CHAPTER 16

Program Management and Review

CHAPTER CONTENTS

Background

Several circumstances define the unique management environment of the Climate Change Science Program (CCSP). Fundamentally, CCSP integrates federal research on global change and climate change, as sponsored by 13 federal departments and agencies (the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, the Interior, State, and Transportation; together with the Environmental Protection Agency, the National Aeronautics and Space Administration, the National Science Foundation, the Agency for International Development, and the Smithsonian Institution). The Office of Science and Technology Policy, the Council on Environmental Quality, the National Economic Council , and the Office of Management and Budget provide oversight. Planning and implementation must be coordinated across the participating departments and agencies because the capabilities required for comprehensive scientific inquiries and synthesis extend beyond the mission, resources, and expertise of any single agency (see Box 16-1 for the roles and responsibilities of CCSP's participating agencies).

As a federal program, CCSP is implemented within the context of the federal budget cycle. Budget requests are coordinated through interagency research working groups and other mechanisms, but ultimate budget accountability resides with the participating agencies and departments. As a result of its interagency composition, activities in the CCSP budget are funded by the U.S. Congress through six separate Appropriations bills. There is also oversight provided by a number of Authorization committees, making the relationship between CCSP budgeting and the appropriations process complex.

CCSP partners closely with the independent national and international research community, which has partitioned research on the Earth system and climate change into discrete and manageable research issues and questions. CCSP has developed management mechanisms to ensure that data and information needs are coordinated across disciplines and research areas so that synthesis and model development can proceed as rapidly as scientific advances allow. In addition, CCSP must manage its research portfolio to facilitate discovery-driven investigation on a broad range of global change issues while also providing sufficient focus to achieve its climate objectives.

Under the President's direction, CCSP is placing increasing emphasis on realizing returns on society's investment in scientific discovery by developing resources that apply this information in support of climate change policymaking and adaptive management/planning. This requires the program to improve interactions between researchers and users of scientific information, and aid in the transfer of capabilities from research and development to operational services.

BOX 16-1

PRINCIPAL AREAS OF FOCUS FOR THE CCSP AGENCIES

Department of Agriculture (USDA)
USDA-sponsored research supports long-term studies to improve our understanding of the roles that terrestrial systems play in influencing climate change, and the potential effects of global change (including water balance, atmospheric deposition, vegetative quality, and ultraviolet-B radiation) on food, fiber, and forestry production in agricultural, forest, and range ecosystems. USDA's research program is strengthening efforts to determine the significance of terrestrial systems in the global carbon cycle, and to identify agricultural and forestry activities that can contribute to a reduction in greenhouse gas concentrations. USDA's research agencies will support the Department in responding to the President's directive to develop accounting rules and guidelines for carbon sequestration projects. Contributions from USDA's research program include the development of improved emission and sequestration coefficients, new tools for accurately measuring carbon and other greenhouse gases, and the development of improved sequestration methodologies.

Department of Commerce (DOC)
DOC's National Oceanic and Atmospheric Administation (NOAA) mission is: "To understand and predict changes in the Earth's environment and conserve and manage coastal and marine resources to meet the nation's economic, social, and environmental needs."The long-term global change efforts of NOAA are designed to develop a predictive understanding of variability and change in the global climate system, and to advance the application of this information in climate-sensitive sectors through a suite of process research, observations and modeling, and application and assessment activities. Specifically, NOAA's research program includes ongoing efforts in operational *in situ* and satellite observations with an emphasis on oceanic and atmospheric dynamics, circulation, and chemistry; understanding and predicting ocean-land-atmosphere interactions, the global water cycle, and the role of global transfers of carbon dioxide among the atmosphere, ocean, and terrestrial biosphere in climate change; improvements in climate modeling, prediction, and information management capabilities; the projection and assessment of variability across multiple time scales; the study of the relationship between the natural climate system and society and the development of methodologies for applying climate information to problems of social and economic consequences; and archiving, managing, and disseminating data and information useful for global change research. DOC's National Institute of Standards and Technology (NIST) provides measurements and standards that support accurate and reliable climate observations. NIST also performs calibrations and special tests of a wide range of instruments and measurement techniques for accurate measurements. NIST provides a wide array of data and modeling tools that provide key support to developers and users of complex climate prediction models.

