

# SSTI Weekly Digest

A Publication of the State Science and Technology Institute

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## **Special Federal Budget Issue, February 14, 2005**

Each year, SSTI dedicates an issue of the *SSTI Weekly Digest* to the president's budget request. Because of length considerations, the issue is not intended to be exhaustive. Instead, we highlight selected S&T programs and initiatives that we believe are of interest to our readers. The president's budget request and supporting documents can be found at: <http://www.whitehouse.gov/omb/budget/>

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## ***SSTI Editorial***

### **Can the Partnership be Restored?**

For those interested in technology-based economic development, you'll be hard-pressed to find any good news in the President's Budget Request for FY 2006 unless, that is, you're hoping to go to Mars or heavily involved in homeland security. It's become a matter of routine to expect bad news when the federal budget comes out. It's never a surprise to see the Advanced Technology Program (ATP) or Community Technology Centers (CTC) on the chopping block, and there's always a guessing game as to what level the Administration will propose for the Manufacturing Extension Partnership (MEP). (This time the Administration proposes \$46.8 million for MEP, a \$60.7 million decrease from FY 2005.)

What is striking about this year's budget request, though, are two general themes: 1) cutting community and economic development spending, and 2) the lack of any type of strategic response toward building tech-based economies across the United States.

### **Cutting \$3B in Community and Economic Development Spending**

The Administration is proposing the elimination of some 28 programs in five agencies that received \$6.7 billion in funding in FY05. Replacing some of those programs, the Administration proposes the creation of the [Strengthening America's Communities Grants Program](#), a \$3.7 billion initiative proposed within the Department of Commerce to provide performance-based grants for both community and economic development. (See below for more details on the proposal.)

Among the programs to be consolidated under the Administration's proposal are the Economic Development Administration (EDA) and the Community Development Block Grant (CDBG) program.

We have long argued for a more rational approach from the federal government in the area of economic development. In particular, one that fundamentally encourages coordination and collaboration between and among agencies and states. Retooling the federal government's approach to encourage economic growth is a laudable goal. Improving the effectiveness of government programs is even more laudable. And if either of those were truly the goals of this proposal, we would not be as skeptical as we are.

It seems clear to us, however, that the goal behind this consolidation is simply to cut spending on community and economic development programs and try to make it more palatable by wrapping it up in the guise of reform. The simple fact is the Administration's proposal would cut spending on these programs by almost 45 percent with spending slashed by \$3 billion from \$6.7 billion to \$3.7 billion. It would pit community development groups purchasing fire trucks and trying to improve poverty-stricken areas against tech-based economic development trying to encourage the commercialization of university research, growth of technology companies and private investment in innovation.

### **Strategic Response to Building Tech-based Economies**

There is the larger question, however, of how the federal government is responding (or not responding as this budget reemphasizes) to a dramatically shifting global economic reality, one that is becoming more focused on technology and innovation than ever before -- where countries as diverse as Bolivia and China are investing heavily to compete in the technology sector.

Back in the U.S., the federal government will and always should be the largest funding source for basic research. The government also can play, and has played successfully in the past, a critical role in encouraging the commercialization of that research to the marketplace, improving the competitiveness of regions, and catalyzing action on the state and local level.

Yet, this budget continues an almost decade-long lack of creativity on the federal level to addressing the changed economy. Examining key federal TBED programs based on what they received in FY 2000 (the first year the *Digest* did a thorough examination of the federal budget) and FY 2005 and what the Administration is proposing for FY 2006 vividly illustrates the decreasing involvement the federal government is having in technology-based economic development. (A table showing budget requests for select programs in FY00, FY05 and FY06 is available at: <http://www.ssti.org/Digest/Tables/021405t.htm>)

While most states have heard the clear message and are aggressively addressing the fact that the economy has changed and new approaches are needed (check any back issue of the *Digest* for examples), our leaders in Washington, D.C. have not.

Perhaps the only positive result that may stem from the Administration's budget proposal will be discussion on the Hill regarding the real priorities, appropriate approaches, and adequate funding levels required to truly strengthen the ability of America's communities to thrive in a knowledge-based global economy. We hope our Congressional representatives, at least, remember the state partnership that created this country in the first place, helped to make it the world's greatest nation, and provides the foundation for maintaining our edge through education, research and innovation.

As every issue of the *Digest* has demonstrated for the past nine years, states and communities are making the investments to sustain that partnership. It is unfortunate, with the budget proposal released earlier this week, to see the federal government walking away from it.

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## **Multi-agency Initiatives**

### **Strengthening America's Communities Grants Program**

The [Strengthening America's Communities Grants Program](#) is a new \$3.7 billion initiative proposed within the Department of Commerce to provide performance-based grants for both community and economic development. The limited printed information available on the proposal indicates awards will be targeted to distressed areas and low-income audiences with criteria based on job loss, unemployment levels and poverty.

The Administration proposes making the grants flexible in their use in exchange for "strong accountability measures" toward specific economic development or community development goals. The economic development measures identified include increased job creation and new business formation rates. Community development measures include increasing home ownership, commercial development and private sector investment.

A portion of the \$3.7 billion would be used to provide Economic Development Challenge Fund grants as bonuses to communities and regions that "have already taken steps to improve economic conditions and demonstrate readiness for development." Three criteria are identified for the bonus grants: meeting the No Child Left Behind goals in the Department of Education, reducing "regulatory barriers" to business creation and housing development, and reducing violent crime rates.

More details on the proposal will become evident in the coming months as the budget works its way through the various Appropriation subcommittees in the House and Senate.

Briefing materials for the Strengthening America's Communities initiative indicate it is intended to streamline the "maze of Federal departments, agencies, and programs" that offer funding or technical

assistance to states, regions or communities for either economic or community development by consolidating 18 existing programs.

The number of community development, economic development and tech-based research programs targeted for elimination is much higher than 18 and the reduction to federal support for these priorities is significantly greater than some figures being circulated, based on SSTI's initial review of the budget documents. We find at least 28 programs in eight agencies slated for elimination or phaseout over the next two years. The FY 2005 appropriations for those 28 programs total \$6.76 billion.

Our list of programs and agencies slated for termination, including their FY05 appropriation levels, is available at: <http://www.ssti.org/Digest/Tables/021405t2.htm>

### **Climate Change Science Program**

The [Climate Change Science Program](#) (CCSP) FY 2006 request is down 1 percent, overall, from FY05 appropriations. CCSP integrates federal research on climate and global change, as sponsored by 13 federal agencies and overseen by the Office of Science and Technology Policy, the Council on Environmental Quality, the National Economic Council and the Office of Management and Budget. Within CCSP, the Climate Change Research Initiative budget would decrease by 17 percent, dropping to \$183 million.

Changes to FY05 budget levels are requested for only six of the 13 participating agencies: Department of Agriculture - \$88 million (21 percent decrease); Department of Commerce - \$181 million (46 percent); Department of Energy - \$132 million (2 percent); Environmental Protection Agency - \$21 million (5 percent increase); NASA - \$1.162 billion (8 percent decrease); and the National Science Foundation - \$197 million (1 percent decrease).

### **Hydrogen Fuel Initiative**

Fiscal year 2006 spending for the **Hydrogen Fuel Initiative** (HFI) totals \$260 million in two agencies, the Department of Energy and the Department of Transportation. The figure reflects a 16 percent increase over 2005 appropriations of \$225 million. HFI seeks to scientifically support industry efforts to develop practical and cost-effective technologies for producing, distributing and using hydrogen to power automobiles. Research focus areas include development of technologies for the production, storage and delivery of hydrogen, and fuel cell technologies.

Despite a proposed 100 percent increase, the Department of Transportation portion of HFI would still capture only \$2 million of the \$260 million total. The Energy Department's \$258 million FY06 request is distributed across five areas: hydrogen production program - \$99 million (5 percent increase); fuel cells - \$84 million (12 percent increase); hydrogen from coal - \$22 million (29 percent increase); nuclear hydrogen initiative - \$20 million (122 percent increase); and basic scientific research - \$33 million (14 percent increase).

### **National Nanotechnology Initiative**

The request for the [National Nanotechnology Initiative](#) (NNI) FY06 budget is \$1.05 billion, a 2 percent decrease from estimated FY 2005 spending. The 10 NNI participating agencies are focusing on R&D that creates materials, devices and systems that exploit the fundamentally distinct properties of matter as it is manipulated at the atomic and molecular levels.

