



Voices of Federal Climate Scientists: Global Warming Solutions Depend on Unimpeded Science

Climate scientists in the U.S. government are leading experts on global climate change. They are entrusted to observe, analyze, and model our changing planet and convey their findings to other scientists, policy makers, and the public. Unfortunately, these scientists report that their findings are being tailored to reflect political goals rather than scientific fact. They are concerned that, while federal climate scientists are providing a solid basis for understanding climate change and crafting solutions, our government has been obscuring the state of our knowledge by exaggerating the level of uncertainty in global warming science.

In summer 2006, the Union of Concerned Scientists distributed surveys to more than 1,600 climate scientists working at seven federal agencies and the independent National Center for Atmospheric Research (NCAR), asking for infor-

mation about the state of climate research. Scientists' responses indicated a high regard for the quality and integrity of federal climate research itself, but also identified broad and substantial interference in their work.

The reality of global warming, including the role of heat-trapping gases from human activities in driving climate change, has been repeatedly affirmed by scientific experts. Every day that we choose to ignore climate science is a day we fail to protect future generations from the consequences of global warming. It is crucial that climate scientists be allowed to accurately inform government decision making. For this to occur, the federal government must pursue reforms that prohibit political interference with and misrepresentation of federal climate science research, and affirm the right of scientists to communicate freely with the media and the public.





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Political Interference with Climate Science

Large numbers of federal climate scientists reported various types of interference, both subtle and explicit:

- 73 percent of all respondents* perceived inappropriate interference with climate science research in the past five years.
- 58 percent personally experienced interference with climate science research in the past five years. This number increased to 78 percent among scientists whose work always or frequently touches upon sensitive or controversial topics. In contrast, only 22 percent of NCAR scientists personally experienced interference with climate science research.
- Nearly half (46 percent) perceived or personally experienced pressure to eliminate the words “climate change,” “global warming,” or other similar terms from a variety of communications. This number increased to nearly three in five (58 percent) among respondents from the National Oceanic and Atmospheric Administration (NOAA).
- 46 percent perceived or personally experienced new or unusual administrative requirements that impair climate related work.

Scientific Findings Misrepresented

Federal climate scientists reported that their research findings have been changed by non-scientists in ways that compromise accuracy:

- More than two in five respondents (43 percent) perceived or personally experienced changes or edits to documents during review processes that changed the meaning of scientific findings.

- 25 percent perceived or personally experienced situations in which scientists have actively objected to, resigned from, or removed themselves from a project because of pressure to change scientific findings.
- 37 percent perceived or personally experienced instances in which their agency misrepresented scientists’ findings.

Barriers to Communication

Agency scientists are not free to communicate their research findings to the media or the public:

- 52 percent of respondents said their agency’s public affairs officials always or frequently monitor scientists’ communications with the media. In contrast, only seven percent of NCAR respondents reported that same level of monitoring.
- Nearly two in five (39 percent) have perceived or personally experienced “fear of retaliation for openly expressing concerns about climate change outside their agency.”
- A majority of respondents (61 percent) from the National Aeronautics and Space Administration (NASA) agreed with the statement, “Recent changes to policies pertaining to scientific openness at my agency have improved the environment for climate research,” in sharp contrast to the 12 percent of non-NASA respondents who agreed with the statement. The high percentage among NASA respondents is most likely the result of a recent policy implemented at the agency that affirmed that the role of public affairs officers was not “to alter, filter or adjust engineering or scientific material produced by NASA’s technical staff.”

* Unless otherwise stated, the numbers cited in this report reflect only the responses of federal climate scientists to each question, and do not include the responses from NCAR scientists (who are not federal employees).



"Policy should be based on sound science; results of science should not be diluted or adjusted to justify policy. This particular Administration has gone beyond reasonable boundaries, on this issue. To be in denial on climate change is a crime against the Nation."

A scientist from the U.S. Department of Agriculture

"I believe the line has been crossed between science informing public policy and policy manipulating the science (and trying to influence its outcome). I have personally experienced this manipulation in the area of communicating the science many times."

A scientist from the U.S. Environmental Protection Agency

- 38 percent perceived or personally experienced "disappearance or unusual delay of websites, reports, or other science-based materials relating to climate."

