

Roundtable on Science and Technology for Sustainability

Committee

Cherry A. Murray

Co-Chair

CHERRY MURRAY (Co-Chair) (NAS/NAE) is the Benjamin Peirce Professor of Technology and Public Policy, emerita, at Harvard University, and Professor of Physics and Deputy Director for Research of Biosphere 2, emerita, at the University of Arizona. Her current research interests include science and technology policy, science diplomacy and 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 to 2014. Dr. Murray served as the Director of the U.S. Department of Energy's Office of Science from 2015 until 2017. 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, served as director of the American Academy of Arts and Sciences from 2018-2024, and member of the National Academy of Engineering Council from 2023-2026. She is currently co-chair of the National Academies Report Review Committee. In July, 2026 she will become the International Secretary of the National Academy of Sciences. She has served for many years on advisory committees for Singapore National Science Foundation, the Max Planck Society and the Helmholtz Association in Germany, and RIKEN in Japan. She is past chair of the governing board of Okinawa Institute of Science and Technology Graduate University, Japan and is currently serving as a trustee of Nanyang Technological University, Singapore. From 2019-2021, she was elected as co-chair for science and is now treasurer of the Inter Academy Partnership, a partnership of over 140 national and regional science, engineering and medical academies dedicated to providing independent and credible advice to policy makers and to strengthening the role of academies nationally, regionally and globally. In 2021-2023 she served as co-chair of the Ten Member Group of the Technology Facilitation Mechanism of the United Nations. Dr. Murray received her B.S. and Ph.D. in Physics from the Massachusetts Institute of Technology.

Klaus Tilmes

Co-Chair

KLAUS TILMES (Co-Chair) is a Senior Policy Adviser and former World Bank Director with over 35 years of international experience in development policy, strategy development at global, country, and sectoral levels. Since leaving the World Bank, Mr. Tilmes has been providing policy advice to international organization, governments, and private sector companies on economic trends, human development, data policies, and technology strategies. At the World Bank, Mr. Tilmes worked with the Office of the President to develop the institution's strategy on emerging technologies. He served as Director of the Trade and Competitiveness Global Practice and as Director for Finance and Private Sector Development. He earned a Master in Public Administration from Harvard University as a McCloy Scholar and a Master in Economics from the University of Mannheim.

Christopher Boone

Member

CHRISTOPHER G. BOONE is Dean and the C. Erwin and Ione L. Piper Chair for the Sol Price School of Public Policy at the University of Southern California. Previously, he served as Dean of the School of Sustainability and Founding Dean of the College of Global Futures at Arizona State University. He graduated from Queen's University with a BA (honours) in Geography and received a master's and PhD degree in Geography from the University of Toronto, focusing his research on Brazilian urbanization. At McGill University, he completed a postdoctoral fellowship in the School of the Environment. His research contributes to scholarship and practice in sustainable urbanization, environmental justice, urban ecology, global environmental change, sustainability careers, and higher education innovation. He served on the scientific steering committee of the Urbanization and Global Environmental Change Programme (an IHDP and Future Earth project) and as a co-pi and senior scientist for two Long Term Ecological Research programs, the Baltimore Ecosystem Study and the Central Arizona Phoenix LTER. He is a co-founder and Past President of the National Sustainability Society, an organization created to develop sustainability as a coherent, transdisciplinary scholarly field, support the growth of sustainability programs in colleges and universities, and convene and connect sustainability researchers, practitioners, employers, and graduates. Boone was a committee member and co-author of a National Academies consensus study on Strengthening Sustainability Curricula at the Undergraduate and Graduate Levels. For the Tyler Prize for Environmental Achievement, he serves on the executive committee. He has held visiting professor positions in the Department of Biology at Georgetown University and in the Yale School of the Environment.

