

Congress: Was the "Shortfall" Phoney?

During the 1980s, Erich Bloch, director of the National Science Foundation (NSF), raised an alarm about an imminent national crisis. Within a decade or two, he said, the country would begin to discover it was not producing enough scientists and engineers to carry on the business of a great economic power. Sometimes Bloch spoke of a "shortfall," sometimes of an unsatisfied "demand" or a "shortage." But the message was always the same: that the United States needed more scientists and engineers—immediately. This troubling news was based on a statistical study carried out by Bloch's policy office at NSF.

Now comes a critical investigation by Representative Howard Wolpe (D-MI) suggesting that this alarmist message was one-sided and possibly a deliberate exaggeration. As a consequence, Wolpe and other critics say, NSF has put its credibility at risk.

This allegation has been made before, but Wolpe's House science investigations and oversight subcommittee has dug up new evidence supporting the view that, for political reasons, NSF may have run roughshod over good technical judgment in the 1980s. Subcommittee staffers say that Bloch and his top policy officer, Peter House, must have known they were on shaky ground making predictions about a "shortage" or "shortfall"—because they were told by the agency's own social science staff that the facts didn't back up those claims.

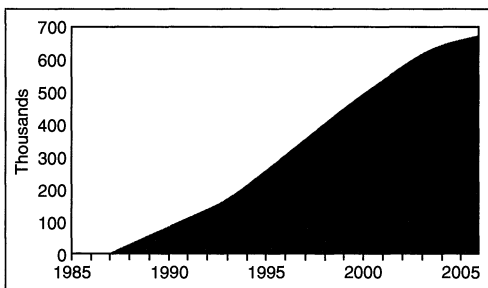
Evidence released by Wolpe as *Science* went to press indicates that as early as 1988, experts within the NSF's Science Resources Studies (SRS) division—which is responsible for watching R&D trends—began challenging the predictions of a shortfall. These internal doubts rose to a crescendo in the spring of 1989 when several members of the SRS staff wrote detailed memos pointing out flaws in the NSF forecast. Specifically, these memos fault policy makers for their "dubious research methods," "unsupported statements of fact," and a pattern of "data aggregation" that obscured details that didn't fit the theory.

One author of these critical comments, former SRS analyst Joel Barries, now says his words of caution were ignored. House even attacked critics like Barries for subjecting his forecast to a "sloppy critical review" and causing him to waste "a couple of person-months" on "unnecessary research and analysis," according to a July 1989 memo released by Wolpe's subcommittee.

After House's salvo, this war between the professionals and the policy makers went further, according to Barries. In a signed statement submitted to Congress on 6 April, he says the policy shop "began to force changes in *Science & Engineering Indicators*," the official report on R&D trends produced by SRS.

Barries writes: "It was my view then, and remains now, that Dr. House ignored and tried to suppress all critiques of his work." The attempt to stifle independent views was successful, according to Barries, until 1990.

House did not respond to telephone messages, but NSF spokesman Ray Bye said House would reserve comment until after he had



Alarm line. NSF's projected shortfall of engineers.

examined Barries' statement.

This disagreement became public in the fall of 1990 when Alan Fechter described the problems with NSF's forecast in an article for *The Bridge*, published by the National Academy of Engineering. Fechter, executive director of the Office of Scientific and Engineering Personnel at the National Research Council, pointed out that the NSF had not taken account of possible changes in demand for technical workers, among many other

neglected variables. Fechter thinks the NSF should have done more to call attention to the very special assumptions that underlay its forecast, for they differed from those used by most economists.

Even harsher in his criticism of NSF is Richard Ellis, director of manpower studies for the American Association of Engineering Societies. Ellis regards the NSF forecasts of the 1980s as "the crassest kind of politically driven sophistry"—designed strictly to promote the NSF's campaign for increased R&D funding. Professional economic analysts do not make long-term predictions of the kind the NSF produced, Ellis claims. "I view that NSF work with contempt," he adds. "It wouldn't pass muster as a serious high school theme exercise."