Climate Scientists are Disheartened

While a large majority of respondents (88 percent) agreed with the statement, "U.S. federal government climate research is of generally excellent quality," respondents reported decreasing job satisfaction and a worsening environment for climate science in federal agencies:

- Two-thirds of respondents said that today's environment for federal government climate research is worse compared with five years ago (67 percent) and ten years ago (64 percent). Among scientists at NASA, these numbers were nearly four in five (79 percent and 77 percent, respectively).
- 45 percent said that their personal job satisfaction has decreased over the past few years. At NASA, three in five (61 percent) reported decreased job satisfaction.
- More than a third from NASA, and more than one in five (22 percent) of all respondents, reported that morale in their office was "poor" or "extremely poor." Among NCAR respondents, only seven percent reported such low levels of morale.
- Insufficient resources are a source of concern. More than half (53 percent) disagreed with the statement, "The U.S. government has done a good job funding climate research."

"Whether climate changes are harsh over the next 3-20 years or hundreds of years, we should be addressing the issues that impact basic societal needs. Hurricane Katrina is an excellent illustration of how costly the current policy of 'benign neglect' can be."

A scientist from the U.S. Department of Defense

"Scientists should be free to communicate with the media, rather than having media contacts filtered by 'Public Affairs' officers. This should be official policy, not a 'wink and nod' policy."

A scientist from the National Oceanic and Atmospheric Administration

"The main issue, as we often discuss, is that climate is not the primary mission of any agency, and is done piecemeal as resources permit, by a large collection of US agencies."

"[The integrity of US federal government climate science could best be improved by] Remembering that the civil service scientists and engineers can and should be an unbiased reservoir of insights into different questions with impacts across international economic and cultural dividing lines. Politicizing and degrading the integrity for which we are internationally known and respected is a disservice to our country and a danger to the world. If we can't be trusted to give insights on global change and funded to do so, who in the world will do it?"

Scientists from the National Aeronautics and Space Administration

Survey Demographics

Surveys were sent to 1,630 scientists at the National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, U.S. Department of Energy, U.S. Department of Defense, U.S. Geological Survey, U.S. Department of Agriculture, and the independent (non-federal) National Center for Atmospheric Research (NCAR).

Responses came from 279 federal scientists and 29 NCAR scientists. One hundred forty-four scientists provided narrative responses. The response rate (19 percent) was fairly consistent across agencies. Eighty percent of the scientists who responded had earned a Ph.D. and 40 percent had completed some post-doctoral research work. A significant number of respondents (44 percent) had been with their agency for more than 15 years, and more than half had been there for more than 10 years.

About the Survey

This survey is one in a series of surveys designed to explore the level of political interference in science at federal agencies. View full survey results, more detailed survey methodology, and excerpts from the survey essays at www.ucsusa.org/surveys.

Other Recent Reports on Climate Science

U.S. Government Accountability Office (GAO). In preparation. *Review of Dissemination of Scientific Research at Selected Agencies*. Washington, DC.

Donaghy, T.Q., J.B. Freeman, F.T. Grifo, K. Kaufman, T. Maassarani, and L. Shultz. 2007. *Atmosphere of Pressure*. Cambridge, MA: Union of Concerned Scientists.

To read additional reports and congressional inquiries regarding the subject of openness in federal climate change research, visit the UCS website at www.ucsusa.org/surveys.

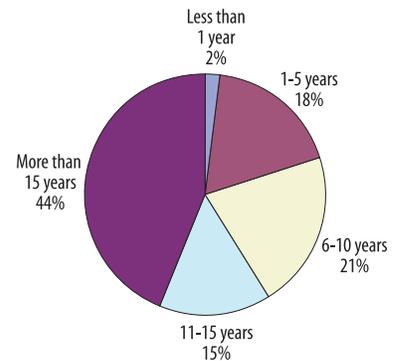
About the Union of Concerned Scientists

The Union of Concerned Scientists (UCS) is the leading science-based nonprofit working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and secure responsible changes in government policy, corporate practices, and consumer choices.

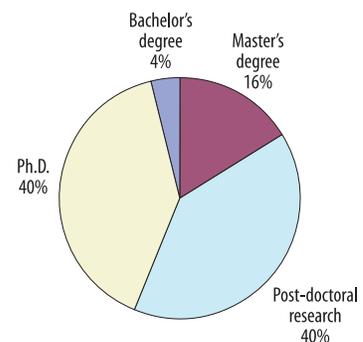
About the UCS Scientific Integrity Program

Policy makers depend on the results of independent research in order to make the informed decisions that keep us and our environment safe and healthy. The UCS Scientific Integrity Program mobilizes scientists and citizens alike to defend science from political interference and restore scientific integrity in federal policy making. To learn more, visit www.ucsusa.org/scientific_integrity.

Respondents' Length of Service at Current Agency



Respondents' Highest Level of Education



Areas of Respondents' Climate Research