Individual agency FY06 requests are: Department of Agriculture - \$8 million (167 percent increase); Department of Commerce - \$75 million (no change); Department of Defense - \$230 million (11 percent decrease); Department of Energy - \$207 million (1 percent decrease); Department of Health & Human Services - \$147 million (1 percent increase); Department of Homeland Security - \$1 million (no change); Department of Justice - \$2 million (no change); Environmental Protection Agency - \$5 million (no change);

NASA - \$35 million (22 percent decrease); and the National Science Foundation - \$344 million (2 percent increase).

### **Networking and Information Technology Research and Development**

The FY06 budget provides \$2 billion (7 percent decrease) for the Networking and Information Technology Research and Development program (NITRD), which focuses and coordinates the research efforts of seven agencies in the area of advanced computing systems, networks, software and information management technologies.

Changes to individual agency budgets vary significantly: Department of Commerce - \$61 million (5 percent increase); Department of Defense - \$294 million (6 percent increase); Department of Energy - \$355 million (7 percent decrease); Department of Health & Human Services - \$551 million (4 percent decrease); Environmental Protection Agency - \$6 million (50 percent increase); NASA - \$57 million (70 percent decrease); and the National Science Foundation - \$803 million (1 percent increase).

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### **Special TBED-related Initiatives**

**Opportunity Zones** - While the Administration's FY06 budget request proposes eliminating all other geographically-based tax credit programs (e.g. Enterprise Zones), it is requesting \$10 billion over 10 years in tax incentives to competitively select 28 urban and 12 rural economic Opportunity Zones in areas transitioning to new and emerging industries. Targeted areas are those that have lost a significant portion of their economic base as a result of the changing economy, for example, due to loss of manufacturing or textile employment, and are now in the process of transitioning to a more diverse, broad-based, 21st century economy.

White House press materials state, "Opportunity Zones are different from existing Empowerment Zones (EZ), Enterprise Communities (EC), and Renewal Communities (RC). They provide a comprehensive, results-based approach, expanding the focus of assistance beyond economic activity to encompass education, job training, affordable housing, and other activities critical for a vibrant community."

Areas qualifying for Opportunity Zone status would be moved to the front of the line for certain federal assistance programs. Specifically, individuals, organizations and governments within an Opportunity Zone could receive priority designation when applying for the following federal programs:

- 21st Century After-school, Early Reading First, and Striving Readers funding;
- Community Based Job Training Grants;
- Community Development Block Grants (*termination proposed in FY06 budget request*), Economic Development Administration grants (*termination proposed in FY06 budget request*), and HOME Funding;
- USDA Telecommunications Loans, Distance Learning and Telemedicine grants (*termination proposed in FY06 budget request*), and Broadband loans; and,
- New Markets Tax Credits (*phaseout proposed in FY06 budget request; no new credits to be issued*).

**Research and Experimentation (R&E) Tax Credit** - \$27 billion to extend the popular tax credit permanently. Current law provides for a 20 percent tax credit for private research and development expenditures above a certain base amount. First created in 1981 and renewed umpteen times over the years, the credit was extended most recently in 2004 for an 18-month period running through 2005. The FY06 budget request proposes to make the R&E tax credit permanent, allowing companies to deduct, up

front, the costs of certain kinds of R&E, rather than capitalize on these costs.

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## **U.S. Department of Agriculture**

Taking one of the largest percentage cuts of all agencies, the U.S. Department of Agriculture (USDA) FY 2006 discretionary budget level of \$19.4 billion calls for an 11.8 percent reduction, or \$2.6 billion below the FY 2005 level.

No funds are included in the 2006 budget for the **Rural Business Enterprise** (\$41 million in FY05) and **Rural Business Opportunity Grant** (\$3 million) programs or the **Empowerment Zones & Enterprise Community (EZ/EC) Program** (\$13 million).

The FY06 budget request proposes \$376 million in USDA funding for the multi-agency **Food and Agriculture Defense Initiative**, which is funded at nearly \$600 million government-wide. This initiative began in 2004. Within USDA's oversight, the budget proposes \$317 million for programs and \$59 million to complete construction of the National Centers for Animal Health in Ames, Iowa. Funding for programs reflects a \$140 million increase above FY05, including \$35 million in increases for research to develop the means to quickly identify pathogens, develop improved vaccines and better understand the genes that provide disease resistance.

New funding requests also were made for **forest and rangeland research**, as well as **biomass research and development** (R&D). For FY06, \$285 million would be available for the former, a \$9 million increase, while \$12 million is proposed for biomass R&D - \$2 million less than the FY05 level. For **R&D in wildland fire management**, the Administration proposes decreasing funding from \$22 million to \$17 million. Each of the above programs fall under USDA's **Natural Resources Conservation Service** (NRCS).

The three USDA programs highlighted below were included in the 2002 Farm Bill. The Administration's FY06 budget request includes discretionary funding instead of mandatory funding for the value-added and renewable energy programs. All three programs are housed under the Rural Business-Cooperative Service (RBS):

- **Renewable Energy and Energy Efficiency Program** - \$5 million for discretionary grants (\$6 million decrease) and \$286 million for discretionary loans (\$324 million decrease).
- **Value-Added Producer Grants Program** (formerly known as Value-Added Development Grants) - \$16 million for discretionary grants (\$1 million increase).
- **Rural Business Investment Program** - no funding requested (\$65 million decrease) for the venture capital program that targets investments in specific geographic elements. The program is administered by the **Small Business Administration**.

Other ongoing RBS and Rural Utilities Service (RUS) programs that would receive funding in FY06 include:

- **Distance Learning & Telemedicine Program** - \$25 million in grants (no change) but no new funding for loans (\$50 million decrease) to support the educational and health care needs of rural America through advanced telecommunications technologies.
- **Broadband and Internet Services Program** - Discretionary funding authority would support \$359 million in loans to help finance the installation of various modes of broadband transmission capacity. The FY06 budget request represents a 34.2 percent decline over FY05 levels of \$545 million. The 2002 Farm Bill authorized a permanent program and provided mandatory funding

through 2007. Recent appropriation acts have blocked the mandatory funding, but provided discretionary funding for the program. Mandatory funding provided in 2002 and 2003 remains available to support over \$1 billion in loans. No new funding is requested for FY06 for broadband grants, a \$9 million decrease from FY05.

- **[Business and Industry Guaranteed Loans](#)** - \$899 million (\$304 million increase) to provide protection against loan losses so that private lenders are willing to extend credit to establish, expand or modernize rural businesses. Special efforts are being made to help rural communities diversify their economies, particularly into value-added processing, by focusing on cooperative ventures.
- **[Rural Economic Development Grants](#)** - \$10 million (no change) for grants to electric and telephone utilities. Program promotes sustainable rural economic development and job creation projects through the operation of a revolving loan fund program.

With the budget reductions and program terminations, the Rural Business Service estimates an 11 percent reduction in its progress toward meeting the objective "Expand Economic Opportunities through USDA Financing of Business." The number of jobs created or saved through USDA financing of businesses is expected to drop from 65,856 in FY05 to 56,400 in FY06. The FY06 figure is 47 percent lower than the 2001 baseline of 105,222 jobs created or saved.

USDA research activities are coordinated by the **[Research, Education and Economics](#)** (REE) agencies, which oversee the discovery, application and dissemination of information and technologies spanning the biological, physical and social sciences. This is accomplished through agricultural research, education, extension activities, and economic and statistical analysis. REE's total FY06 funding of \$2.44 billion (\$64 million decrease) is distributed across four areas:

- **[Agricultural Research Service](#)** (ARS) - \$1.079 billion (\$227 million decrease), including \$996 million for research in the natural and biological sciences.
- **[Cooperative State Research, Education and Extension Service](#)** (CSREES) - \$1.04 billion (\$143 million decrease) to support research partnerships with land-grant and non-land grant colleges and universities in carrying out extramural research, higher education and extension activities.
  - **[National Research Initiative](#)** - \$250 million (\$70 million increase) to help fund initiatives in agricultural genomics, and human nutrition and obesity.
  - **[Regional State and Local Grants Program](#)** - \$75 million (new initiative) to support State Agricultural Experimentation Station-conducted research targeting regional, state and local issues. According to the USDA Budget in Brief, "This competitively-awarded grants program will support system-wide research planning and coordination and research in areas such as new products/uses, social sciences and the environment. This is the first phase of a two-year plan to shift funding from some formula-based research programs."
- **[Economic Research Service](#)** (ERS) - \$81 million (\$7 million increase) for economic and social science information and analysis on agriculture, food, environment and rural development.
- **[National Agricultural Statistics Service](#)** (NASS) - \$145 million (\$17 million increase) to conduct the Census of Agriculture and provide the official current statistics on agricultural production and indicators of the economic and environmental welfare of the farm sector.

