Earth System Predictability R&D: Continuing the Conversation

September 22, 2020, 1-3pm EDT

The National Academies' Board on Atmospheric Sciences and Climate is hosting a 2-hour webinar to contribute to an ongoing dialogue on Earth System Predictability Research and Development. The goals of this event are to (1) share the main themes from the June 2020 Earth Systems Predictability workshop with the community, (2) provide any updates to the community on relevant federal activities, and (3) open a dialogue about how the community might contribute to advancing the initiative.

1:00 PM **Welcome and introductions (5 min)**
Amanda Staudt, National Academies

1:05 PM **Overview of themes from Earth System Predictability R&D Workshop held on June 4-5, 2020**
James Hurrell, Colorado State University, Chair of the Workshop Planning Committee

1:35 PM **Updates on Relevant Federal Activities**
Kelvin Droegemeier, Office of Science, Technology, and Policy

1:55 PM **Perspectives on Building Broad Engagement in Advancing Earth System Predictability**
Moderated by Amanda Staudt

Panelists:
Mary Glackin, American Meteorology Society President
Kevin Petty, The Weather Company, an IBM Business
Antonio Busalacchi, University Corporation for Atmospheric Research
Susan Lozier, American Geophysical Union President-elect, Georgia Institute of Technology

2:25 PM **Panel discussion**

2:55 PM **Closing Remarks**
James Hurrell, Colorado State University

Bios of Participants

Antonio Busalacchi, president of the University Corporation for Atmospheric Research (UCAR) since August 2016, has a distinguished career in the geosciences; extensive experience in management of academic, laboratory, and government programs; and a broad knowledge of the community. Prior to his appointment at UCAR, he served as director of the Earth System Science Interdisciplinary Center (ESSIC) and as a professor in the Department of Atmospheric and Oceanic Science at the University of Maryland. After receiving a Ph.D. in oceanography from Florida State University, Dr. Busalacchi began his professional career at NASA's Goddard Space Flight Center. He has studied tropical ocean circulation, its role in the coupled climate system, and phenomena such as El Niño. His interests include the development and application of numerical models combined with in situ and space-based ocean observations to study the tropical ocean response to surface fluxes of momentum and heat. His research on climate variability and predictability has supported a range of international and national research programs dealing with global change and climate, particularly as affected by the oceans. In 1991, he was appointed chief of NASA's Laboratory for Hydrospheric Processes. In 2000, he was selected as the founding director of ESSIC at the University of Maryland. Dr. Busalacchi has been involved in the activities of the World Climate Research Program (WCRP). From 2008-2014 he chaired the Joint Scientific Committee that oversaw the WCRP. He previously was co-chair of the scientific steering group for its sub- program on Climate Variability and Predictability.

Dr. Busalacchi has served extensively on activities of the National Academies, including as chair of the Board on Atmospheric Sciences and Climate, chair of the Climate Research Committee, chair of the Committee on Earth Science and Application: Ensuring the Climate Measurements from NPOESS and GOES-R, and co-chair of the Committee on National Security Implications of Climate Change on U.S. Naval Forces. He also has served as a member of the Committee on the Effect of Climate Change on Indoor Air Quality and Public Health, Committee on Assessing the Impacts of Climate Change on Social and Political Stresses, and Committee on the Assessment of NASA's Earth Science Program. Among his awards and honors, in 1991, Busalacchi was the recipient of the Arthur S. Flemming Award, as one of five outstanding young scientists in the entire Federal Government. In 1995 he was selected as Alumnus of the Year at Florida State University, in 1997 he was the H. Burr Steinbach Visiting Scholar at Woods Hole Oceanographic Institution, in 1999 he was awarded the NASA/Goddard Excellence in Outreach Award and the Presidential Rank Meritorious Executive Award. He is a Fellow of the American Meteorological Society (AMS), the American Geophysical Union (AGU), and the American Association for the Advancement of Science (AAAS), and was the 2006 AMS Walter Orr Roberts Interdisciplinary Science Lecturer. In 2016, Dr. Busalacchi was elected to the National Academy of Engineering.

Kelvin Droegemeier serves as Director of The White House Office of Science and Technology Policy (OSTP). Before joining the white house, Kelvin served as Vice President for Research and Regents' Professor of Meteorology at the University of Oklahoma. He also co-founded, directed, and led the National Science Foundation (NSF) Science and Technology Center for Analysis and Prediction of Storms (CAPS) and served as co-founder and Deputy Director of the NSF Engineering Research Center for Collaborative Adaptive Sense of the Atmosphere (CASA). Kelvin served two six-year terms on the National Science Board, the governing body of the NSF, including the last four years as Vice-Chairman, having been nominated by Presidents George W. Bush and Barack Obama and twice confirmed by the United States Senate. He has also served on and chaired numerous national boards and committees and is a Fellow of the American Meteorological Society and American Association for the Advancement of Science. He was appointed in 2017 as Oklahoma Cabinet Secretary of Science and Technology.

