal health and production, biosafety, biosecurity and animal welfare. After his initial years at COVS, JNKVV, Jabalpur and a Bottom of Form year in MP State Veterinary Services, he joined ICAR as a scientist in 1976. He served in various groups including Head Animal Health at CSWRI, Avikanagar, Raj. He retired from the post of Joint Director HSADL (now NIHSAD), Bhopal, MP. His significant contributions include development and implementation of a Bimodal Disease Data Information System for small ruminants along with Flock Health Approach and Annual Health Calendar leading to reasonable reduction in morbidity and mortality in all age groups of SRs under farm and field conditions. Dr. Dubey is considered a reference expert for his handling of the AIV by OIE. During his research life he authored four books and 108 research papers in national (81) and international research journals (27) along with 124 scientific presentations. He is recipient of four national awards, two fellowships, and a number of society awards.

**Amy DuBois** was posted as the HHS Health Attaché in New Delhi, India on October 10, 2013. Dr. DuBois previously held the role of acting director for the Office of Research and Science with the Office of the U.S. Global AIDS Coordinator. She also served as the deputy director Global AIDS Program for U.S. Centers for Disease Control and Prevention (CDC) in Guyana, as the Branch Chief for Strategic Information for the CDC Office in Mozambique, and as an Epidemic Intelligence Service Officer with the CDC where she worked in food-borne and diarrheal diseases. A native of Michigan, Dr. DuBois completed her medical school and residency in general surgery at Wayne State University. She holds an M.P.H. from Johns Hopkins University and a B.S. from Calvin College. She practiced general surgery in a community teaching hospital in Massachusetts for several years and still maintains her board certification in surgery.

**David R. Franz** (See biography David R. Franz.)

**Raghavendra Gadagkar** is the president of the Indian National Science Academy, New Delhi, and a JC Bose National Fellow at the Centre for Ecological Sciences, Indian Institute of Science. His research interests are in understanding the diverse research methodologies of different disciplines and create opportunities to rethink the foundations of his own disciplines. He obtained his B.Sc (Hons) and M.Sc. in zoology from Bangalore University and Ph.D. in molecular biology from the Indian Institute of Science, Bangalore, India. He is also chairman at the Centre for Contemporary Studies and an Honorary Professor at the Jawaharlal

Nehru Centre for Advanced Scientific Research, Indian Institute of Science Education and Research, Kolkata. He has published over 250 research papers and articles and two books. His research work has been recognized by a number of awards including the Shanthi Swarup Bhatnagar Prize, B. M. Birla Science Prize, Homi Bhabha Fellowship, B.P. Pal National Environment Fellowship on Biodiversity, the Third World Academy of Sciences award in biology and H. K. Firodia award. He is an elected fellow of the Indian Academy of Sciences, the Indian National Science Academy, the National Academy of Sciences, India, the Academy of Sciences for the Developing World, Foreign Associate of the National Academy of Sciences, and the German National Science Academy Leopoldina. He received his Ph.D. from the Indian Institute of Science, Bangalore.

**Nirmal Kumar Ganguly**, M.D was formerly a distinguished biotechnology research professor with the department of biotechnology in the government of India. He was formerly president of the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), as well as that of the Asian Institute of Public Health, Bhubaneswar, Odisha. He is the former director general of the Indian Council of Medical Research (ICMR), New Delhi. He is also the former director, PGIMER (Chandigarh) and former director of the National Institute of Biologicals (Noida). Dr. Ganguly has published 773 research papers and has supervised 130 Ph.D. theses as supervisor/co-supervisor. His major areas of research have been tropical diseases, cardiovascular diseases and diarrhoeal diseases. His interest encompasses the disciplines of immunology, biotechnology, and public health. He is president of The Asian Conference on Diarrhoeal Diseases and Nutrition, Yogyakarta, Indonesia. He is an honorary global health research fellow and adjunct professor at Boston University, U.S. He is also an adjunct professor of environmental health in the School of Public Health at the University of Minnesota, U.S. He is also a member of the Scientific Board, Grand Challenges, Bill and Melinda Gates Foundation. He has received 117 awards, including 6 international and 111 national awards. He has been honored with the prestigious Padma Bhushan award by Her Excellency, the president of India on January 26, 2008 in the field of medicine.