José Lobo

Member

JOSÉ LOBO is on the faculty of the School of Sustainability, College of Global Futures, Arizona State University. Trained in physics, applied mathematics and urban economics, Dr. Lobo's research spans the role of cities and urbanization in driving socioeconomic development, and the determinants of technological change. In his research work he has collaborated with social scientists, physicists, biologists, engineers and applied mathematicians, and with colleagues from the Global North and the Global South (including China, India, South Africa, Mexico and Brazil). In collaboration with organizations representing informal settlements ("slums") in Africa, India and Latin America, Dr. Lobo has studied the role of informal settlements in urban development and is currently examining how the experience of the urban poor building resilient urban communities can inform the design of climate change solutions. At the School of Sustainability Dr. Lobo teaches undergraduate and graduate courses on mathematics, sustainable urban development and energy systems transitions. As a member of the University's General Studies Council, he has been involved in the design and implementation of the new undergraduate general studies curriculum. The curriculum specifies the requirements for undergraduate students in the nation's largest public University. One of the curriculum's knowledge areas is "Sustainability," which aims to provide students with an interdisciplinary understanding of socio-ecological systems in relation to global challenges and opportunities. Dr. Lobo received his Ph.D. in Regional Science from Cornell University.

Gary E. Machlis

Member

GARY MACHLIS is University Professor of Environmental Sustainability at Clemson University, and served as Science Advisor to the Director, U.S. National Park Service (NPS) during both terms of the Obama administration. He was the first scientist appointed to this position within the NPS and advised the director on a range of science policy issues and programs, also serving as the Science Integrity Officer for the agency. Dr. Machlis was co-Leader of the U.S. Department of the Interior's Strategic Sciences Group, which conducts scientific assessments during major environmental crises. He joined the Clemson faculty in 2013; he was on the faculty at the University of Idaho from 1979-2013. Dr. Machlis received his bachelor's and master's degrees from the University of Washington in Seattle, and his Ph.D. in human ecology from Yale University. Dr. Machlis has written numerous books and scientific papers on issues of conservation, human ecology, sustainability, and the politics of science. His books include Warfare Ecology: A New Synthesis for Peace and Security (2011), The Structure and Dynamics of Human Ecosystems (2017) which received an award as an Academic Title of the Year from Choice, and The Future of Conservation in America: A Chart for Rough Water (2018). His upcoming book, Desolation Row: Sustainability for the Forgotten will be published in 2023. His research has appeared in journals as varied as Bioscience, Climatic Change, Conservation Biology, Society and Natural Resources, Science Advances, and Science. Dr. Machlis is active in international conservation and worked in China in 1981, 1986-87, and 2004 on the Giant Panda Project for the World Wildlife Fund. He has conducted research on conservation and sustainability issues in the Galápagos Islands, the national parks of Kenya, and in Eastern Europe, and has helped advance environmental science and sustainability collaborations between the U.S. and Cuba. As co-leader of the Strategic Sciences Group, Dr. Machlis led the Group's response and assessment related to the Deepwater Horizon oil spill and Hurricane Sandy. He also led the AAAS project to rebuild science capacity in Haiti after its devastating earthquake. Dr. Machlis is also a member of the Last Glacier Collective, a group of artists and scientists working together to advance public understanding of climate change. In 2010, Dr. Machlis was elected a Fellow of the American Association for the Advancement of Science.

Shefali Mehta

Member

SHEFALI V. MEHTA is an economist, statistician and coach who supports individuals and communities in reaching their full potential. She founded and leads Open Rivers Consulting Associates, a science & technology and management consulting firm that builds upon her clients' strengths to develop and implement robust strategy. Serving the community across diverse causes are core to Open Rivers' mission. Dr. Mehta extensively advises and supports multiple non-profits. She most recently served as Deputy Under Secretary of Research, Education and Economics and Acting Chief Scientist of U.S. Department of Agriculture. Before that Dr. Mehta served across a variety of private, public and non-profit sectors including McKinsey, Syngenta, and the National Corn Grower's Soil Health Partnership. Dr. Mehta earned her Ph.D. in Agricultural and Applied Economics and M.S. in Statistics from the University of Minnesota, M.Phil. in Economics from Cambridge University, and a B.A. in Economics from New York University.

