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America's Climate Choices: Panel on Advancing the Science of Climate Change



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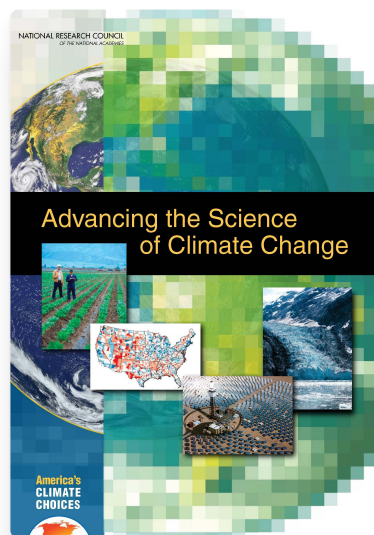
Advancing the Science of Climate Change shows that hypotheses about climate change are supported by multiple lines of evidence and have stood firm in the face of serious debate and careful evaluation of alternative explanations. The book calls for a single federal entity or program to coordinate a national, multidisciplinary research effort aimed at improving both understanding and responses to climate change. In addition, leaders of federal climate research should redouble efforts to deploy a comprehensive climate observing system, improve analytical tools, invest in human

capital, and improve linkages between research and decisions by forming partnerships with action-oriented programs.

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Featured publication



Consensus Study Report • 2010

Advancing the Science of Climate Change

Climate change is occurring, is caused largely by human activities, and poses significant risks for—and in many cases is already affecting—a broad range of human and natural systems. The compelling case for these conclusions is provided in...

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Description

In response to Public Law 110-161, the National Academies will conduct a series of coordinated activities to study the serious and sweeping issues associated with global climate change, including the science and technology challenges involved, and provide advice on the most effective steps and most promising strategies that can be taken to respond. This work will be led by a Committee on America's Climate Choices responsible for coordinating the work of four panels, convening a Summit, convening additional workshops or informal working groups to gather information and address cross-cutting issues, and writing a final report. Collectively, the activities will produce a broad, action-oriented, and authoritative set of analyses to inform and guide responses to climate change across the nation. To provide detailed analysis of important technical issues, focused panels will be convened to address each of the following four questions: 1. What can be done to limit the magnitude of future climate change? 2. What can be done to adapt to the impacts of climate change? 3. What can be done to better understand climate change and its interactions with human and ecological systems? 4. What can be done to inform effective decisions and actions related to climate change? The Panel on Advancing the Science of Climate Change will address question 3. The panel will first provide a concise overview of past, present, and future climate change, including its causes and its impacts, then recommend steps to advance our current understanding, including new observations, research programs, next-generation models, and

the physical and human assets needed to support these and other activities. The panel should consider both the natural climate system and the human activities responsible for driving climate change and altering the vulnerability of different regions, sectors, and populations as a single system; it should also consider the scientific advances needed to better understand the effectiveness of actions taken to limit the magnitude of future climate change, including "geo-engineering" approaches, and to adapt to the impacts of climate change. The panel should also provide input to the Committee on America's Climate Choices on the following integrating questions:

- What short-term actions can be taken to better understand climate change and its interactions with human and ecological systems?
- What promising long-term strategies, investments, and opportunities could be pursued to advance the science of climate change?
- What are the major scientific and technological advances (e.g., new observations, improved models, research priorities, etc.) needed to extend our understanding of climate change and its interactions with other systems?
- What are the major impediments (e.g., practical, institutional, economic, ethical, intergenerational, etc.) to advancing the science of climate change, and what can be done to overcome these impediments?

What can be done to advance the science of climate change at different levels (e.g., local, state, regional, national, and in collaboration with the international community) and in different sectors (e.g., nongovernmental organizations, the business community, the research and academic communities, individuals and households, etc.)? This project is sponsored by the National Oceanic and Atmospheric Administration (NOAA). The approximate start date is October 1, 2008. A final report will be issued at the end of the project.

Contributors

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