**B. M. Gandhi** was formerly an adviser to the government of India in the Ministry of Science and Technology, Department of Biotechnology. He is CEO (Founder, Partner) of Neo BioMed Services, New Delhi, and a consultant (Biotechnology) to the Federation of Indian Chambers of Commerce and Industries, New Delhi. His fields of interest in research and development include immunology of parasitic, bacterial and viral infections, especially amoebic diseases; viral diseases including hepatitis; liver diseases; and diagnostics, food and

nutritional health problems. He has been published in 60 international journals, and 65 national journals. He is also an adviser to the Centre for Drug Development Sciences, PSG Institute of Medical Sciences and Research, Coimbatore and a consultant in the Department of Biotechnology at the National Institute of Immunology. He is the director of the Biotech Consortium India, Limited as well as director of EmProCell Clinical Research Private Limited, Mumbai. Dr. Gandhi received his Ph.D. in experimental medicine at the University of Bergen, Bergen, Norway, and his M.Sc. in biochemistry at Punjab Agricultural University, Hissar, Haryana, India.

**Ashley M. Grant**, Ph.D., MPH, is senior biological scientist at the Government Accountability Office. Her primary areas of interest include pathogens, science policy and biosafety. She is a graduate of the University of Texas Medical Branch.

**Diane Griffin** (See biography Diane Griffin.)

**Umesh Datta** Gupta heads the laboratory for Animal Experiments at JALMA. He received a Ph.D. from N.D.R.I., Karnal University and has 22 years of experience in this area. During this time he has contributed to 40 papers on related subject matter. He is currently engaged in studies on testing of viability for *M.leprae* in the mouse footpad, drug resistance in leprosy as a part of multicentric study and is initiating studies on testing of drugs on *Mycobacterium tuberculosis* in animals. During his career he has worked as faculty at GBPUA&T, Pantnagar, as Senior Research Officer (Animal House), National JALMA Research Institute for Leprosy & Other Mycobacterial Diseases, Tajganj and is presently deputy director (SG)/Scientist F cum Head, at the Experimental Animals Facility. He has attended more than 100 national and international conferences in India and abroad. He has published 80 papers in national and international journals and contributed chapters in several books. Dr. Gupta is vice president of the Society of Immunology and Immunopathology and a recipient of ICMR Senior Scientist International Fellowship (2006) as well as ICMR's JALMA oration award in 2008 for work in Mycobacterial research.

**F. Gray Handley**, M.S.P.H., is the NIAID associate director for International Research Affairs. Mr. Handley coordinates and facilitates international research activities for NIAID, ensuring that the Institute has a well-integrated, scientifically productive program of international research cooperation. He is involved in integrating NIAID global activities with those of other National Institutes of Health (NIH) Institutes and Centers, the agencies of the U.S. Department of Health and Human Services (HHS) (including the Centers for Disease Control and Prevention and the Food and Drug Administration), and other U.S. federal agencies (including the U.S. Department of State, U.S. Agency for International Development, and U.S. Department of Defense). Mr. Handley has had a long career in the U.S. government as a global health and biomedical research program manager, senior advisor, and health diplomat. From 2001 to 2006, he served as Health Attaché and HHS Regional Representative in Southern Africa, at the U.S. Embassy Pretoria, South Africa; and, from 1992 to 1998 he was assigned as U.S. Science Attaché and HHS Representative in South Asia at the U.S. Embassy New Delhi. Mr. Handley also served as associate director for Prevention Research and International Programs at the NIH Eunice Kennedy Shriver

National Institute of Child Health and Human Development; associate director for International Relations at the NIH Fogarty International Center; and global public health advisor for the U.S. Department of State. He has had other assignments at the NIH National Institute of Environmental Health Sciences, the World Health Organization, the White House Office of Management and Budget, the U.S. Department of Defense, and the U.S. Agency for International Development. Mr. Handley has received many awards in recognition of his service and accomplishments. He received his master's degree in the Science of Public Health from the University of North Carolina, Chapel Hill.