Asked about such criticism earlier this year, Bloch replied that the manpower studies of the 1980s "didn't pretend to forecast what our demand [for engineers] was going to be." He argues that they merely looked at demographic trends and potential supply. Today, Bloch is as certain as ever that the United States will need more engineers. He says: "I claim that there is a relationship" between the high per capita population of engineers in Japan (twice the U.S. number) and "their success in the world marketplace." With his penchant for carrying arguments to their logical extreme, Bloch adds that if the country wants to give up being an economic power altogether, "you don't need any engineers or scientists...you don't need anybody."

—Eliot Marshall

SCIENCE POLICY

Senate Backs Fetal Research—and More

The Senate last week handed supporters of fetal tissue transplantation research a stunning victory. By a vote of 87 to 10—far greater than the margin needed to beat back a promised presidential veto—the Senate approved legislation that would overturn the Bush Administration's ban on federal funding for research on transplantation of fetal tissue from induced abortion.

The language overturning the ban is part of a bill that authorizes a variety of new programs at the National Institutes of Health. The House of Representatives passed a version of the authorization bill—with the same language on fetal tissue—last year, but not by a veto-proof margin. A House-Senate conference will now iron out the differences in the two versions, and by early May the bill should go to George Bush, who has said that, despite the Senate vote, he will veto it.

In addition to overturning the fetal tissue ban, the bill has several other provisions that should please researchers:

- **Sex surveys.** In the past 2 years, Secretary

of Health and Human Services Louis Sullivan has torpedoed two sex surveys that had been approved by NIH. The bill would explicitly allow such surveys if they were approved by a peer review panel—as both previously canceled surveys were—and were designed to reduce the incidence of sexually transmitted disease or improve health. (The bill would still permit Sullivan to disapprove a particular survey on ethical grounds, but to do so he must convene an ethics advisory panel and that panel must confirm his ethical judgment.) The bill does not, however, reverse the Administration's veto of the two previously proposed surveys—the Survey of Health and AIDS Risk Prevention and the American Teenage Study of adolescent sexual behavior. Senator Jesse Helms (R-NC) saw to that by introducing an amendment that would explicitly prohibit funding those two studies.

At one point the floor debate on Helms' amendment got ugly. Helms tried to get Senator Edward Kennedy (D-MA), one of the bill's sponsors, to read some questions from

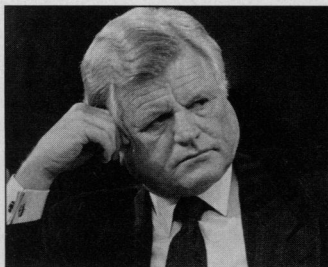
the proposed survey out loud in front of the Senate. Kennedy refused. "The Senator does not want to read the questions because they are so rotten he would lose his case on the spot," said Helms. "Now these questions may be all right for a nightclub in Miami or Palm Beach at 2 o'clock in the morning on Saturday night, but they are not fit for young children to be asked in their own homes," he concluded. The amendment passed 51 to 46.

• **Reproduction research.**

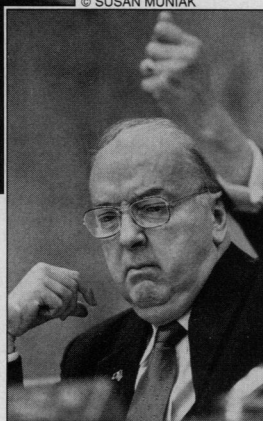
The new legislation would establish three centers for contraception research and two for infertility research around the country. Such centers have been a low priority for the Bush Administration.

• **Personnel system changes.** Language introduced by Senator Barbara Mikulski (D-MD) would allow NIH to set up its own personnel system separate from the rest of the federal government's. NIH has complained that federal hiring rules have made it hard to hire top scientists. The bill would also authorize NIH scientists to take sabbaticals at state uni-

versities. It also expands a newly created job category called the Senior Biomedical Research Service (SBRS) that provides salaries in excess of \$100,000 per year. SBRS



Kennedy and Helms (right)



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was designed to attract senior researchers to the Public Health Service, including NIH. Currently there are 350 positions permitted in SBRS. The bill would expand that number to 750.

• **Loan repayments.** To attract young researchers to the NIH intramural program, NIH would be granted authority to repay

student loans at a rate of up to \$20,000 for each year a researcher stayed at NIH.

