

Congress Finalizes Creation of Department of Homeland Security, Authorizes New S&T Infrastructure

(This analysis revises earlier AAAS R&D Funding Updates (August 28, August 12, and June 21) on the R&D portfolio and organizational structure of the DHS. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D by agency in FY 2003 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/rd>) in the “FY 2003 R&D” or the “What’s New” sections.)

On November 19, after months of partisan debate over personnel rules and in one of the last actions of the 107th Congress, the Senate joined the House in giving final approval to legislation (HR 5710 or HR 5005) that will establish a new **Department of Homeland Security (DHS)**. [President Bush signed the bill into law on November 25 and announced a reorganization plan to officially establish the new department in 60 days, on January 24.] DHS will form through the consolidation of programs from several existing cabinet-level agencies and various independent agencies with the primary mission of preventing future terrorist attacks within the United States. Included under the new DHS umbrella will be agencies such as the Coast Guard, the Customs Service, the Federal Emergency Management Agency, and the Immigration and Naturalization Service; all told, the DHS will bring together nearly 170,000 federal employees and up to \$35 billion in annual budgetary resources in the largest reorganization of the federal government since the 1940s.

The new DHS will have significant impacts in science and technology, especially in S&T related to homeland security. The DHS will have its own S&T policy infrastructure as well as a significant R&D portfolio of its own, drawing on transfers of programs from other agencies as well as newly created R&D programs and R&D performing organizations.

Science and Technology in the new DHS

The final version of the DHS bill contains provisions **creating the position of an Under Secretary for Science and Technology**, missing from the Bush Administration’s original proposal, to coordinate the department’s science and technology programs and to oversee its R&D funding. The Under Secretary, who will report directly to the Secretary for Homeland Security (Tom Ridge, the current director of the White House Office of Homeland Security), will be in charge of the **Directorate of Science and Technology**, one of four broad directorates in the new DHS. This Directorate will have responsibility for setting homeland-security R&D goals and priorities, coordinating homeland security R&D throughout the federal government, funding its own homeland security R&D, facilitating the transfer and deployment of technologies for homeland security, and advising the DHS Secretary on all scientific and technical matters.

The Under Secretary will be the apex of a new S&T infrastructure in the DHS, missing from the original Bush proposal but added by Congress. The Under Secretary will act as scientific and technical adviser to the Secretary for Homeland Security and will be assisted by his or her own staff and will also have the ability to rely on numerous new institutions that will be created in the coming months. There will be a Homeland Security Advisory Committee consisting of 20 members appointed by the Under Secretary representing first responders, citizen groups, researchers, engineers, and businesses to provide science and technology advice to the Under Secretary. The DHS could also create a new federally funded research and development center (FFRDC), the Homeland Security Institute, to act as a think tank for risk analyses, simulations of threat scenarios, analyses of possible countermeasures, and strategic plans for counterterrorism technology development. DHS will also have the authority to contract with existing FFRDCs for independent analyses on homeland security-related issues.

There will also be an Office for National Laboratories that will coordinate DHS interactions with Department of Energy (DOE) national laboratories with expertise in homeland security such as Sandia, Lawrence Livermore, and Los Alamos; the Office can help DHS jointly sponsor R&D at the labs or can

contract directly with the labs for R&D. The Office also has the authority to establish a semi-independent DHS headquarters laboratory within an existing federal laboratory, national lab, or FFRDC to supply scientific and technical knowledge to the DHS.

The legislation also directs DHS to establish one or more university-based centers for homeland security, and includes 15 detailed criteria for where to locate it. It is widely assumed that the 15 criteria are written in such detail to favor Texas A&M University.

The legislation creates a new research agency within the Directorate named the **Homeland Security Advanced Research Projects Agency (HSARPA)**, modeled on the existing Defense Advanced Research Projects Agency (DARPA) in the Department of Defense (DOD). HSARPA's primary program will be the **Acceleration Fund** for Research and Development of Homeland Security Technologies, which will award competitive, merit-reviewed grants for: basic and applied research to promote revolutionary changes in homeland security technologies; development and testing of potential homeland security technologies; and the acceleration or prototyping and developing of homeland security technologies to get them ready for deployment. The Fund will therefore have responsibility for the entire spectrum of R&D from basic research all the way to prototyping new technology products. The legislation authorizes up to \$500 million in FY 2003 for the Fund, but the actual appropriation will have to be decided as part of the yet-unfinished FY 2003 budget process.

The DHS R&D Portfolio

The DHS will fold in R&D programs from three existing departments (DOE, USDA, and DOT) in addition to the new HSARPA. Precise R&D funding figures are not available because of the vague parameters of the final legislation, and also because the FY 2003 budget process was left unfinished by the 107th Congress. While the original Bush Administration proposal in June suggested that DHS would have a \$3.4 billion R&D portfolio (AAAS estimate) out of a \$37.5 billion budget, the final legislation suggests a portfolio of up to \$800 million (AAAS estimate; see Table) out of a \$35 billion proposed budget. In contrast to the original proposal, **the final legislation keeps federal bioterrorism R&D programs within the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) instead of transferring them to DHS.** Although the final FY 2003 budget for these programs has not been decided, the NIH/CDC bioterrorism R&D portfolio could be as much as \$2 billion in FY 2003.

Other counterterrorism R&D programs in other agencies, notably EPA, DOD, and DOE, will continue to remain outside DHS (see the August 22 R&D Funding Update on counter-terrorism R&D for information on the total federal counter-terrorism R&D portfolio.)