**Joseph Kanabrocki** (See biography Joseph Kanabrocki.)

**Vishwa Mohan Katoch** is known for his experience with microbiology and for managing the high containment research enterprise for the government in India. He joined the Indian Council of Medical Research (ICMR) as a Talent Search Schemes Fellow and was posted at JALMA (Japanese Leprosy Mission for Asia) Agra and became Director of this Institute. He was selected as First Secretary to the Government of India, Department of Health Research, Ministry of Health and Family Welfare and is presently the Director-General, ICMR, New Delhi. Katoch developed the molecular methods of rapid diagnosis of TB, leprosy and DNA chips; DNA fingerprinting methods; and viability determination methods like ATP bioluminescence. Studies carried out by his group in collaboration with others have led to important new findings and new technologies such as enzyme based methods in the 1980s, molecular biology based techniques in the 1990s and genomics based methods in the recent past. He is a fellow of the National Academy of Sciences, Allahabad; the National Academy of Medical Sciences; and the Indian Academy of Sciences, Bangalore. Dr. Katoch received his MBBS from Shimla and M.D. from the All India Institute of Medical Sciences, New Delhi. He obtained specialized training at the VA Medical Center, Long Beach, and the National Institute for Medical Research, U.K.

**John Kenneth** is the head of the Infectious Disease Unit and Molecular Diagnostics, dean and vice dean of St. Johns Research Institute and associate professor in microbiology of infectious disease. He completed a MBBS from Christian Medical College (CMC) Vellore and graduate training at MGR Medical University. His research interests include molecular methods for rapid diagnostics and point of care testing, bacterial resistance, viral exanthems, and mycobacterial disease and prevention. He has a lead assessor for NABL certification.

**Thomas G. Ksiazek** is currently a director of high containment laboratory operations for the Galveston National Laboratory at the University of Texas Medical Branch. He is also director of the National Biodefense Training Center and a world-renowned virus expert with 40 years of experience on the front lines of some of the worst outbreaks the world has ever seen. In August 2014, he led the U.S. Centers for Disease Control and Prevention Ebola outbreak control operations, assisting the government of Sierra Leone in Africa. Prior to that, Dr. Ksiazek was the chief of the Special Pathogens Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, Centers for Disease Control, in Atlanta, Georgia. He had been in the Special Pathogens Branch at the CDC since 1991 after retiring from the U.S. Army as Lieutenant Colonel with 20 years of active duty service. Dr. Ksiazek

earned his DVM in 1970, and then spent a year as associate veterinarian, at the Adirondack Animal Hospital in Glensfalls, New York. He started his military career when he joined the U. S. Air force in 1971, holding a position that year as base veterinarian at Sheppard Air Force Base, Texas. He then worked as chief of Veterinary Services, Royal Air Force Chicksands, UK.

**Jens H. Kuhn**, M.D./Ph.D., Ph.D., M.S., is a principal at Tunnell Government Services (TGS), Inc., Bethesda, Maryland, tasked as the lead virologist (contractor) at the IRF. He is also TGS team leader for all IRF-Frederick TGS contractors. Dr. Kuhn specializes in highly virulent viral pathogens. He is the author of *Filoviruses: A Compendium of 40 Years of Epidemiological, Clinical, and Laboratory Studies* (Vienna: Springer, 2008) and co-author of *The Soviet Biological Weapons Program – A History* (Cambridge: Harvard University Press, 2012) and has studied and worked in Germany, Italy, Malta, Russia, South Africa, and South Korea. In the United States, he rotated through or worked at Harvard Medical School, Boston, Massachusetts; the Arthropod-Borne Infectious Disease Laboratory in Fort Collins, Colorado; the Centers for Disease Control and Prevention in Atlanta, Georgia; and the U.S. Army Medical Research Institute of Infectious Diseases in Frederick, Maryland. Dr. Kuhn was the first western scientist with permission to work in the former Soviet biological warfare facility SRCVB “Vector” in Siberia, Russia, within the U.S. Department of Defense Cooperative Threat Reduction Program. Dr. Kuhn was a contributor to the Center for International and Security Studies at Maryland’s Controlling Dangerous Pathogens Project and a member of the Center for Arms Control and Nonproliferation’s CBW Scientist Working Group. He is currently chairing the International Committee on Taxonomy of Viruses Study Groups and is a subject-matter expert for the National Center for Biotechnology Information for all mononegaviruses; is a member of the editorial boards of *Applied Biosafety–Journal of the American Biological Safety Association*, *Archives of Virology*, *BioMed Research International*, *Journal of Bioterrorism and Biodefense*, *PLoS One*, *PLoS Pathogens*, *Viruses*, *Virologica Sinica*, *Voprosy Virusologii*, and *World Journal of Virology*; was a member of the U.S. National Academy of Sciences’ committee on animal models for assessing countermeasures to bioterrorism agents; and is continuously involved with the American Association for the Advancement of Science and the U.S. Department of State bioengagement efforts in the Broader Middle East and North Africa region, Turkey, and the Newly Independent States.