No funds are included in the 2006 budget for **[Appropriate Technology Transfer for Rural Areas](#)** (\$2 million), **[Economic Impact Initiative Grants](#)** (\$18 million), and the **[Rural Community Development Initiative](#)** (\$6 million).

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## **[Department of Commerce](#)**

The Administration's FY 2006 \$9.4 billion discretionary budget request for the Department of Commerce reflects a 48 percent increase above FY 2005 estimated expenditures of \$6.33 billion. If one excludes the proposed \$3.71 billion [Strengthening America's Communities Grant Program](#) (see description under Multi-Agency Initiatives above), the agency is actually facing a 5.6 percent cut of more than \$357 million. NIST would bear the brunt of the cuts through reduction of the Manufacturing Extension Partnership and elimination of the Advanced Technology Program.

The [Economic Development Administration](#) (EDA) currently provides grants to states, regions and communities to help create wealth and minimize poverty by promoting a favorable business environment to attract private capital investments and high skill, high wage jobs. The FY05 appropriation was \$284 million, a 10 percent reduction from the FY 2004 level. Staffing levels, on the other hand, rose 13.2 percent in FY05. Recently reauthorized by Congress, EDA's FY06 request maintains the full-time equivalent staffing level of 240 while eliminating all existing grant programs, including: **Public Works Grants, Economic Adjustment, Planning Grants, Trade Adjustment, Technical Assistance, and Research & Evaluation**. The EDA staff and regions, it is presumed, would be responsible in part for administering the proposed Strengthening America's Communities Grant Program.

The [Technology Administration](#) (TA) works with U.S. industry to maximize technology's contribution to U.S. economic growth. Led by the Under Secretary for Technology, TA fulfills its broad responsibilities through its component organizations: the Office of Technology Policy (OTP), the National Institute of Standards and Technology (NIST), and the National Technical Information Service (NTIS) with its National Telecommunications and Information Administration (NTIA).

- [Under Secretary for Technology/OTP](#) - \$4.2 million (\$2.3 million decrease). OTP's mission is to develop national policies and initiatives to enable technology to best contribute to America's competitiveness. The office also administers the National Medal of Technology. Full-time equivalent staffing levels would be reduced by 10 in FY06.
- [NIST Advanced Technology Program](#) (ATP) - no funding is requested (\$140.4 million decrease). The Administration's FY06 budget would terminate the program and eliminate 244 full-time equivalent positions. No new projects were funded in FY05, facilitating the termination process. According to the FY06 Budget in Brief (p. 120), NIST would be abandoning obligations toward its second performance goal to "accelerate private investment in and development of high-risk, broad-impact technologies." Progress toward the goal's target measurements or outcomes, such as a 10-12 percent increase in number of patents, publications and technologies under commercialization, would be based on the continued success of past ATP investments.
- [NIST Hollings Manufacturing Extension Partnership](#) (HMEP) - \$46.8 million (\$60.7 million decrease). The Budget in Brief provides no reasoning for the reduction. It indicates, "At this level, the Administration will maintain a national network of centers while focusing funding based on centers' performance and need" (p.131). In the performance goals and measures, the request acknowledges the 56.7 percent cut would result in 52 percent reduction in the number of clients served, increased sales attributed to the centers by clients, capital investment attributed to the centers and industrial client cost savings attributed to center-provided services (p.120). In FY06, 18 full-time equivalent positions would be eliminated, reducing HMEP federal staffing levels to 46.
- [NIST Baldrige National Quality Program](#) - \$5.7 million (\$200,000 increase). This program helps U.S. businesses and other organizations continuously improve their competitiveness and productivity through quality and performance management practices. Staffing levels are maintained at 39 full-time equivalent positions.
- [NIST Laboratories and Research Facilities](#) - \$417.8 million ( \$37.7 million increase). The NIST laboratories research program focuses on proving the measurements, standards, verified data, and test methods necessary to support the development of new technologies and to promote U.S. competitiveness. The **Advanced in Manufacturing** research area would receive the largest increase (up \$16.6 million and 31 full-time equivalent positions) to enhance the research capabilities of the National Nanomanufacturing and Nanometrology Facility. An additional \$11.55 million and 33 positions are requested for New Measurement Horizons for the U.S. Economy and

Science to provide the measurement infrastructure. **Measurements and Standards for Homeland Security** would receive an additional \$3 million.

The **Minority Business Development Agency** (MBDA) would receive \$30.7 million in FY06, an increase of \$1.2 million above the FY05 appropriation. MBDA maintains the lead role within the federal government providing management and technical assistance to minority-owned businesses through the national network of Minority Business Development Centers and Native American Business Development Centers. New initiatives include: \$500,000 to foster business development among Asian American and Pacific Islanders; and, \$203,000 to expand the agency's capacity to disseminate statistical information and research. Staffing levels are maintained at 115 full-time equivalent positions.

The **National Oceanic and Atmospheric Administration** (NOAA) would receive \$3.6 billion in FY06, or \$332 million less than the FY05 appropriation. NOAA components supporting significant research activity fall under the Operations, Research and Facilities line item, which is slated for a \$261.3 million cut. Most of the reductions are attributed to eliminating Congressionally directed funds (i.e. "earmarks"). Key NOAA components for the research community include:

- **National Marine Fisheries Service** - \$625.5 million (\$51.1 million increase) for research in the variables affecting the abundance and variety of marine fisheries.
- **National Ocean Service** - \$394.2 million (\$147 million decrease) to support coastal science and estuarine research reserves of national significance.
- **Oceanic and Atmospheric Research** - \$361.7 million (\$42.4 million decrease) for the research and technology development necessary to improve outlooks, solar-terrestrial forecasts and marine services.
- **National Weather Service** - \$744.8 million (\$40.9 million increase) for weather and flood warning and forecasts.
- **National Environmental Satellite, Data and Information Service** - \$154 million (\$22.1 million decrease) for operation and updating polar-orbiting and geostationary operational field satellites.

The **U.S. Patent and Trademark Office** is anticipated to have a budget of \$1.703 billion in FY06, funded entirely by fees, an increase of \$149 million. The anticipated increase would permit the office to hire an additional 384 full-time equivalent staff for patent and trademark examination and processing.

The **Bureau of Economic Analysis** within the Economic and Statistical Analysis Administration would receive \$81.3 million and 44 new full-time equivalent positions in FY06 through the Administration's request. This reflects a 10.8 percent increase over FY05. The increased funds would be directed toward strengthening international statistics and accelerating data releases of several key economic measures for improved timeliness, relevance and accuracy.

**NTIA Technology Opportunities Program** - no funding is requested. This program also was not funded in FY05. Organizations looking for information on demonstration projects applying advanced telecommunications technology to enhance the delivery of social services, such as education, health care and public safety are encouraged to visit the program's website while it is still functioning.

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## **Department of Defense**

The Administration's FY 2006 budget request for the Department of Defense (DoD) totals \$419.3 billion, an increase of 4.8 percent from the FY 2005 appropriation level. However, the budget proposes significant

cuts for Defense science and technology (S&T). The FY06 budget provides \$10.5 billion for S&T, a 19.5 percent decrease from the FY05 funding level of \$13.1 billion. This includes cuts in basic research, applied research and advanced technology development. Spending on basic research is down 12.9 percent from the FY05 funding level, applied research would decline 14.7 percent, and advanced technology development would drop 24.5 percent.

The budget provides \$10.3 million for a new National Defense Education program aimed at providing financial support to students who pursue studies in areas deemed critical to national defense, according to *The Chronicle of Higher Education*. The new program would incorporate \$2.5 million provided in the FY05 budget to the **Science, Mathematics, and Research for Transformation Defense Scholarship Pilot Program**, or SMART.