Nebojsa Nakicenovic

Member

NEBOJSA NAKICENOVIC is Honorary and Distinguished Emeritus Scholar of the International Institute for Applied Systems Analysis where he was the Deputy and Acting Director General. He is Deputy Chair of the Group of Chief Scientific Advisors to the European Commission and was tenured Professor of Energy Economics at Vienna Technology University. Among other positions, Dr. Nakicenovic is the Executive Director of The World In 2050 (www.TWI2050.org); has been a member of the Earth League; Earth Commission of the Global Commons Alliance; Multi-stakeholder Technical Group of Advisor on Sustainable Development Goal 7; Scientific Advisory Boards of the Potsdam Institute for Climate Impact Research; Fondazione Eni Enrico Mattei; Japanese Institute of Environmental Studies; German Aerospace Center; Renewable Energy Policy Network for the 21st Century; OMV Advisory Group on Sustainability; and Climate Change Centre Austria. He has also been a Technology and Innovation Advisor to the Government of Montenegro. He serves on many Editorial Boards of peer-reviewed journals, including Technological Forecasting and Social Change; Climate Policy, Energy Policy, Institution of Civil Engineers; Current Opinion in Environmental Sustainability; Energy Sector Management; Ecosystem Health and Sustainability; Scientific World Journal; Environmental Innovation and Societal Transitions; and the Energy Strategy Reviews. Dr. Nakicenovic's research interests include the long-term patterns of technological change, economic development and response to climate change and, in particular, the evolution of energy, mobility, digital technologies. Dr. Nakicenovic holds bachelors and master's degrees in economics and computer science from Princeton University and the University of Vienna, where he also completed his Ph.D. He also holds Honoris Causa Ph.D. degree in engineering from the Russian Academy of Sciences.

Giulio Quaggiotto

Member

GIULIO QUAGGIOTTO is an Advisor to the Prime Minister's Office in the United Arab Emirates on strategy and innovation. He is also a Policy Research Fellow with University College London's Institute for Innovation and Public Purpose. Prior to this, he headed the global innovation function at United Nations Development Programme and was Director of Community at Climate KIC. His diverse career spans leadership roles at Nesta, World Wildlife Fund, and the World Bank. He was also the manager of the Jakarta Lab of the United Nations Global Pulse, a flagship innovation initiative of the United Nations Secretary-General on big data for public policy. He holds an M.A. in Communications from Westminster's University and was a Research Associate at the Massachusetts Institute of Technology focusing on lead user innovation.

Anne K. Roby

Member

ANNE ROBY (NAE) is a Former Executive Vice President of Linde PLC. Previously, Dr. Roby served as Senior Vice President of Praxair, Inc., responsible for Global Supply Systems, R&D, Global Market Development, Global Operations Excellence, Global Strategic Sales, Global Procurement, Sustainability and Safety, Health and Environment. From 2011 to 2013, Dr. Roby served as President of Praxair Asia, responsible for Praxair's industrial gases business in China, India, South Korea and Thailand as well as the electronics market globally. Dr. Roby is a director Nuvance Health, Twelve, Rinchem, Rogers Corporation, and AMG, N.V. and a Trustee at Villanova University and Northwell Health. Dr. Roby was elected to the U.S. National Academy of Engineering for "developments in oxidation processes and leadership in technological developments, safety, and business growth in global industrial gas companies." Dr. Roby received her Ph.D. in Chemical Engineering from University of Delaware and her B.Ch.E. in Chemical Engineering from Villanova University.