**D. D. Kulkarni** is a principal scientist at ICAR, the national Institute of High Security Animal Diseases. He is a fellow of National Academy of Veterinary Science (India). He is the recipient of a number of awards including the Dr. C.M. Singh Award for the best research paper published in *Indian Journal of Comparative Microbiology*, the Dr. Ganty A. Sastry Award for the best article published in the field of pathology in *Indian Veterinary Journal* and the Intas-Polyvet Award for the best review article published in *Intas-Polyvet Journal* among others. He has published eight books and 56 research papers. He has earned a Ph.D. in veterinary microbiology.

**Krishan Lal** is an honorary professor at IIT, Kanpur. Dr. Lal established and led an active research group on crystal growth and study of crystal defects by high-resolution X-ray

diffraction techniques. He has made important contributions in the area of lattice imperfections in nearly perfect crystals and crystal growth. His research work has led to breakthroughs in understanding the nature of real materials and their interaction with radiation and external fields. His basic research has helped in establishing the origin of diffuse X-ray scattering from crystals; made it possible to directly observe and characterize the effect of external electric fields on real structure of semiconductors and insulators; enabled characterization of effect of processing steps for solid state devices fabrication on substrate materials; and enabled growth of single crystals of unprecedented perfection level. He has edited eight books and published more than one hundred research papers in refereed journals. He has seven patents to his credit. He was elected as the President of ICSU's (International Council for Science) Committee on Data for Science and Technology (2006). He was editor of *Zeitschrift fur Kristallographie* (1996-2003) and is presently editor-in-chief of the proceedings of the Indian National Science Academy. He obtained his Ph. D. (1969) from Delhi University in solid-state physics. He obtained his B.Sc. (1959) and M.Sc. (1961) degrees from Meerut College, (Agra University).

**James LeDuc** (See biography James LeDuc.)

**Robert Martin**, MPH, Ph.D., has an extensive background in laboratory practice in both clinical and public health settings, including: directing and managing laboratories, addressing state and national policies governing the practice of laboratory medicine, and supporting laboratory capacity development in resource-limited countries. While at the Centers for Disease Control and Prevention (CDC) he served as executive director of CLIAC; the Federal Advisory Committee that, together with FDA and CMS, governs the practice of laboratory medicine in the United States. While at CDC, Dr. Martin also held the positions of acting director of the National Center for Public Health Informatics and director of the Division of Laboratory Systems (DLS). As director of DLS, he developed the laboratory systems branch to strengthen laboratory capacity both domestically and internationally. In this capacity Dr. Martin worked with the CDC Global AIDS Program, Department of Defense, World Bank, and World Health Organization in Africa, Southeast Asia and Central Asia to address strengthening of laboratory systems. Dr. Martin joined the International Training and Education Center for Health in 2009 as director of laboratory systems development. In this role, he provides technical assistance in laboratory capacity development in countries in Central Asia, the Southern Caucuses, Southeast Asia and sub-Saharan Africa, including Namibia.

**Arabinda Mitra** was confirmed by the Indian and United States governments as the first executive director of the bi-national Indo-U.S. Science and Technology Forum. Dr. Mitra has had an extensive career with varied positions in the fields of geology and ocean research and development. Dr. Mitra was the Director in the International Division of the Department of Science and Technology for the Government of India. He was a member of the 12th Indian Expedition to Antarctica and has undertaken several scientific cruises to the Indian, Atlantic and Pacific Oceans. Dr. Mitra has won several academic awards like the ORS Award of UK; Bursary Award of St. Edmund's College; UK and JSPS Award of Japan and was also elected as a Fellow of Geological Society, London. In 1988, he was awarded the prestigious

Cambridge Nehru Fellowship to pursue his doctoral research at the University of Cambridge, UK. His Ph.D. project was jointly carried out with MIT, USA in the area of mid oceanic ridge hydrothermal systems. His research work was published in journals like Nature, Marine Chemistry and Geochimica Cosmo-chimica Acta, and International Journal of Remote Sensing.

