



MIT Joint Program on the Science and Policy of Global Change
XLIII GLOBAL CHANGE FORUM
20–29 October, 2020
Zoom Conference Calls

Global Changes: Physical and Transition Risks

Agenda

October 20, 2020 (Tuesday)

10:00 – 12:00 EDT

1. SCENARIOS: PHYSICAL & TRANSITION RISKS

Mustafa Babiker • Senior Analysis and Planning Consultant • *Aramco*

Adam Schlosser • Deputy Director and Senior Research Scientist • *MIT Joint Program*

Angelo Gurgel • Research Scientist • *MIT Joint Program*

Moderator: Sergey Paltsev • MIT Joint Program • *Deputy Director*

October 22, 2020 (Thursday)

10:00 – 12:00 EDT

2. REGIONAL HOTSPOTS FOR CLIMATE RISKS

Saleemul Huq • Director • *International Centre for Climate Change & Development (ICCCAD)*
• Senior Fellow • *International Institute for Environment & Development (IIED)*

Claudia Ringler • Deputy Director of Production Technology Division • *International Food Policy Research Institute (IFPRI)*

John Aldridge • Assistant Leader, Humanitarian Assistance and Disaster Relief Systems Group • *MIT Lincoln Laboratory*

Moderator: Anne Slinn • Executive Director for Research • *MIT Joint Program*



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October 27, 2020 (Tuesday)

10:00 – 12:00 EDT

3. SUSTAINABLE DEVELOPMENT GOALS

Keywan Riahi • Director of the Energy Program • *International Institute for Applied System Analysis (IIASA)*
• Visiting Professor • *Energy Systems Analysis of the Graz University of Technology, Austria*

Ranjula Bali Swain • Visiting Professor • *Stockholm School of Economics, Sweden*

Claire Walsh • Senior Policy Manager • *Abdul Latif Jameel Poverty Action Lab (J-PAL), MIT*

Moderator: Horacio Caperan • Executive Director of External Affairs • *MIT Joint Program*

October 29, 2020 (Thursday)

10:00 – 12:00 EDT

4. URBAN TRANSITIONS

Brian Goldberg • Assistant Director • *MIT Office of Sustainability*

Paty Romero-Lankao • Senior Research Scientist • *National Renewable Energy Laboratory (NREL)*

Christoph Reinhart • Director • *Building Technology Program*
• Professor • *MIT Department of Architecture*

Moderator: Adam Schlosser • Deputy Director • *MIT Joint Program*

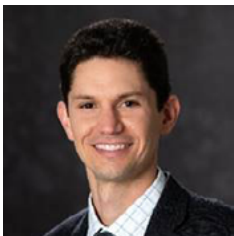
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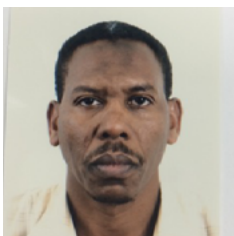
Speaker Biographies



Mr. John Aldridge

Assistant Leader, Humanitarian Assistance & Disaster Relief Systems Group, MIT Lincoln Laboratory

In his nearly two decades at the Laboratory, Mr. Aldridge has focused on sensor hardware development and assessment programs, with a particular interest in exploring how advanced and emerging sensing technologies can be adapted for the most challenging environments and use cases. He has led numerous interdisciplinary technical research and development programs, spanning undersea systems, novel sensors, unmanned aerial systems and airborne remote sensing. He is happiest when working in the field alongside operators, first responders and practitioners to understand firsthand how technology can help bridge the gap between operational needs and capability. Mr. Aldridge joined the Laboratory in 2002 after graduating with a Bachelor's degree in Optical Engineering from the University of Arizona; in 2006 he completed a Master's degree in Photonics at Boston University as a participant in the Laboratory's *Lincoln Scholars* program.



Dr. Mustafa H. Babiker

**Senior Analysis and Planning Consultant, Saudi Aramco
Research Associate, MIT Joint Program on the Science and Policy of Global Change**

An economist with a PhD in Environmental and Natural Resources Economics, Dr. Babiker's main research interests include energy economics, climate change policies, economic development, and applied computable general equilibrium modeling. He is an author of a number of publications and a participant in United Nations Framework Convention on Climate Change (UNFCCC) activities. Regarding climate change / energy economics and policy analyses, Dr. Babiker is an accomplished scholar with contributions widely recognized by the research community and work appearing in top journals including *Journal of International Economics*, *Journal of Environmental Economics and Management*, *Climatic Change*, *Energy Journal*, *Energy Economics*, and *Energy Policy*. He previously served as a research scientist at MIT (1998-2002) and senior economist at the Arab Planning Institute (2003-2006).



