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ERIN HEATH

President Bush is in a tight spot. He faces a burgeoning national deficit and a crop of aging baby boomers who will soon require trillions in Medicare and Social Security benefits. Disinclined to curtail his tax cuts, the president has turned to snipping nondefense discretionary spending to demonstrate fiscal restraint, which does not bode well for scientists who rely on federal funding.

At the same time, a growing number of lawmakers are viewing basic research as an investment rather than an expenditure. Among those battling for science funding are Rep. Frank Wolf (R–VA), who chairs the House appropriations subcommittee with jurisdiction over the National Science Foundation (NSF); Rep. Dave Obey (D–WI), the appropriations committee's senior Democrat; Rep. Bob Inglis (R–SC), who heads the Science Committee's research panel; Rep. Alan B. Mollohan (D–WV); and Rep. John Culberson (R–TX).

In May 2005, frustrated by perennially small budget allocations for scientific research, Wolf sent a letter to President Bush imploring the administration to triple the nation's investment in promoting and fostering scientific innovation over the next decade.

"That's a laudable goal," says Sam Rankin, associate executive director of the American Mathematical Society. "Whether that can actually happen is another question. It's not something that can happen overnight."

Indeed, in December 2002, after years of efforts by science groups and their congressional supporters, President Bush signed a bill to put NSF on track to double its budget over five years, to nearly $10 billion. But the bill only authorized the funding—it didn't require congressional appropriators to provide the funds. During the intervening fiscal years, NSF and most other nondefense agencies have felt the squeeze. NSF's funding is two years behind schedule; for FY 2005, NSF received less than $5.5 billion, $2 billion less than the amount it would have gotten had the doubling taken effect.

"Federal research support serves two essential purposes," Wolf wrote in his letter to Bush. "First, it supports the research required to fuel continued innovation and economic growth. Second, because much of it takes place at the nation's colleges and universities, it plays a critical role in training our next generation of scientists." At current levels of investment, the United States "will fall victim to the fierce manpower competition we face from developing countries."

There is evidence that points to a trailing science output for the United States. According to NSF data, foreign students accounted for most of the growth in the numbers of US science and engineering doctorates awarded between 1985 and 2001. In 2001, US citizens made up 59 percent of PhD recipients in the country and held about half of all US patents. The number of science articles published by US authors has remained static since 1992, in contrast to those by authors in other member countries of the Organisation for Economic Co-operation and Development, which have risen steadily over the same period.

So far, Wolf and his colleagues have not persuaded Congress. When the House appropriations committee presented its plan for the FY 2006 spending bill for NSF, it raised the agency's budget just $171 million over last year's, to $5.64 billion, well below the $6.1 billion scientists and congressional advocates had requested.

But securing even this increase demanded considerable effort from congressional advocates for NSF. When an amendment by Rep. Anthony D. Weiner (D–NY) sought to move $126 million out of NSF to support a Justice Department program, Obey, Wolf, Mollohan, Culberson, and stalwarts Sherwood Boehlert (R–NY) and Vernon J. Ehlers (R–MI) sprang into action to defend NSF funding. The House voted down the amendment handily, with a final tally of 31 to 396.

Rankin says that Wolf, as an appropriator, "is in a position to do things that he wants." But it's not that simple; in Wolf's subcommittee, which also includes the Departments of State, Commerce, and Justice, "there are competing agencies and he has to deal with that.... I think it depends a lot on what allocations are given to the committees. Plus, what the administration does with the budget sets the tone."

Science funding is not likely to improve until Congress and the White House connect scientific research and development with economic growth and an enhanced quality of life. It is this connection that has inspired political leaders to fight to augment the federal budget for fundamental research.

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