

U.S.-China Collaborative for Planetary Health

Committee

Karen C. Seto

Chair

Karen Seto is the Frederick C. Hixon Professor of Geography and Urbanization Science at the Yale School of the Environment. She is one of the world's leading experts on urbanization and its impacts on the planet, including climate change, biodiversity, and food systems. A geographer and urban scientist, she integrates remote sensing, field interviews, and modeling methods to focus on four research themes: 1) measuring and characterizing urban land-use; 2) modeling and understanding the drivers of urban land-use change; 3) forecasting urban expansion; and 4) assessing the environmental consequences of urban expansion. She is an expert in satellite remote sensing analysis and has pioneered methods to reconstruct historical urban land-use. Her research developed the first forecasts of urban land expansion globally. She has extensive fieldwork experience in Asia, especially China and India, where she has conducted research for over 20 and 10 years, respectively.

Professor Seto serves on numerous national and international scientific bodies. She is chair of the Policy and Global Affairs Division of the U.S. National Academies and co-chair of the U.S. National Academies Climate Security Roundtable, established by the direction of Congress to help better understand and anticipate the ways climate change affects U.S. national security interests. She was the Coordinating Lead Author for two UN climate change reports, the IPCC 5th (2014) and 6th (2022) Assessment Reports, where she co-led the chapters on how urban areas can mitigate climate change.

Professor Seto is committed to improving public understanding of an urbanizing planet. She was the Executive Producer of "10,000 Shovels: Rapid Urban Growth in China," a documentary film that integrates satellite imagery, historical photographs, and contemporary film footage to highlight the urban changes occurring in China. Her book, *City Unseen*, co-authored with Meredith Reba (YSE MEM '14), uses satellite imagery to show how cities shape landscapes and how landscapes shape cities.

Professor Seto has received many awards for her scientific contributions, including the Outstanding Contributions to Remote Sensing Research Award from the American Association of Geographers. She is an elected member of the U.S. National Academy of Sciences, the American Academy of Arts and Sciences, and the Connecticut Academy of Science and Engineering. She is also a Foreign Academician of the Chinese Academy of Sciences, an elected lifetime member of the Council on Foreign Relations and a Fellow of the American Association for the Advancement of Science. She holds a PhD in Geography from Boston University.

Roger N. Beachy

Member

Roger Beachy (NAS), Professor Emeritus of Biology at Washington University in St. Louis, was appointed to the National Science Board. He previously served as director of the National Institute of Food and Agriculture (NIFA) at the U.S. Department of Agriculture (USDA) following his role as founding President of the Donald Danforth Plant Science Center in St. Louis. He is Chief Science Officer of Kultevar Inc, and a member of Boards of Directors of Talam Inc, and Performance Plants Inc. Dr. Beachy is an advocate for implementation of technology management policies that encourage sharing of intellectual properties, and research for the public good. He is recognized for work in molecular virology, plant gene expression, and biotechnology, including for discovery of technologies to develop transgenic plants that are resistant to virus infection. Dr. Beachy is a Member of the U.S. National Academy of Sciences; he was elected Councilor of the NAS and served as a Member of the Editorial Board of the Proceedings of the NAS. Dr. Beachy is a fellow at the American Association for the Advancement of Science, the American Academy of Microbiology, and the Academy of Science of St. Louis, and is Foreign Associate of Academies of Science in India and in South Korea, a Member of The World Academy of Sciences, and Laureate Distinguished Fellow of the International Engineering and Technology Institute. Beachy has served on numerous Boards and Committees, including the International Center for Genetic Engineering and Biotechnology (ICGEB) and the Science Board of ICRISAT, a component of the CGIAR. Dr. Beachy authored or contributed to 50 book articles and his work has produced more than 250 journal publications. He has received a number of honors for his research, including the Wolf Prize in Agriculture, the Bank of Delaware Commonwealth Award, the Robert Hoagland Award from the American Society of Plant Biologists, Ruth Alan Award from the American Phytopathological Society. He was named R&D Magazine's Scientist of the Year for 1999.