Mary Glackin is Senior Vice President, Public Private Partnerships and Director of Meteorological Science and Services at The Weather Company, an IBM Business. In this role, she oversees the company's relationship with members of the international environmental community, including government agencies, academia and other private sector providers. She is also responsible for the company's research agenda as well as forecast operations. Ms. Glackin is retired from the National Oceanic and Atmospheric Administration, where from 2007 to 2012 she was Deputy Under Secretary of Commerce for NOAA Operations in Washington DC. As such, she was responsible for the day-to-day management of operations for oceanic and atmospheric services, research, and coastal and marine stewardship. Before that, she was the Assistant Administrator for NOAA's Office of Program Planning and Integration. Between 1999 and 2002, she served as the Deputy Assistant Administrator for the National Environmental Satellite, Data, and Information Service of NOAA. Ms. Glackin has twice received the Presidential Rank Award (2001 and 2009). She has also received the Charles Franklin Brooks Award for Outstanding Services to the American Meteorological Society (AMS), the NOAA Bronze Medal (2001), the Federal 100 Information Technology Manager Award (1999), the NOAA Administrator's Award (1993), and the United States Department of Commerce Silver Medal (1991). She is a Fellow of the AMS and the National Academy of Public Administration, as well as a member of the National Weather Association and of the American Geophysical Union. Ms. Glackin has a BS degree from the University of Maryland.

Susan Lozier is Dean of the College of Sciences at Georgia Tech and leads more than 2,500 students and 500 faculty and researchers across six internationally ranked schools. She is a physical oceanographer who researches the ocean's role in climate variability and climate change. She is an elected member of the American Academy of Arts and Sciences, a Fellow of the American Association for the Advancement of Science, President Elect and Fellow of the American Geophysical Union, and the international lead for the Overturning in the Subpolar North Atlantic Program, a trans-basin observing system that measures the ocean's overturning at high latitudes. Dr. Lozier received her Ph.D. in Physical Oceanography from the University of Washington.

James (Jim) Hurrell joined Colorado State University faculty in September 2018 as the Scott Presidential Chair in Environmental Science and Engineering and a professor in the Department of Atmospheric Science. Dr. Hurrell is a former director of the National Center for Atmospheric Research (NCAR) in Boulder, Colorado, where he was a Senior Scientist in the Climate and Global Dynamics Laboratory (CGD). He is also the former Chief Scientist of Community Climate Projects in CGD, which includes the Community Earth System Model, and a former director of CGD and the NCAR Earth System Laboratory. Dr. Hurrell's research has centered on empirical and modeling studies and diagnostic analyses to better understand climate, climate variability and climate change. He has authored or co-authored more than 100 peer-reviewed journal articles and book chapters, as well as dozens of other planning documents, workshop papers and editorials. Dr. Hurrell has been extensively involved in the World Climate Research Programme (WCRP) on Climate Variability and Predictability (CLIVAR), including roles as co-chair of the Scientific Steering Group of both U.S. and International CLIVAR, Chair of the Scientific Organizing Committee for the WCRP Open Science Conference (2011), and membership on several other CLIVAR panels. He is currently a member of the Joint Scientific Committee of WCRP. Dr. Hurrell has served on several National Academies panels, and he has provided briefings and testimonies to both the U.S. Senate and the House of Representatives on climate change science. He attended the April 2020

Roundtable on Earth System Predictability Research and Development, and moderated one of the panels.

Kevin Petty is director of science and forecasting and head of public-private partnerships at The Weather Company, an IBM Business. He oversees research and development for weather solutions and is responsible for forecasting operations, including a global team of meteorologists across IBM's Watson Media and Weather organization. Petty also manages the company's relationships with members of the national and global weather enterprise that includes government agencies, academia, and other private-sector providers.

Well known in the weather enterprise, Petty is a staunch supporter of the advancement and application of science and science policy and on increasing diversity in the field. Before joining IBM, he served as chief science officer for Vaisala, a company that delivers weather and climate-based products and solutions to the meteorological, transportation, energy and defense industries. He's also worked as a scientific program manager with the National Center for Atmospheric Research (NCAR) and as an accident investigator and senior meteorologist for the National Transportation Safety Board.

Petty is a committee member of the Environmental Information Services Working Group (ESWIG) for the National Oceanic & Atmospheric Administration (NOAA) and serves as a member of the dean's advisor board for Colorado State University's College of Engineering. An American Meteorological Society (AMS) Fellow, he is also a steering committee member of the Commission on the Weather Water and Climate Enterprise for the AMS.

He regularly speaks and publishes on weather and climate topics. Petty graduated with a Ph.D. and master's degree in atmospheric science from The Ohio State University and a bachelor's degree in mathematics from Illinois College.

Amanda Staudt directs the Board on Atmospheric Sciences and Climate (BASC) and the Polar Research Board (PRB) at the National Academies of Sciences, Engineering, and Medicine. BASC and PRB conduct studies and convene workshops on emerging science and provide advice to the US government and the nation related to climate change, weather, air pollution, the Arctic, and Antarctica. Her team provides stewardship for the Academies' ongoing advice to the U.S. Global Change Research Program and co-leads a new Academies-wide Climate Communication Initiative. Prior to taking on this role, Dr. Staudt was a Senior Climate Scientist at the National Wildlife Federation, where she focused on communicating climate science and impacts, developing the intellectual and practical foundation for climate-informed conservation, and advancing climate change science education. Dr. Staudt received her B.A. in environmental science and engineering and her Ph.D. in atmospheric sciences from Harvard University.