

Workshop on Tipping Points, Cascading Impacts, and Interacting Risks in the Earth System

Committee

Kristen St. John

Chair

Kristen St. John (Chair) is a professor of geology at James Madison University. She earned her M.S. and Ph.D. in Geoscience from The Ohio State University. Her research focuses on marine sediment records of past climate change, and on teaching and learning in the geosciences. An active researcher in the International Ocean Discovery Program (IODP), she was a marine sedimentologist for several expeditions, and worked on samples from the Arctic, North Atlantic, North Pacific, and South Pacific. Dr. St. John is the U.S. co-chief scientist for IODP Expedition 377: Arctic Ocean Paleoceanography (ArcOP; awaiting rescheduling). Her research informs the design and content of the book, *Reconstructing Earth's Climate History: Inquiry-Based Exercises for the Lab and Class*. Dr. St. John was the Editor-in-Chief of the *Journal of Geoscience Education* from 2012-2017. She is the President-elect of the American Geophysical Union Education Section and is a Geological Society of America Fellow. Dr. St. John recently served on the NASEM Committee on Advancing a Systems Approach to Studying the Earth: A Strategy for the National Science Foundation, and she serves on the Polar Research Board.

Amir AghaKouchak

Member

Amir AghaKouchak is a Professor of Civil and Environmental Engineering and Earth System Science at the University of California, Irvine. His research focuses on natural hazards and climate extremes and crosses the boundaries between hydrology, climatology, and remote sensing. One of his main research areas is studying and understanding the interactions between different types of climatic and non-climatic hazards including compound and cascading events. He has received several honors and awards including the American Geophysical Union's James B. Macelwane Medal and the American Society of Civil Engineers (ASCE) Huber Research Prize. Amir is currently serving as the Editor-in-Chief of *Earth's Future* – a transdisciplinary scientific journal examining the state of the planet and the science of the Anthropocene. Amir has published 200 peer-reviewed research articles in scientific journals. He has served as the principal investigator of many interdisciplinary research grants funded by the National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), and National Oceanic and Atmospheric Administration (NOAA). Amir obtained his BSc (2003) and MSc (2005) in Civil Engineering from K.N. Toosi University of Technology in Tehran, Iran. Subsequently, he received his PhD in Civil and Environmental Engineering from the University of Stuttgart, Germany, 2010.

Katharine V. Cashman

Member

Katharine Cashman is a Research Professor at the University of Oregon in the Department of Earth Sciences. She has also held professional positions that include an AXA Endowed Chair of Volcanology (2014-2021), AXA Research Chair (at the University of Bristol, UK (2011-20140) and the Philip H. Knight Professor of Natural Sciences, University of Oregon (2007-2011). Dr. Cashman is a volcanologist who studies links between chemical and physical factors that control magma ascent, eruption, and emplacement on the Earth's surface. She has studied volcanoes on all seven continents, explored a wide range of eruption styles and has worked on problems that span from the chemical to physical to social aspects of volcanism. Additionally, Dr. Cashman has worked at the USGS volcano observatories in Hawaii and Washington and served on the Scientific Advisory Committee for the island of Montserrat during the eruption of Soufriere Hills volcano. Dr. Cashman is a Fellow of the American Geophysical Union (AGU), the American Academy of Arts and Sciences, and the Royal Society (UK) and has been elected to the Academia Europaea and the National Academy of Sciences. Dr. Cashman has received the Murchison Medal (Geological Society of London), a Royal Society Wolfson Award, an Honorary Doctorate of Science from Middlebury College and a Bowen Award from the Volcanology, Geochemistry and Petrology section of the AGU. Dr. Cashman is a Distinguished Lecturer for the Mineralogical Society of America and the Mineralogical Society (UK) and has given both the Daly lecture and the Bowen lecture at AGU annual meetings, the Shell Lecture at the Geological Society of London, the Inaugural Green Lecture at the University of Leeds and an Annual Address at the Swedish Academy. Dr. Cashman received her Ph.D. in geology from The Johns Hopkins University. She has also served on the NAS Committee on Improving Understanding of Volcanic Eruptions, which produced the consensus report "Volcanic Eruptions and Their Repose, Unrest, Precursors, and Timing".