Prof. Ranjula Bali Swain

**Research Director, Center for Sustainability Research (CSR) & Misum, Stockholm School of Economics
Professor of Economics, Södertörn University, Stockholm, Sweden**

Prof. Swain's research focuses on sustainable development, environmental economics and development economics.



Mr. Brian Goldberg

Assistant Director, MIT Office of Sustainability

Since coming to MIT in 2016, Mr. Goldberg has been leading MIT's campus-wide collaboration to grow an MIT that is resilient to disruptions from current and intensifying climate risks. Core to this collaboration is how MIT is leveraging the campus as a testbed for climate resiliency and adaptation by engaging both MIT research expertise and MIT staff expertise in climate science, operations, risk management and planning. Mr. Goldberg is also leading a campus-wide collaboration to systemically design out waste from MIT and drive circular material flows. He previously worked for more than a decade addressing urban planning challenges across Asia, Africa and the US with the United Nations, AECOM Design and Planning, and James Corner Field Operations (New York City). He is a graduate of the Yale School of Environment and Union College (NY).



Dr. Saleemul Huq

Director, International Centre for Climate Change and Development (ICCCD), Independent University, Bangladesh

In addition to his work at ICCCD, Dr. Huq is a Senior Fellow at the International Institute for Environment & Development (IIED) in London and Advisor of the Climate Change Program at BRAC. He has worked extensively in the interlinkages between climate change (both mitigation as well as adaptation) and sustainable development, from the perspective of developing countries, with special emphasis on least developed countries (LDCs). He has published numerous articles in scientific and popular journals, was a lead author of the chapter on Adaptation and Sustainable Development in the IPCC Third Assessment Report, and was one of the coordinating lead authors of "Interrelationships between adaptation and mitigation" in the IPCC Fourth Assessment Report (2007). Previously he served as Director of the Climate Change Program at IIED and founding Executive Director at the Bangladesh Centre for Advanced Studies (BCAS).



Prof. Christoph Reinhart

MIT Department of Architecture

Prof. Reinhart leads the MIT Department of Architecture's Building Technology Program and Sustainable Design Lab (SDL), an interdisciplinary group with a grounding in architecture that develops design workflows, planning tools and metrics to evaluate the environmental performance of buildings and neighborhoods. He is also the head of Solemma, a technology company and Harvard University spinoff and Strategic Development Advisor for mapdwell, a solar mapping company and MIT spinoff. Software products originating from SDL, Solemma and mapdwell are used in practice and education in over 90 countries.



Dr. Keywan Riahi

Director of the Energy Program, IIASA

Visiting Professor, Energy Systems Analysis, Graz University of Technology, Austria

Dr. Riahi's main research interests are long-term patterns of technological change and economic development, particularly in the evolution of the energy system. His present research focuses on energy-related sources of global change, and on future development and response strategies related to the Sustainable Development Goals. Dr. Riahi leads a number of international research efforts, including EU-funded projects on national and global actions to reduce GHG emissions and on linking climate and development policies. He is also a member of the Scientific Steering Committee of the Integrated Assessment Modelling Consortium (IAMC) and of other international and European scenario activities. His work within international modeling comparison projects focuses on climate and energy policies for rapid transformation toward environmental, economic and social sustainability. Dr. Riahi was appointed as the Coordinating Lead Author in Working Group III of the IPCC Sixth Assessment Report (Chapter 3 on Mitigation pathways compatible with long-term goals). Since 1998, he has served as Lead Author and Review Editor for various international assessments and IPCC reports. Dr. Riahi has been acknowledged as a Highly Cited Researcher worldwide by Thomson Reuters (2016-2019).



Dr. Claudia Ringler

Deputy Division Director, International Food Policy Research Institute (IFPRI)

A thought leader on water for food, Dr. Ringler manages IFPRI's Natural Resource Theme, co-leads the Institute's water research program and is a co-manager of the Managing Resource Variability, Risks and Competing Uses for Increased Resilience (VCR) flagship of the CGIAR Research Program on Water, Land and Ecosystems (WLE). She also chairs the Food, Energy, Environment and Water Network (FE²W) and is associated with the Sustainable Water Futures Program of Future Earth. She has published more than 100 journal articles in the areas of global water and food security, gender-water and gender-climate change linkages and the synergies of climate change adaptation and mitigation. She has a PhD in agricultural economics from University of Bonn and an MA in International Development Economics from Yale University.