Peter H. Gleick

Member

Dr. Peter H. Gleick (NAS) is a world-renowned expert, innovator, and communicator on water and climate issues. In 1987, he co-founded the Pacific Institute, which he led as president until mid-2016 when he became Senior Fellow. Dr. Gleick was the first to successfully link general circulation models with regional hydrologic models to characterize regional impacts of climate change on water. His subsequent work has focused on the challenges of providing basic human needs for water across the globe and understanding the interactions of global freshwater resources with respect to human environmental impacts, economic development, and international security. He pioneered and advanced the concepts of the "soft path for water" and "peak water," and helped codify the human right to water in international law. Dr. Gleick received a MacArthur fellowship and is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. Dr. Gleick holds a B.S. degree in engineering and applied science from Yale University and M.S. and Ph.D. degrees in energy and resources from the University of California, Berkeley.?

Margaret A. Hamburg

Member

Margaret (Peggy) Hamburg is an internationally recognized leader in public health and medicine. She is co-president of the InterAcademy Partnership (IAP), an international consortium of national academies of science, medicine and engineering. She recently served as vice-chair of the President's Intelligence Advisory Board and on the Foreign Affairs Advisory Board to the Secretary of State. Prior to this, Dr. Hamburg was the foreign secretary for the U.S. National Academy of Medicine and the president/chair of the American Association for the Advancement of Science (AAAS). She is the former commissioner of the U.S. Food and Drug Administration (FDA). Before joining the FDA, Dr Hamburg was founding vice president and senior scientist at the Nuclear Threat Initiative, a foundation dedicated to reducing nuclear, chemical, and biological threats. Previous government positions include assistant secretary for planning and evaluation at the U.S. Department of Health and Human Services, health commissioner for New York City, and assistant director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health.

Dr Hamburg is a fellow of the American Association for the Advancement of Science, and the American College of Physicians, and an elected member of the Council on Foreign Relations, the National Academy of Medicine, the American Academy of Arts and Sciences., and the UK Academy of Medical Sciences. She sits on numerous boards, including the Commonwealth Fund (chair), the Nature Conservancy, the American Academy of Arts and Sciences, The Lasker Foundation, The Broad Institute, The Nuclear Threat Initiative, The Council on Foreign Relations, Resolve to Save Lives (chair), and Alnylam Pharmaceuticals.

Dr Hamburg graduated from Harvard College and Harvard Medical School and completed her medical residency at Weill Cornell Medical Center. She is the recipient of multiple honorary degrees and numerous awards.

Valerie Jean Karplus

Member

Dr. Valerie Karplus is a professor in the Department of Engineering and Public Policy at CMU and Associate Director of the Wilton E. Scott Institute for Energy Innovation. Karplus studies resource use and innovation management in organizations operating in diverse national and industry contexts, with a focus on the role of institutions and management practices in explaining performance. Areas of expertise include innovation in global corporate and industrial supply chains, regional approaches to workforce and economic revitalization, and the integrated design and evaluation of public policies. Karplus has taught courses on public policy analysis, global business strategy and organization, entrepreneurship, and the political economy of energy transitions. At CMU, she runs the Laboratory for Energy and Organizations. Karplus is a faculty affiliate of the MIT Energy Initiative, the MIT Center for Energy and Environmental Policy Research, and the MIT Center for Sustainability Science and Strategy. She has previously worked in the development policy section of the German Federal Foreign Office in Berlin, Germany, as a Robert Bosch Foundation Fellow, and in the biotechnology industry in Beijing, China, as a Luce Scholar. From 2011 to 2016, she co-founded and directed the MIT-Tsinghua China Energy and Climate Project, a five-year research effort focused on analyzing the design of energy and climate change policy in China, and its domestic and global impacts. Karplus holds a BS in biochemistry and political science from Yale University and a Ph.D. in engineering systems from MIT.