Department of Defense (DOD)
DOD does not support dedicated global change research, but continues a history of participation in CCSP through sponsored research that concurrently satisfies national security requirements and stated CCSP goals. All data and research results are routinely made available to the civil science community. DOD science and technology investments are coordinated and reviewed through the Defense Reliance process and published annually in the Defense Science and Technology Strategy, the Basic Research Plan, the Defense Technology Area Research Plan, and the Joint Warfighting Science and Technology Plan.

Department of Energy (DOE)
Research supported by DOE's Office of Biological and Environmental Research (BER) is focused on the effects of energy production and use on the global Earth system, primarily through studies of climate response. Research includes climate modeling, aerosol and cloud properties and processes affecting the Earth's radiation balance, and sources and sinks of energy-related greenhouse gases (primarily carbon dioxide). It also includes research on the consequences of climatic and atmospheric changes for ecological systems and resources, the development of improved methods and models for conducting integrated economic and environmental assessments of climate change and of options for mitigating climate change, and education and training of scientists for climate change research.

Department of Health and Human Services (HHS)
Four National Institutes of Health (NIH) institutes support research on the health effects of ultraviolet (UV) and near-UV radiation. Their principal objectives include an increased understanding of the effects of UV and near-UV radiation exposure on target organs (e.g., eyes, skin, immune system) and of the molecular changes that lead to these effects, and the development of strategies to prevent the initiation or promotion of disease before it is clinically defined. In addition, the National Institute of Environmental Health Sciences (NIEHS) supports research on the health effects of chlorofluorocarbon replacement chemicals, including studies on the metabolism and toxicity of hydrofluorocarbons and halogenated hydrocarbons. HHS (NIH and the Centers for Disease Control and Prevention) also conducts research related to other impacts of global change on human health, including renewed concern about infectious diseases whose incidence could be affected by environmental change. In addition, NIH sponsors a program to assess the impact of population change on the physical environment and to account for effects of the physical environment on population change.

BOX 16-1 (CONTINUED)

PRINCIPAL AREAS OF FOCUS FOR THE CCSP AGENCIES

Department of the Interior (DOI)
Research at DOI's U.S. Geological Survey (USGS) contributes directly to the CCSP's intellectual framework of a whole-system understanding of global change (i.e., the interrelationships among climate, ecological systems, and human behavior). USGS examines terrestrial and marine processes and the natural history of global change, including the interactions between climate and the hydrologic system. Studies seek to understand the character of past and present environments and the geological, biological, hydrological, and geochemical processes involved in environmental change. USGS supports a broad area of global change research, with a focus on understanding the sensitivity of natural systems and impacts of climate change and variability, surficial processes, and other global change phenomena on the nation's lands and environments at the regional scale. Specific goals of the program are to improve the utility of global change research results to land management agencies; to emphasize monitoring the landscape and developing technical approaches to identifying and analyzing changes that will take advantage of a burgeoning archive of remotely sensed and *in situ* data; and to emphasize the response of biogeographic regions and features, particularly montane, coastal, and inland wetland ecosystems.

Department of State (DOS)
Through DOS annual funding, the United States is the world's leading financial contributor to the United Nations Framework Convention on Climate Change and to the Intergovernmental Panel on Climate Change (IPCC), a major organization for the assessment of scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. Recent DOS contributions to the IPCC provide substantial support for the Global Climate Observing System, among other activities.

Department of Transportation (DOT)
DOT utilizes existing science to improve decisionmaking tools in three primary areas: (1) impact of climate variability and change on transportation (research to examine the effects that climate change and variability may have on transportation infrastructure and services, and to identify potential adaptation strategies for use by transportation decisionmakers, operators, state and local planners, and infrastructure builders); (2) increasing energy efficiency and reducing greenhouse gases (research on reducing energy use will cover mitigation of transportation's environmental impacts both through conservation and through the application of new technology); and (3) modeling (research to develop and improve analytical tools for transportation energy use to support decisionmaking throughout government and in the private sector).

Agency for International Development (USAID)
USAID provides decisionmakers with the information to effectively respond to drought and food insecurity through the Famine Early Warning System Network (FEWS NET). FEWS NET analyzes remote-sensing data and ground-based meteorological, crop, and rangeland observations to track progress of rainy seasons in semi-arid regions of Africa in order to identify early indications of potential famine.

