# 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)*
   - **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*
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

Note: Presentations will be recorded exclusively for the purpose of preparing a news summary with absolutely no attributions per the Chatham House Rule.
Global Changes: Physical and Transition Risks

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 (FE3W) 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**

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

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Gokce Akin Olcum</td>
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<td>Mustafa Babiker</td>
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<td>Martha Broad</td>
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<td>Sheri Brodeur</td>
<td>MIT Corporate Relations</td>
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<td>Compañía General de Combustibles S.A.</td>
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<td>Lexi Clark</td>
<td>Field to Market</td>
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<td>Alessandro Cocco</td>
<td>Federal Reserve Bank of Chicago</td>
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<td>Flywheel Energy</td>
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<td>Jill Engel-Cox</td>
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<td>Stephen Eule</td>
<td>Global Energy Institute, US Chamber of Commerce</td>
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<td>Malcolm Fawcett</td>
<td>ConocoPhillips - Houston, TX</td>
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<td>Luiz Gylvan Filho</td>
<td>Institute for Advanced Research, University of São Paulo</td>
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<td>Novartis</td>
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<td>James Herbertson</td>
<td>IPIECA</td>
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<td>Howard Herzog</td>
<td>MIT</td>
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<tr>
<td>Betsy Hickman</td>
<td>Field to Market: The Alliance for Sustainable Agriculture</td>
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<td>Terron Hill</td>
<td>National Grid</td>
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<td>Harooni Kheshgi</td>
<td>ExxonMobil Research and Engineering Company</td>
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<td>Duke Energy</td>
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<td>University of Massachusetts Boston</td>
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<td>Orbis Air, LLC</td>
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Supriya Lahiri  
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  
  
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INPEX Americas  
  
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Iberdrola  
  
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RFF  
  
Evan Moran  
MIT  
  
Jennifer Morris  
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Habib Moudachirou  
V-Square Quantitative Management  
  
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Chalmers University of Technology  
  
Adam Pasci  
Chevron  
  
Sergey Paltsev  
MIT Joint Program  
  
Arnico Panday  
Ullens Education Foundation  
  
John Parsons  
MIT Sloan  
  
Bruce Phillips  
The NorthBridge Group  
  
Ronald Prinn  
MIT Joint Program  
  
Cynthia Randles  
ExxonMobil Research and Engineering Company  
  
Rachael Reid  
BP  
  
David Reiner  
University of Cambridge  
  
Joanna Reynolds  
BP  
  
Keywan Riahi  
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Mamadou-Abou Sarr  
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Andreas Schafer  
University College London  
  
C. Adam Schlosser  
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Richard Schmalensee  
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Ulrike Schopp  
IPIECA  
  
Jianxiong Sheng  
MIT  
  
Anne Slinn  
MIT Joint Program  
  
Alan Smith  
HSBC Holdings  
  
Erin Smith  
MIT  
  
Susan Solomon  
MIT  
  
Gabriela Sorribas  
Compañía General de Combustibles  
  
Edward Stones  
Dow  
  
Kenneth Strzepek  
MIT  
  
Stig Svenningsen  
The Norwegian Ministry of Petroleum and Energy  
  
Hiroyuki Tanaka  
INPEX Corporation  
  
Parth Vaishnav  
University of Michigan  
  
Viviana Valiño  
Compañía General de Combustibles S.A.  
  
Pamela Villar Lettieri  
CGC  
  
Lloyd Visser  
ConocoPhillips  
  
Tim Vrints  
Baltimore Aircoil International nv  
  
Peter Wadhams  
Cambridge University  
  
Claire Walsh  
MIT J-PAL  
  
Mike Witt  
Dow  
  
Stanley Wood  
Bill and Melinda Gates Foundation  
  
Xiliang Zhang  
Tsinghua University  
  
Martin Zimmerman  
University of Michigan