**Vasantha Muthuswamy** is currently president of FERCI (Forum for Ethics Review Committees in India) and advisor for clinical research and ethics at PSGIMS&R, Coimbatore. She retired as senior deputy director general (Scientist G) and chief of Division of Basic Medical Sciences, Traditional Medicine and Bioethics and Division of Reproductive Health and Nutrition from the Indian Council of Medical Research (ICMR) after three decades of service in different capacities. She has played a major role in the area of drug development including traditional medicine, genetics and genomics, haematological disorders, ethics of animal and human experimentation, and promotion of research by medical students. She is well recognised for bringing out the ICMR's "Ethical guidelines for biomedical research on human subjects" in 2000 and the revised version "Ethical guidelines for research on human participants" in 2006. Dr. Muthuswamy received the Lifetime Achievement Award from the Indian Society for Clinical Research (ISCR), National Bioethics Conference (NBC) and FERCAP. She is a medical graduate from R.G. Kar Medical College, Kolkata and received an M.D. from the Institute of Obstetrics and Gynaecology, Madras.

**G. Balakrish Nair** works at the Translational Health Science Technology Institute, a newly founded autonomous institute of the Department of Biotechnology in Gurgaon, Harayana, India. He took up this position in October 2011. He was formerly the director of the National Institute of Cholera and Enteric Diseases (NICED), Kolkata, India. He joined NICED in 1981 and worked there until April 2000 after which he took up a 7-year assignment at the International Centre for Diarrhoeal Diseases in Dhaka, Bangladesh as the Director of Laboratory Sciences Division. Dr. Nair's research is on enteric pathogens with particular emphasis on *Vibrio cholerae*, the causative agent of the disease cholera. For the past five years, his research interests have expanded into the human microbiome especially on the gut and vaginal microbiota in relation to malnutrition and diarrhoea. He is a fellow of the National Academy of Sciences, India, fellow of the Indian National Academy of Sciences, Foreign Associate of the U.S. National Academy of Sciences, fellow of the Academy of Sciences for the Developing Nations (Italy), fellow of the American Academy of Microbiology and fellow of the German Academy of Sciences (Leopoldina). Among other awards, Dr. Nair received the prestigious Shanti Swarup Bhatnagar award for Medical Sciences in 1998 for his contributions to the discovery of *Vibrio cholerae* O139 Bengal. Under his supervision, 29 students have obtained doctoral degrees. He is the author of over 500 research papers and several book chapters and has edited several books on enteric diseases.

**Indira Nath** (See biography Indira Nath.)

**Norman P. Neureiter** was born in Illinois and grew up near Rochester, New York. He received a B.A. in chemistry from the University of Rochester and a Ph.D. in organic

chemistry from Northwestern University.. He spent a year as a Fulbright Fellow in the Institute of Organic Chemistry at the University of Munich. In 1957, he joined Humble Oil and Refining (now part of Exxon) in Baytown, Texas as a research chemist, also teaching German and Russian at the University of Houston. On leave from Humble in 1959, he served as a guide at the U.S. National Exhibition in Moscow, subsequently qualifying as an escort interpreter for the Department of State. In 1963, he joined the International Affairs Office of the U.S. National Science Foundation in Washington and managed the newly established U.S.-Japan Cooperative Science Program. Entering the U.S. Foreign Service in 1965, he was named Deputy Scientific Attache at the U.S. Embassy in Bonn. In 1967, he was transferred to Warsaw as the first U.S. Scientific Attache in Eastern Europe with responsibility for Poland, Hungary and Czechoslovakia. Dr. Neureiter returned to Washington in 1969 as an assistant for international affairs to the President's Science Advisor in the White House Office of Science and Technology. He left the government in 1973 and joined Texas Instruments (TI), where he held a number of staff and management positions including manager, East-West Business Development; manager, TI Europe Division; vice president, Corporate Staff; and Vice President of TI Asia, resident in Tokyo from 1989-94. After retirement from TI in 1996, he worked as a consultant until being appointed in September 2000 as the first Science and Technology Adviser to the U.S. Secretary of State. Finishing the 3-year assignment in 2003, he was made a Distinguished Presidential Fellow for International Affairs at the U.S. National Academy of Sciences. In May 2004, he joined the American Association for the Advancement of Science (AAAS) as the first director of the new AAAS Center for Science, Technology and Security Policy (CSTSP), funded by the MacArthur Foundation.