Defense-wide science and tech expenditures would decrease as would the research budgets of the Army, Navy, Air Force and Missile Defense Agency. S&T spending at the Defense Advanced Research Projects Agency, on the other hand, would increase. The breakdown by major component is as follows:

### **Army**

- Basic Research - \$307.6 million (21.7 percent decrease)
- Applied Research - \$671.3 million (39.9 percent decrease)
- Advanced Technology Development - \$756.4 million (45.4 percent decrease)

### **Navy**

- Basic Research - \$448.3 million (8.7 percent decrease)
- Applied Research - \$597.9 (27.3 percent decrease)
- Advanced Technology Development - \$729.8 million (25.2 percent decrease)

### **Air Force**

- Basic Research - \$340.8 million (11 percent decrease)
- Applied Research - \$851.7 million (9.9 percent decrease)
- Advanced Technology Development - \$787.6 million (21.3 percent decrease)

### **Defense-wide**

- Basic Research - \$222 million (9.8 percent decrease)
- Applied Research - \$2.02 billion (2.8 percent increase)
- Advanced Technology Development - \$2.79 billion (16.3 percent decrease)

Funding university-based research seems to particularly unpopular in DoD's FY06 budget, as many of the major university-related programs see double-digit reductions or elimination:

- **Defense Experimental Program to Stimulate Competitive Research** (EPSCoR) - \$9.2 million (30.2 percent decrease) to improve the capabilities of U.S. institutions of higher education to conduct research and to educate scientists and engineers in the areas important to national defense.
- **Government/Industry Cosponsorship of University Research** - no new funding is requested (\$6.8 million decrease). The Government-Industry Cosponsorship of University Research (GICUR) program fosters cooperative research by universities with industry or government laboratories.

- **University and Industry Research Centers** - \$81.9 million (18 percent decrease) to leverage research in the private sector through Federated Laboratories, Centers of Excellence, and the University Affiliated Research Center.
- **University Research Initiatives** - \$248 million (15.7 percent decrease) to improve the quality of research performed at universities to meet DoD needs, provide expanded opportunities for interaction between universities and the DoD research community, and to support fellowships and traineeships in science and engineering disciplines important to national defense. The breakdown by component includes \$67.2 million (19.7 percent decrease) for the Army, \$75.9 million (16.9 percent decrease) for the Navy, and \$105 million (11.7 percent decrease) for the Air Force.

Funding for other programs of interest also would suffer cuts, including:

- **Dual Use Science & Technology Program** - no new funding is requested (\$5.1 million decrease).
- **Office of Economic Adjustment** - \$30.5 million (65.7 percent decrease) to provide assistance to communities, regions and states adversely impacted by significant DoD program changes, such as: base expansions, closures, realignments, major contract changes that result in significant worker layoffs, and other personnel reductions or increases.
- **Procurement Technical Assistance Centers** (PTAC) - anticipated \$20.0 million (23.7 percent decrease). The 93 PTACs across the country provide assistance to business firms in marketing products and services to the federal, state, and local governments.
- **Technology Link** - \$3.4 million (57 percent decrease) to MDA for facilitating the use of technology developed in the non-defense public and private sectors.

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## **Department of Education**

The Administration's FY 2006 budget request for the Department of Education (ED) is \$56 billion, a 0.9 percent decrease (\$529.6 million) from the FY 2005 appropriation.

The most positive news in the request concerns the popular **Pell Grant** federal student loan program. Already lauded in a [joint statement](#) from the nation's six leading higher education associations, the ED FY06 budget request for the Pell Grant program of \$13.7 billion (a \$1.3 billion increase) includes funds allowing an increase in the maximum Pell Grant award by \$100 annually over the next five years, from \$4,050 to \$4,550. In addition, the FY06 budget request includes a one-time \$4.3 billion in mandatory funding to retire the Pell Grant shortfall accumulated from 2002 to 2005.

The Pell Grant increase and deficit payoff come at a cost, however -- the termination of 48 existing programs, such as the **Educational Technology State Grants** (\$496.0 million in FY05), **Community Technology Centers** (\$5 million in FY05), **Projects with Industry** (\$21.6 million), the **Regional Educational Laboratories** (\$66.1 million), **Upward Bound** (\$312.6 million), and the **Vocational Education State Grants** (\$1.19 billion). The agency budget brief states, "Termination of these 48 programs frees up almost \$4.26 billion - based on 2005 levels - for reallocation to more effective, higher-priority activities." The complete list of programs slated for termination and the agency rationale for each is available [here](#).

Also among the casualties is the proposed phaseout of the **Perkins Loans** program (\$6 billion in FY05), which provided help to more than 670,000 students in 2004. The Department would recall the federal contribution to revolving loan funds at participating institutions and would provide no funding for loan cancellations (\$66.1 million in FY05).

The FY06 request provides \$269 million for [Mathematics and Science Partnerships](#), a program for developing rigorous mathematics and science curricula, distance learning programs, and incentives to recruit college graduates with degrees in math and science into the teaching profession. The request is \$90.4 million above the FY05 appropriation, a 51 percent increase.

Included in the [Postsecondary Education](#) FY06 budget is \$50 million for a new **Presidential Math-Science Scholars** program, under which ED would enter into a public-private partnership to award \$100 million annually in grants to low-income math and science students. Approximately 20,000 low-income students who receive Pell Grants would receive these separate, additional awards of \$5,000 each.

Another new initiative proposed in the FY06 budget request is \$125 million for a new **Community College Access** program, which would provide incentives to states and partnerships to improve access to a college education, particularly for low-income and minority students, through "dual-enrollment" programs offering both high school and postsecondary credit to high school students who take college-level courses.

At \$999.1 million, funding for the [21st Century Community Learning Centers](#) would reflect no change. The centers are designed to help communities establish or expand learning centers that provide extended learning opportunities for students and related services to their families.

On the research front, the [Institute of Education Sciences](#) FY06 request of \$479.1 million (8.4 percent decrease from FY05) is intended to fund programs of research, development and dissemination in areas where knowledge of learning and instruction is inadequate.

- The **Research, Development and Dissemination** funding request for FY06 is \$164.2 million (no change) to help support the [National Center for Education Research](#), which oversees directed research, field-initiated studies, and research and development centers. The ED [SBIR](#) is administered by the center.
- \$10 million of new funding is proposed for a new line item, Special Education Studies and Evaluations. The Research in Special Education line item is reduced by \$10.5 million, however.

[Rehabilitation Services and Disability Research](#) would receive \$339.1 million of discretionary funding, a decrease of \$99.6 million or 22.7 percent from FY05 appropriation levels. The reduction is a result of several programs slated for termination, including the Assistive Technology Programs (see discussion above for more information).

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## [Department of Energy](#)

The Administration's FY 2006 budget request for the Department of Energy (DOE) is \$23.4 billion, or \$475.4 million (2 percent) less than the FY 2005 request. The decrease is largely absorbed by DOE's [Environment](#) budget which, at \$7.34 billion, reflects a 6.4 percent decrease over FY05. The [Science](#) budget, at \$3.46 billion, also would have its funding cut by \$136.8 million (3.8 percent). The [National Nuclear Security Administration](#) and [Energy](#) budgets would experience increases of \$233.3 million (2.5 percent) and \$73.7 million (3 percent), respectively.

The FY06 request for the [Office of Energy Efficiency and Renewable Energy](#) (EE), \$1.2 billion, reflects a 3.9 percent decrease over the office's FY05 level. EE conducts research, development and deployment

activities to advance energy efficiency and clean power technologies and practices. Of the \$48.2 million decrease, \$26.7 million would be cut from renewable energy activities under the Energy Supply account. The remaining \$21.4 million in cuts would come from energy efficiency activities, funded within the Energy Conservation account.

One major DOE program, the **Coal Research Initiative**, would receive \$286 million in FY06 between two components - \$218 million for the coal research and development (R&D) program and \$68 million for the Clean Coal Power Initiative (CCPI). Requested funding for the initiative shows a \$13.2 million increase (4.9 percent) over the FY05 level, with both components sharing the increase. Specific areas to receive funding are detailed further below.

The **Hydrogen Fuel Initiative** would receive \$260 million to support hydrogen fuel production, storage, distribution and infrastructure. Funding for this initiative - a \$35 million increase over FY05 enacted levels - would be distributed across EE and the Offices of **Fossil Energy**, **Nuclear Energy** and Science. The Hydrogen Fuel Initiative complements the **FreedomCAR Partnership**, which supports hybrid vehicle technologies needed to enable the mass production of affordable, practical hydrogen powered fuel cell vehicles.

