

Revised Research Plan for the U.S. Climate Change Science Program



A Report by the
Climate Change Science Program and
the Subcommittee on Global Change Research



EXECUTIVE SUMMARY

The U.S. Climate Change Science Program (CCSP) released its Strategic Plan in 2003. This Revised Research Plan in compliance with Section 104(a) of the Global Change Research Act of 1990, is an update to the 2003 Strategic Plan. It reflects both scientific advances since the publication of the 2003 Strategic Plan and the evolving needs of society. The update focuses on near-term (1–3 year) planning needs, and specifically addresses research plans for the period 2008 to 2010. The Revised Research Plan also represents one of the first steps in the longer-term development of the next Strategic Plan. CCSP is currently developing a process for gathering input from a wide range of stakeholder and scientific communities to inform the development of that new Strategic Plan, which will describe approaches for addressing the Nation's needs for climate change information beyond the 2010 timeframe and into the next decade.

The Revised Research Plan contains an updated statement of capabilities and objectives consistent with CCSP's current Strategic Plan but reflecting both scientific progress and the Nation's evolving societal and environmental needs. It also contains examples of research progress and a discussion of the program's emerging priorities. Using the program's five strategic goals as an organizing framework, the Revised Research Plan provides a goal-by-goal overview of emerging research questions and themes, key research topics, and illustrative research plans for the years 2008 to 2010.

CCSP's vision is a Nation and the global community empowered with the science-based knowledge to manage the risks and opportunities of change in the climate and related environmental systems. Its mission is to facilitate the creation and application of knowledge of the Earth's global environment through research, observations, decision support, and communication.

This mission arises from the recognition that climate variability and change will continue to influence society directly and indirectly, and that in order to make informed decisions, society requires knowledge as to 1) what is changing and how; 2) what forces are causing those changes; 3) how the Earth system may change in the future and affect societies and ecosystems; 4) what parts of the Earth system are most sensitive to global change and how adaptable those parts are; and 5) how scientific knowledge can be effectively applied to manage the risks and opportunities. These are the essence of CCSP's strategic goals.

To address these goals, CCSP will utilize the Nation's investments and advances in monitoring, analysis, and modeling to increase understanding of Earth systems and the processes affecting their changes (Goals 1 through 3), while strengthening activity in understanding societal and ecosystem sensitivities and adaptability, and supporting decisionmaking (Goals 4 and 5). The effectiveness of this suite of activities will be enhanced through the development of robust communication and education activities that serve decisionmakers, stakeholders, and the public.

For each of CCSP's strategic goals, the Revised Research Plan provides a series of specific examples of research priorities and plans. **The illustrative examples in the Revised Research Plan are not intended to provide an exhaustive list of every CCSP research project, but rather to provide an indication of the breadth and depth of the program's activities.** In addition to the illustrative research examples identified in the Revised Research Plan, it is fully

expected that other important research topics, yet to be determined, will emerge from future scientific progress, events, and societal needs.

As identified in the Revised Research Plan, key components of CCSP's activities over the next three years include the following:

- CCSP will continue to provide the basic physical science required to understand Earth's past and present climate, including its natural variability, and to improve understanding of the causes of and uncertainties in observed variability and change at global, continental, regional, and local scales. CCSP remains committed to basic, ongoing research to understand climate processes and the forcing factors that cause changes in climate and related systems.
- CCSP will increasingly address emerging needs for research to more fully understand the impacts of climate change on unmanaged and managed ecosystems, human health and infrastructure, economic, and other human systems.
- CCSP will continue to generate science in support decisionmaking related to the management of risks and opportunities of climate variability and change, including adaptive management and mitigation efforts, with an increased emphasis on generating scientific results at regional and local scales.
- CCSP will place greater emphasis on communicating with users and stakeholders (e.g., state and local governments, academia, industry, public utilities, and nongovernmental organizations), both to gain the benefit of their experience, perspectives, and input and to ensure that the results of CCSP research, monitoring data, and assessments are widely and easily available and accessible to potential users of this information.

These four points distill the key similarities and differences between the 2003 Strategic Plan and the way forward that is identified and illustrated in the Revised Research Plan.

CCSP's role in meeting the challenges of global change is vital. CCSP adds value to federal agency efforts in climate change research and related activities by providing a structure and coordination mechanism that leverages individual agency efforts through increased cooperation, collaboration, and the joint development of research priorities. The CCSP framework allows federal agencies engaged in global change research to do more than individual agencies could do separately, and thus to more effectively address the Nation's global change science needs and coordinate and communicate their activities with those of their domestic and international research partners and stakeholders. In contributing to this framework, the Revised Research Plan is consistent with the CCSP guiding vision identified above and restated here: "A Nation and the global community empowered with the science-based knowledge to manage the risks and opportunities of change in the climate and related environmental systems."



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