

Biotechnology Cooperation for the U.S.- India Initiative on Critical and Emerging Technology (iCET): A Workshop Series

Committee

Pawan Dhar

Co-Chair

Dr. Pawan Dhar, Ph. D. (Co-Chair), is a distinguished scholar in synthetic biology and heads the CVJ Centre for Synthetic Biology and Biomanufacturing at Kochi. Having earned his Ph.D. in human genetics from Banaras Hindu University, Varanasi, in 1993, Dr. Dhar's academic journey has spanned institutions such as Manipal University in India, the Bioinformatics Institute in Singapore, and the RIKEN Yokohama Institute in Japan, where he made significant contributions to the understanding of human genetics, systems biology, and synthetic biology. Dr. Dhar's pioneering research focuses on exploring the "dark genome" (non-expressing, non-translating, and extinct DNA sequences) for their potential to generate functional molecules. In partnership with Professor Ron Weiss of the Massachusetts Institute of Technology and Springer, Dr. Dhar co-founded the first journal dedicated to Systems and Synthetic Biology in 2007. Dr. Dhar has established a robust research and academic synthetic biology ecosystem in India for the last fifteen years.

Michele Garfinkel

Co-Chair

Michele Garfinkel, Ph.D., (Co-Chair), was from 2011 until 2022 the founding head of the Policy Programme at the European Molecular Biology Organization. Earlier, she was a policy analyst at the J. Craig Venter Institute. She is currently working as an independent researcher. Her areas of expertise include responsible conduct of research, analysis of emerging technologies, international collaborations, and open science. Dr. Garfinkel was previously on the planning committee for the National Academies of Sciences, Engineering, and Medicine workshop on Governance of Dual Use Research in the Life Sciences: Advancing Global Consensus on Research Oversight. She received her doctoral training in microbiology at the University of Washington and completed post-doctoral work in cancer genetics at the Fred Hutchinson Cancer Research Center and in outcomes-driven research at Columbia University. She has received further formal training in public policy at the George Washington University. Dr. Garfinkel is an elected Fellow of the American Association for the Advancement of Science (AAAS).

Vibha Ahuja

Member

Vibha Ahuja, Ph.D., is presently serving as the Chief General Manager at the Biotech Consortium India Limited (BCIL). Dr. Ahuja has been working at BCIL since 1993 and has more than 30 years of experience in undertaking projects for facilitating biotechnology commercialization. She holds a M.Sc. (Hons.) and Ph.D. in microbiology from Panjab University, Chandigarh, India. She is an expert on biosafety, biosecurity and regulatory aspects of modern biotechnology viz. genetic engineering and gene editing. She is very well versed in issues related to the Indian biosafety regulatory framework and has been involved in the formulation and dissemination of guidelines. She has also been involved in issues on modern biotechnology under the Convention on Biological Diversity and the Cartagena Protocol on Biosafety. Throughout her long and distinguished career, she has been actively involved in capacity building initiatives in India and throughout South Asia. She has also served as expert in multi-country initiatives involving Asian and African countries. Dr. Ahuja is on the board of International Society of Biosafety Research.

Rajeev Bahuguna

Member

Rajeev Bahuguna, Ph.D., works as Scientist-D at the National Agri-Food Biotechnology Institute, Mohali, India. He obtained his doctoral degree in plant physiology and has worked on crop yield and nutrition for more than 12 years. He has worked in a variety of national and international institutes including as a post-doctoral fellow at the International Rice Research Institute, Manila, Philippines. He has done extensive work in the area of crop improvement for food and nutritional security in the context of climate change.

James Diggans

Member

James Diggans, Ph.D., is a distinguished scientist in bioinformatics and biosecurity, at Twist Bioscience, a DNA synthesis company based outside of San Francisco, and he is the current chair of the International Gene Synthesis Consortium. At Twist, he created and leads the company's biosecurity program, is a member of the government affairs and policy team and leads bioinformatics in the Advanced Development group on work including the storage of digital data in DNA. Dr. Diggans holds a Ph.D. from George Mason University in computational biology and bioinformatics and has worked in target discovery, molecular diagnostic development, and biodefense.

