

## UNITED STATES OF AMERICA

In June 2001, President Bush launched the U.S. Climate Change Research Initiative (CCRI) “...to study areas of uncertainty and identify priority areas where investments can make a difference.” The CCRI represents a focusing of resources and attention on those elements of U.S. global change research that can best support improved public debate and decision-making in the near term. The goal of the CCRI is to improve integration of scientific knowledge (including measures of uncertainty) into policy and management decisions and evaluation of management strategies and choices within the next five years.

The CCRI accelerates key areas of long-term that address the following areas: natural and human-induced changes in the Earth’s environmental system; the monitoring, understanding and prediction of global change; and the provision of a sound scientific basis for national and international decision-making. To date, more than \$20 billion of research funding has been invested in these areas.

The near-term focus of the CCRI on key climate change uncertainties is being balanced with the breadth of long-term research, creating the combined **Climate Change Science Program (CCSP)** that accelerates research on key science uncertainties while supporting long-term advances in understanding the physical, biological, and chemical processes that influence the Earth system.

The CCSP strategic plan has been prepared by the thirteen U.S. Federal Agencies participating in the CCSP. The development of this plan has benefited from the contributions of an extraordinarily large number of climate scientists and users of climate information. More than two hundred and fifty Federal Government scientists participated in the drafting process, and approximately one thousand three hundred climate scientists and information users from throughout the United States and thirty-five other nations participated in an open workshop called to critique the draft. In addition the U.S. National Academy of Sciences reviewed both the draft and the final version of the plans and are providing helpful input in implementation.

The Strategic Plan for the CCSP lays out a vision, mission, and goals for the program. At the highest level, CCSP has five overarching goals:

- **CCSP Goal 1:** Improve knowledge of the Earth’s past and present climate and environment, including natural variability, and improve understanding of the causes of observed variability and change.
- **CCSP Goal 2:** Improve quantification of the forces bringing about changes in the Earth’s climate and related systems.
- **CCSP Goal 3:** Reduce uncertainty in projections of how the Earth’s climate and related systems may have change in the future.
- **CCSP Goal 4:** Understand the sensitivity and adaptability of different natural and managed ecosystems and human systems to climate and related global changes.
- **CCSP Goal 5:** Explore the uses and identify the limits of evolving knowledge to manage risks and opportunities related to climate variability and change.

The CCSP calls for the creation of a series of 21 synthesis and assessment reports during the next four years. These reports present principal responses to the top-priority research, observation, and decision-support needs described above.

We recognize, however, that in most cases, the process of improving knowledge on these crucial issues will extend beyond the four-year time frame. The CCSP also has **longer-term research priorities** in the following seven areas:

- 1) atmospheric composition;
- 2) climate variability and change;
- 3) global water cycle;
- 4) land-use/land-cover change;
- 5) global carbon cycle;

- 6) ecosystems; and
- 7) human contributions and causes.

Even with substantial budgets, the potential scope of climate change research, observations and scientific synthesis is so large that the CCSP must clearly identify the highest priority activities for CCRI support. To improve the integration of scientific knowledge into policy and management decisions, and into the evaluation of management strategies and choices within the next five years, the CCRI aims to:

**1. Reduce scientific uncertainty in three key areas of climate change:**

- *Develop reliable representations of the climatic forcing resulting from atmospheric aerosols.* Aerosols and tropospheric ozone play unique, but poorly quantified, roles in the atmospheric radiation budget. Proposed activities include field campaigns, *in situ* monitoring stations, improved modeling, and satellite data algorithm development.
- *Improve our understanding of the global carbon cycle (sources and sinks).* CCRI funds will be targeted for activities to carry out the North American Carbon Program, a key element of the U.S. Carbon Cycle Science Plan. This program will improve monitoring techniques, reconcile approaches for quantifying carbon storage, and elucidate key processes and land management practices regulating carbon fluxes between the atmosphere and the land and the ocean.
- *Increase our knowledge of climate feedback processes.* Poor understanding of climate feedbacks (key interactions among two or more components of the climate system, such as clouds, water vapor, ocean circulation, or sea ice) are responsible for large uncertainties in our ability to reliably predict climate variability and change. The CCRI will prioritize activities to support increased understanding of feedback processes.

