

Chapter 21. Congress to the Rescue?

Testimony to Congress is the pinnacle for communication with lawmakers and the public on important matters and on actions that may be required to address those matters.

Washington in the 1980s was more than the nation's capital. It was the world's capital. The power of the almighty dollar made Washington the one capital city that could set the world on a different energy course, if Washington had the will to do so.

Congressional hearings have the potential to create an essential aura. Lawmakers, like Supreme Court Justices, sit on a raised dais behind an impressive oaken podium, usually curved outward. Expert witnesses sit nervously at a bare table, trapped between the elevated lawmakers and the gallery behind. With a full gallery, television cameras, and congressional aides scurrying behind the Congress people, this is a setting that can hold public attention.

When I received the invitation to testify to Congress, it revived my hope of funding for our carbon dioxide and climate research program. It was well known that the Department of Energy was trying to phase down research on a topic they wanted to go away. Congress appropriated \$17M for their CO₂ research program, but DoE responded that they only wanted \$8M.

The Committee on Science and Technology of the U.S. House of Representatives scheduled a hearing 'Carbon Dioxide and Climate: The Greenhouse Effect' for March 25, 1982. The hearing was co-chaired by Congressmen Jim Scheuer of New York and Albert Gore of Tennessee. Scheuer was Chair of the Subcommittee on Natural Resources, Agriculture Research and Environment, and Gore was Chair of the Subcommittee on Investigations and Oversight.

A hearing does not guarantee any attention from the media or the public. This hearing was the second hearing held by Gore and Scheuer. Their prior hearing, in 1981, featured Roger Revelle. As a professor at Harvard in the 1960s, Revelle had introduced undergraduate student Al Gore to the CO₂ greenhouse problem. His academic presentation had spurred Gore's interest, but such a presentation did not ignite the public. The evening television news and the newspapers ignored that first hearing.

The press release for the second hearing featured Melvin Calvin, a Nobel Prize winner in chemistry for work on photosynthesis. George Kukla of Lamont and I were the other two witnesses. Finally there would be a panel, consisting of Fred Koomanoff, who headed the CO₂ and climate research program at DoE, and his supervisor, James Kane.

Gore and Scheuer stated in their press release: "In light of the ever increasing amount of evidence (for human-caused greenhouse effect), we believe it is obvious that federal research into this phenomenon should be stepped up. It frankly baffles us how the Reagan Administration can cut the budget of a research effort with such enormous consequences."

Gore opened the hearing by noting a recent editorial of the Washington Post that stated "it is not just the 'sandals and granola' crowd who support the need for accelerated research into the problems associated with the greenhouse effect." He also noted that DoE's Research Advisory Board concluded that their research into carbon dioxide should be given top priority and more funding, and that DoE had made a commitment to the House subcommittees to do that at the Gore and Scheuer hearing in 1981.

The larger part of the hearing was devoted to Calvin's proposition that fossil fuels could be replaced by liquid fuels produced by synthetic photosynthesis. He seemed to be persuasive, as Al Gore stated at the end of Calvin's very long testimony: "I personally strongly favor your suggestion that we have a massive increase in biomass programs and adopt the synthetic photosynthesis that you are recommending for this country."

As the next witness, I showed results from our 1981 *Science* paper, still reasonably fresh, and two newer papers. The first of these,¹ by Andy Lacis and co-authors, showed that the increase of non-CO₂ trace gases in 1970-80 added almost as much greenhouse effect as CO₂. This was observational proof of what Yuk Ling Yung had argued in 1975.

The second paper,² by Vivian Gornitz and co-authors, used data from tide-gauge stations around global coastlines to show that sea level had risen about 10 centimeters (4 inches) already in the 20th century, a much faster rate than in recent millennia.

The objective of the hearing was to consider the research needed to understand the effect of CO₂ on climate and whether it was adequately funded, so I concluded my presentation with recommendations for the highest priority research tasks:

- 1) monitor solar irradiance, to see if its variations were a significant factor in climate change,
- 2) monitor non-CO₂ trace gases, which, unlike CO₂, were poorly measured,
- 3) extract a global cloud climatology from satellite images, as cloud changes were likely a major climate feedback,
- 4) measure ocean heat storage and transport, and
- 5) monitor ice sheet changes.

I expected them to ask about funding. After all, the purpose of the hearing was to consider whether DoE was adequately funding carbon dioxide and climate research. There was no such question. There were questions about the science, but time was limited, because of the large amount of time that was spent in banter with Calvin. It seemed that the opinions of a Nobel Laureate were much appreciated, even in topics where he had no expertise.

Fred Koomanoff was a principal witness. He needed to explain why DoE was decimating its CO₂ research funding. Koomanoff listed what was known about the CO₂ climate matter: CO₂ was increasing rapidly and this was due mainly to human activities. Then he listed what was unknown: the timing, magnitude and regionality of climate change, future use of fossil fuels, the level of CO₂ that is acceptable, possible climate mitigation strategies, the costs and benefits of higher CO₂ concentrations.