Miguel Román

Member

MIGUEL O. ROMÁN is the Deputy Director for Atmospheres in the Earth Sciences Division at NASA's Goddard Space Flight Center, an organization dedicated to advancing our understanding of the Earth's atmospheric processes, including mesoscale meteorology, precipitation, atmospheric chemistry, aerosols and clouds, radiative transfer, and related climate studies. Dr. Román has held various science leadership roles across the federal government, industry, and non-profit organizations. Since 2014, he has led the Terra/Aqua MODIS and Suomi-NPP VIIRS science and instrument teams, a global consortium of principal investigators and technical experts responsible for one of the largest and most comprehensive polar-orbiting satellite systems critical for monitoring our planet's health. He also spearheaded the development of NASA's Black Marble product suite, pioneering the first quantitative measurements of nocturnal visible and near-infrared imagery to meet the diverse needs of Earth science research and applications communities. This innovation has enabled critical analysis of urbanization, disaster response, and understanding humanity's impact on the planet. A recognized authority in satellite remote sensing, disaster risk reduction, and climate sustainability, Dr. Román has been instrumental in advancing interdisciplinary research and data-driven methodologies at the energy-climate-sustainability nexus. His work is internationally acclaimed for highlighting the unique vulnerabilities faced by socially-disadvantaged and underserved communities in the aftermath of major disasters. His extensive body of work includes over 60 technical publications, with mentions in major news outlets such as NPR, The Washington Post, NBC News, The Economist, El Nuevo Día, Smithsonian Magazine, USA Today, and BBC World News. Born in San Juan, Puerto Rico, Dr. Román's exceptional contributions to science and engineering have earned him prestigious accolades, including the inaugural 2023 Society of Hispanic Professional Engineers (SHPE) Award for Climate Sustainability, the 2016 Presidential Early Career Award for Scientists and Engineers (PECASE) bestowed by President Barack Obama, and being a finalist for the 2014 Service to America Medal ("Sammies"), one of the highest honors for federal civil servants. Dr. Román's educational background includes a bachelor's degree in Electrical Engineering from the University of Puerto Rico at Mayagüez, a master's degree in Systems Engineering from Cornell University, and a Ph.D. in Remote Sensing from Boston University.

Beatriz Sanz Saiz

Member

BEATRIZ SANZ SÁIZ is Global AI Clients & Industries Leader for EY. She is a forward-thinking professional with experience in strategy and deep knowledge in artificial intelligence (AI). She has been a partner with EY for 18 years. Ms. Sanz served in various roles within Europe, Middle East, India, Africa, and Asia-Pacific and leads more than 22,000 professionals. In her current role Beatriz has direct responsibility of the overall AI strategy and implementation, with a focus on applied AI for growth, Industries transformation and AI for good. Ms. Sanz has been awarded as the Global Consultant of the year in the category of top influencer by Consulting Magazine in 2018. Ms. Sanz has been featured at Forbes, FT and is regular speaker at International Conferences like MTech China or Mobile World Congress. In 2025 Reuters has recognized Beatriz in the exclusive list of top 10 Global Woman in Enterprise AI.

Joerg C. Schlatterer

Member

JOERG SCHLATTERER is the Director of the Office of Research Grants at the American Chemical Society (ACS) where he oversees the distribution of approximately \$20 million in grants annually. As a key thought leader for the ACS Scientific Advancement Division, he works to ensure that the ACS strategically utilizes its grantmaking capacity to best support today's scientific research community. In previous roles at ACS, Dr. Schlatterer led the office Student & Postdoctoral Scholars Development to support the career and professional development of students and postdoctoral investigators. He is the co-PI on the National Science Foundation's INCLUDES Alliance grant for the Inclusive Graduate Education Network, and he led the development of the ACS Bridge Project which aims to create ecosystems in higher education where everyone can develop a feeling of belonging. Prior to joining the ACS in 2017, Dr. Schlatterer served as Program Director in the Division of Graduate Education at the US National Science Foundation. He began his professional career as a faculty member in biochemistry at the Albert Einstein College of Medicine in New York City; and later served as Assistant Dean of Faculty Professional Development at Columbia University Medical Center. Dr. Schlatterer received his bachelor's and master's degrees in chemistry from the Free University of Berlin, and his Ph.D. in chemistry from the University of Heidelberg.

Meghna Tare

Member

MEGHNA TARE is the Chief Sustainability Office of University of Texas Arlington, working collaboratively to foster partnerships among academic, research, and operational departments. She has a successful track record of launching and managing projects, developing strategy, managing operations, policy and program implementation. She has expertise in SDGs, public policy, CSR, climate change, equitable food systems, transportation, conservation, place-based education, and social impact. Ms. Tare is the Founder and Director of Regional Center of Expertise for Education in Sustainable Development (RCE North Texas), a program of the United Nations University, and the North Texas Food Policy Alliance. She serves and represent UTA on several Advisory Boards including the National Academy of Science Board on Higher Education and Workforce Development, Association for the Advancement of Sustainability in Higher Education (AASHE), and on the Board of Directors for International Council for Local Environmental Initiative (ICLEI USA). Ms. Tare graduated with an MBA in Sustainable Management, M.S. in Environmental Science, and M.S. in Chemistry.

