Before and during World War II, the centerpiece of the U.S. economy was steel and its products. But starting about fifty years ago, the government began to invest heavily in science and information technology. Ever since that time, there has been a strong cooperative relationship between science and technology on the one hand and politics on the other, with the university research community greatly benefiting from the relationship. But with the promulgation this year of the Bush administration's first budget, we face a different situation. The Department of Education (DoEd), the Department of Defense (DOD), and the National Institutes for Health (NIH) have been singled out as the primary recipients of budget increases, while funding for basic IT research programs has been held at the same level or significantly reduced.

Why has the science and IT community been sidelined? Is the significant increase (14 percent, or $2.8 billion) in the NIH budget a stand-in for all other basic scientific research in FY 2002? Even the former NIH director, Dr. Harold Varmus, noted: “Congress is not addressing with sufficient vigor the compelling needs of other science agencies, especially the National Science Foundation and the Office of Science in the Department of Energy. This disparity in treatment undermines the balances of the sciences that is essential to progress in all spheres, including medicine.” Within the NIH budget, it appears that only the National Library of Medicine will be directly involved in IT as it continues to fund ($23 million) in FY 2002 the Next Generation Internet program, for which university-based researchers can compete.

The Bush administration's lack of interest in IT should come as no surprise. During the campaign, Bush certainly did not focus on science and research, and his contact with technology was limited to meetings with the leaders of the major technology companies in the country. Those meetings resulted in the recommendation for a permanent research and development (R&D) tax credit. Now that President Bush is in office, much talk has swirled around the fact that no White House Science Advisor has been appointed—nor, as of this date, have there even been rumors of an appointment. The administration's approach was summed up by Environmental Protection Agency Director Christine Todd Whitman. When asked why the EPA budget had been cut so significantly, Whitman replied that the administration had merely removed all the “pork” projects from the previous year.

But Whitman's answer does not explain the budget cuts within the National Science Foundation (NSF), which has a long record of not funding “pork programs.” Despite an overall NSF budget increase of 1.3 percent, specific IT programs within the agency face cuts or stagnation. Nor does it explain the specific cuts (totaling 3 percent) in IT programs in the Office of Science in the Department of Energy (DOE) or those at the National Institute of Standards and Technology (NIST) or the National Oceanic and Atmospheric Administration (NOAA), all of which fund technology programs for which universities can compete.

In addition, the newly created K-12 Education Technology State Grants (which collapse nine DoEd programs into one) cut the DoEd budget from $837 million last year to $817 million this year. And the overall program is to be formula-driven, targeting rural and high-poverty schools. Although some of the DoEd's IT support programs in the post-secondary division remain intact, new grants for the Learning Anytime, Anywhere Partnerships (LAAP) program, which has helped facilitate distance learning in higher education, have been eliminated. It is true, however, that this initial budget contains a modest increase for the DoEd, with the expectation that Congress will propose additional funding (a supplemental bill) once a review of the DOD is completed, which would significantly increase the budget for R&D programs.

Clearly the major promises of the campaign are on track: to provide for a tax cut, to “leave no child behind,” to double the NIH budget, and to provide for the Defense Department. These are the keys to this year's budget. So, what is left for science and research?

Priority areas have been identified in the NSF budget to include the following departments: Biocomplexity, Information Technology Research, and Nanoscale Science and Engineering and...
Learning for the 21st Century—with increases ranging from 5.9 percent ($4 million) for Biocomplexity to 16.6 percent ($24 million) for Nanoscale Science. However, there are inconsistencies within the budget. For example, even though Information Technology Research is listed as receiving an increase of 5.0 percent overall, funding for specific programs is flat, remaining at $155 million. The Experimental Program to Stimulate Competitive Research (EPScOR) is also shown with no increase, at $100 million, and the Innovation Partnership Activities program, at almost $10 million last year, is zeroed out. The NSF's budget for the Directorate for Computer and Information Sciences and Engineering (CISE), which oversees key grant programs that benefit higher education IT and networking research, faces a funding cut of 1.6 percent, a decrease of $75 million. The Advanced Networking budget for infrastructure (1.8 percent cut, down $800,000) and for research (1.4 percent cut, down $300,000) also shows decreases. And several other programs in the NSF have significant decreases in funding, including teacher and student development programs, education system reform activities, and multidisciplinary activities in math and science.

Finally, the NSF program designed to utilize H1B visa money is based on a premise that the requests for these visas will continue at the same rate as last year, but with so many dot-coms initiating layoffs, there will be fewer dollars available. The rate of H1B visa requests is now running at one-third the rate at the same time last year, and the program to provide scholarships in computer science, engineering, and math—as well as the private-public partnership aimed at training K-12 teachers—will be hard-pressed to come up with the projected dollars.

Other agencies facing significant budget constraints are the National Aeronautics and Space Administration (NASA), DOE (specifically the Office of Science), and both the NOAA and the NIST in the Department of Commerce. Overall, basic and applied research in federal agencies (excluding the NIH and DOD) fall 1.5 percent, or $357 million.

In Congress last year, Senators “Kit” Bond (R., Mo.) and Barbara Mikulski (D., Md.), majority and minority leadership for the HUD/VA appropriations subcommittee, were instrumental in providing increases in the NSF budget at the last minute. This year they have renewed their efforts to increase the budgets for basic science in several agencies (NASA, DOE–Office of Science, and the NSF), sending a joint letter that is currently circulating and seeking additional co-signers. On April 5 by voice vote, the Senate agreed to increase the discretionary funding for general science, space, and technology, and the May Budget Conference report reflects an increase—though it is short of the 15 percent that the science community has been advocating. The appropriations process has begun, and there are several months of wrangling before the October 1 start of FY2002.

Once again the “science community” is being exhorted to participate in the funding process. Those in higher education must communicate with members of Congress to tell them of the importance of IT research. Representative Sherwood Boehlert (R., N.Y.), chairman of the House Science Committee, stated in early May: “The scientific community must not be complacent, and it cannot assume that it inherently has the greatest claim to, or most self-evident argument for, federal largess. That’s a recipe for failure.”

For additional federal budget information, see the following Web sites:

- [http://www.whitehouse.gov/omb/budget/](http://www.whitehouse.gov/omb/budget/)
- [http://www.ed.gov/offices/OUS/Budget02/](http://www.ed.gov/offices/OUS/Budget02/)

Sue Fratkin is a public policy analyst, consulting for EDUCAUSE.