**H. K. Prasad** is a professor in the Department of Biotechnology at the All India Institute of Medical Sciences (AIIMS). He teaches immunology for masters candidates in biotechnology. In his research he is currently trying to establish the complex web of mycobacterial transmission that could potentially occur between humans and domesticated animals; and the reservoirs of infection that maintain the pathogens in the environment. In order to establish transmission of pathogens from humans to cattle and cattle to humans, efforts are on to identify and trace the origin of strains of mycobacterial pathogens isolated from clinical samples. He is a member of several scientific societies including the Indian Immunology Society, the Molecular Immunology Forum, the Society of Biological Chemists, the Society for Scientific Values, the American Society for Microbiology and the Guha Research Conference. He has published 53 research papers and three chapters in books. He has five patents outstanding. In his future research plans he would like to attempt to understand the basis of tissue predilection of mycobacterial pathogens in a clinical context as well as work on a collaborative project for development of bovine vaccines for prevention of tuberculosis.

**Vijay Raghavan** is currently distinguished professor and director of The National Centre for Biological Sciences. He was awarded the Infosys Prize in the life sciences category. He completed his doctoral work in the field of molecular biology and holds a Ph.D. from the Tata Institute of Fundamental Research. During his post-doctoral work, he was a research fellow and, a senior research fellow at the California Institute of Technology. In 1988, he joined the Tata Institute of Fundamental Research as a Reader and, then National Centre for

Biological Sciences (NCBS), which is under the aegis of Tata Institute of Fundamental Research that joined NCBS. He moved to Bangalore and was instrumental in the establishment of NCBS in Bangalore. His fields of specialization are developmental biology, genetics and neurogenetics. His research primarily focuses on the important principles and mechanisms that control nervous system and muscles during development and how these neuromuscular systems direct specific locomotor behaviours. Dr. Raghavan is also a director of the Centre for Cellular and Molecular Platforms. He is a member of the Board of Governors of the Okinawa Institute of Science and Technology, the Advisory Committee of the Janelia Farm Research Centre of the HHMI and a senior editor of the new journal eLife. Professor Raghavan has received numerous awards such as British Council Fellowship, Procter & Gamble Fellowship (Caltech), Lucile P Markey Fellowship (Caltech) and Biotechnology Career Development Award of Rockefeller Foundation. He was elected fellow of the Indian Academy of Sciences. K. Vijay Raghavan was conferred with the Shanti Swarup Bhatnagar Prize for Science and Technology award by the Council of Scientific and Industrial Research. In January 1999, he became an associate faculty member of the Jawaharlal Nehru Centre for Advanced Scientific Research. He became a fellow of the Indian National Science Academy, a member of the editorial board of Journal of Genetics and a member of the Asia-Pacific International Molecular Biology Network.

**Ch. Mohan Rao** is presently the director of Centre for Cellular and Molecular Biology, Hyderabad. He combines biophysical, molecular biological, and cell biological approaches to address problems of biomedical importance. His research interests include protein folding, molecular chaperones and heat shock proteins, molecular basis for lens transparency, cataract and keratitis, biosensors, DNA based diagnostics, Nanobiology, Photoacoustic spectroscopy and its application to biomedical problems. His recent research addresses the role of small heat shock proteins in gene expression, cell division, differentiation and apoptosis. Mohan Rao is a member of the program advisory committees and task force committees of major government funding agencies, a member of editorial boards of scientific journals and a section editor for BBA-Proteins and Proteomics. He is a fellow of the World Academy of Science, Trieste, Italy, a fellow of the Indian National Science Academy, the National Academy of Sciences, India the Indian Academy of Science, and Andhra Pradesh Akademi of Sciences. He is the president of the Andhra Pradesh Akademi of Sciences, Honorary President of the Jana Vigyana Vedika (Andhra Pradesh), and president of the Society of Biological Chemists (India). He is also a member of the Council of International Union for Pure and Applied Biophysics, Asia Pacific Protein Association, and the Federation of Asian and Oceanian Biochemists and Molecular Biologists. He is recipient of several awards including Ranbaxy Award for Basic Medical Sciences (2000) and the Shanthi Swarup Bhatnagar Prize (1999). He is a "J C Bose National Fellow." He is the recipient of Eminent Educationist Award, The Indus Foundation; Visishta Puraskaram, Ramineni Foundation-USA, Doctor of Science (Honoris Causa), Kakatiya University, and Bires Chandra Guha Memorial Lecture Award (INSA). He has obtained his Ph.D. from the University of Hyderabad in Chemistry.