**2. Enhance and expand observation of the Earth system.**

CCRI efforts will contribute to and benefit from the design and operational implementation over the next ten years of a new international, integrated, sustained, and comprehensive global Earth observation system to minimize data gaps and maximize the utility of existing observation networks.

The longer-term CCSP focuses on climate observing systems including efforts to (a) document historical records; (b) improve observations for model development and applications; (c) enhance biological and ecological observing systems; and (d) improve data archiving and information system architectures. These activities will involve substantial collaboration with the international climate change science community and with several ongoing international programs. The CCSP observation and data management activities support a major international initiative to develop a comprehensive, integrated Earth observing system. This ten-year international initiative was launched at the Earth Observation Summit hosted by the United States in July 2003 in Washington DC.

**3. Increase our climate modeling capacity.**

The CCRI will support continued development and refinement of computational climate models. Priority activities will focus on improving model physics (particularly with respect to clouds and aerosols), increasing resolution of climate model simulations, improving methods to assimilate observations into model analyses and predictions, and exploring limits to predictability of climate variability and change. CCRI will also support development of climate modeling to provide routine model products for policy and management decision support.

We see the IAI as a partner in achieving these longer- and shorter-term objectives and goals. The IAI's Scientific Agenda aligns well with the priorities of the CCSP. This alignment strengthens the position of the IAI in front of the U.S. global change research community, in front of U.S. Federal funding agencies within the CCSP structure, and in front of other international funding agencies that have similar research interests. This alignment is reflected by the success with which researchers with IAI grants have been able to obtain parallel funds for their institutions both within the U.S. and abroad. Linking the research communities of the Americas to the global research frameworks represented by the World Climate Research Programme, the International Geosphere-Biosphere Programme, the International Human Dimensions Programme, and DIVERSITAS is a valuable contribution to helping the Americas achieve its

research goals, both nationally and regionally. Certainly, there are examples of first-rate science carried out by IAI researchers, and the region should be proud of the strong groups set up under the Collaborative Research Network and the IAI's other programs. These successes have contributed to the reputation not only of the scientists and of the Institute, but also to the reputation of the individual countries and the region. We believe that the IAI has had some significant successes in reaching its scientific goals under the Scientific Agenda.

However, in almost every call for proposals, many groups proposing work that was judged of excellent scientific quality were not funded because of a shortage of funds. To date, only two countries have contributed funds to the IAI's Program and Project budgets. The IAI is currently a very strong partnership between scientists and research institutions in the Americas, but it is not yet a research partnership in the Americas between *governments*. We have every hope that this Forum will be a large step in that direction.

We are confident that the structures set up for the IAI, both for the evaluation of science and for the setting of policy are both robust and transparent. Participation within the scientific programs, both from the point of view of submissions and review participation are strong, but could be strengthened by actions of the Representatives: dissemination of information about funding opportunities, and by the submission of suggestions for reviewers. The policy structure for the IAI (CoP and EC) is weak. Weak not because of any structural fault, but simply because of irregular or non-participation.

This irregular or non-participation is also present in the funding structure for the Institute, and has reached the point where all of the potential of the Institute is at risk. The Parties will, at this Conference and Forum, be able to map the interests of their countries onto the IAI's Scientific Agenda, and emphasize certain areas for the future calls for proposals. However, this will be all for naught if there is not a clear commitment by the Parties to the Core Budget of the IAI. Without a stable Directorate, there is no chance that the work invested to this point by the governments will come to fruition.

The United States re-emphasizes its support for the IAI, and for the scientific direction given by the Scientific Advisory Committee, and looks forward to working with the Parties at the CoP and Forum in emphasizing areas within the existing Scientific Agenda to more closely match the needs of the region.