Environmental Protection Agency (EPA)
EPA's Global Change Research Program is an assessment-oriented program with primary emphasis on understanding the potential consequences of climate variability and change on human health, ecosystems, and socioeconomic systems in the United States. This entails: (1) improving the scientific basis for evaluating effects of global change on air quality, water quality, ecosystems, and human health in the context of other stressors and in light of human dimensions (as humans are catalysts of and respond to global change); (2) conducting assessments of the risks and opportunities presented by global change; and (3) assessing adaptation options to increase resiliency to change and improve society's ability to effectively respond to the risks and opportunities presented by global change. EPA's program emphasizes the integration of the concepts, methods, and results of the physical, biological, and social sciences into decision support frameworks.

National Aeronautics and Space Administration (NASA)
The mission of NASA's Earth Science Enterprise is to understand and protect our home planet by using our view from space to study the Earth system and improve prediction of Earth system change. NASA programs are aimed at understanding the Earth system and applying Earth system science to improve prediction of climate, weather, and natural hazards in partnership with other federal agencies and international space and research programs. Its Research Strategy orchestrates observing and modeling programs to address these essential questions:

- How is the Earth changing, and what are the consequences for life on Earth?
- How is the global Earth system changing?
- What are the primary causes of change in the Earth system?
- How does the Earth system respond to natural and human-induced change?
- What are the consequences of change in the Earth system for human civilization?
- How well can we predict future changes in the Earth system?

NASA's portfolio includes observations, research, analysis, modeling, and advanced technology development, in order to answer select science questions, and benchmarking decision support resources to ensure society receives the benefits of this research.

BOX 16-1 (CONTINUED)

PRINCIPAL AREAS OF FOCUS FOR THE CCSP AGENCIES

National Science Foundation (NSF)
NSF programs address global change issues through investments in challenging ideas, creative people, and effective tools. In particular, NSF global change research programs support research and related activities to advance the fundamental understanding of physical, chemical, biological, and human systems and the interactions among them. The programs encourage interdisciplinary activities and focus particularly on Earth system processes and the consequences of change. NSF programs facilitate data acquisition and information management activities necessary for fundamental research on global change, and promote the enhancement of models designed to improve understanding of Earth system processes and interactions and to develop advanced analytic methods to facilitate basic research. NSF also supports fundamental research on the general processes used by organizations to identify and evaluate policies for mitigation, adaptation, and other responses to the challenge of varying environmental conditions.

Smithsonian Institution
Within the Smithsonian Institution, global change research is conducted at the Smithsonian Astrophysical Observatory, the National Air and Space Museum, the Smithsonian Environmental Research Center, the National Museum of Natural History, the Smithsonian Tropical Research Institute, and the National Zoological Park. Research is organized around themes of atmospheric processes, ecosystem dynamics, observing natural and anthropogenic environmental change on daily to decadal time scales, and defining longer term climate proxies present in the historical artifacts and records of the museums as well as in the geologic record at field sites. The Smithsonian Institution program strives to improve knowledge of the natural processes involved in global climate change, provide a long-term repository of climate-relevant research materials for present and future studies, and to bring this knowledge to various audiences, ranging from scholarly to the lay public. The unique contribution of the Smithsonian Institution is a long-term perspective—for example, undertaking investigations that may require extended study before producing useful results and conducting observations on sufficiently long (e.g., decadal) time scales to resolve human-caused modification of natural variability.

Mission agencies that can benefit from observations, methods, and information developed through CCSP need to have ready access to these resources (see Chapter 11).

After more than a decade of experience, the U.S. Global Change Research Program (USGCRP) provides the foundation for managing an interagency research program on complex climate and global change issues. The new cabinet-level management structure instituted by President Bush in 2002 helps to focus efforts addressing the challenges of improving science-based information to manage the risks and opportunities of variability and change in climate and related systems during the coming decade. Among the new management techniques to be employed are approaches for addressing gaps in research and integration capacity that do not fit easily into the activities of any particular agency. In addition, the program coordinates with the Climate Change Technology Program (CCTP) to address issues at the intersection of science and technology, such as evaluating approaches to sequestration, monitoring of anthropogenic greenhouse gas emissions, and energy technology development and market penetration scenarios.