Under the Office of Science, \$126.6 million is dedicated for **nanoscience research** and \$290.6 million is targeted for **fusion sciences research**. Combined, the two items receive increases totaling \$64.2 million. Other Office of Science initiatives with respective increased or decreased levels, by percent, include:

- **Advanced Scientific Computing Research** - \$207.1 million (10.9 percent decrease).
- **Basic Energy Sciences Program** - \$1.15 billion (3.7 percent increase)
- **Biological and Environmental Research** - \$455.7 million (21.7 percent decrease)
- **High Energy Physics** - \$713.9 million (3.1 percent decrease)
- **Nuclear Physics** - \$370.7 million (8.4 percent decrease)

Additional DOE programs of interest:

- **Advanced Fuel Cycle Initiative** - \$70 million (3.8 percent increase)
- **Advanced Metallurgical Processes Research** - \$8 million (19.2 percent decrease)
- **Biomass and Biorefinery Systems R&D program** - \$72.2 million (18.1 percent decrease), the combined total between the Energy Supply and Energy Conservation accounts
- **Building Technologies** - \$58 million (11.5 percent decrease)
- **Clean Coal Technology** - budget proposes to redirect funds from withdrawn clean coal projects to the Fossil Energy R&D program for work on the Future Gen project beginning in FY 2007. The FutureGen project, which is part of the Clean Coal Power Initiative, is expected to yield the world's first integrated carbon-sequestration and hydrogen production research power plant.
- **Coal Research Initiative** - \$286 million (4.9 percent increase)
  - Clean Coal Power Initiative - \$68 million (1.3 percent increase)
  - Coal R&D - \$218 million (6 percent increase)
    - Advanced Research - \$30.5 million (28.6 percent decrease)
    - Fuels - \$22 million (31.5 percent decrease)
    - Central Systems - \$98.3 million (15 percent increase)
    - Sequestration R&D - \$67.2 million (48 percent increase)
- **Generation IV Nuclear Energy Systems Initiative** - \$45 million (13.4 percent increase)
- **High Temperature Superconductivity R&D** - \$45 million (17.6 percent decrease)
- **Industries of the Future** - \$22.4 million (42.1 percent decrease) for Specific industries and \$30.6 million (6.9 percent decrease) for Crosscutting industries. The budget request allows for the completion of existing high-payoff projects and concludes work on near-term commercialization efforts that industry can complete on its own. For the Specific subprogram, decreases in funding

would be absorbed by all but Supporting industries. For Crosscutting, four industries would actually experience increases as no new funding is proposed for Robotics (\$1.97 million decrease) and Gasification Programs (no change). Funding for industrial technical assistance also is cut by \$2.28 million.

- **Natural Gas Technologies** - \$10 million (77.7 percent decrease)
- **Nuclear Energy Research Initiative (NERI)** - no new funding requested (\$2.5 million decrease). In FY04, DOE began to integrate NERI activities into its mainline nuclear R&D programs. Solicitations were issued in late FY04 and 35 cooperative agreement awards will be made to U.S. universities in early 2005.
- **Petroleum/Oil Technology** - \$10 million (70.5 percent decrease)
- **University Reactor Fuel Assistance and Support** - \$24 million (0.8 percent increase)
- **Vehicle Technologies** - \$165.9 million (0.3 percent increase)

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## **Department of Health and Human Services**

The \$642 billion FY 2006 budget for the Department of Health and Human Services (HHS) reflects an increase of \$58 billion over FY 2005, most of which occurs in mandatory spending programs such as Medicare. Discretionary portions of the HHS FY06 budget total \$67.2 billion, a decrease of 1 percent from FY05.

However, individual discretionary programs such as the **Food & Drug Administration** (FDA), **Centers for Disease Control & Prevention** (CDC), and the **National Institutes of Health** (NIH) are quite diverse. For example, funding for FDA will increase by \$81 million from FY 2005, whereas funding for CDC will decrease by \$491 million.

The Administration is proposing to terminate three HHS programs related to community and economic development, including the **Community Services Block Grants** (\$637 million in FY 2005) and **Community Services Discretionary Programs** (\$65 million in FY 2005) such as the **Urban and Rural Community Economic Development** grants and **Rural Community Facilities** grants.

In order to attract highly trained scientists to aid in their research objectives, NIH proposes to increase stipend levels and health insurance for certain postdoctoral trainees and fellows. Additionally, individual postdoctoral fellows will receive an increase of \$500 in their institutional allowances to cover the rise of health benefit costs. Without an increase in funding, however, NIH will support 17,442 Full-Time Training Positions for \$764 million, a decrease of 397 positions from FY 2005.

Funding priorities for NIH in FY 2005 include:

- **Biodefense** - \$1.7 million (\$6 million increase). HHS has requested that a total of \$97.1 million be provided to support radiological/nuclear research at \$47.1 million and chemical threat countermeasures at \$50 million. Other priorities include the clinical development of vaccines; clinical development of anti-toxins/antibody treatment for anthrax; and preclinical development of drugs, vaccines, and diagnostics with a focus on therapies.
- **The Roadmap for Biomedical Research** - \$333 million (\$98 million increase). The Roadmap has three primary initiatives: New Pathways to Discovery - \$169 million, Multidisciplinary Research Teams of the Future - \$44 million, and Re-engineering the Clinical Research Enterprise - \$120 million.
- **The Neuroscience Blueprint** - \$12 million. The Blueprint is a combined effort of neuroscience Initiatives and centers joined together through initiatives and working groups to focus on specific disorders. Funding for the Blueprint is distributed across three primary initiatives: Neuromouse

Project - \$2 million, Cross-Institute Neuroscience Training Programs - \$2.5 million, and Neuroscience Core Grants - \$7.5 million. In addition, the 15 collaborating Institutes and centers will contribute an extra \$14 million to this initiative, totaling \$26 million in FY06.

- **HIV/AIDS Research** - \$2.9 million (\$12 million or 0.4 percent increase)

The FY06 [NIH SBIR/STTR](#) budget for research grants is estimated to total \$616 million; the total available for contract awards through the NIH SBIR program is estimated to be \$22 million.

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## **Department of Homeland Security**

The FY 2006 discretionary budget request for the Department of Homeland Security (DHS) is \$34.15 billion, 6.6 percent above the comparable enacted FY 2005 appropriation. In FY06, DHS seeks to consolidate the research, development, test and evaluation (RDT&E) activities within the DHS [Science and Technology \(S&T\) Directorate](#). This consolidation, at a one-time cost of \$127 million, would bring the scientific and engineering personnel and other RDT&E resources of the department under a single accountable authority.

The FY06 budget requests \$1.4 billion (22.7 percent increase) for the **S&T Directorate** to provide leadership for directing, funding and conducting RDT&E and procurement of technology and systems to prevent the importation of chemical, biological, radiological, nuclear and related weapons and material to protect against and respond to terrorist threats.

New initiatives for FY06:

- **National Bio and Agrodefense Facility** - \$23 million to extend the capabilities of the National Biodefense Analysis and Countermeasures Center to support RDT&E to strengthen the nation's ability to address high consequence biological threats.
- **Low Volatility Warning System** - \$20 million to develop a protection-mode capability to detect chemical threat agents upon release in specific environments.
- **Rad/Nuc Countermeasures Test and Evaluation Complex** - \$9 million for facilities and capabilities to validate the performance of systems under development, and already deployed, to protect the U.S. from the threat of a terrorist radiological or nuclear attack.
- **Counter-MAN Portable Air Defense Systems** - \$49 million (plus \$61 million base funding) to initiate Phase III to include delivery and installation of pre-production C-MANPADS equipment on commercially operated aircraft by U.S. cargo carriers. In FY06, 20 operational aircraft will be modified and 16 C-MANPADS systems will be procured to support reliability and test data collection, as well as critical technology protection methods.
- **Research and Development (R&D) Consolidation** - \$127.5 million to integrate the RDT&E activities of TSA, USCG, CBP, and IAIP with those conducted within DHS's S&T Directorate. The directorate anticipates the development and expansion of collaborative relationships to foster and leverage an environment of collective capabilities, maximizing the efficiency and effectiveness of the department's RDT&E capacity.
- **Homeland Secure Data Network (HSDN)** - \$300,000 to address requirements for secure, classified, computer-to-computer connectivity. (A total of \$37 million is requested for the HSDN; however, the directorate's portion of this project requires \$300,000).

The requested FY06 funding levels under the [Research & Technology](#) area of the S&T Directorate are divided into three portfolios, including countermeasures, security components and cross-cutting divisions.

The Association of American Universities (AAU) reports requested funding levels for research activities

within the **countermeasures portfolio** include:

- **Biological Countermeasures** - \$362.3 million (\$3 million decrease) to provide the understanding, technologies, and systems needed to address possible biological attacks on this nation's population, agriculture or infrastructure.
- **Chemical Countermeasures** - \$102 million (9.25 percent increase) to enhance and coordinate the nation's capability to address chemical threat attacks through innovative research, development, and transition of capabilities.
- **Explosives Countermeasures** - \$14.7 million (25.4 percent decrease) to develop technical capabilities to address the use of explosives and other conventional means in terrorist attacks against the population, mass transit, civil aviation, and critical infrastructure without impeding flow of commerce.
- **Radiological and Nuclear Countermeasures/Domestic Nuclear Detection Office** - \$246.4 million (100 percent increase) to counter the threat of radiological and nuclear terrorism by developing and transitioning advanced, integrated systems and capabilities to operational end users.