Dr. Patricia Romero-Lankao

Senior Research Scientist, National Renewable Energy Laboratory Center for Integrated Mobility Sciences

Research Fellow, University of Chicago Mansueto Institute for Urban Innovation

Dr. Romero-Lankao examines interactions among people and risk in cities, with an emphasis on the sustainability of energy systems, mobility and the built environment, as well as their resilience to disruptive events. Previously, she was a senior scientist at the National Center for Atmospheric Research. Throughout her career, Dr. Romero-Lankao has developed a considerable body of highly regarded interdisciplinary research, resulting in several research grants and 130 peer-reviewed publications. She has extensive experience as a sociologist working across disciplines, and at the science-policy interface, in the US, Mexico and many other urban locations internationally. She was co-leading author to Working Group II of the Nobel prize-winning IPCC Fourth Assessment Report (AR4), and currently serves as editor of *Earth's Future* and editorial board member of several journals. She is also a steering committee member of national organizations such as the US Carbon Program, and of local organizations such as the Colorado Local Science Engagement Network.



Ms. Claire Walsh

Associate Director of Policy, Abdul Latif Jameel Poverty Action Lab (J-PAL) Global, MIT

Ms. Walsh works with policymakers and J-PAL-affiliated researchers around the world to share insights from randomized evaluations and promote evidence informed policy to reduce poverty and fight climate change. She is the Project Director for J-PAL's [King Climate Action Initiative](#), which evaluates innovative climate policies and technologies and works with policymakers, NGOs and companies to catalyze the scale-up of solutions that reduce carbon emissions and carbon co-pollutants, build vulnerable communities' ability to adapt to climate change, and increase access to affordable energy. Ms. Walsh previously led J-PAL's [Innovation in Government Initiative](#) and served as interim Deputy Director of [J-PAL Southeast Asia](#) in Jakarta. In 2019, MIT awarded her its "[Excellence Award](#)." She holds an MA from the Fletcher School of Law and Diplomacy at Tufts University where she specialized in development economics and international business relations. Prior to joining J-PAL in 2012, she worked for NGOs working to improve the quality of education and employment opportunities for youth in East Africa.

MIT Joint Program Speakers and Moderators



Mr. Horacio Caperan

Executive Director of External Affairs, MIT Joint Program on the Science and Policy of Global Change

Mr. Caperan has over 20 years of experience in strategic planning, marketing, business development and program management for organizations in the transportation, agroindustry, life sciences and technology sectors in the U.S. and international markets. He is an alumnus of the MIT Sloan School of Management where he earned an MBA with honors. Previously he received a Fellowship in the Management of Clean Energy Ventures from Boston University and the New England Clean Energy Council. He holds a dual Master's degree in Biology and Biotechnology from Tufts University. He earned a BS in management and economics in Chile, where he later held positions as a professor of economics and finance.



Dr. Angelo Gurgel

Research Scientist, MIT Joint Program on the Science and Policy of Global Change

Dr. Gurgel has been developing applied research on climate policy, climate change, land-use changes, bioenergy, agricultural and environmental economics. He was a professor at the Sao Paulo School of Economics, Fundacao Getulio Vargas (FGV), Brazil (2012-2020), and the University of Sao Paulo, Brazil (2004-2011). He coordinated the FGV master's program on Agribusiness and the FGV Observatory of the Plan on Low-Carbon Emissions in Agriculture from 2012 to 2020. He holds a PhD in Applied

Economics and a BS in Agricultural Engineering from University of Viçosa - Brazil.



Dr. Sergey Paltsev

**Deputy Director, MIT Joint Program on the Science and Policy of Global Change
Senior Research Scientist, MIT Energy Initiative**

Dr. Paltsev is a Deputy Director of the MIT Joint Program and a Senior Research Scientist at the MIT Energy Initiative. He is an author of more than 90 peer-reviewed publications in scientific journals and books on the topics of energy and climate economics and policy, taxation, advanced energy technologies, and international trade. Dr. Paltsev is an Advisory Board Member for the Global Trade

Analysis Project (GTAP) Consortium, and was a Lead Author of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). He is a recipient of the 2012 Pyke Johnson Award (by the Transportation Research Board of the National Academies, USA, for the best paper in the area of planning and environment), the Best Policy Analysis Paper of 2012 by *Environmental Science and Technology*, a journal of the American Chemical Society, and the Best 2004 Research Award by Tokyo Electric Power Company, Japan. Before joining MIT in 2002, Sergey worked as a consultant at The World Bank, and as an executive director of the Program in Economics and Management of Technology at Belarusian State University. He holds a PhD in Economics from University of Colorado at Boulder.



