

News & Comment

Fuqua Leaves 62 Parting Thoughts

The chairman of the science committee is leaving Congress after 24 years; he is leaving behind a mammoth science policy study and 62 of his own recommendations

AFTER 24 years in the House of Representatives, the past eight of them as chairman of the Committee on Science and Technology, Don Fuqua (D-FL) is clearing out his office. He will no doubt be back soon in Congress's marble hearing rooms, though on the other side of the witness table. Next month, he starts a new job as head of the Aerospace Industries Association, the chief trade organization of aerospace companies whose interests lie squarely in the jurisdiction of the committee Fuqua is departing.

In his years at the helm of the leading science policy committee in Congress, Fuqua has been widely regarded as a friend of science. Although not one of the most visible committee chairmen on Capitol Hill, he is said to have been an effective promoter of his committee's causes and has maintained a benevolent oversight of the National Science Foundation, over which the committee has jurisdiction.

Fuqua says he "never expected to become an expert on science policy" when he entered Congress as a 29-year-old freshman from the Florida panhandle. Over the past 2 years, however, he has headed a congressional task force that has racked up more than 100 hours of hearings on U.S. science policy, and the findings are now being distilled into an exhaustive report. The document, which is expected to be published in January, will no doubt become known as the Fuqua Report, thereby eponymously securing the chairman's place in the annals of science policy.

Because the study will not be published until after Fuqua departs, he has taken the unusual step of making his own recommendations—62 in all—public in advance (see box). In a lengthy interview with *Science* amid the cardboard boxes in his office, Fuqua expanded on the recommendations and offered some thoughts about the place of science in congressional decision-making.

Fuqua's first recommendation is that federal spending on basic research be increased substantially, to reach at least 1% of the total government budget, compared with 0.8% today. Such an increase could be achieved

"without reaching a point of diminishing returns," he says.

Any effort to increase research spending substantially is going to face tough going in the next few years, however. The budget deficit is expected to be \$170 billion to \$180 billion this year, yet in theory Congress is supposed to cut it to \$108 billion next year to meet the Gramm-Rudman tar-



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get. "The pressure on the budget is going to be extreme, and you should underline the word extreme," says Fuqua. Nevertheless, "science and technology have had a high priority in recent years, and all indications are that science will continue to fare well."

Given the extreme pressure on the budget, Fuqua acknowledges that there is little chance of shaking loose sufficient new money to take care of what he sees as the central problem facing the universities—inadequate facilities. He continues to advocate, as "the only practical way I can see," the Research Facilities Revitalization Act, which he introduced last year. In essence, the measure would require federal agencies to devote a

portion of their research budgets to improving university facilities.

For the long term, Fuqua suggests that new money for facilities be provided through overheads on federal research grants and contracts. He proposes adding a fixed percentage of the direct costs to each grant, exclusively for facilities, and suggests that the percentage be steadily increased until it is eventually seen as a direct subsidy. Before that happens, though, "higher education is going to have to take a more responsible role in making sure that this overhead money goes back into funds for facilities and equipment rather than be used for operating expenses."

Unless something is done to tackle the overall problem of inadequate facilities, Fuqua predicts that universities will continue to seek funds directly from Congress for their own projects—a phenomenon Fuqua refers to politely as "earmarking," but which is generally called pork barrel funding. (Indeed, Florida State University, which is in Fuqua's district, successfully won funding from Congress 2 years ago for a supercomputer, thanks in no small measure to Fuqua's support.) However, providing funds for facilities in part through overhead on research grants will exacerbate what many who have supported congressional earmarking in the past view as a major drawback of the present system: research support is highly concentrated in a few universities, which continue to attract the bulk of new funds.

Well, says Fuqua, "the agencies and Congress are going to have to take a serious look at the distribution of research funds." Population and economic growth are shifting to areas in which universities have not had a strong tradition in basic research, he notes, and local government and private groups "are demanding that they receive some of the funding that has traditionally gone to the older, prestigious schools." He predicts that "political pressure will ultimately demand that there be a redistribution of [research] money more geographically."

In the next year or two, the science committee will have to decide whether to support the biggest single basic research project

ever proposed—construction of the Superconducting Super Collider (SSC). A proposal to begin construction of the \$6-billion machine could be made in the fiscal year 1988 or 1989 budget. Fuqua urges his colleagues to view the matter with caution.

He points out that there is not enough money in the high energy physics budget to operate the new accelerators at the Fermi National Laboratory and the Stanford Linear Accelerator Center to their full extent (see p. 1195). "Before we take on big new projects, we ought to decide what we are going to do with those we already have," he says. If there is not enough money to build new machines and operate existing facilities, Fuqua argues that the SSC should not go beyond the research and design phase.

