

# THE NATIONAL ACADEMIES

*Advisers to the Nation on Science, Engineering, and Medicine*

## AMERICA'S CLIMATE CHOICES

### PANEL ON ADAPTING TO THE IMPACTS OF CLIMATE CHANGE

#### Statement of Task

The Panel on Adapting to the Impacts of Climate Change will describe, analyze, and assess actions and strategies to reduce vulnerability, increase adaptive capacity, improve resiliency, and promote successful adaptation to climate change in different regions, sectors, systems, and populations. The panel will draw on existing reports and assessments and use case studies to identify lessons learned from past experiences, promising current approaches, and potential new directions. The issues and examples considered by the panel should be drawn from a variety of regions and sectors, focusing on domestic actions but also considering international dimensions, and should cover a range of temporal and spatial scales.

Ultimately, the goal of this panel is to answer the second question in the Statement of Task for the study (“What can be done to adapt to the impacts of climate change?”). This question will be expanded over the course of the study to include more specific sub-questions such as<sup>1</sup>:

- What strategies and options have proven effective at reducing vulnerability, increasing adaptive capacity, or improving resiliency to climate change in different sectors (e.g., water, energy, ecosystems, agriculture, health, etc.), regions, and populations?
- What are the benefits, costs, and risks associated with current actions to adapt to climate change, and what is the potential for enhancing their effectiveness and/or transferring them to other sectors, regions, or populations?
- How are vulnerabilities and adaptation capabilities expected to change in the future under different scenarios of population, economic, ecological, and technological change?
- What additional options, strategies, and opportunities might be available in the future to reduce vulnerability, increase adaptive capacity, or improve resilience to climate change?
- What are the likely economic and noneconomic consequences of different courses of adaptive action (e.g., inaction, “reactive” adaptation, “anticipatory” adaptation, and “adaptive management” strategies)? Which actions will be most difficult to implement?
- What interactions and synergies exist between actions to adapt to climate change and actions to limit future the magnitude of future climate change?
- What can be done to address adaptation issues that span multiple sectors and scales?

The panel will be challenged to produce a report that is broad and authoritative, yet concise and useful to decision makers. The costs, benefits, limitations, tradeoffs, and uncertainties associated with different options and strategies should be assessed qualitatively and, to the extent practicable, quantitatively, using the scenarios of future climate change and vulnerability developed in coordination with the Committee on America's Climate Choices and the other

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<sup>1</sup> These sub-questions are only examples of the types of questions to be addressed by the panel, to indicate the level of specificity intended. Some of these illustrative questions may be revised or dropped, and other questions may be added, at the discretion of the panel and the Committee on America's Climate Choices.

study panels. The panel should also provide policy-relevant (but not policy-prescriptive) input to the committee on the following overarching questions:

- What short-term actions can be taken to adapt effectively to climate change?
- What promising long-term strategies, investments, and opportunities could be pursued to adapt to climate change?
- What are the major scientific and technological advances (e.g., new observations, improved models, research priorities, etc.) needed to promote effective adaptation to climate change?
- What are the major impediments (e.g., practical, institutional, economic, ethical, intergenerational, etc.) to effective adaptation to climate change, and what can be done to overcome these impediments?
- What can be done to adapt to 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.)?

#### **Panel Membership:**

**Katharine L. Jacobs (Chair)**, Arizona Water Institute

**Thomas J. Wilbanks (Vice-Chair)**, Oak Ridge National Laboratory

**Bruce Baughman**, IEM, Inc.

**Roger N. Beachy**, Donald Danforth Plant Science Center

**Georges C. Benjamin**, American Public Health Association

**James L. Buizer**, Arizona State University

**F. Stuart (Terry) Chapin III**, University of Alaska

**W. Peter Cherry**, Science Applications International Corporation

**Braxton Davis**, South Carolina Department of Health and Environmental Control

**Jeremy Harris**, Sustainable Cities Institute

**Robert Kates**, Independent Scholar

**Howard Kunreuther**, University of Pennsylvania, Wharton School of Business

**Linda Mearns**, National Center for Atmospheric Research

**Philip Mote**, University of Washington

**Andrew Rosenberg**, University of New Hampshire

**Henry G. Schwartz, Jr.**, Jacobs Civil (retired)

**Joel B. Smith**, Stratus Consulting, Inc.

**Gary Yohe**, Wesleyan University

**Claudia Mengelt (Study Director)**, National Research Council