Natalia Vasquez

Member

NATALIA VASQUEZ is a Senior Strategic Foresight Research Scientist at Autodesk, where she leads work on artificial intelligence futures and sustainable planetary futures to advise strategy and investment. Previously, she co-built IDEO's Climate Practice, partnering with Fortune 500 companies, venture capital groups, and philanthropies on sustainability and technology innovation. She has worked for the U.S. Department of Energy, The Nature Conservancy, and conducted emerging technology research in partnership with the Massachusetts Institute of Technology. She serves as an Earthshot Prize Nominator and Keeling Curve Prize Judge. She holds a B.A. in International Relations from Tufts University, with professional studies completed at Stanford University and The New School. Her work has been recognized by Forbes, Bloomberg, and Fast Company's World Changing Ideas Award.

Alfred Watkins

Member

ALFRED WATKINS is the Founder and Chairman of the Global Solutions Summit (GSS), which focuses on promoting the large-scale deployment in emerging markets of commercially viable, financially sustainable development solutions. Prior to founding the GSS, Dr. Watkins worked for more than 23 years at the World Bank and served as the World Bank's Science and Technology Program Coordinator and head of the World Bank's Science, Technology and Innovation Global Expert Team. He has extensive on-the-ground experience leading science, technology, and innovation capacity-building programs in Africa, Asia, and various countries in the Former Soviet Union, including Russia, Ukraine, Kazakhstan, and Latvia. Dr. Watkins organized two World Bank Global Forums on Science, Technology and Innovation Capacity Building for Sustainable Development (one in 2007 and another in 2009) and five Global Solutions Summits which convened at the US Department of State (2014), Clinton Presidential Library (2016), and UN Headquarters (2018, 2019, and 2023). Before joining the World Bank, he also served as a legislative assistant/staff economist in the U.S. Congress and was an assistant professor at the University of Texas at Austin. In March 2017, United Nations (UN) Secretary-General António Guterres appointed him to a 3-year term on the Governing Council of the Technology Bank for the Least Developed Countries (LDCs). He was reappointed to a second 3-year term in January 2020. Dr. Watkins received his Ph.D. in Economics from the Graduate Faculty of the New School University.

Marilu Hastings

Ex Officio Member

MARILU HASTINGS is executive vice president of the Cynthia and George Mitchell Foundation in Austin, Texas. Ms. Hastings also directs CGMF's Mitchell Innovation Lab, a varied portfolio of breakthrough sustainability ideas and opportunities that the foundation develops and incubates. She launched the foundation's most recent philanthropic venture, the Permian Energy Development Lab, a cross-sector consortium bringing advanced energy technology, workforce development, and economic development to enrich the world's most important energy producing region. Ms. Hastings was raised in Midland, Texas. Ms. Hastings is a member of the National Petroleum Council and co-chaired the Societal Impacts and Considerations chapter of the NPC's most recent study, Charting the Course: Reducing GHG Emissions from the U.S. Natural Gas Supply Chain. She is chair of the University of Texas's Energy Institute Advisory Board, and a member of the Advisory Board of the Bureau of Economic Geology at the University of Texas at Austin. She is a member of the National Academy of Sciences' Roundtable on Science and Technology for Sustainability. Ms. Hastings earned a Bachelor of Arts in economics and political science from Duke University, an MBA from the University of Texas at Austin, and a Master of Public Affairs from the University of Texas at Austin.