Program Criteria

CCSP uses a problem-driven rather than a disciplinary approach in setting priorities and sequencing investments, identifying for early action and support those projects and activities that meet the following agreed-upon criteria:

- *Scientific or technical quality*. The proposed work must be scientifically rigorous as determined by peer review. Implementation plans will include periodic review by external advisory groups (both researchers and users).
- *Relevance to reducing uncertainties and improving decision support tools in priority areas*. Programs must substantially address one or more of the CCSP goals. Programs must respond to needs for scientific information and enhance informed discussion by all relevant stakeholders.
- *Track record of consistently good past performance and identified metrics for evaluating future progress*. Programs addressing priorities with good track records of past performance will be favored for continued investment to the extent that time tables and metrics for evaluating future progress are provided. Proposed programs that identify clear milestones for periodic assessment and documentation of progress will be favorably considered for new investment.
- *Cost and value*. Research should address Climate Change Research Initiative (CCRI)/USGCRP goals in a cost-effective way. Research should also be coordinated with and leverage other national and international efforts. Programs that provide value-added products to improve decision support resources will be favored.

The Climate Change Science Program Management Strategy

Management of CCSP involves five mechanisms:

- Executive direction by the cabinet-based management structure, including priority setting, management review, and accountability
- Program implementation by CCSP-participating agencies

- Coordinated planning and program implementation through interagency working groups
- External interactions for guidance, evaluation, and feedback
- Coordination and management support from an interagency office accountable to the CCSP interagency governing committee.

Interactions among those responsible for these five mechanisms are critical for improving the scientific planning, the effectiveness of interagency management, and the focus of climate and global change research to support governmental and non-governmental needs. CCSP will also employ guidance from the President's Management agenda to strengthen the implementation of this plan.

Executive Direction by the Cabinet-Based Management Structure

CCSP's executive direction is provided by the cabinet-based management structure introduced in Chapter 1 and shown in Figure 16-1. At the highest level, this structure includes the Executive Office of the President, with policy review provided by a combined National Security Council (NSC), Domestic Policy Council (DPC), and National Economic Council (NEC) panel. The Committee on Climate Change Science and Technology Integration (CCCSTI), consisting of cabinet secretaries and agency heads, was developed to provide management oversight to the federal climate change science and technology programs. The Interagency Working Group on Climate Change Science and Technology (IWGCCST) reports to CCCSTI and consists of the Deputy/Under Secretaries (or the counterparts of these positions in non-cabinet agencies and offices). The working group provides oversight for both CCSP and CCTP (which develops and reviews climate technology programs within the federal government), and makes recommendations to CCCSTI about funding and program allocations, in order to implement a coordinated climate change science and technology program that will better support policy development.

Membership on CCSP's interagency governing body, which is chaired by the CCSP Director (a Department of Commerce