Cherry A. Murray

Member

Cherry A. Murray (NAS, NAE) is the Benjamin Peirce Professor of Technology and Public Policy, emerita, at Harvard University, and Professor of Physics, Professor of Electrical Engineering, by courtesy and Deputy Director for Research for Biosphere 2 at the University of Arizona. She obtained both a B.S. and a Ph.D. in physics from the Massachusetts Institute of Technology. Her research interests have varied from experimental condensed matter and surface physics to nanotechnology, innovation, research and development of telecommunications networks, national security, and science and technology policy. Her current interests include policy, research, development, education, and innovation to sustain human civilization on future Earth. From 1978 to 2004, Dr. Murray held a number of research positions, which culminated in the Senior Vice Presidency of Physical and Wireless Research, at Bell Laboratories, Lucent Technologies, formerly AT&T Bell Laboratories and previously Bell Telephone Laboratories, Inc. She then served at Lawrence Livermore National Laboratory as Deputy Director for Science and Technology from 2004 to 2007, and as Principal Associate Director for Science and Technology from 2007 to 2009. She was dean of Harvard University's School of Engineering and Applied Sciences from 2009 until 2014. Dr. Murray served as the Director of the United States Department of Energy's Office of Science, from 2015 until 2017, overseeing \$6 billion in competitive scientific research in the areas of advanced scientific computing, basic energy sciences, biological and environmental sciences, fusion energy sciences, high energy physics, and nuclear physics, as well as the management of ten national laboratories. She served as president of the American Physical Society in 2009, on the National Commission on BP Deepwater Horizon Oil Spill and Offshore Drilling in 2010, has served on numerous National and American Academy, American Association for the Advancement of Science, American Physical Society, Department of Energy and Department of Commerce committees, and was board member and Chair of the Okinawa Institute of Science and Technology Graduate University and the American Academy of Arts and Sciences from 2011 -2015 and 2017-2024. From 2019-2022 she was co-chair for science of the Inter Academy Partnership (IAP), a partnership of over 140 national and regional science, engineering and medical academies dedicated to providing independent advice to policy makers and to strengthening the role of academies nationally, regionally and globally. She currently serves as Treasurer of IAP. From 2021-2023 she was appointed by UN Secretary General as co-chair of the United Nations Group of Ten High-level Representatives of Civil Society, Private Sector and Scientific Community to Promote Science, Technology and Innovation for the SDGs (10-Member-Group.) ?

Stephen Polasky

Member

Stephen Polasky is Regents Professor and Fesler-Lampert Professor of Ecological/Environmental Economics at the University of Minnesota. His research focuses on issues at the intersection of ecology and economics including the value of ecosystem services and natural capital, biodiversity conservation, land use, sustainability, common property resources, and environmental regulation. He is a co-founder of the Natural Capital Project, a partnership of Stanford University, the University of Minnesota, the Chinese Academy of Sciences, the Stockholm Resilience Center, the Nature Conservancy and the World Wildlife Fund, whose aim is to incorporate the value of natural capital and ecosystem services into public and private sector decision-making. He served as Senior Staff Economist for environment and resources for the President's Council of Economic Advisers 1998-1999. He is co-chair of the Biodiversity and Business Assessment of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES), and previously served as a coordinating lead author on nature's contributions to people for the IPBES Global Assessment. He has served on the Board of Directors for The Nature Conservancy, the Science Advisory Boards of the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA), and the Sustainability External Advisory Committee of Dow Chemical Company. He is a member of the National Academy of Sciences, and a Fellow of the Association of Environmental and Resource Economists, the American Academy of Arts and Sciences, and the American Association for the Advancement of Science. He received a Ph.D. in economics from the University of Michigan and a B.A. from Williams College.

Shilpa Constantinides

Staff Officer