Requested funding levels for research activities within the **security component portfolio**, according to AAU, include:

- **Critical Infrastructure Protection** - \$20.8 million (23 percent decrease) to protect the nation's critical infrastructure and key resources from acts of terrorism, natural disasters, or other emergencies by developing and deploying tools to anticipate, identify, and analyze risks, and systems to reduce those risks and the consequences of an event.
- **Cyber Security** - \$16.7 million (9.4 percent decrease) for research, development, testing, and evaluation endeavors to secure the nation's critical information infrastructure, through coordinated efforts that will improve the security of the existing cyber infrastructure, and provide a foundation for a more secure infrastructure.
- **Threat and Vulnerability, Testing and Assessment** - \$47 million (28.6 percent decrease) to develop capabilities that enable the creation, application and dissemination of knowledge to address terrorist activities and restore the nation's operational capabilities.

AAU also reports the following funding levels for research activities within the **cross-cutting portfolio**:

- **University & Fellowship Programs** - \$63.6 million (9.1 percent decrease) to stimulate, coordinate, leverage, and utilize the unique intellectual capital in the academic community to address current and future homeland security challenges, and educate and inspire the next generation homeland security workforce.
- **Standards** - \$35.5 million (10.6 percent decrease) to develop and coordinate the adoption of national standards and appropriate evaluation methods to meet homeland security mission needs.
- **Emerging Threats** - \$10.5 million (2.3 percent decrease) to anticipate and define potential threats arising from new scientific and technological advances, terrorist use of existing capabilities in new or unexpected manners, and self-assessments of science and technology research activities and jump-start countermeasures capability development.
- **Rapid Prototyping** - \$20.9 million (72.5 percent decrease) to accelerate deployment of advanced technologies to address urgent user requirements.

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## **Department of Housing and Urban Development**

Big H, little u, little d may provide the most apt description of the priorities in the Department of Housing

and Urban Development (HUD) FY 2006 request, as cuts to the economic development programs are deep. Housing advocates may not entirely agree with that summation as the agency overall takes an 11 percent cut to total \$28.51 billion for FY06; however, nearly every major initiative promoting economic development falls victim to the budget knife.

Slated for elimination are [Community Development Block Grants](#) (\$4.7 billion in FY 2005, including most CDBG set asides), Community Development Loan Guarantees (subsidy and authorization level of \$282 million), [Brownfields Economic Development Initiative](#) (\$24 million), [Economic Development Initiatives Special Purpose Projects](#) (\$292 million), [Neighborhood Network Initiative](#) and Neighborhood Initiative Demonstration (combined \$57 million), [Renewal Communities, Urban Empowerment Zones and Enterprise Communities](#) (\$10 million), [Rural Housing and Economic Development](#) (\$24 million), and [Partnership for Advancing Technology in Housing](#) (\$7 million).

In total, the Community Planning and Development account would be down from \$8.341 billion in FY05 to \$3.68 billion in FY06 (55 percent decrease).

**Research and Technology**, however, would see a sharp rise to \$70 million (55 percent increase) as the \$29 million **University Program**, formerly funded under the CDBG line item, is transferred into the Policy Development and Research account.

## **[Department of the Interior](#)**

The total FY 2006 budget request for the Department of Interior, as reported in its Budget in Brief, is \$14.958 billion, down 6.7 percent from FY 2005. The discretionary budget appropriation request is \$10.76 billion, 1 percent less than FY05. There are two research-related items of potential interest:

- **Oil Spill Research Program** - \$7 million (no change) to support oil pollution research and other duties related to oil spill prevention. The program is run within the [Minerals Management Service](#).
- **U.S. Geological Survey** - \$934.3 million (\$1.95 million decrease) to provide reliable scientific information to: describe and understand the Earth, minimize the loss of life and property from natural disasters, assist others in managing water, biological and other natural resource; and, enhance and protect the quality of life. **Biological research** would receive a \$1.2 million increase for ecological systems mapping and research projects in the Great Lakes, Glen Canyon and regarding invasive plants.

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## **[Department of Labor](#)**

The Department of Labor's (DOL) discretionary budget request of \$11.5 billion for FY 2006 is 4.4 percent less than the FY 2005 appropriation. The agency's payroll, however, would increase by 169 full-time equivalent positions, according to the budget overview.

The **Employment and Training Administration** (ETA) FY06 budget request of \$6.36 billion reflects a 5.4 percent decrease from the FY05 appropriation. Highlights of ETA include:

- **High Growth Job Training Grant Program** - \$5.8 million (new initiative) to prepare workers to take advantage of new and increasing job opportunities in high growth or high demand and economically vital industries and sectors of the economy. The foundation of this initiative is built on partnerships that include the public workforce system, business and industry, education and

- training providers, and economic development.
- **Community College Initiative** - \$250 million (no change) to provide community-based job training grants, an employer-focused competitive grant program for job training at community and technical colleges. The request is expected to result in training and the subsequent or enhanced employment for up to 100,000 individuals.

Four DOL programs would be consolidated into a proposed \$3.91 billion [WIA Plus Consolidated Grant Program](#). The budget overview states that the new program includes formula grants and a National Reserve and will give states and the Secretary of Labor greater ability to target resources where needed, facilitate coordination, and eliminate duplication in the provision of services to adults, dislocated workers, and youth. The Administration tried unsuccessfully in FY05 to create a unified grant program by consolidating employment and training programs serving adults, including the WIA Adult and Dislocated Worker programs and Employment Service state grants. The FY06 request adds the Youth Program and additional Employment Service Grants. The FY06 consolidated program is at least \$61.5 million less than the individual programs received in FY05.

## **Department of Transportation**

The Administration's FY 2006 budget request of \$59.5 billion for the Department of Transportation (DOT) is 1 percent higher than the FY 2005 appropriation. DOT's request would be distributed across the department's five key strategic objectives as follows:

- Improve safety (26.1 percent);
- Increase mobility for all Americans (64.5 percent);
- Increases global transportation connectivity in support of the Nation's economy (0.5 percent);
- Protect the environment (6.7 percent); and,
- Support national security (0.9 percent).

The balance of 1.3 percent would go toward organizational excellence, according to the DOT Budget in Brief.

DOT's FY06 budget request includes a \$28 billion funding increase for the Administration's six-year surface transportation re-authorization proposal, the **[Safe, Accountable, Flexible, and Efficient Transportation Equity Act](#)** (SAFETEA) of 2003, from \$256 billion to \$284 billion in federal resources over the six-year life of the bill.

Highlights of the research and development (R&D) portion of the DOT budget request:

The FY06 budget request reflects DOT's two new organizations, effective Nov. 30, 2004: the **Research and Innovative Technology Administration** (RITA), and the **Pipeline and Hazardous Materials Safety Administration**. The new organizations were formed from the merger of the [Research and Special Programs Administration](#) (RSPA), the [Office of Intermodalism](#), currently housed in the [Office of the Secretary](#), and the [Bureau of Transportation Statistics](#) (BTS).

The FY06 budget request for RITA is \$39 million to coordinate, facilitate, and review the advancement and R&D of innovative technologies, including intelligent transportation systems; comprehensive transportation statistics research, analysis and reporting; education and training in transportation and transportation-related fields, including the **[University Transportation Centers](#)**; and activities of the Volpe National Transportation Center. The FY06 budget request for RITA's R&D line item is \$6.2 million, an increase of \$2 million from the FY05 appropriation.

RITA also will undertake more than \$300 million in transportation-related research on a reimbursable basis for other agencies. For instance, through the University Transportation Centers, RITA will support the education of transportation professionals in obtaining advanced degrees in transportation-related programs from participating universities.

In FY06, the Research, Engineering, and Development line item at the [Federal Aviation Administration](#) (FAA) is \$130 million (no change), including \$92 million for continued research on aviation safety issues. The remaining research funding is for mobility and environmental issues, including \$18.1 million for the Joint Planning and Development Office to develop a plan for transforming the future of the National air space.

