
Living with Environmental Change

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Science has the capacity to bring together people, ideas, and solutions across borders, disciplines, sectors, ideologies, and traditions. This was the theme of the 2019 Annual AAAS meeting, with over 120 scientific sessions, lectures, and workshops centered around the idea that science transcends boundaries.

AAAS is one of the most interdisciplinary scientific meetings in the world, and the session topics at the [2019 AAAS Annual Meeting \(https://www.aaas.org/resources/2019-aaas-annual-meeting\)](https://www.aaas.org/resources/2019-aaas-annual-meeting) ranged from supercomputing and technology, equity in STEM education, and environmental change. Here, we highlight several scientific lectures in the latter category: Living with Environmental Change. Our [full report \[PDF\] \(https://www.aaaspolicyfellowships.org/sites/default/files/2019%20Annual%20Meeting%20Hackathon%20Report%20-%20Living%20With%20Environmental%20Change.pdf\)](https://www.aaaspolicyfellowships.org/sites/default/files/2019%20Annual%20Meeting%20Hackathon%20Report%20-%20Living%20With%20Environmental%20Change.pdf) has more

details about the individual meeting sessions.

Climate Change Impacts: Applying current natural and social scientific knowledge of the Earth system to the study of climate change impacts

Climate change impacts are serious and far-reaching in sectors as diverse as public health, agriculture, transportation, and power generation. The effects are already apparent and are projected to become more costly throughout the 21st century. In regions of the developing world, the effects on economic stability, food security, public health, and personal safety will be even more devastating. Improving economic analyses of climate change could provide a stronger basis when considering policies for mitigation, adaptation, and protection of the most vulnerable communities.

Climate Change Technology and Policy: Leveraging cutting-edge science to mitigate climate change

New technology and policy approaches are creating opportunities in reducing the impacts of climate change in a variety of ways. The use of waste carbon dioxide in production with carbon capture and utilization, for example, has the potential to result in avoided carbon emissions from areas such as chemical manufacturing, aviation and shipping fuels, and cement production. Advances in the precision and speed of the attribution of extreme events to climate change continue to increase public awareness of climate change impacts when national attention is focused on extreme events such as the Hurricane Harvey flooding across Texas. It will not be a single technology or solution that successfully addresses the challenges and impacts of the changing climate, but rather a variety of strategies from multiple stakeholders across a range of sectors.

Stakeholder Engagement: Highlighting the importance of working with affected populations for sustainable development

Engaging this wide range of stakeholders is perhaps the most essential element in addressing climate change and the broader context of sustainable development across the globe. In Washington, the Smithsonian's Outbreak exhibit informs the public on the relationship between environmental and human health through the lens of global health epidemics. Another program involves sharing stories of community action to encourage communities across the United States to engage with climate change responses. From Montana, Wyoming, and Virginia to Kenya and Tanzania, scientists across the globe are collaborating on sustainability projects with private land managers. Digital technologies make a greater contribution to the achievement of the United Nations sustainable development goals worldwide when local populations have the capacity to be part of open and inclusive systems. Planning for the African component of the Square Kilometer Array (SKA) radio telescope incorporates building African technical infrastructure and developing research capacity among Africans. The common theme of all these initiatives is to listen to people affected by climate change and build their capacity and agency to work on solutions.

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