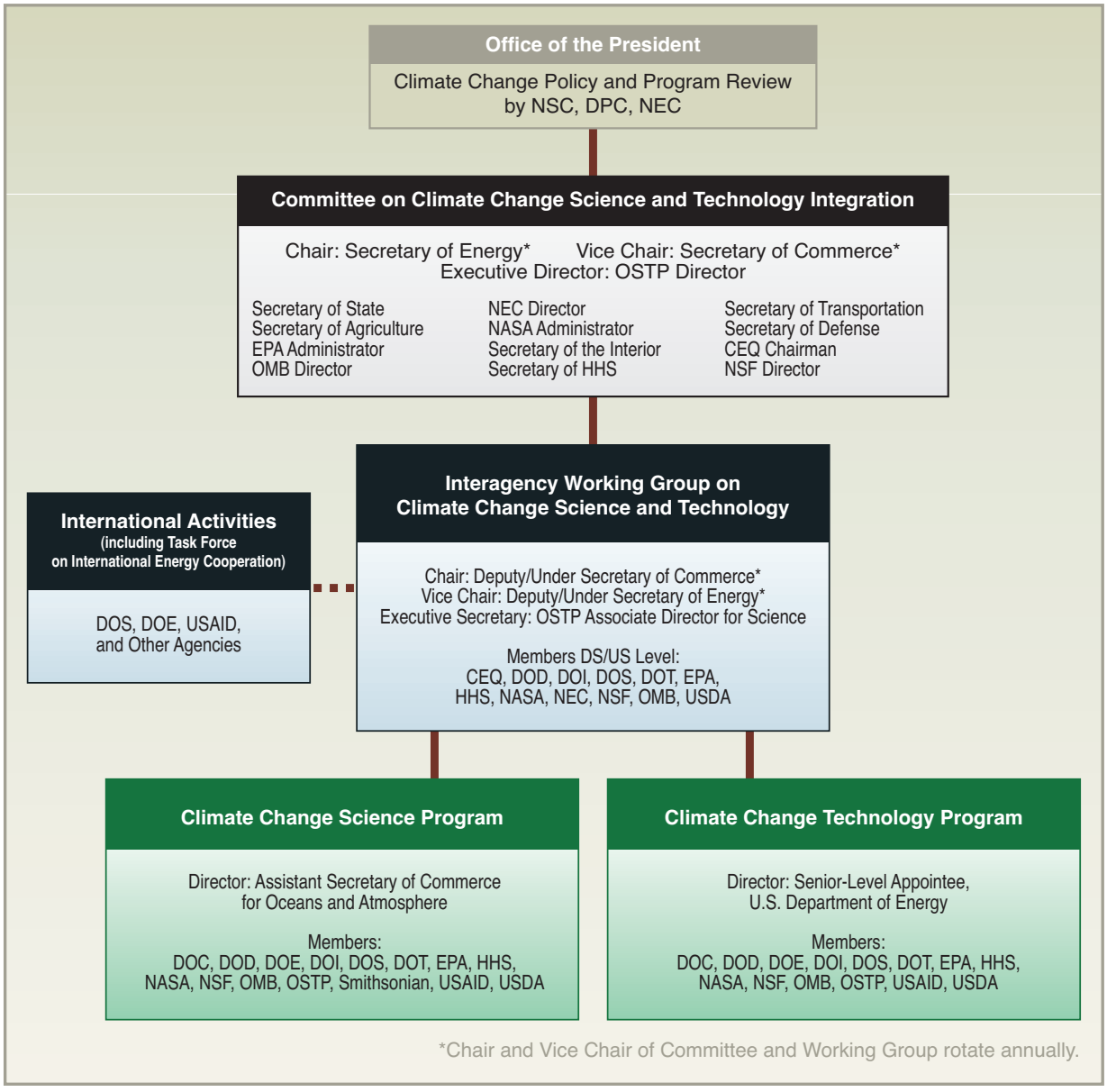

Figure 16-1: The Climate Change Science and Technology Programs are overseen by a cabinet-level management structure of the U.S. government.

appointee), is joint with the Subcommittee on Global Change Research (SGCR), the interagency committee that coordinates USGCRP. Its membership includes representatives from agencies that have mission responsibilities and/or funding in climate and global change research. USGCRP and CCRI are integrated within CCSP and responsibility for compliance with the requirements of the Global Change Research Act of 1990—including its provisions for annual reporting of finding and short-term plans, scientific reviews by the National Academy of Sciences/National Research Council, and periodic publication of a strategic plan for the program—rests with the CCSP's interagency governing body.

The CCSP interagency governing body provides overall management direction and is responsible for ensuring the development and implementation of an integrated interagency program. It oversees and directs all aspects of the program, including setting top-level goals for the program and determining what products will be developed and produced to meet those goals.

Agency representatives on the CCSP's interagency committee coordinate development of an integrated, interagency budget as a component of the President's annual budget request to Congress. They conduct periodic inventories and reviews of agency or departmental programs within the CCSP budget cross-cut (e.g., for the FY03 inventory, see <www.climatescience.gov>) and, in cooperation with IWGCCST and OMB, determine which agency programs are considered part of the CCSP budget cross-cut. They ensure that agency/departmental climate and global change research programs are prioritized and aligned with CCSP's interagency goals.

CCSP's governing committee ensures periodic program reviews and evaluations involving both the CCSP agencies and external partners, including the scientific research community and users of global change information. It also conducts periodic reviews of progress toward interagency objectives in order to evaluate the performance and effectiveness of the allocated budget.

The CCSP interagency governing body is responsible for ensuring the availability of scientific inputs needed to achieve the program's mission. It will develop and oversee mechanisms that support crucial research that is not central to the core missions of the participating agencies and that is most effectively and efficiently carried out in an interagency setting.

Finally, the CCSP interagency governing committee is responsible for coordinating activities with CCTP and other related programs; several members serve in leadership roles in coordinating committees for both CCSP and CCTP.