**S. R. Rao** is director in the department of biotechnology, for the government of India and is responsible for international cooperation especially in the Asian region and the establishment of biotech facilities and centers of excellence. He has postdoctoral experience in molecular plant pathology in Japan and Australia. He served as adviser for science and technology for a period of three years (2004-2007) to the Minister for Science and Technology, government of India. During this tenure he initiated important programs on public health access in villages through public-private partnerships, S&T interventions in judiciary reforms, technology assessment of bioenergy and biofuel resources and various issues of S&T and public policy interface. He served or is serving as a member of several technical committees of the government of India. He is member of many important committees on biotechnology policy and research. Dr. Rao has established a niche in blending economics with technology and specializes in capacity building and regional cooperation and has published several important papers in national and international journals on biotechnology priorities, policy, regulation and management. Dr. Rao obtained his Ph.D. from Indian Agricultural Research Institute, New Delhi.

**T. S. Rao** is working as adviser in the department of biotechnology in the Ministry of Science and Technology, for the government of India. He has coordinated programs related to medical biotechnology, human genetics and genome analysis, National Bioethics Committees, and vaccine research and development since 1988-1989. This includes the Jai Vigyan Mission program on S&T for new and improved vaccines, Vaccine Grand Challenge Programme, glue grant, rapid grant for young investigators and also the two human vaccine production units established under Technology Mission on Immunization, namely Bharat Immunologicals and Biologicals Corporation Limited and Indian Vaccines Corporation Limited, Gurgaon. In addition, he has established the National Brain Research Centre, Manesar, Translational Health Science and Technology Institute, Faridabad, and Institute for Stem Cell and Regenerative Medicine, Bangalore, as autonomous institutions of the Department of Biotechnology, including its niches centers and extramural units. Before joining the department of biotechnology in 1988, Dr. Rao worked at the National Institute of Communicable Diseases, Ministry of Health and FW for the government of India in the area of development of Malaria vaccine by using molecular biology methods and developed monoclonal antibodies for blood stages of *P. falciparum*. Dr. Rao has 18 scientific publications to his credit in national and international peer-reviewed journals. He is also one of the coauthor's of a comprehensive book entitled "An Introduction to Biotechnology Principles, Techniques Applications, and Industrial Opportunities" published in English and Hindi by Kitab Mahal in 1992.

**David A. Relman**, M.D. is the Thomas C. and Joan M. Merigan Professor in Medicine, and Microbiology and Immunology, and Co-Director of the Center for International Security and Cooperation at Stanford University. He is also Chief of Infectious Diseases at the Veterans Affairs Palo Alto Health Care System in Palo Alto, California. Dr. Relman's research focus is the human indigenous microbiota, and the identification of previously-unrecognized microbial agents of disease. He has advised the U.S. government on emerging infectious diseases, human-microbe interactions, and future biological threats. He is Chair of the Forum

on Microbial Threats at the Institute of Medicine (National Academies of Science) and past president of the Infectious Diseases Society of America. He is a fellow of the American Academy of Microbiology, and a member of the Institute of Medicine.

**Ratnakar Sahoo** is a professor at the RML Hospital in New Delhi. Professor Sahoo is an active member of the Association of Physician of India (API) and regularly attends API conferences. He has presented several scholarly papers on various aspects of internal medicine in API conferences. He organized the annual conference of the Indian Society of Hematology and Transfusion Medicine as Treasurer (ISHTM-2008) at JIPMER, Pondicherry. He has guided 14 PG students for their thesis and has been the co-guide for many others. He has to his credit 35 publications in various national and international journals and contributed chapters in seven different medical books. He has received an FIACM award in 2012 and an FICP award. Professor Sahoo has conducted 38 MBBS, M.D., and DNB examinations as external examiner. He has been invited to deliver lectures for DNB student at IGONU periodically. He participated in the Indo-U.S. workshop and delivered a talk on ebola giving an Indian perspective at the Indian National Science Academy in November 2014.

