Congressman hits NSF shortfalls study

Continued from page 1 its own political agenda. In a statement, Wolpe expressed his belief that the NSF wanted to boost its education budget.

Erich Bloch was the director during most of the period the forecast was circulated. He was not called to the hearing of the House subcommittee on Investigations and Oversight. But a poster board was set up in clear sight of attendees with quotes from Block telling Congress about “shortages” of people—even though his employee, House, maintained that his report was not a labor-market analysis but simply a prediction that the number of engineering degrees would drop in the next decade.

The hearing uncovered evidence that the NSF itself was split over House’s paper. Repeatedly, conflicts arose within and outside NSF over how House arrived at his forecast. At one point, NSF’s own people refused to publish the paper as an official document. The 1986 paper went through 10 revisions and permutations in the next five years in an seemingly futile attempt to prop up its findings.

Most important to Wolpe, however, was the fact that Congress based legislation, in part, on the forecast. The 1980 Immigration Reform Act, the Excellence in Mathematics, Science and Engineering Act of 1990, and the NASA authorization bill all cited “shortages” as a reason for federal action.

“The credibility of the Foundation is seriously damaged when it is so careless about its own work product,” said Wolpe.

Methodology

The subcommittee called 10 witnesses during the 8-hour hearing. Besides House, two were from NSF: the new director, Walter E. Massey, and Kenneth Brown, director of the NSF’s Science and Education Studies Division. The division clashed frequently with House’s Policy Research and Analysis (PRA) division over the forecast’s methodology.

That methodology was the focus of questioning of the first seven witnesses, an assortment of statistical experts from other governmental agencies, academe and from the Engineering Manpower Commission of the American Association of Engineering Societies, an umbrella group that IEEE belongs to.

The basic message from those witnesses was that the paper’s methodology was flawed. Its emphasis on supply did not take into account job-market demand. It extrapolated data on the basis of the peak year of engineering graduates. And it did not undergo vigorous peer review.

Facing Wolpe, the persistent chairman of the I&O committee, the gruff, visibly nervous Peter House defended his work. He said he never meant to have the paper those who felt there should be more degrees in NS&Es.

Wolpe then pressed the bowled analyst about how his study was used. Wolpe noted that House’s boss, Erich Bloch, talked about a “cumulative shortfall” in engineers and scientists in arguing for higher NSF funds in 1986-87. “He frequently mentioned your numbers. Did you ever remind Bloch you were addressing only one point? Did you ever go to him?”

“Do.” Then, in an unintentionally funny moment, House added, “I didn’t pay attention to Erich’s speeches.”

House repeated his assertion that “my input was one of many.” He later added that if Bloch received other numbers from elsewhere, “it was within his purview to translate them into a shortfall.” But, House added, “he could not make that kind of statement from my numbers.”

The hearing revealed that while one division of NSF was warning of shortfalls, another dismissed that contention. Wolpe presented a statement from Joel L. Barries, a former study director for the utilization studies group of the Science Resources Studies Division of NSF. In it, he said, “In 1989, I supervised the preparation of a report which had a new section on projections based on the SRS model.”

The SRS concluded that the labor market “would adjust to any spot shortages in personnel.” Barries said the model prepared by its sister division at NSF, House’s PRA unit, belied them. “Even the SRS staff . . . could not always follow the reasoning and methodology.”

The PRA model tracks engineering degrees. The SRS forecast model “breaks out supply into four components: new degree holders, re-entrants, immigrants and upgrades,” Barries pointed out. Witnesses at the hearing confirmed that any study of labor-market shortages must take those factors into consideration and look into demand and market forces.

The SRS attempted to publish its findings. But the report was held up for a year. The SRS director met with House to find out why. “At that meeting,” Barries said, “Dr. House said the problem was that the report did not support the director’s position that there would be serious personnel shortages in the 1990s.”

At the hearing, House said, “I can’t say if I said that. Asked by Wolpe whether the "pipeline study" had an impact, House replied, "I can’t say." Wolpe cited the numerous occasions in which it was quoted, and asked incredulously, "And you’re not sure what impact it had on policy?" "I just don’t know!"

House conceded that by mid-1989, the NSF itself backed away from the shortage conclusions. In 1991, the word "shortages" was removed from the title, as was the prediction there would be a shortfall of 762,000 engineers and scientists.

The Michigan congressman, who was the only representative on the panel (except staff) for most of the hearing, conceded that when Democrats and Republicans present data, people recognized the potential of a built-in bias.

"No one expects the NSF to play that game," said Wolpe. "This was not good science." Bloch has since retired as director of NSF.

NSF study under fire on the Hill

By ROBERT ELLINGER

Washington — A congressional hearing last week focused on shortfalls predicted nearly a decade ago by the National Science Foundation and a pivotal report on the natural sciences and engineering. The warning that the situation was "cumulative" and that the shortfall would continue was "the equivalent of saying, 'in a free market, you have a shortfall of 400,000 to 600,000 scientists by the year 2000.'"

The National Science Foundation said it has projected a shortfall of 400,000 to 600,000 scientists by the year 2000. The report, based on projections, was cited by the House Subcommittee on Science, Technology and Space and the Senate Committee on Commerce, Science and Technology.

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