But the prize supporters of the legislation fought hardest for was overturning the fetal tissue ban. And the question that may be most pondered as Congress awaits the promised Bush veto is why the president would stick to his guns when staunch conservatives like Strom Thurmond (R-SC), Jake Garn (R-UT), Alan Simpson (R-WY), and Robert Dole (R-KS) voted in favor of the measure. The Senate vote has given a huge psychological lift to scientists who have maintained programs in fetal tissue research with private funding. "We are absolutely delighted," says Eugene Redmond, a neuroscientist at Yale University who heads a team that is using fetal tissue implants to treat Parkinson's patients. He says his team is already preparing a grant application for NIH in the hope that federal funding will soon be available. To avoid a political fire fight in an election year, Bush may yet find a way to ignore the message he reads on his own lips.

—Joseph Palca

CONFLICT OF INTEREST?

California Evolution Defender Indicted

Religious fundamentalists in California who oppose the teaching of evolution in public schools have something to celebrate—one of their most stubborn opponents, state superintendent of schools Bill Honig, has been indicted by a grand jury on criminal conflict-of-interest charges. He is charged with funneling \$300,000 of federal funds into an education program run by his wife. If convicted, he could face up to 12 years in prison and be barred from holding public office again. Honig denies the charges, saying he's the victim of politics.

Honig, a Democrat who has held the elected post of schools chief for 10 years, has relentlessly fought attempts by the religious right to water down the teaching of evolution, insisting that it be included as a strong theme in the textbooks California buys. Because of California's clout with textbook publishers, the standards imposed by Honig have influenced textbook quality for the entire country (*Science*, 17 November 1989, p. 881).

Honig has also fought to prevent the Institute for Creation Research in San Diego from awarding master's degrees in biology, geology, and astrophysics, because the institute teaches the subjects from the perspective of biblical creation. That battle recently ended in a draw, after a change in state law removed nonaccredited graduate schools, including the Institute for Creation Research, from Honig's jurisdiction (*Science*, 21 February, p. 927).

Given his stance on evolution, as well as

his support for sex education and his opposition to a voucher system that would let parents use tax dollars to send their children to private schools, the religious right has plenty of reasons to want Honig out. And Honig says they are behind the present allegations that he used federal funds for personal gain. Honig does admit that four federally paid school-district employees worked with a nonprofit, privately funded program directed by his wife. But he denies that he benefited financially from the arrangement with the Quality Education Project, which encourages low-income parents to participate in their children's educa-

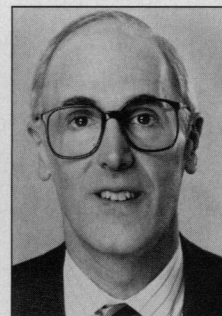
"This is a baseless charge. The weaker the charge, the stronger the implication that it is politics."

—Bill Honig

tion. "They [the state employees] did work in parent involvement in their school districts, and all the [federal] money went to their salaries," he told *Science*. "This is a baseless charge. The weaker the charge, the stronger the implication that it is politics."

Indeed, Honig has been locked in a power struggle, not only with conservative groups, but also with their supporters on the largely

conservative state education board, whose 10 members have been appointed by the past two Republican governors. Last fall the board sued Honig for more control of education decisions, and, according to ex-board member Kenneth Peters, several board members have been engaged in a campaign to "hang Bill Honig at all costs." *The San Francisco Chronicle* reported last week that board president Joe Stein, a vocal sympathizer with creationists, was the one who first brought the allegations against Honig to the attention of state attorney general Dan Lundgren. Lundgren's office will not comment on how it received the charges, and Stein did not return repeated calls from *Science*.



Regardless of who is behind the charges and whether or not Honig is convicted, creationists stand to gain, says Honig supporter Eugenie Scott, executive director of the Berkeley-based Center for Science Education. Honig and his staff will be dis-

tracted this summer, when California is scheduled to select its elementary and middle-school textbooks for the next 6 years. "With Honig tied up, and part of his staff tied up," says Scott, "there will be less energy for supporting the good books."

—Marcia Barinaga