Dr. C. Adam Schlosser

**Deputy Director, MIT Joint Program on the Science and Policy of Global Change
Senior Research Scientist, MIT Center for Global Change Science**

Dr. Schlosser is a Deputy Director of the MIT Joint Program and a Senior Research Scientist at the MIT Center for Global Change Science. Dr. Schlosser was previously an Associate Research Scientist at the NASA Goddard Space Flight Center and a research scientist at the Center for Ocean Land Atmosphere Studies. He conducted his postdoctoral work at NOAA's Geophysical Fluid

Dynamics Laboratory. His primary interests are the modeling, prediction and risk assessment of the natural, managed, and built water-energy-land systems using the MIT Integrated Global System Modeling (IGSM) framework. Dr. Schlosser has also undertaken studies of hydrology, weather and climate and their predictability and limits-to-prediction. He also has participated in and led international experiments aimed at assessing the performance of Earth-system model simulations and predictions. In earlier work, he served as a member of the NASA Energy and Water Cycle Study Science Integration Team to improve our observational capabilities for monitoring, understanding and predicting the Earth's global water and energy cycles. His current collaborative research activities also include: the study of extreme events and associating their potential changes and risks on the natural, managed and built environments; water-resource assessments to inform mitigation and adaptation strategies; and renewable-energy resource and intermittency assessments.



Ms. Anne Slinn

**Executive Director for Research, MIT Joint Program on the Science and Policy of Global Change
Executive Director for Research, MIT Center for Global Change Science**

An engineer by training and an alumna of MIT, Ms. Slinn has over 25 years of experience organizing activities that address the research challenges intersecting the global environment, climate, energy, economics and policy. She oversees a diverse portfolio of fundamental research on Earth-system science, and applied research on global change issues. Her key contributions are to the alignment

of priorities and resources, the synthesis of scientific description, research administration, communication and fiscal oversight, and coordination of multi-institutional and international collaborations.

Forum Attendees

Gokce Akin Olcum

Environmental Defense Fund

Nahiomy Alvarez

Federal Reserve Bank of Chicago (FRB)

Mustafa Babiker

Saudi Aramco

Ranjula Bali Swain

Stockholm School of Economics

Naty Barak

Netafim

Ryan Barrett

Bank of England

Adriano Bastos

BP

Raul Bernardi

CGC

Birgitta Beuthe

BP

Kieran Bhatia

BP

Mark Bosse

Ingredion Incorporated

Ed Boyle

MIT-EAPS

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MITEI

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MIT Corporate Relations

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Springer Nature

Horacio Caperan

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Saudi Aramco Energy Ventures

Martin Cevallos

Compañía General de Combustibles S.A.

Henry Chen

MIT Joint Program

Lexi Clark

Field to Market

Alessandro Cocco

Federal Reserve Bank of Chicago

Justin Cope

Flywheel Energy

Julie Dalzell

ConocoPhillips

David Daniels

U.S. EIA

Michael Davidson

University of California, San Diego

Campbell Deborah

MIT Lincoln Laboratory

David Deese

Boston College

Fabrice Devaux

Total

Delavane Diaz

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Matthew Drews

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Richard Eckaus

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Jill Engel-Cox

NREL

Stephen Eule

Global Energy Institute, US
Chamber of Commerce

Malcolm Fawcett

ConocoPhillips - Houston, TX

Luiz Gylvan Filho

Institute for Advanced Research,
University of São Paulo

Tom Fort

Novartis

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Gloriamar Gamez

Dow

Xaquín García-Muros

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GSA/AAAS Science and Engineering
Congressional Fellowship

Kelly Goddard

BP

David Goldston

MIT

Chris Green

Novartis

Angelo Gurgel

MIT

Martin Haigh

Shell

Beez Hazen

Northern Engineering & Scientific

Jutta Hellstern

Novartis

James Herbertson

IPIECA

Howard Herzog

MIT

Betsy Hickman

Field to Market: The Alliance for
Sustainable Agriculture

Terron Hill

National Grid

Carrie Houtman

Dow

Henry Jacoby

MIT

Shaffiq Jaffer

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Jaimin Jethwa

BP

Harooni Khesghi

ExxonMobil Research and
Engineering Company

Marsha Kinley

Duke Energy

Paul Kirshen

University of Massachusetts Boston

Gary Kleiman

Orbis Air, LLC

Charles Kolstad

Stanford University

Muge Komurcu

MIT Joint Program

Karl Koster

MIT

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UMASS Lowell

Angel Landa Ugarte

Iberdrola

Erik Landry

GRESB

Francisco Laveron

Iberdrola

Arthur Lee

Chevron Corporation

Jia Li

EPA

Philip Lippel

MIT

Theresa Lober

Bank of England

Michael MacCracken

Climate Institute

Ryo Manabe

INPEX Americas

Julia Mangueira

The Nature Conservancy - TNC

Marta Martinez

Iberdrola

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The NorthBridge Group

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