In other words, Koomanoff seemed to be a witness against himself. He admitted that CO₂ climate effects might be important, but he claimed that we lacked good understanding of those effects. So why was DoE slashing the research budget?

In the end, Gore was successful. He prevented DoE from phasing down its research budget. However, the lawmakers had no way to assure that DoE spent the money effectively.

When the hearing ended, I stayed sitting for several moments, deflated. Then I decided to go speak with Jim Jensen, the congressional staffer working for Gore who had helped arrange the

hearing. I told him that I thought Komanoff was a hatchet man, that he refused to fund us, not because our research was bad, but because it was good.

Jensen had a suggestion. We should resubmit our proposal that DoE rejected, but not directly. Gore's subcommittee would submit the proposal for us, so that they could verify that it was treated fairly. I did not respond immediately.

On the way home, I decided against Jensen's suggestion. If DoE did not want to fund us, it would be a continual battle, and I had so many other things on my plate. Even if they could force DoE to fund us, we would be beholden to the Subcommittee and to Gore.

Why should I spend time fighting with an agency determined not to fund us? There was another agency, EPA, eager to help, albeit an agency that only provided funds at six-month intervals.

I decided to go with EPA. That was a mistake. John Hoffman of EPA, our source of funding, was intent on making a public splash about the climate threat. As soon as he did, the Reagan Administration cracked down on him, and his budget was reduced. John needed most of his remaining funds for his own team.

Our funding woes soon became secondary. We had bigger problems.



Fig. 22.1. Jeannie and Kiki marching on Columbia campus.

Chapter 22. Sleeping With Two Elephants

Dr. Jastrow was right. Columbia University in New York City was a great place for a NASA research laboratory. It was all the more true when we began to focus on climate, because of Columbia's premier research organization: the Lamont Geological Observatory. Lamont is located in Palisades, New York, near the New Jersey-New York border about 25 miles north of New York City on a beautiful property overlooking the Hudson River.

Our location, on Manhattan's Westside, in a Columbia University building near the center of the Columbia campus, was perfect. We could cooperate with Lamont and Goddard, but we were a sufficient distance from both to maintain our intellectual independence.

Not that it would be easy. We were a little teddy bear in bed with two elephants. No matter how friendly they were, if one rolled over – could we survive?

I received a memo from Les Meredith, Director of Earth Sciences at Goddard Space Flight Center. I should begin preparations to move GISS from New York to Greenbelt.

I burned for a moment. I recalled how assiduously I had worked for Meredith, on weekends writing sections of the "Green Book," the NASA climate plan. The reward was that I could exterminate GISS and move the people to Greenbelt? I was not going, that I knew.

I called the civil servants in our research group to my office and showed them the memo. There were about five of us in the meeting. It may have included Inez Fung, although she was not yet a civil servant. We agreed that we were not moving. We would not explicitly raise the threat of getting New York politicians involved; better to hold that option in reserve. One person began to raise the topic of realistic choices, if Goddard stuck to its guns, but I ended the meeting.

"Les, all you will get is the furniture." We were not moving. We could find other jobs. It was not angry, defiant insubordination. It was a frank statement. I said that I had the backing of the key people at GISS. Surprisingly, Meredith's reaction was reserved. I soon found out why.

Noel Hinners had replaced Tom Young as Goddard Director. Hinners requested that I come to Goddard for a meeting. It was just Hinners and me. Meredith would have been included under bureaucratic chain-of-command rules. Perhaps Hinners recognized that, although GISS was in the Earth Sciences Directorate, we were a distinct organization, because of our location.

Hinners asked to see Meredith's memo. His comment, that it was "not appropriate" for Les to send such a memo without his (Hinners) knowledge, amounted to a rebuke of Meredith's action.

Unfortunately, Dr. Hinners said that he also preferred that we move to Greenbelt. If we insisted on staying in New York, he would not try to force us to move, but then we should expect limited resources. We would be wise to move to Greenbelt, if we wanted to be well supported.

Les Meredith did not allow us to hire civil service scientists. That was our biggest problem. The hiring gap would reach almost five years, until Meredith was replaced by Frank Martin, when NASA reorganized Space and Earth Sciences under a single command.

Noel Hinners was fair and supportive, but, consistent with his warning, resources were limited. He allowed us to use the money allocated for maintenance of the IBM 360-95 to purchase a used Amdahl computer instead. The Amdahl was a bit slower than the 360/95, but it was more reliable, took less floor space, and had a much cheaper maintenance contract.

The other elephant, besides Goddard, was Columbia. The University was a great asset.

Columbia provided us prime real estate, the building on Broadway. NASA had to pay rent, but Columbia could well have made other use of the space.