Program Implementation by CCSP-Participating Agencies

The goals and objectives of CCSP and the plans designed by the interagency working groups are carried out by the participating agencies, either individually or collaboratively. Each agency has its respective mission, capabilities, and budget authorizations, on the basis of which it commits to conduct research, make observations, run models, and generate products contributing to CCSP objectives. Agency managers serve as chairs and members of the CCSP interagency working groups, facilitating the alignment of agency plans and CCSP implementing strategies. Agency managers pursue collaborative agreements with other CCSP agencies and other organizations as required to generate the products they commit to in the CCSP context.

Coordinated Planning and Implementation through Interagency Working Groups

At the implementation level, CCSP draws on the strengths of many agencies and departments. It requires a significant degree of coordination to ensure that the individual agency research conducted under the umbrella of CCSP supports program scientific objectives and that developments are effectively and efficiently synthesized and transferred into operational and sustained societal benefits.

Interagency Working Groups (IWGs) of program managers who have budget authority within their agencies to implement programs will oversee development of integrated science and implementation plans for each of the CCSP IWGs.[5] IWGs will commission preparation of science plans (see next section on external interactions) to provide overall guidance for the research, observations, and modeling needed to achieve program goals. IWGs will themselves prepare implementation plans for the research program elements, which will provide performance objectives. The implementation plans will describe the priority scientific programs necessary to meet goals, the roles of the participating agencies, and joint agency initiatives, where needed. The plans will also provide generalized timelines and budget estimates for the investments necessary to carry out the activities, noting any critical dependencies. The implementation plans will also include priorities for the observations and/or observing systems necessary to meet the goals of the research as well as critical modeling efforts and/or information management issues. These priorities will inform the choices that will need to be made by agencies and by CCSP as a whole.

Appropriate CCTP working groups will coordinate with CCSP through membership on the relevant CCSP interagency working group [e.g., CCTP Measurement, Monitoring, and Verification (MMV) Working Group members on CCSP Observations and Monitoring Working Group, CCTP Scenarios and Modeling Task Force member on CCSP Modeling and Decision Support groups, CCTP Sequestration group member on CCSP Carbon Cycle Working Group] and *vice versa*. In addition, the CCTP Scenarios and Modeling Task Force and the MMV and sequestration working groups will meet jointly on occasion with the CCSP Decision Support, Observations and Monitoring, and Carbon Cycle groups, respectively, to review program directions and potential joint initiatives.

[5] Currently, CCSP has research-oriented interagency working groups focusing on Atmospheric Composition, Climate Variability and Change, Global Water Cycle, Land-Use/Land-Cover Change, Global Carbon Cycle, Ecosystems, Human Contributions and Responses to Environmental Change, Decision Support, Modeling, Observations and Monitoring, International, and Data Management.

External Interactions for Guidance, Evaluation, and Feedback

The science community brings essential expertise to CCSP activities. CCSP recognizes the need to develop and utilize a variety of processes and mechanisms to provide an open and transparent process, program evaluation, and feedback. Scientific input will be sought from individuals from universities, federal research agencies, non-governmental organizations, and industry.

Relevant committees and boards of the National Academy of Sciences and the National Research Council (NRC) will continue to be asked to provide scientific guidance as appropriate. Since the establishment of USGCRP, NRC has provided a wealth of valued advice to USGCRP, leading to such documents as *Global Environmental Change: Research Pathways for the Next Decade* (NRC, 1999a), *Our Common Journey* (NRC, 1999c), *The Science of Regional and Global Change: Putting Knowledge to Work* (NRC, 2001e), and *Climate Change Science: An Analysis of Some Key Questions* (NRC, 2001a). Most recently, NRC has engaged in the review of the development of this strategic plan by participating in the CCSP Workshop in December 2002, and providing a review of the CCSP draft strategic plan. The NRC will provide an overall review of the CCSP Strategic Plan and its development process after the plan is published.

CCSP has considered the NRC recommendation that a permanent external advisory group be created to oversee CCSP performance. After careful review, CCSP believes that essential program oversight is better provided by the use of a number of external advisory mechanisms, including periodic overall program reviews by NRC or other groups, rather than a single body. Additional mechanisms to seek external scientific input—such as workshops, steering committees, ad hoc working groups, and review boards—will be employed as needed. CCSP will continue to consider creation of a permanent overall advisory group as program implementation proceeds.