In his many years on the science committee, Fuqua has been in a good position to judge the scientific community's participation in the political process. In general, he says scientists are not aggressive enough in supporting legislation or contacting their members of Congress on issues that affect them. In particular, Fuqua suggests that scientists should invite politicians to take a look at their work. "I have never yet seen a member of Congress who isn't impressed when they visit a research facility," he says.

Have there been any occasions when the scientific community has been effective in applying political pressure? "Yes," says Fuqua. "Soon after Reagan came in, there was a rather severe cut in the NSF budget. I wasn't sure we could get the votes to take it on. I talked to some of the scientific societies and asked for help. They did an effective job. I would go on the House floor and people would come up to me and say 'What's this amendment you are going to offer? I want to support it. I promised Dr. So-and-So in my district.' I felt then we were going to win, and we did."

Fuqua has also had a good vantage point from which to view the operations and effectiveness of the Office of Science and Technology Policy (OSTP). The office, he points out, "will only be as effective as the President wants it to be," and in the Reagan Administration "the director of OSTP was a reluctant appointee of the President." Fuqua adds that the science adviser must be willing to give the President frank advice, regardless of what his other advisers are telling him. Yet President Reagan "doesn't even like his Council of Economic Advisers because they may give him [contrary] advice sometimes."

Next in line to fill Fuqua's position at the head of the science committee is Robert Roe (D-NJ). He has already said he would like to follow Fuqua's 2-year look at science policy with a similar study of technology policy. ■ COLIN NORMAN

The Chairman's Wish List

The congressional Science Policy Task Force is not scheduled to release its final report until early next year, but the chairman, Representative Don Fuqua (D-FL), has already made public his own conclusions and recommendations. The following are among them:

Research spending. Expenditure on basic research currently amounts to 0.8% of the federal budget. It should be increased substantially, with a national goal of "no less than 1%" of the total budget.

University facilities. The research infrastructure in the universities has deteriorated to the point where action must be taken "even if support for individual researchers has to be curtailed." In the short term, agencies should set aside a portion of their research budgets to create a facilities fund, along the lines of legislation introduced by Fuqua last year. In the long term, a fixed percentage of the direct costs of federal research grants and contracts should be used to fund facilities. "As the years progress, this percentage should be increased so that it loses any relationship to actual *indirect* cost and is therefore seen as a form of *direct* subsidy."

Big science. Congress should create a mechanism to provide multiyear authorization and appropriations for large international science projects to ensure that they are backed by stable funding and carried through to fruition. Big science should receive "a measure of priority" from the federal government because no other entity can support such activities. However, the scientific community "must order priorities and accept reasonable timetables." In particular, the Superconducting Super Collider should not be considered a priority until Fermilab and the Stanford Linear Accelerator Center are provided sufficient funds to exploit their new machines to the fullest extent. "We must first reap the harvest of our current crop of machines," and "stop driving beyond our headlights." In the meantime, the SSC should receive funds only for planning and design work.

Basic military research. The basic research portion of military R&D has been neglected in recent years. A partial remedy would be for the National Science Foundation to work closely with the Department of Defense in ensuring that proper investments are made in fundamental research in areas critical to national defense.

Energy research and development. The demise of the synthetic fuels program "will one day be shown to have represented a sad chapter in our nation's history. We must recapture what we can of the program." As for nuclear power, Congress should concentrate federal funding on the development of inherently safe reactors that can be built in a modular fashion so that each power plant is not of unique and independent design. Fusion will clearly not be needed for "many generations," thus "the element of desperation and the fantasy of immediate commercialization should be removed from considerations of what research is being funded and undertaken." This means there is no need to go beyond a demonstration of breakeven in fusion reactors.

Medical research. Present progress indicates we are spending a reasonable and responsible portion of our tax dollars on health research, and there is little likelihood that Congress will permit funding to slacken. But "any large increase in funding would not likely lead to a commensurate spurt of accomplishment because breakthrough researchers are limited in number, most are adequately funded, and time is required for maturation of ideas." Moreover, "more effort should be made to discontinue support of marginally productive researchers and in the process make certain that young investigators get a chance to launch their careers."

Distribution of research funds. Granting agencies should reexamine their policies to see if the geographical distribution of grants is "consistent with the best interests of the nation." With the top ten states receiving 66% of federal research funds and the bottom ten receiving a total of only 1.5%, the Science and Technology committee in its oversight function should inquire as to the cause and examine ways to develop a broader geographic base of excellence.

Fuqua makes it clear that these are his personal conclusions and recommendations, and they should not be regarded as the task force's official findings. The task force is, however, not expected to reach conclusions that are wildly at odds with those of its chairman. ■ C.N.