**Dinakar Salunke** is the director of ICGEB New Delhi. Prior to joining ICGEB, Dr. Salunke was the executive director at the Regional Centre for Biotechnology (RCB), India. His research has focused on understanding the physiological processes of self-nonsel self discrimination in terms of physicochemical principles of molecular interactions. He has analyzed how the immune system reacts when encountered with the antigens that keep changing shape and showed that the restricted paratope conformational repertoire on binding of an antigen to multiple independent antibodies may be relevant for minimizing possibility of self-reactive antibodies. He is a fellow at the Indian National Science Academy, the National Academy of Sciences (India), and the Indian Academy of Sciences. He is a member of the Molecular Immunology Forum and the Guha Research Conference. He has received numerous awards during his career including the Professor R.C. Shah Memorial Award, the Dr. C. R. Krishnamurthi Oration Award, Dr. A.T. Varute Oration Award, the JC Bose National Fellowship Award the Professor G. N. Ramachandran 60th Birthday Commemoration Medal and the S. K. Mitra Birth Centenary gold medal. He obtained his Ph.D. from the India Institute of Science, Bangalore, and went on to join the National Institute of Immunology in 1988.

**Sudhir Kumar Sopory** is the Vice Chancellor at the Jawaharlal Nehru University, New Delhi. He is one of India's most distinguished scientists. An eminent plant molecular biologist of International repute, Prof. Sopory began his academic career in 1973 as a faculty at the School of Life Sciences, Jawaharlal Nehru University. His teaching and research career spans over 37 years. Professor Sopory has been awarded various national and international awards for his pioneering contributions to scientific research and teaching. Notable among them are: the prestigious Bhatnagar Award of CSIR; Chakravorty Award; Birbal Sahni Medal of the Botanical Society; Birbal Sahni Birth Centenary Award of Indian Science Congress; Godnev Award Lecture of Belarus Academy of Sciences and Padma Shri, Government of India. He is an elected Fellow of the Indian National Science Academy (New Delhi); Indian Academy of Sciences (Bangalore); National Academy of Sciences (Allahabad); National

Academy of Agricultural Sciences (New Delhi) and The World Academy of Sciences (Trieste, Italy). Recently he has also been awarded Corresponding Membership Award of American Society for Plant Biology, 2010, the first time to an Indian. He has to his credit 200 research publications in refereed journals; 13 edited books and 50 chapters in books. He received his BSc and MSc from Jammu and Kashmir University and completed his Doctorate at the University of Delhi in the field of plant molecular biology.

**David Swayne**, D.V.M., M.Sc., Ph.D., is a research veterinarian in avian influenza. Since 1987, his personal research has focused on pathobiology and control of high pathogenicity avian influenza with more than 262 peer-reviewed publications and more than 237 invited presentations. He is a former faculty member at Ohio State University and for the past 20 years has been the Director of the U.S. Department of Agriculture's in-house high-biocontainment laboratory for research on exotic, emerging, and endemic viral diseases of poultry and is subject-matter expert on avian influenza. In 2011, he completed a 16-month sabbatical to the World Organization for Animal Health (OIE), conducting a global assessment of avian influenza control programs, especially the role of vaccines. He is the editor of the international text *Avian Influenza*, editor-in-chief of the 13th edition of *Diseases of Poultry*, and associate editor for two journals: *Veterinary Pathology and Influenza and Other Respiratory Pathogens*. Dr. Swayne has served on OIE international committees to update the avian influenza chapters in *Terrestrial Animal Health Code* and *Manual of Standards for Diagnostic Tests and Vaccines*. He has participated in missions or conferences on avian influenza control and biosafety/biosecurity in 44 countries in the past 15 years.

**Srikanth Tripathy** is the Director of the National JALMA Institute of Leprosy and Other Mycobacterial Diseases (ICMR). Dr. Tripathy's areas of research specialization include tuberculosis, HIV-TB, HIV drug resistance, drug resistance TB and drug resistance in leprosy. He has published 84 research papers and studies. He received a Fogarty Fellowship from Harvard School of Public Health where he worked on HIV and molecular epidemiology. He obtained his M.D. from Madras Medical College.

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