The research community, in cooperation with users, will develop science plans for each research element of the program. These plans will describe in greater detail than is possible in this Strategic Plan the research that is required to address the questions in the research program elements. An example of a detailed science plan is the *U.S. Carbon Cycle Science Plan* (CCWG, 1999). This science plan was requested by several agencies participating in USGCRP and was developed by a Carbon and Climate Working Group that drew on the expertise of the U.S. carbon cycle science community through workshops. Scientific plans have been developed or are being developed for the other CCSP research program elements as well to guide research efforts.

Coordination on an ad hoc basis across advisory bodies of the participating agencies involved in CCSP and related programs, such as CCTP, will be encouraged by the CCSP's interagency governing body. This will help ensure that the respective advisory bodies of participating CCSP agencies are aware of the roles and responsibilities of each of the other agencies in the program. It will also enable the interagency governing body for CCSP to consult with an independent group of individuals who also serve as members of scientific advisory committees for the individual CCSP agencies.

Coordination and Management Support by an Interagency Office

The agencies participating in CCSP fund and supervise an interagency office—the Climate Change Science Program Office (CCSPO)—which fosters program development and coordination by supporting:

- Research coordination and integration
- Development, coordination, and integration of decision support resources
- Integration of agency activities in the areas of observing, monitoring, and data management
- Development and implementation of an interagency communications plan
- Secretariat support for the CCSP Director, the interagency governing body of CCSP, and related bodies.

Research Coordination and Integration. CCSPO staff will support interagency working groups responsible for coordinating major CCSP program elements. Specific responsibilities will include (1) helping to develop scientific strategies and implementation plans; (2) assisting in the coordination of element-specific planning and implementation; (3) assisting in supporting and managing interactions with scientific advisory groups; (4) assisting in development of program milestones/deliverables and approaches for monitoring progress toward objectives; and (5) providing general support including coordinating meetings, acting as a central point of contact, and responding to queries. In addition, CCSPO staff will take responsibility for helping to achieve better integration across the major research elements. Strides have been made in science coordination and integration in recent years in several areas of CCSP/USGCRP, including climate variability and change, the carbon cycle, and the water cycle.

Development, coordination, and integration of decision support resources. CCSPO staff will support the CCSP agencies/departments and interagency groups responsible for oversight and implementation of CCSP decision support activities. This will foster evaluation of differing approaches to decision support analyses. CCSP focuses on solutions that integrate climate change research results into decision support resources based on national and international priorities. CCSP coordinates agency activities employing peer-review solicitations to identify best-in-class decision support solutions. Interagency working groups benchmark the performance of decision support solutions associated with specific local, regional, national, and international areas of emphasis. CCSPO staff will also support interagency oversight and review processes, ensuring a feedback link between decision support and research planning.

Integration of agency activities in the areas of observing, monitoring, and data management. CCSPO will coordinate and facilitate the work of the interagency CCSP Observations and Monitoring and Data Management working groups. CCSPO staff for observing and monitoring and data management will work with the agencies to: (1) develop a strategy for the U.S. contributions to a global climate observation and monitoring system; (2) coordinate an interagency design of U.S. contributions to the global system; (3) coordinate and ensure interagency implementation of the system (i.e., moving from design to operations); and (4) help evaluate the development

and performance of the system in meeting the needs of the science and decision support communities.

Development and Implementation of an Interagency Communications Plan. CCSPO will facilitate program reporting and communications. CCSPO staff coordinate preparation of the annual *Our Changing Planet* report to Congress and other stakeholders, as well as other reports as requested. They are responsible for designing and maintaining the program's websites (including the USGCRP and CCSP websites, and the web presence of related programs in areas such as the carbon cycle). CCSPO will also take responsibility for maintaining an inventory of agency communications efforts, and working with agency CCSP representatives to develop an interagency communications plan.

CCSPO also supports the Working Group on International Research and Cooperation.

Secretariat Support for the CCSP Director, the Interagency Governing Body of CCSP, and Related Bodies. Activities include:

- Providing support to the CCSP Director and program staff
- Preparing and staffing the meetings of CCSP/SGCR, including timely distribution of needed materials, preparation of agenda, recording decisions, and supporting follow-up actions
- Supporting the annual production of *Our Changing Planet*
- Preparing and compiling budgets and supporting materials for the office and other activities supported through the distributed cost mechanism
- Establishing and maintaining office infrastructure (computer network and peripherals; databases; records of CCSP and CCSPO activity)
- Coordinating U.S. government review of Intergovernmental Panel on Climate Change and other assessment reports.

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