The [Federal Highway Administration](#) (FHWA) FY06 budget request for the [Office of Research, Development and Technology](#) and [Intelligent Transportation Systems](#) (ITS) is \$425.6 million, which is down from the FY05 appropriation of \$864 million with the elimination of earmarked funds for ITS projects. The FY06 budget request would enable FHWA to continue to work on identifying ways to reduce the number of injuries and fatalities on the nation's roadways. This would be accomplished by applying innovative technologies in highway safety, deploying and evaluating safety technologies and innovations at the state and local levels, and assuring the deployment of best practices in training, design, and planning.

The [National Highway Traffic Safety Administration](#) (NHTSA) FY06 budget request includes \$94 million (\$6 million increase) for research and analysis in support of all NHTSA programs, including the collection and analysis of crash data to identify safety problems, develop alternative solutions and assess costs, benefits, and effectiveness. Research will continue to concentrate on improving vehicle crash worthiness and crash avoidance, with emphasis on increasing safety belt use, decreasing alcohol involvement in crashes, decreasing the number of rollover crashes, improving vehicle-to-vehicle crash compatibility, and improved data systems.

The FY06 budget request for the [Federal Transit Administration](#) (FTA) includes \$53.8 million for **National Research**, to be distributed across four programs:

- \$34.4 million for the [National Research Program](#);
- \$9 million for the [Transit Cooperative Research](#);
- \$4.4 million for the [National Transit Institute](#); and,
- \$6 million for the **University Transportation Research Program**.

The [Federal Railway Administration](#) (FRA) FY06 budget request for R&D is \$46 million (up from \$36 million in FY 2005) to support research efforts in the areas of rail systems safety, track and structures, train occupant protection, human factors in train operations, rolling stock and components, track and train interaction, train control, grade crossings, hazardous materials, and transportation and research development facilities and test equipment. The \$10 million increase over the FY05 appropriation will be used to implement a revised plan to install the Nationwide Differential Global Positioning System.

The FRA FY06 budget request of \$360 million would provide funding to the [Surface Transportation Board](#) (STB) to oversee the continuation of commuter operations in the Northeast Corridor and elsewhere should Amtrak cease commuter rail operations as the future of intercity passenger rail is determined. No funding is requested for the **Next Generation High Speed Rail initiative** (\$22 million decrease) because the future of the passenger rail system remains under debate, according to the FRA budget document.

The [Minority Business Resource Center](#) (MBRC) program, through the DOT Office of the Secretary,

requested \$3.9 million for FY06. Federal subsidy and administrative expenses of \$900,000 will support an \$18 million short-term loan guarantee program to assist small, disadvantaged and women-owned transportation-related businesses; and \$3 million (no change) will fund the Minority Outreach program, which includes a clearinghouse for national dissemination of information on transportation-related projects and grants to minority educational institutions.

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## **Department of the Treasury**

There are only a few programs in the Treasury Department that SSTI monitors for the tech-based economic development community. All are slated for termination or phaseout.

The **Community Development Financial Institutions** (CDFI) Program (\$31.4 million in FY 2005), the **Bank Enterprise Award** (\$11.4 million in FY 2005), and the **CDFI Native Initiatives** (\$6 million in FY 2005) all would be eliminated as part of the initiative to create a Strengthening American Communities Grant Program within the Department of Commerce (see Multi-Agency Initiatives for details).

A request of \$8 million is made in FY 2006 for CDFI to administer the **New Market Tax Credits** (\$6.2 million in FY 2005) and phase out the existing CDFI portfolio. New Market Tax Credits permit taxpayers to receive a credit against federal income taxes for making qualified equity investments in designated Community Development Entities.

## **Environmental Protection Agency**

The Administration's FY 2006 budget request for the Environmental Protection Agency (EPA) is \$7.6 billion, a 5.6 percent decrease from the FY 2005 appropriation. However, the agency's **science and technology** programs would receive \$760.6 million, a 2.2 percent increase over the FY05 appropriation.

A \$79 million increase is proposed for EPA **homeland security** efforts, including:

- \$44 million to launch a pilot program of monitoring and surveillance in select cities to provide early warning signs of contamination;
- An increase of \$19.4 million for environmental decontamination research and preparedness, with an additional \$4 million requested for the Safe Buildings research program; and,
- More than \$11.6 million in new resources to support preparedness in environmental laboratories.

Other EPA programs of interest include:

- **Pollution Prevention Grant Program** - \$6 million to help state programs assist businesses and industries in identifying environmental strategies for complying with federal and state environmental regulations.
- **Regional Science and Technology** - \$3.6 million to support geographically targeted research activities.
- **Research** - \$509 million
  - **Environmental Technology Verification** - \$3.2 million for this voluntary, market-based verification program for commercial-ready technologies.
  - **Human Health and Ecosystems** - \$169.6 million to enhance current risk assessment and management strategies and guidance to better consider risk determination needs for children.

- **Pollution Prevention** - \$20 million to facilitate the incorporation of pollution prevention concepts and principles into the daily operations of government agencies, businesses, manufacturers, nonprofit organizations, and individuals.
- **Fellowships** - \$8.3 million to support fellowships including the Science to Achieve Results (STAR) Program, and the Greater Research Opportunity (GRO) graduate and undergraduate fellowships.
- **Science Advisory Board** - \$4.9 million to provide scientific, credible and technical advice as may be requested by the Administrator, the Committee on Environment and Public Works of the United States Senate, or the Committees on Science and Technology, Interstate and Foreign Commerce, or Public Works and Transportation of the House of Representatives.
- **Science Policy and Biotechnology** - \$1.7 million to coordinate scientific, technical, and policy development activities within the Office of Prevention, Pesticides, and Toxic Substances. The Office of Science Coordination and Policy Biotechnology Team is also a focal point for coordination with other federal agencies on any issues involving biotechnology, including international activities.

**Editor's Note:** Unfortunately, we are unable to provide comparisons between the president's request for EPA and its FY05 appropriations. After several conversations, Dave Ryan, an EPA press officer, told us the independent agency "is unable to release FY05 enacted or estimated budget numbers until their operating plan has been approved by OMB and Congress."

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## **NASA**

The Administration's \$16.47 billion FY 2005 budget request for NASA represents a 2.4 percent increase over the FY 2005 appropriation. Among highlights, the budget proposal maintains investments in next-generation Earth-observing satellites to support **climate research** efforts. It also continues support for **Lunar, Mars, Earth Observations Systems and solar research**, but cancels the **Jupiter Icy Moon Orbiter program**, promising to fund Project Prometheus to test a nuclear reactor in 2008 and fly a demonstration mission within a decade.

The budget request for the **Science Mission Directorate** is \$5.48 billion, a modest decrease from its \$5.53 billion in FY05. By contrast, **Education** programs are reduced by nearly 23 percent to \$166.9 million. Funding for **Aeronautics Research** is down 5.9 percent from FY05 to \$852.3 million.

For the **Exploration Systems Mission Directorate**, the request is \$3.17 billion -- an 18 percent increase. Included in this figure is \$919.2 million, a 27 percent increase, to support exploration systems research and technology under NASA's Advanced Space Technology and Technology Maturation programs.

In NASA's new budget structure, the former **Biological and Physical Sciences Directorate** falls under the \$806.5 million Human Systems Research & Technology theme of the Exploration Systems directorate. In its brief summary of the NASA budget, the Association of American Universities (AAU) notes NASA indicates it will use the International Space Station and continue ground-based research in improving human tolerance of the space environment.

The request for the **Innovation Partnerships Program** within Exploration Systems is \$34.9 million higher than the FY05 figure for an FY06 total of \$223.2 million. The line item includes NASA's technology transfer efforts, the **SBIR/STTR** programs, space product development, and the **University Research, Engineering and Technology Institutes**. The phrase **Regional Partnership Centers** replaces former discussion of the Regional Technology Transfer Centers. Goals for the year include centralizing "external contractor network for management of NASA technology transfer projects at NASA headquarters."

The FY06 budget proposal also includes \$1.86 billion for the **Space Station**, maintaining that the return-to-flight of the **Space Shuttle** fleet is its top priority. This level of funding will enable NASA to meet obligations to international partners. NASA also will proceed with plans to retire the Shuttle in 2010, providing \$753 million for development of a "crew exploration vehicle" by 2014.

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## **National Science Foundation**

The Administration's FY 2006 budget request for the National Science Foundation (NSF) is \$5.605 billion, a 2.4 percent increase above the FY05 appropriation level, but is still lower than the agency's FY04 appropriation of \$5.652 billion.

