



## Our Planet, Our Future – Global Sustainability the Science Sessions

The Academic Science Sessions take place at 2:30-4:30 pm EDT 27 April and 2:00-4:00 pm EDT 28 April.

### Purpose

These sessions are designed as a scientific discussion on global sustainability challenges in the context of a global pandemic. The sessions will explore the leadership role of science as we enter a critical “decade of action”.

Main audience: Nobel Prize laureates and invited experts

### The Context

These sessions on the role of science in the transformation to a sustainable and resilient future for all on our planet, is hosted at a critical moment in time. Humanity is in the midst of the Covid-19 pandemic, a global crisis and extreme event that has rapidly spread across societies and nations impacting human wellbeing and societal development.

The pandemic has exposed fragility in several dimensions of the tightly coupled and interconnected globalised world. It occurs, not coincidentally, in the midst of the rising challenges of the Anthropocene, manifested in interconnected crises of global climate change and biodiversity loss. Our future on our planet, and our ability to reduce risks of future shocks, will be strongly influenced by our ability to keep global warming below 2°C and build resilience of the living biosphere.

These are turbulent times when science is needed more than ever. Science provides informed consensus on the facts and trade-offs in times of misinformation and polemics; and insights in support of evidence-based solutions for human and planetary health. The planetary challenges that confront humanity need shared narratives for just and sustainable futures and governance informed by and mobilizing the best that

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science has to offer. Youth are calling upon us all to listen to science and act on its evidence! We are in a transformative moment for economies and societies. Science does not act in an isolated void. The quest for knowledge, novelty and solutions is rooted in our human fabric, and it is when science interacts with political will, citizen engagement, entrepreneurship and social competence that we are able to make informed choices to sustain humanity and the rest of the living world for long into the future.

The science sessions will clarify the new reality of the global sustainability challenges based on multiple lines of evidence to summarise the current state of knowledge. Society and nature are deeply intertwined and embedded in the biosphere. Society needs to be viewed and governed as part of the biosphere, not separate from it. Humanity has accelerated into the dominant global force shaping the operation and future of the biosphere and the broader Earth system. Climate change and loss of biodiversity are symptoms of the situation, they interact, and interact with social, economic, technological, and cultural development in complex ways.

The current situation calls for rapid and responsible science-based action for transformative change over the coming decade. It serves as a window-of-opportunity for redirecting our civilizations into just and sustainable futures. Major transitions in policy, practice, and business are on the way. Further transitions will be needed in higher education, the tech sector, economic incentives, governance structures and institutions to pave the way for sustainability and a prosperous future. Such transitions will be the focus of the moderated panel dialogues.

## April 27 Academic Science session 1: Our Planet

2:30-4:30 pm EDT

### Welcome

Setting the stage (Göran K. Hansson)

Remarks by HRH Crown Princess Victoria of Sweden

### Keynote presentation - Setting the stage (40-45 min, 10 min each)

- White Paper's key messages for global sustainability (Carl Folke)
- NAS workshop main points (Pamela Matson)
- The economics of biodiversity (Partha Dasgupta)
- Ocean stewardship (Jane Lubchenco)

### Response - Comments on the keynotes (10-15 min)

- Richard Horton (the Lancet), Magdalena Skipper (Nature), Holden Thorp (Science)

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### Moderated Panel Dialogue (45 min)

*Science Supporting Transformations towards Global Sustainability*

(moderator Rosina Bierbaum)

Brian Schmidt, Yuan Tseh Lee, Marcia McNutt, Hans Joachim Schellnhuber

### Nobel Summit statement – a call for action (15 min)

Introducing the plan with and draft of the call for action

Steering Committee of the Summit followed by comments from invited participants

## April 28 Academic Science session 2: Our Future

2:00-4:00 pm EDT

### Moderated Panel Dialogue (45 min)

*Breakthroughs in Technologies and Social Innovations for Resilient Societies and Global Sustainability*

(moderator Leena Srivastava)

Richard Roberts, Jennifer Doudna, Karen Seto, Frank Geels

### Moderated Panel Dialogue (45 min)

*Towards Sustainable Futures: Governance, Inclusiveness and Stewardship*

(moderator Rosina Bierbaum)

Joe Stiglitz, Jane Lubchenco, Gretchen Daily, Eduardo Brondizio

### Next steps with the Call for Action (20 min)

Steering Committee of the Summit followed by comments from invited participants

### Closing remarks (10 min)

Vidar Helgesen, Marcia McNutt, Johan Rockström, Carl Folke

As part of the moderated dialogues there will be opportunities for invited participants to ask/submit questions and reflections.

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## Speakers

### \*Nobel Prize laureates

**Rosina Bierbaum (NAS)**, Roy F. Weston Chair in Natural Economics, University of Maryland

**Eduardo S. Brondizio**, Distinguished Professor of Anthropology, and Director, Center for the Analysis of Social-Ecological Landscapes, Indiana University

**Gretchen Daily (NAS)**, Bing Professor in Environmental Science and Senior Fellow at the Woods Institute for the Environment, Stanford University

**Partha Dasgupta (NAS)**, Frank Ramsey Professor Emeritus of Economics, University of Cambridge

**Jennifer Doudna\*(NAS/NAM)**, Professor, Department of Molecular and Cell Biology and Department of Chemistry, University of California, Berkeley

**Carl Folke (NAS)**, Director and Professor, The Beijer Institute of Ecological Economics, Royal Swedish Academy of Sciences, The Stockholm Resilience Centre /Stockholm University

**Frank Geels**, Professor of System Innovation and Sustainability, University of Manchester

**Göran K. Hansson**, Professor of Experimental Cardiovascular Research, Karolinska Institutet, Secretary General of the Royal Swedish Academy of Sciences, and Vice Chairman of the Board of the Nobel Foundation

### **HRH Crown Princess Victoria of Sweden**

**Richard Horton**, Editor in Chief, The Lancet

**Yuan Tseh Lee\*(NAS)**, President Emeritus, Institute of Atomic and Molecular Sciences, Academia Sinica

**Jane Lubchenco (NAS)**, Distinguished University Professor and Marine Studies Advisor to the President, Oregon State University

**Pamela Matson (NAS)**, Dean Emerita Stanford University's School of Earth, Energy and Environmental Sciences, Goldman Professor of Environmental Studies

**Marcia McNutt (NAS)**, President, National Academy of Sciences

**Sir Richard Roberts\***, Chief Scientific Officer, New England BioLabs, Inc

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**Johan Rockström**, Director, Potsdam Institute for Climate Impact Research; Professor, University of Potsdam

**Hans Joachim Schellnhuber (NAS)**, Director Emeritus of the Potsdam Institute for Climate Impact Research

**Brian Schmidt\*(NAS)**, Vice-Chancellor, President, Chief Executive, Officer and Professor, The Australian National University

**Karen Seto (NAS)**, Frederick C. Hixon Professor of Geography and Urbanization Science, School of the Environment, Yale University

**Magdalena Skipper**, Editor in Chief, Nature

**Leena Srivastavaa**, Deputy Director General for Science of the International Institute for Applied Systems Analysis (IIASA)

**Joseph E. Stiglitz\***, University Professor, Columbia University, Chief Economist of the Roosevelt Institute

**Holden Thorp**, Editor in Chief, Science, Rita Levi-Montalcini Distinguished University Professor at Washington University in St. Louis