U.S. Global Change Research Program

WCRP
2024
U.S. Global Change Research Program

“[A] comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict and respond to human-induced and natural processes of global change”

(P.L. 101-606)

• Mandated by Congress: Global Change Research Act of 1990
• FY2023 budget crosscut is around $4.2 billion (research)
• Led by the Subcommittee on Global Change Research – and now also the Subcommittee on Climate Services
• Coordinates global change research and climate services across the Federal Government
USGCRP 2022–2031 Strategic Plan

Four Pillars:

- Advancing Science
- Engaging the Nation
- Informing Decisions
- Collaborating Internationally
Participation

• Eleven departments and agencies were identified in the Global Change Research Act, plus “such other agencies and departments of the United States” as deemed appropriate.

• The current SGCR includes these 11 members plus the Smithsonian Institution, USAID, DHS/FEMA, and HUD.

• Participation in other USGCRP activities (e.g., the interagency groups) is NOT limited to these agencies (open to all Federal agency personnel).
International context of the Global Change Research Act

- Promote international cooperation on global change research
- Coordinate the activities of the United States internationally
- Involve developing country scientists and decision makers while building capacity abroad in the realm of global change science

USGCRP develops international partnerships that advance program priorities, link to program areas, and leverage investments by other entities.

Supports non-Federal travel for international assessments

Leads U.S. review of international assessment products
Latin American and Caribbean Initiative

LACI’s **overarching vision** is to provide opportunities for partnerships between countries in the Americas to enhance capacity for climate risk and vulnerability assessments that would support local and regional decision-making in response to climate change impacts.

**El Salvador**: easy-to-use and reliable climate change vulnerability and risk atlas

**La Plata**: develop an information observatory that assesses climate impacts on compound hydrological disasters to help facilitate informed decision-making

**Amazonia**: developing user-friendly climate-informed decision support tools with Indigenous Peoples

**Jamaica**: advance disaster resilience in Jamaica by co-developing geospatial decision-support tools and providing capacity building support

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**LACI IS A VOLUNTARY COLLABORATION AMONG COUNTRIES.**
Activities relevant to GPEX: Examples of US Modeling Capacities

- Model Development (E3SM)
- Model Analysis: Many core efforts focus on Extreme Events (CASCADE, WACCEM, CATALYST), Precipitation Diagnostics (PCMDI)
- Storm feature tracking, dataset development and analysis, development of metrics and diagnostics (PyFLEXTRKR, TempestExtremes, TECA)
- Database of large eddy simulations of deep convection from CACTI

- NSF supported modeling research
- NCAR CESM model development and research
- NCAR Data Assimilation Research Testbed

- Airborne and ground data provide context for NASA global precipitation capabilities
- Observation-driven modeling (and assimilation): Two-way coupling of how observations help improve models and how models help us understand and exploit our observations
- NOAA PPGC Initiative/supplemental funding
- Global nested UFS & SPEAR Atmospheric River (AR) prediction system
- Improve model physics data assimilation to improve precipitation for NCEP/GFDL models
- FY22 CPO/CVP and NWS/OSTI NOFO to improve the understanding and representation of precipitation in weather and climate models.
- GFDL high-resolution modeling
Recent priority topics of interest

Expanded scope
• “global change” research
• Climate Services – new subcommittee
• Expanded participation and membership

Fulfilling USGCRP’s full global change mandate
National Nature Assessment (E.O. 14072)

Climate information and climate services
• Subcommittee on Climate Services
• Climate information/validation
• Greenhouse gas monitoring

Climate security
• Collaboration with intelligence/national security communities
• New interagency group (WGNS)
THANK YOU

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