



SCIENCE POLICY

Scientists “Uniquely Positioned” to Assist Climate Policy-Makers

As governments around the world search for ways to address rising greenhouse gas emissions, researchers should be ready to offer expert advice to lawmakers seeking a broad view of global climate change and its potential consequences, according to a distinguished panel of science policy advisers at a recent Capitol Hill briefing.

The panel, convened by AAAS and three other scientific societies on 11 January, drew more than 150 congressional staffers, think tank representatives, university faculty, and journalists spilling out of the briefing room in the Rayburn House Office Building. In front of a crowd eager for answers, the speakers discussed how scientists can assist policy-makers in their analysis of climate change proposals awaiting congressional debate.

“Funding scientists and their research is going to help answer questions like how much are humans responsible for global warming and what are the potential effects on our lives,” said David Goldston, former staff director of the House Science Committee and a lecturer at Princeton University. “These are very important questions, and we need answers as we move forward.”

“Scientists are uniquely positioned to help the public understand the dangers and help lawmakers make informed decisions about addressing climate change,” agreed Michael Oppenheimer, the Albert G. Milbank Professor of Geosciences and International Affairs at Princeton University.

But Oppenheimer, Goldston, and the other panelists acknowledged the limits of scientific advice in crafting climate change policy, which will have to incorporate a wide set of political, economic, and social considerations beyond the scientific data, they said.

“Climate goals involve more than science, so in the end, policy-makers, not scientific institutions, should choose them,” Oppenheimer said, although he also noted that it “may even be part of the scientist’s professional obligation” to comment publicly on the implications of their research.

“Scientists do not hang up their citizenship when they enter a briefing room,” agreed Stephen Schneider, a senior climatologist and professor at Stanford University. He stressed



(Left to right) Michael Oppenheimer, Stephen Schneider, David Goldston, and Ralph Cicerone

the need for scientists to support their public arguments by “clearly identifying which opinions are personal values and which are based on professional judgments.”

Although nearly all researchers agree that the Earth is in the midst of a human-caused warming period, no scientist can definitely state how hot it will get or predict exactly how the Earth will respond, Schneider cautioned. He compared the Earth’s rate of warming to a carnival pinwheel—“the great greenhouse gamble,” he quipped—with different-sized sections representing different average global temperature increases.

The largest section on the pinwheel chart, created by researchers at the Massachusetts Institute of Technology, represents the most likely outcome (22.5% likelihood) of a 2 to 2.5°C increase in temperature. The smallest slice of the pinwheel (a 3.8% likelihood) predicts an increase of more than 5°C.

Oppenheimer said policy-makers will have to respond to the consequences of higher temperatures in four main areas: access to water and food; human health in extreme climate conditions; ecosystems and species; and sea-level rise from ice sheet melting.

The exact nature of these challenges remains uncertain, however, and several panel speakers urged the U.S. Congress to support sharp increases in climate science research funding to fill in the details. Goldston singled out researchers at NASA Earth Science programs—“the biggest people in Earth observation and monitoring”—as a group that deserved an immediate budget increase.

By measuring climate changes in fragile regions, developing more powerful computer

programs to improve climate predictions, and increasing satellite observation budgets, researchers can “accelerate scientific research to deliver more useful results,” said Ralph Cicerone, president of the National Academy of Sciences, who also suggested that the scientific community evaluate a diverse portfolio of carbon mitigation strategies.

“There are also some really big bioengineering ideas that are not quite developed, nor fully articulated or peer-reviewed, so they are far from ready for implementation,” Cicerone noted. “But we would be foolish not to look into them. The stakes are too high.”

The American Geophysical Union, the American Meteorological Society, and the Pew Center for Global Climate Change cosponsored the briefing with AAAS.

—Benjamin Somers and Becky Ham

SCIENCE AND SOCIETY

Neureiter Receives Public Welfare Medal

Norman P. Neureiter, director of the AAAS Center for Science, Technology and Security Policy, has been awarded the 2008 Public Welfare Medal by the U.S. National Academy of Sciences for his lifelong efforts to encourage international cooperation in science and technology.

Established in 1914, the medal honors “extraordinary use of science for public good.” The Academy commended Neureiter’s work as the first science and technology adviser to the U.S. Secretary of State, at the White House’s Office of Science and Technology Policy, and in the Foreign Service.

Neureiter is “elated” by the Academy’s decision to recognize the importance of science and technology cooperation as a positive instrument of a constructive U.S. foreign policy.

“This kind of engagement can be one of the nation’s most effective ‘soft power’ strategies for both addressing problems of global concern—such as food, energy, and climate change—and for building bridges of understanding to other countries,” he said. “It is the ultimate win-win strategy.”

Neureiter is the second current AAAS senior manager to receive the Public Welfare Medal: Shirley Malcom, director of Education and Human Resources at AAAS, was honored in 2003 for her lifelong efforts to make science available to those normally underrepresented in science careers.