



## Press Release: For Immediate Release

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Under the High-Patronage of  
Mr Emmanuel MACRON  
President of the French Republic

## Global Science Leaders Herald New Era of Ground-breaking Climate and Sustainability Science at Paris Summit & Symposium

STRASBOURG, France, 5 July 2023 — Climate and sustainability science and policy entered a new era last week during a High-Level Science Summit & Symposium that drew international ministers and the world's top scientists to Paris and created new partnerships, communicated societal needs, offered new discoveries, and built bridges across disparate expertise.

“Fundamental Life Science Meets Climate, Environment, and Sustainability” was organized by the International Human Frontier Science Program Organization (HFSP) together with its partners, and drew more than 2,000 participants from over 40 countries for in-person and online events offered at the Académie des Sciences in Paris from 27-29 June 2023. The events sparked a wholly new approach by bringing together global expertise in basic science from biology, climate change, marine science, ecology, agriculture, psychology, and the social sciences to meet with government officials.

Through the High-Level Summit & Symposium, participants validated important priorities that will greatly assist governments, communities, and science agencies committed to forging a robust sustainability transition:

1. **International collaboration is critical.** Ministers and scientists need more opportunities like this to communicate. This Summit & Symposium allowed decision-makers, funders, and scientists to communicate openly and directly regarding the needs of societies and the insight that discovery science can offer. Likewise, next steps must be based on broad inclusion that welcomes professionals from a diverse array of countries, perspectives, and backgrounds in order to have the full complement of expertise available.
2. **Basic frontier life science must be a full partner.** To fully understand the global challenges humanity faces, we need the ‘life cycle’ approach that biological sciences can bring to partnerships with climate science, environmental research,

physics, and data science. The global challenges are ultimately a threat to life on Earth - the life sciences must be involved in these investigations to inform policymaking.

3. **Systems science is next-generation science.** Important policies and societal safeguards can benefit from the knowledge of systems behavior - biological systems, Earth systems, and the common universal truths underlying key systems. Further, the life sciences and physical sciences must partner with the social and behavioral sciences to reflect more accurately how living organisms play key roles in impacting our Earth systems.
4. **Transdisciplinary, frontier science can help people adapt to global challenges.** Engineering opportunities for food security, renewable energy, and human resilience can emerge from basic life science research coupled with climate science, marine research, data science and other transdisciplinary approaches. There is a time and a place for discipline-focused basic science, but there is also a need for frontier life science to be involved in solving our rapidly expanding global challenges. In that setting, telescoping translation can benefit humanity and all life on Earth. Truly, the 21<sup>st</sup> century will be known as the “Age of Biology.”
5. **Responding to global leaders’ call for advanced science.** Reiterating what was said in May 2023 during the G7 Summit in Hiroshima and the Science and Technology Ministers' Meeting in Sendai, it is clear that science must now play a vital role for the security and future of humanity and all life on Earth. It is imperative that governments support transdisciplinary basic research that will inform solutions for global challenges.

#### **Next Steps: Frontier Workshops in Three Critical Areas:**

- A. Beginning in 2024, HFSP and its global partners, will host Frontier Workshops to further extend the discussions and facilitate new funding opportunities for frontier basic research that will advance the sustainability transition. Each discussion will focus on one of the four thematic areas discussed in Paris:
  - Climate Change and Health;
  - Ocean Biodiversity and Resources at Risk;
  - Food Security in a Changing World; and
  - Individuals, Institutions, and Societal Transformations.

These conversations will be held in geographically diverse locations around the world to formulate a thoughtful, rigorous approach to bringing basic life science into the sustainability transition worldwide. The workshops will engage science ministers, government officials, and leading scientists representing transdisciplinary fields of expertise.

- B. To accelerate the impact that frontier life science research can have for the benefit of humanity, HFSP and its global partners will also host a series of Frontier

Workshops highlighting the potential of basic life science research to deliver innovations that can be rapidly translated to applications for public good. These workshops will bring diverse scientists to regional hotspots where there is ample opportunity to make and act on these connections.

- C. HFSPo will host Frontier Workshops to identify and recommend approaches to enhance greater inclusiveness in basic life science research organizations and in the frontier life science enterprise on the global scale. The workshops will begin with an event hosted by Canadian life science stakeholders and will be open to all participants interested in creating a welcome environment for diverse perspectives, approaches, and empowering those people and countries who have not been in a position to take active roles in the past.

### Select Transdisciplinary Research Presented at the Summit & Symposium Included:

*(To schedule an interview, contact Rachael Bishop, [rbishop@hfsp.org](mailto:rbishop@hfsp.org), +33 (0)7 81 87 621 21)*

- Carbon storage in the oceans as a function of microscale mechanisms driving particle degradation, **Uria Alcolombri**, Dept. of Civil, Environmental and Geomatic Engineering, ETH Zurich, Switzerland and Dept of Plant and Environmental Science, Hebrew University of Jerusalem, Israel.
- A systems perspective: human behavior, the environment, and biological feedback loops that create unintended consequences, **Ulf Dieckmann**, Okinawa Institute of Science and Technology, and International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Plant heat stress, heatwaves, and food security: prediction and mitigation, from molecular genetics to Earth system modeling, **Peter Franks**, University of Sydney, Australia.
- Understanding how certain flowers attract pollinators as a predictor for food security, **Beverly Glover**, Cambridge University, United Kingdom.
- Heat acclimation and neuronal pacemaker mechanisms that drive heat tolerance and resilience to hot environments, **Jan Siemens**, Heidelberg University, Institute of Pharmacology, Germany.
- Why don't plants get sunburned? How can this help promote food security? **Gabriela Schau-Cohen**, Massachusetts Institute of Technology, United States.

The Summit and Symposium was co-hosted by the Honorable **Sylvie Retailleau**, French Minister of Higher Education and Research, and the International Human Frontier Science Program Organization (HFSPo). The events were organized by HFSPo and its partners: French National Agency for Research (ANR), French National Council of Scientific

Research (CNRS), French Academy of Sciences, Pasteur Institute, International Science Council (IRS), European Molecular Biology Laboratory (EMBL), UNESCO, European Research Council (ERC), and U.N. International Year of Basic Sciences for Sustainable Development (IYBSSD).

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The Human Frontier Science Program was established by the G7 countries at the initiative of former Prime Minister Yasuhiro Nakasone of Japan at the 1987 Venice Summit. Open to scientists of every nation, HFSP is supported by 17 Members: Australia, Canada, France, Germany, India, Israel, Italy, Japan, the Republic of Korea, New Zealand, Norway, Singapore, South Africa, Switzerland, the UK, the USA, and the European Commission. The mission of HFSP is to foster bold, basic, frontier research in the life sciences and interdisciplinary collaborations around the world. Since 1990, close to 8,000 researchers from more than 70 countries have been supported. Of these, [28 HFSP awardees have gone on to win the Nobel Prize](#).

The **International Human Frontier Science Program** is headquartered at

12 Quai Saint-Jean, 67000, Strasbourg, France.

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