Jaishree Garhyan

Member

Jaishree Garhyan, Ph.D., is director of the high containment laboratory at the School of Medicine, Stanford University. She received her Ph.D. in infectious disease (Bbiotechnology) from JNU, New Delhi, India, where she worked with Mtb and drug delivery in stem cells. For a part of her Ph.D. work, she was developing models for Mtb infection at the high containment laboratory at Ragon Institute of Harvard, MIT and Massachusetts General Hospital (MGH). She then completed her postdoctoral studies at the University of Massachusetts, Amherst and Patel Chest Institute, New Delhi. Later, she joined Stanford as a director of the high containment laboratory where she operates the core and manages multiple projects. Dr. Garhyan has extensive experience in working at various Biosafety Level 3 labs including University of Massachusetts, Amherst and Harvard University CFAR BSL3 Core Facility, Cambridge, MA (Ragon Institute of MGH, MIT and Harvard, Cambridge, MA). She is a certified International Federation of Biosafety Associations professional for BSL3 Biorisk Management, Biocontainment Facility Design, and Operation and Maintenance, and is an Association for Biosafety and Biosecurity International Distance Learning Committee subject matter expert and a member. Among her numerous awards are the Bill and Melinda Gates Foundation American Society for Microbiology Award and a Bio-epoch award. She has served as a speaker and committee member in various biosafety invitation-only meetings, along with the Indo-U.S. Biosafety and Biosecurity dialogues for two consecutive years. Dr. Garhyan also works as a consultant for numerous biosafety and biosecurity projects.

Sumathy Kandaswamy

Member

Sumathy Kandaswamy, Ph.D., is currently serving as director of research and development (R&D) at Bharat Biotech where she has worked for the last 20 years. Dr. Kandaswamy obtained her doctorate in life sciences from JNU, New Delhi. Prior to that, she worked as a senior scientist at Monsanto Research Center, Bangalore. She was a recipient of the Commonwealth fellowship in biochemistry for post-doctoral research at the University College, London. At Bharat Biotech, Dr. Kandaswamy pioneered R&D of new vaccines and vaccine platform technologies for emerging infections, most notable among them are vaccines for Chikungunya and Zika virus which are in clinical development. She has made significant contributions to building a multi-disciplinary R&D team with proven expertise in bioinformatics, molecular and cell biology, bacteriology, virology, protein chemistry, recombinant DNA technology, reverse genetics, upstream & downstream product development with special attention to GMP manufacturing and clinical research for successful advancement of R&D products into the product pipeline.

Harshini Mukundan

Member

Harshini Mukundan, Ph.D., leads the chemical and biological technologies program at Lawrence Berkeley Laboratory. She is a senior policy advisor for the Council on Strategic Risks, an adjunct professor at the University of New Mexico, and a visiting scientist at the Los Alamos National Laboratory (where she was a group leader before moving to Berkeley). Dr. Mukundan has extensive experience in biodefense, preparedness using biotechnology innovation – primarily focusing on agnostic sensing, diagnostics, detection, and manufacturing. She led development of agnostic detection/diagnostics; including biomarker discovery, engineered solutions; surveillance. Her work has led to ~100 peer-reviewed publications; 7 provisional and issued patents and multiple awards, including R&D 100 awards for biotech innovation, principal investigator of excellence award from small business association; laboratory fellow's research award, among others. She is an AAAS Fellow; an associate editor of the Electrochemical Society Journal, Sensor Advances, and an IF/THEN STEM ambassador. She has been featured in magazines, on television and other media; and at the Smithsonian (IF/THEN: the Exhibit). Dr. Mukundan earned her bachelor's and master's degrees in microbiology in India, and her Ph.D. in biomedical sciences in the United States. She holds degrees in hindi and tamil.

Shambhavi Naik

Member

Shambhavi Naik, Ph.D., is head of research at the Takshashila Institution and CEO at CloudKrate Solutions Private Limited. She researches India's policies on critical and emerging technologies, with a focus on bioeconomy and biosecurity. Dr. Naik has served as a drafting committee member for India's risk assessment of genetically modified crops and worked with the Rajya Sabha Parliamentary committee on Science and Technology for strengthening The DNA Technology (Use and Application) Regulation Bill. She served as a co-chair of the taskforce on Sustainable Development Goals as part of the Think20, an official engagement group of the G20, during India's G20 Presidency in 2023. She has represented India at the BRICS Academic Forum 2019 and has participated in Indo-U.S. Biosecurity Dialogues. Shambhavi is on the editorial board of the Dialogue, a journal published by the Indian Academy of Sciences. Dr. Naik has a Ph.D. in cancer biology from the University of Leicester, UK and over 3 years of experience as a postdoctoral fellow at The National Centre for Biological Sciences and InStem, Bangalore. Dr. Naik has a PGP in public policy from the Takshashila Institution.

Ramaswamy Subramanian

Member

Ramaswamy Subramanian, Ph.D., “Rams” is a professor of biological sciences and biomedical engineering at Purdue University. He is also the director of the Bindley Bioscience Center, where he manages all of the shared resources in life sciences at Purdue University. Before moving to Purdue, he worked for ten years in Bangalore as one of the founding Deans of inStem and a co-founder and first CEO of C-CAMP. He is a structural biologist and runs a funded, active research program. He is a serial entrepreneur and currently is the director of both for-profit and not-for-profit entities. Dr. Subramanian has experience working at the interface of academia, government, and industry. He has experience in setting up multi-national collaborative projects. His experience of working in Sweden, the United States, and India allows him to contribute perspectives on both opportunities and challenges associated with multi-national collaborations.