Columbia was an attraction that made our institute more appealing for staff members, post-docs, students, and employees. We had good working relations with several Columbia departments, including Physics and Astronomy, Applied Physics and Mathematics, and Geography until Columbia eliminated the latter department. Our most extensive partnership was with Geology, which later changed its name to the Department of Earth and Environmental Sciences.

We funded cooperative agreements with these departments, with the principal purpose being to cover the costs of students and research associates who worked with GISS scientists. The largest cooperative agreement, with Geology, was established before I became involved. It was an agreement between Jastrow and Wally Broecker, the power that be in Geology. NASA paid for two or three Research Associates, who worked mainly at GISS, and three of Broecker's students, who worked at Lamont.

Wally was more than a world-leading scientist in climate and oceanography. He was the heart and soul of Lamont. He worried about Lamont as much as about climate and the ocean. Once he concluded that a Lamont Director was not doing a good job, he went on the warpath. Moving the bureaucracy of a large university is a herculean task, but once Wally was confident that he had widespread support at Lamont, he would land his haymaker. He got a job offer elsewhere.

The Columbia administration caved in, for good reason. No chance to find another Broecker. Easier to find another Director. After a new Director arrived, a Lamont staffer pulled up the 'Director' sign meant to reserve a prime parking space and replanted it in front of Wally's building. The Director got it restored, but it happened again. Wally enjoyed the shenanigans.

Once, when I was in Wally's office, he chortled about the latest incident. Someone from the machine shop had welded the Director sign onto Wally's building. I'm not sure how the Director resolved that. Must have been embarrassing.

"Throw the money over the transom, Buster!" Those were Wally's exact words to me, after I became GISS Director, to make sure that I understood the deal. When Halem and his big pot of money left GISS, Jastrow continued his bargain with Wally by taking money from the \$500K grant that NASA Headquarters agreed to provide for global climate modeling.

I thought that I had a brilliant solution. I included the cost of Broecker's students in the \$230K per year CO₂ proposal, with Wally as a co-investigator. That worked for a while, until NASA zeroed out our CO₂ funding on the grounds that DoE was assigned the national CO₂ program.

I decided to collect funds to pay this "Broecker tax" from all GISS Earth Science programs, rather than only from my climate modeling program. In part, my rationale was that the Broecker tax was a cost we paid for the privilege of being located at Columbia University. Mostly, I wanted a decision on the level of Broecker's support to be reached jointly with the GISS staff.

These were tough times, but we produced some good climate papers. These included the new results that I reported at the Gore and Scheuer hearing: the paper by Andy Lacis and others on non-CO₂ trace gases and the paper by Vivian Gornitz and others on observed sea level rise.

Meanwhile, on the home front, Kiki was graduating from Tompkins Hall nursery school. The neighborhood public school was not good. Erik was attending the Cathedral School of Saint John the Divine, but we could not afford two private school tuitions.

The Kims, our good friends in the coop apartments, whose daughter Jeannie was Kiki's age, were moving to Ridgewood, New Jersey, which had excellent schools. Mr. Kim was persuasive. Ridgewood was less than half an hour from my office at times of no traffic.

Anniek's hard work on our apartment paid off. We could sell it for the price of a house in Ridgewood, and we did. We would move in July 1982, but first, a week before the move, there was a great opportunity: a workshop at Woods Hole, Massachusetts.

We reserved a cottage at nearby Sandpiper Cottages for the week of the Woods Hole meeting. Anniek, Erik, Kiki and I drove up the weekend before. There were bunnies in the yard of our cottage. They ran behind the bushes when Erik and I played catch. I put down a newspaper for home plate and Erik practiced pitching. He was almost nine years old. It was time to start preparing for Little League.

Monday morning, as I set off from Sandpiper, headed for the National Academy of Sciences house on the Woods Hole harbor, all seemed bright and right in the world. NASA was considering the possible launch of a major research program on global change, change on planet Earth! This could be the answer to our prayers. My decision to resign from the Venus and Jupiter experiments might work out after all.

Climate change must be central in the NASA program. The summer of 1982 was one year after we published our CO₂ paper in *Science*. During 1981 and 1982 Congress had begun to hear testimonies about the importance of climate change. Climate was coming to the fore. Surely there would be increased support for research on climate change. For sure it would work out.

Some of the same people who brilliantly led definition of the Pioneer Venus mission and NASA's program in ozone research seemed to be in leadership positions for a new initiative. It all seemed too good to be true. What could possibly go wrong?

¹ Lacis, A., J. Hansen, P. Lee, T. Mitchell and S. Lebedeff, [Greenhouse effect of trace gases, 1970-1980](#), *Geophys. Res. Lett.* **8**, 1035-1038, 1981.

² Gornitz, V., S. Lebedeff and J. Hansen, [Global sea level trend in the past century](#), *Science* **215**, 1611-1614, 1982.