

Data-Informed Societies Achieving Sustainability: Tasks for the Global Scientific, Engineering, and Medical Communities

Committee

Nebojsa Nakicenovic

Chair

NEBOJSA NAKICENOVIC (Chair) is the Executive Director of The World In 2050 (www.TWI2050.org). He is one of seven Chief Scientific Advisors to the European Commission, was the Deputy and Acting Director General of the International Institute for Applied Systems Analysis and tenured Professor of Energy Economics at Vienna Technology University. Among other positions, Dr. Nakicenovic has been a member of the Earth League; Earth Commission of the Global Commons Alliance; Multi-stakeholder Technical Group of Advisors 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.

Aleksandra Berditchevskaia

Member

ALEKSANDRA BERDITCHEVSKAIA is a Principal Researcher for the Centre for Collective Intelligence Design (CCID) at Nesta, the United Kingdom's social innovation foundation. She leads the development and delivery of the research agenda for CCID focusing on how artificial intelligence can enhance and scale collective human intelligence, data justice and participatory AI methods. She is interested in designing systems that make the most of combining data, technology and distributed human intelligence for solving societal challenges. She co-authored 'The Future of Minds & Machines,' a report on AI and collective intelligence, and the 'Playbook for Collective Intelligence Design,' the CCID's flagship toolkit for creating projects that mobilise collective intelligence, which was used to train over 370 staff of the United Nations Development Programme as part of their Accelerator Lab network for sustainable development. Prior to Nesta, Dr. Berditchevskaia worked in European science policy and knowledge transfer for participatory innovation methods such as citizen and DIY science. She has also worked at the Science Policy Centre at the Royal Society, focusing on emerging technologies and the societal and ethical implications of machine learning. She holds a Ph.D. in Neuroscience from Imperial College London, where she researched the role of motivation in behaviour.

Luis Bettencourt

Member

LUIS BETTENCOURT is the Inaugural Director of the Mansueto Institute for Urban Innovation and Professor of Ecology and Evolution and the College at the University of Chicago, as well as an External Professor at the Santa Fe Institute. He was trained as a theoretical physicist and obtained his undergraduate degree from Instituto Superior Técnico (Lisbon, Portugal) and his Ph.D. from Imperial College (University of London, UK) for research in statistical and high-energy physics models of the early Universe. He has held postdoctoral positions at the University of Heidelberg (Germany), Los Alamos National Laboratory (Director's Fellow and Slansky Fellow) and at Massachusetts Institute of Technology (Center for Theoretical Physics). He has worked extensively on complex systems theory and applications and on cities and urbanization, in particular. His research emphasizes the creation of new interdisciplinary synthesis to describe cities in quantitative and predictive ways, informed by classical theory from various disciplines and the growing availability of empirical data worldwide. He is the author of over 120 scientific papers and several edited books. His research has been featured in leading media venues, including the New York Times, Science, Nature, PNAS, Wired, New Scientist, and the Smithsonian.

Jeanne Holm

Member

JEANNE HOLM is the deputy mayor of the City of Los Angeles. Prior to this appointment, Dr. Holm was a chief data officer of the City of Los Angeles, working on issues ranging from homelessness to predictive analytics. She works at the cross-section of innovation, open data, and education. As a senior consultant with the World Bank, she worked with governments throughout the world to build robust open data ecosystems and ensure transparency. She was the evangelist for Data.Gov for the U.S. White House, leading collaboration and building communities with the public, educators, developers, and international and state governments in using open government data. She was the chief knowledge architect at the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory, driving innovation through social media, virtual worlds, gaming, and collaborative systems, including the award-winning NASA public portal. She is a fellow of the United Nations International Academy of Astronautics and Distinguished Instructor at University of California, Los Angeles (UCLA), leads several high-tech startups, and has more than 130 publications on information systems, knowledge management, and innovation. Her research and courses focus on data science, knowledge management, and civic innovation. Her honors include the NASA Exceptional Service Medal for leadership (twice), top 50 Women in Tech, NASA Achievement Award for her work on the Galileo and Voyager spacecraft, three Webby's from The International Academy of Digital Arts and Sciences, and she led NASA to an unprecedented three global Most Admired Knowledge Enterprise awards. Dr. Holm received her Ph.D. in Management of Information Systems from Claremont Graduate University and her B.A. from UCLA.

Solomon Hsiang

Member

SOLOMON HSIANG is currently the Chancellor's Professor of Public Policy at the University of California, Berkeley, a Co-Director at the Climate Impact Lab, Research Associate at the National Bureau of Economic Research (NBER), a National Geographic Explorer, and an Andrew Carnegie Fellow. Dr. Hsiang also directs the Global Policy Laboratory at University of California, Berkeley, where his team is integrating econometrics, spatial data science, and machine learning to answer questions that are central to rationally managing planetary resources--such as the economic value of the global climate, how the United Nations can fight wildlife poaching, the effectiveness of treaties governing the oceans, and whether satellites and Artificial Intelligence can be combined to monitor the entire planet in real time. Dr. Hsiang earned a B.S. in Earth, Atmospheric and Planetary Science and a B.S. in Urban Studies and Planning from the Massachusetts Institute of Technology, and he received a Ph.D. in Sustainable Development from Columbia University. He was a Post-Doctoral Fellow in Applied Econometrics at NBER and a Post-Doctoral Fellow in Science, Technology and Environmental Policy at Princeton University.

Barend Mons

Member

BAREND MONS is a molecular biologist by training and a leading FAIR data specialist. The first decade of his scientific career he spent on fundamental research on malaria parasites and later on translational research for malaria vaccines. In the year 2000 he switched to advanced data stewardship and (biological) systems analytics. He is currently a professor in Leiden and most known for innovations in scholarly collaboration, especially nanopublications, knowledge graph based discovery and most recently the FAIR data initiative and GO FAIR. Since 2012 he is Professor in biosemantics in the Department of Human Genetics at the Leiden University Medical Center (LUMC) in The Netherlands. In 2015 Dr. Mons was appointed chair of the High Level Expert Group on the European Open Science Cloud. Since 2017 Dr. Mons is heading the International Support and Coordination office of the GO FAIR initiative. He is also the elected president of CODATA, the standing committee on research data related issues of the International Science Council. Dr. Mons is a member of the Netherlands Academy of Technology and Innovation (ACTI). He is also the European representative in the Board on Research Data and Information (BRDI) of the National Academies of Science, Engineering and Medicine in the USA. Dr. Mons is a frequent keynote speaker about FAIR and open science around the world, and participates in various scientific advisory boards of international research projects.