Jeff Martin

Ex Officio Member

JEFF MARTIN is Founder and Chief Executive Officer (CEO) of Tribal Planet, Inc. Through the marketing and development of groundbreaking technologies, Mr. Martin has spent his career applying innovation to multimedia product design. Mr. Martin continues to build new mobile commerce channels by changing the way consumers engage with entertainment, industry and philanthropy. In 2001 and 2008, Mr. Martin founded Tribal Brands and Tribal Technologies, respectively. Tribal Brands developed mCommerce solutions for a variety of consumer brands and was one of the first companies to drive more than one billion dollars in mobile-based sales for the entertainment industry through 17 global carrier alliances. Tribal Technologies created the first intelligent database behind mobile applications that predicted consumer behavior and interactions, powering unique mCommerce channels, and providing incentive programs for customers. The extensive mobile analytics platform captured actionable, psychographic data highlighting user tastes and preferences collected through mobile devices. In 2014, Tribal Brands and Tribal Technologies were combined to create Tribal Planet. Prior to Tribal Planet, Mr. Martin helped pioneer the entertainment and new media markets divisions at Apple in the early 1990s for 9 years and was a direct report to Steve Jobs after the NEXT acquisition.

E. W. Colglazier, Jr.

Scientific Advisor

E. WILLIAM COLGLAZIER formerly served as Editor-in-Chief of Science & Diplomacy and Senior Scholar in the Center for Science Diplomacy at the American Association for the Advancement of Science (AAAS). He served as the fourth Science and Technology Adviser to the Secretary of State from 2011 to 2014. From 1994 to 2011, he was Executive Officer of the National Academy of Sciences and the National Research Council where he helped to oversee the studies that provide independent, objective scientific advice on domestic and international public policy issues. Dr. Colglazier received his Ph.D. in theoretical physics from Caltech in 1971, and prior to 1994 worked at the Stanford Linear Accelerator Center, the Institute for Advanced Study in Princeton, the Center for Science and International Affairs at Harvard's Kennedy School of Government, and the University of Tennessee. He is a past chair of the Forum on Physics and Society and the Committee on International Scientific Affairs of the American Physical Society (APS) and a Fellow of the AAAS and APS. In 2015 he received the Joseph A. Burton Forum Award from the APS for "outstanding contributions to the public understanding or resolution of issues involving the interface of physics and society" and the Order of the Rising Sun, Gold Rays with Neck Ribbon from the Government of Japan for "contributing to science and technology exchange and mutual understanding between Japan and the United States." From 2016 to 2018, Dr. Colglazier served as co-chair of the Ten Member Group appointed by the U.N. Secretary General to advise on science, technology, and innovation for achieving the 17 Sustainable Development Goals of the UN 2030 Agenda.

Franklin Carrero-Martínez

Staff Officer

Franklin Carrero-Martínez is Senior Director within the Office of International Networks, Cooperation and Security at the National Academies of Sciences, Engineering, and Medicine, where he leads the institution's engagement at the intersection of science, foreign policy, global development. His portfolio spans science diplomacy, multilateral partnership-building, and sustainability science, with a focus on advancing science-based cooperation in complex geopolitical environments, strengthening research systems in the Global South, and shaping policy frameworks to advance sustainability.

Dr. Carrero-Martínez came to the Academies following a career built across the U.S. science and foreign policy infrastructure. He served as Deputy Science and Technology Adviser to the Secretary of State, one of the most senior science diplomacy positions in the U.S. government, where he worked to integrate scientific expertise into American foreign policy at the highest levels. Prior to that, he held a position at the National Science Foundation's Office of International Science and Engineering, and earlier served as an AAAS Roger Revelle Fellow in Global Stewardship with dual appointments at the State Department's Office of the Science and Technology Adviser and NASEM, including service as acting Science Counselor at the U.S. Embassy in Mexico City. Before transitioning to policy, he was a tenured Associate Professor of Biology at the University of Puerto Rico, where he led a research program in cellular neurobiology focused on synaptic development and brain connectivity, and directed curriculum reform that converted traditional laboratory courses into course-based undergraduate research experiences.

He holds a B.S. in Biology with honors from the University of Puerto Rico and a Ph.D. in Cell and Developmental Neurobiology from the University of Illinois at Urbana-Champaign, with additional training in business administration. Throughout his career, Dr. Carrero-Martínez has stewarded large-scale international programs and partnerships, contributed to high-level policy dialogues on sustainability, research integrity, and the governance of emerging science, and mentored researchers across career stages with a particular commitment to talent from underrepresented backgrounds. He is bilingual in English and Spanish.