Demand for NSF funding has increased dramatically over the past few years, based on the funding rate for research grants dropping from 30 percent in the late 1990s to only 20 percent in 2005 (estimated). The budget brief states, "In FY06, NSF will increase the funding rate to the FY04 level of 21 percent, while striving to maintain recent gains in award size and duration." This may be difficult given funds available would barely keep pace with inflation and the agency would add 25 employees under the Administration's request.

While NSF hopes to turn around the funding rate for proposals, the number of students able to participate in NSF educational programs is expected to drop by 6,140 students, a 27 percent drop from FY05, according to a Feb. 8 article on the [Chronicle of Higher Education](#) website. This is due in large part because most of the agency's overall net increase of \$132.18 million in FY06 is accomplished by significant budget shifts across the four major accounts:

- Research and related activities - \$4.33 billion (2.7 percent increase)
- Education and human resources - \$737 million (12.4 percent decrease)
- Major research equipment and facilities construction - \$250.1 million (44 percent increase)
- Salaries and expenses - \$269 million (20.5 percent increase)

The Division of Undergraduate Education (DUE) would shoulder \$18.67 million (12 percent) of the cuts to the education and human resources account. DUE serves as NSF's focal point for improving undergraduate science, technology, engineering and mathematics (STEM) education. Some key programs under DUE or the Education and Human Resources directorate that would be affected include:

- **Course, Curriculum & Lab Improvement** - \$80 million (\$14.4 million decrease) to support research on undergraduate STEM teaching and learning.
- **Math & Science Partnerships** - \$60 million (\$19.36 million decrease) to improve student outcomes in math and science for all students in grades K-12 through partnerships with higher education. Funding would support awards made in previous years.
- **STEM Talent Expansion Program** (STEP) - \$25 million (\$280,000 decrease) to increase the number of U.S. citizens and permanent residents receiving associate or baccalaureate degrees in established or emerging STEM fields.
- **Advanced Technological Education** - \$45 million (\$140,000 decrease) to improve technician education in science- and engineering-related fields that drive the nation's economy, particularly at two-year colleges and secondary schools.
- **Informal Science Education** - \$63 million (\$60,000 decrease) to promote public interest understanding and engagement in science and technology through voluntary self-directed, and life-long learning opportunities for children and adults.

A few education-related programs that would experience increases, albeit modest, include:

- **Experimental Program to Stimulate Competitive Research (EPSCoR)** - \$94 million (\$320,000 increase) to promote the development of selected states' science and technology resources through partnerships involving a state's universities, industry, government and the federal R&D enterprise.
- **Integrative Graduate Education and Research Training (IGERT)** - \$24.6 million (\$100,000 increase) to prepare U.S. doctoral students for advancing knowledge in emerging areas of research and to pursue successful careers in academia, industry or the public sector.
- **Graduate Research Fellowships** - \$88.57 million (\$100,000 increase) to support the most promising graduate science, mathematics and engineering students in the U.S. for a broad range of disciplinary and interdisciplinary careers.
- **Graduate Teaching Fellowships in K-12 Education** - \$41.83 million (\$100,000 increase) to enable graduate students in NSF-supported STEM disciplines to acquire skills that will prepare them for professional and scientific careers in the 21st century.

The **National Nanotechnology Initiative** remains a priority area as the FY06 request for NSF's investment in nanoscale science and engineering would grow by 1.6 percent to \$343.77 million.

NSF's centers programs, favorites of many state and local tech-based economic development initiatives, are highlighted for additional funds for new and expanded centers. Selected programs include:

- **Science and Technology Centers** - \$53.89 million (3.8 percent increase), with \$2 million dedicated to supporting up to four new centers across the range of NSF disciplines.
- **Engineering Research Centers** - \$61.8 million (0.4 percent increase) to support partnerships involving academe, industry and NSF for development of next-generation advances in complex engineered systems important for the nation's future.
- **Materials Research Science and Engineering Centers** - \$58 million (1.75 percent increase) to support the existing 27 centers established through open competitions to address major interdisciplinary problems in materials and condensed matter science.
- **Nanoscale Science & Engineering Centers** - \$9.71 million (no change) from the Engineering Directorate to fund eight nanotechnology centers with multidisciplinary capabilities.
- **Plant Genome Virtual Centers** - \$36 million in the Biological Sciences Directorate (no change) to support collaborative labs, or "collaboratories" in which coordinated, multi-investigator teams pursue comprehensive plant genome research programs relevant to economically important plants or plant processes.
- **Long-Term Ecological Research (LTER) Sites** - \$17.53 million (no change) to support collaborative interdisciplinary research at LTER sites.
- **Science of Learning Centers** - \$23 million (15.9 percent increase) to continue support for multidisciplinary, multi-institutional centers to advanced understanding of learning.
- **Industry/University Cooperative Research Centers (I/UCRCs)** - \$7.25 million (20.8 percent increase) to further develop long-term partnerships among industry, academe and government and to allow the 50 existing centers to compete for supplements for fundamental research that will enhance their capabilities.

**Partnerships for Innovation** would receive \$9.5 million, \$420,000 less than the FY05 level. The program stimulates the transformation of knowledge created by the national research and education enterprise into innovations that create new wealth, build strong local, regional and national economies and improve the national well-being.

Funding for **SBIR/STTR** within the Engineering Directorate is \$105.33 million, a 2.5 percent increase over

FY05, to support innovation research conducted by small technology firms.

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## **Regional Commissions and Authorities**

There are three federally established regional commissions and authorities that are dedicated to improving the economic opportunities within specific geographic regions. Two - the Appalachian Regional Commission and the Delta Regional Authority - are dependent on annual appropriations and are looking at reductions in FY 2006. The Tennessee Valley Authority, the oldest and largest of the three, generates its budget primarily through power generation revenues. TVA still requires the government to approve or set its annual spending level.

- **[Appalachian Regional Commission](#)** (ARC) - \$65.5 million (\$528,000 decrease) to assist the 13-state, 410-county Appalachian Region in achieving socioeconomic parity with the nation through four goals, including increasing job opportunities and per capita income, strengthening the capacity of citizens to compete in the global economy, improving the region's competitiveness through development of key infrastructure, and reducing the region's isolation through the Appalachian Development Highway System (ADHS). ADHS receives an additional appropriation for road construction and maintenance.
- **[Delta Regional Authority](#)** - \$6 million direct appropriation (\$48,000 decrease) to assist an eight-state, 240-county region of demonstrated distress in obtaining the transportation and basic public infrastructure, skill training, and opportunities for economic development essential to strong local economies. An additional \$1 million the authority received from the Department of Agriculture is deleted in FY06.
- **[Tennessee Valley Authority](#)** (TVA) - \$8 million (\$252,000 increase). Established in 1933, TVA is a government-owned corporation for the unified development of a river basin comprised of parts for seven states. The agency finances its program primarily from proceeds available from current power operations and borrowings against future power revenues. TVA operates a series of 49 dams and 47 reservoirs to reduce the risk of flooding, enable year-round navigation, supply affordable and reliable electricity, improve water quality and supply, provide recreational opportunities, and stimulate economic growth.

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## **Small Business Administration**

The Administration's \$593 million FY 2006 request for the Small Business Administration (SBA) represents a 3 percent decrease from the FY 2005 appropriation. Funding levels for selected activities identified as "core programs" in the agency's press release include:

- **[Small Business Development Centers](#)** (SBDC) - \$88 million (1.1 percent decrease) to support 1,100 SBDCs around the country that provide management assistance to current and prospective small business owners.
- **[Women's Business Centers](#)** (WBC) - \$12 million (2.7 percent decrease) to support 84 WBCs located throughout the U.S. to promote the growth of women-owned businesses through programs that address business training and technical assistance, and provide access to credit and capital, federal contracts, and international trade opportunities.
- **[Service Corps of Retired Executives](#)** (SCORE) - \$5 million (1.4 percent increase) to support 389 chapter offices to provide entrepreneurs with free, confidential face-to-face and email business counseling services.
- **[National Women's Business Council](#)** - \$750,000 (1.3 percent increase) to support a bi-partisan federal advisory council created to serve as an independent source of advice and policy

recommendations to the President, Congress and SBA on economic issues of importance to women business owners.

- **[Veteran's Outreach](#)** - \$750,000 (1.3 percent increase) to provide entrepreneurial development services such as business training, counseling and mentoring to eligible veterans owning or considering starting a small business.

No FY06 funds were requested for the **[Federal and State Technology Partnership](#)** (FAST), whose authorization expires in FY 2005. Nor was funding provided for the SBIR/STTR **Rural Outreach Program**. The programs' last direct appropriations were, respectively, \$2 million and \$250,000 in FY 2004.

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