Simon Dietz

Member

Simon Dietz is Professor of Environmental Policy at the London School of Economics and Political Science (LSE), where he has a joint appointment between the Grantham Research Institute on Climate Change and the Environment, and the Department of Geography and Environment. He joined the LSE faculty in 2006, was tenured in 2011 and promoted to full professor in 2015. He co-founded the Grantham Research Institute in 2008 and was a director from 2008 to 2017. He is an environmental economist with particular interests in climate change and sustainable development. He has published research on a wide range of issues, including the social cost of carbon, decision-making under uncertainty and discounting. He has been co-editor of the Journal of the Association of Environmental and Resource Economists since 2016, is a member of the Council of the European Association of Environmental and Resource Economists (and former Vice President), a CESifo Research Network Fellow, and a Fellow of the Royal Society of Arts. In 2018 he became the first recipient of the new European Award for Researchers in Environmental Economics under the Age of Forty, “a recognition given every year to the environmental economist under the age of forty who is judged to have made the most significant contribution to environmental economic thought and knowledge.” He graduated from the University of East Anglia in 2001 with a B.Sc. (Starred First Class Honours) in Environmental Science, from the LSE in 2002 with an M.Sc. (Distinction) in Human Geography Research, and from the LSE in 2006 with a Ph.D. in Geography and Environment, specialising in environmental economics. Prior to joining the LSE faculty, he was a Policy Analyst at the UK Treasury, where he worked on the Stern Review on the Economics of Climate Change.

Timothy M. Lenton

Member

Tim Lenton is founding Director of the Global Systems Institute and Chair in Climate Change and Earth System Science at the University of Exeter. He has more than 25 years research experience, focused on modelling life's coupling to the Earth system, biogeochemical cycling, climate dynamics, and associated tipping points. His books 'Revolutions that made the Earth' (with Andrew Watson) and 'Earth System Science: A Very Short Introduction' have popularised a new scientific view of our planetary home. Tim co-authored the 'Planetary Boundaries' framework and is renowned for his work identifying climate tipping points, which won the Times Higher Education Award for Research Project of the Year 2008. He has also received a Philip Leverhulme Prize 2004, European Geosciences Union Outstanding Young Scientist Award 2006, Geological Society of London William Smith Fund 2008, and Royal Society Wolfson Research Merit Award 2013. Tim is a member of the Earth Commission, an ISI Highly Cited Researcher, and in the top 100 of the Reuters 'Hot List' of the world's top climate scientists. Tim received his BA from Cambridge University in 1994, and obtained his PhD from the University of East Anglia in 1998.

Dorothy J. Merritts

Member

Dorothy Merritts is the Harry W. and Mary B. Huffnagle Professor of Geosciences at Franklin and Marshall College. She worked at the US Geological Survey while completing an MS in Engineering Geology at Stanford University and Ph. D. in Geosciences at the University of Arizona. Dr. Merritts work focuses on the history of landscapes and processes that shape them. She is known particularly for her research on landscapes perturbed by geologic events and climate change during the past ~130,000 years, and by human activities during the past ~400 years. Dr. Merritts was president of the American Geophysical Union Earth and Planetary Surface Processes Section, is a fellow of the Geological Society of America (GSA), was a co-recipient of the GSA Kirk Bryan award for outstanding scholarship, received the Distinguished Career award from the GSA Quaternary Geology and Geomorphology Division in 2022, and was elected to the National Academy of Sciences in 2022. Dr. Merritts has served on five NRC committees, two of which she chaired and one of which she co-chaired, and all of which were related to the impacts of human activities and/or climate change at the Earth's surface.

Michael Schoon

Member

Michael Schoon is an Associate Professor in the School of Sustainability at Arizona State University, specializing in collaborative environmental governance, the resilience of social-ecological systems, biodiversity conservation, and institutional analysis, taking a transdisciplinary approach to this research. Through his research in social-ecological resilience, Schoon regularly studies and writes about tipping points, transformation, and regime shifts. He is the current chair of the Resilience Alliance, an international, interdisciplinary research organization that focuses on the resilience of social-ecological systems. He is also editor-in-chief of the International Journal of the Commons, an academic journal focusing on the study of common-pool resources and their management. Schoon is active in IUCN's research in transboundary conservation. His doctoral research won multiple awards, including the American Political Science Association's award for best dissertation. Recently, he convened a collaborative governance group for the US Forest Service to develop recommendations for the management of wild horses in Central Arizona. Schoon received a Ph.D. from Indiana University in an interdisciplinary program in environmental policy, international relations and conservation biology. He worked at Indiana in the Ostrom Workshop, emphasizing governance and institutional analysis.