

# Government Recognizes Need to Bolster Research

Tom Price



President Bush describes the “American Competitiveness Initiative” during the State of the Union address.

Associated Press/Pablo Martinez Monsivais

Washington’s newest buzzwords are competitiveness and innovation. From the White House to both sides of Capitol Hill, they’re being offered by everyone as the antidote to widespread worries that the United States is in danger of losing its world economic and scientific leadership.

This is good news for American scientists, because all of Washington also seems to believe that scientific research is the foundation upon which competitiveness and innovation are built. Basic research in physical science especially seems likely to catch a boost in federal funding. But gargantuan deficits, the cost of war and a continuing aversion to taxes set the stage for a struggle over just how big that boost will be and how America’s scientific enterprise will fare overall.

President Bush brought the topic front and center in this year’s State of the Union Address, when he announced his “American Competitiveness Initiative” to encourage innovation throughout our economy and to give our nation’s children a firm grounding in math and science.

“To keep America competitive,” he said, “one commitment is necessary above

all: We must continue to lead the world in human talent and creativity.”

Lawmakers from both parties—some of whose interest in the subject long preceded Bush’s—are tripping over each other to tout their own plans, which usually are more ambitious than the president’s.

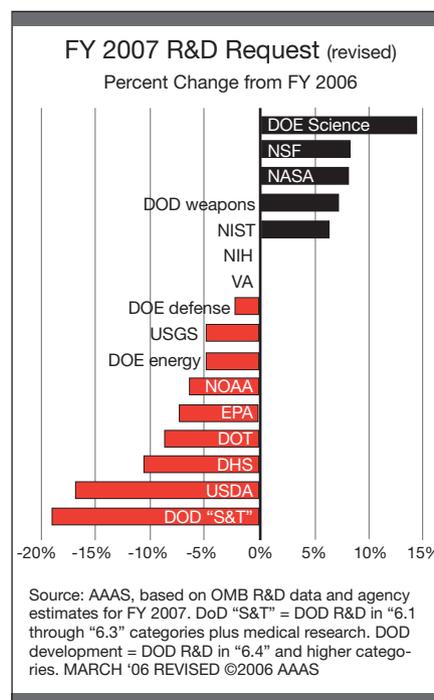
Bush describes his initiative as a \$136 billion plan to bolster research and education over the next decade. The bulk of the money—\$86 billion—would resurrect

and make permanent the research and development tax credit, which expired in December. The next-biggest chunk would double research spending at the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), and the Energy Department’s Science Office during that ten-year period. The rest of the money would go primarily to various education projects.

The tax credit would consume \$4.6 billion in fiscal 2007, the initiative’s first year. Another \$910 million would go to the research agencies, and the rest to the Education Department. That would enable NSF alone to support 500 additional research projects involving some 6,000 scientists, students, post-doctoral fellows and technicians, the administration said.

The initiative also sets goals of preparing 70,000 new teachers over five years for Advanced Placement (AP) and International Baccalaureate (IB) courses in math and science, helping 470,000 additional low-income students pass AP and IB math and science tests in the fifth year, recruiting 30,000 “adjunct” teachers from scientific professions by 2015, and developing better methods for teaching math and science. To meet those goals, states and the private sector would have to supplement the federal funds.

There is broad support on Capitol Hill for doubling federal spending on physical science research, in part because



it follows the doubling of National Institutes of Health research between 1998 and 2003. So does increased emphasis on math and science education from kindergarten through college. Like the president, legislators also want to make it easier for foreign students and scientists to study—and work—in the United States. And many back restoring, or even expanding, the R&D credit.

House Science Committee Chairman Sherwood Boehlert offered a typical response to the president's proposal when he first described himself as "elated" by the initiative, then noted his several areas of concern.

"The American Competitiveness Initiative is a bold and much needed step to ensure our future prosperity," the New York Republican said, adding that he expects the Congress to be very sympathetic to hiking research spending. But, he went on, NSF's education programs "are continuing to get short shrift." And he is "greatly concerned" about inadequate support for NASA's science programs.

Not surprisingly, Democrats were harsher in their analysis. A report by House Science Committee Democrats, for instance, termed Bush's proposal's "little more than sleight of hand—taking from one pocket and putting into another and calling that shift an increase." In milder terms, science advocates in both parties leveled similar complaints. While the president proposed significant increases in basic research at three agencies, he wants to limit spending on many other science activities.

According to the American Association for the Advancement of Science, total federal spending on basic research next year would grow just 1.3 percent and total R&D by 1.8 percent, both below the projected inflation rate. Spending on applied research would actually decline. Because the biggest increases are concentrated in a few favored activities—NSF, NIST, the Energy Department's Science Office, Defense Department weapons development and NASA space vehicle development—most R&D programs would have to be cut.

All of this sets the stage for a pretty vigorous battle, not so much over the need to increase spending on physical science research, but over whether the president's proposed increases are big enough and whether his suggested cuts elsewhere in the budget make sense.

Boehlert has promised to act quickly on the president's plan and other bills that promote science. House Democrats have already introduced more ambitious legislation. A majority of senators are co-sponsoring a package of bills that also goes farther than the president's plans.

The Senate bills, authored by Republicans Lamar Alexander of Tennessee and Pete Domenici of New Mexico, along with New Mexico Democrat Jeff Bingaman and Maryland Democrat Barbara Mikulski, model proposals made last year by a blue ribbon panel of the National Academies. The bills would:

- ▶ Double federal support for basic research in seven years;
- ▶ Double the R&D tax credit;
- ▶ Provide 40,000 college scholarships for math and science students annually;
- ▶ Establish summer academies for teachers;
- ▶ Help to fund specialty high schools in math and science; and
- ▶ Create internships and summer enrichment programs for middle and high school students.

How much of this gets accomplished will depend on how much support science advocates can muster for a long-term investment. "No doubt we face pressing short-term budgetary demands," said Judy Biggert of Illinois, a science subcommittee chair. "But we surely will never meet long-term challenges without long-term investments in technology, science and mathematics." ▲

[ Tom Price (ThePricesWrite@yahoo.com) is a journalist who focuses on government, politics, technology, business and education. ]

## Tables & Breadboards



### Optical Tables

- Excellent Surface Flatness & Thermal Stability
- Damping & Stiffness for All Demands
- Up to 14' x 4'9"; Custom Sizes & Shapes Available
- Non-Magnetic Option

### Breadboards

- UltraLight™
- Non-Magnetic Option
- High Performance

### ScienceDesk™ Workstations

- Space Optimized Workstations
- Vibration Isolation

**YOU ASKED FOR IT  
WE MANUFACTURED IT**



visit us on the web at:

[www.thorlabs.com](http://www.thorlabs.com)

or call a sales representative at:

973-579-7227

**Request Your Tools of the Trade  
Catalog With Over 10,000 Products.  
Order Online at [www.thorlabs.com](http://www.thorlabs.com)  
Over 700 New Products!**

**THORLABS**