Table. Potential DHS R&D Portfolio (in millions of dollars budget authority)

R&D Program	FY 2003 (Estimate)
DOE NISAC	\$20m
Other DOE programs	\$100m
HSARPA (new)	\$500m
USDA Plum Island	\$25m
DOT TSA	\$130m
DOT Coast Guard	\$24m

Total DHS R&D	\$799m

AAAS estimates of R&D based on final DHS legislation, OMB and agency R&D data.

Note: The FY 2003 budgets for these programs have not been decided. The figures in this table represent preliminary estimates based on the FY 2003 request or FY 2003 authorization levels.

By directorate, the DHS R&D portfolio will include:

- **Directorate for Information Analysis and Infrastructure Protection:** R&D will not be a large part of this directorate. The **Department of Energy's (DOE) National Infrastructure Simulation and Analysis Center (NISAC)** moves to DHS. NISAC is a partnership between two of DOE's national laboratories, Los Alamos and Sandia, both in New Mexico. NISAC had a budget of \$20 million in FY 2002 and performs R&D to analyze critical infrastructures and their vulnerabilities, and simulate infrastructure or biological attack scenarios. The Department of Commerce's National Institute of Standards and Technology (NIST) Computer Security Division, part of the NIST laboratories, will not move to DHS as originally proposed.

- **Directorate of Science and Technology:** This directorate, as noted above, will contain most of the S&T policy and advisory infrastructure of the new DHS, as well as a majority of the R&D portfolio. Also as noted above, the directorate will have responsibility for the newly created HSARPA, which could have an R&D portfolio of up to \$500 million in FY 2003 if the money is appropriated. The original June 6 announcement proposed that all of DOE's Lawrence Livermore National Laboratory (LLNL), with a proposed budget in FY 2003 of \$1.2 billion, would move to DHS but in the final legislation only parts of LLNL such as its Advanced Scientific Computing Research program and some smaller programs will move to DHS. Among other DOE programs, the Biological and Environmental Research program's microbial pathogens activities, and the national security and nuclear smuggling and other programs within Nonproliferation & Verification R&D will move to DHS. The small DOE Environmental Measurement Laboratory in New York City will also move to DHS. Because these programs are embedded within larger programs, it is unclear how large these transfers will be, but combined they could total around \$100 million.

The other affected department under this directorate is the **U.S. Department of Agriculture (USDA)**. Its **Plum Island Animal Disease Center** off Long Island, New York, with a budget of \$25 million and 124 federal employees, will transfer to DHS. The center is currently funded through USDA's Agricultural Research Service (ARS). The new directorate will also house the Department of Defense's (DOD) National Bio-Weapons Defense Analysis Center, which does not yet exist and was proposed in the FY 2003 budget; the final FY 2003 Defense appropriations bill, however, does not mention this center, so it is unclear whether this Center will even exist in FY 2003 or whether the Center will fund any R&D.

The final legislation rejects the Administration proposal to transfer to DHS the civilian biological defense research programs operated by the Department of Health and Human Services (HHS). The legislation keeps all human health-related homeland security research within HHS. The Administration proposed to transfer bioterrorism-related R&D from the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC; both are HHS agencies), with a proposed budget of \$2.0 billion in FY 2003. The final DHS legislation gives the DHS Secretary joint authority with the HHS Secretary to set priorities and strategy for human health-related research on terrorist threats, but no funding authority.

- **Directorate of Border and Transportation Security:** This division will be by far the largest of the four in terms of budget and personnel, and will integrate federal government operations aimed at securing U.S. borders and transportation systems. It will fold in the Immigration and Natural Service, the Customs Service, and the recently created Transportation Security Administration (TSA) within DOT. This division will inherit TSA's R&D program on aviation security, with a requested budget of \$130 million in FY 2003.

- **Directorate of Emergency Preparedness and Response:** This division will coordinate all federal assistance in response to disasters (including natural disasters) and domestic attacks. There will be no R&D programs within this mission.

- **Other agencies:** The Secret Service, the Coast Guard, and part of USDA's Animal and Plant Health Inspection Service (APHIS) will transfer to the DHS as independent agencies outside of the directorate structure. The Coast Guard's \$24 million R&D portfolio will become part of DHS, but it appears that APHIS's \$29 million R&D portfolio will remain in USDA.

Although the DHS will have enormous impacts on the federal government and especially on goods and travelers crossing U.S. borders, the impact on scientists and engineers is minimal. Few federal scientists and engineers will be affected except a small number of DOT, USDA, DOE or DOE contractor employees. The new priority-setting powers of DHS, however, mean that NIH bioterrorism research priorities will be set with strong input from DHS.

Next Steps and Possible Impacts

Although the legislation is now final, it will take years before the DHS reorganization is complete. Because the 107th Congress left Washington without completing the FY 2003 budget, all domestic programs are currently operating at FY 2002 funding levels. As a consequence, there is no money available to create new programs and organizations such as HSARPA and other organizations within the new Directorate of S&T, unless funds can be shifted from other, existing programs. [Congress hopes to finish work on FY 2003 appropriations in January.]

The core offices of DHS will be established on January 24, including the Under Secretary for S&T, HSARPA, and the Office for National Laboratories. Most of the existing agency programs such as the TSA, the DOE programs, and the Coast Guard will be transferred to the new department on March 1. The remaining programs including Plum Island will be transferred on June 1; the Homeland Security Advisory Committee will also be established on that date.

It may be months, however, before the new department has the necessary resources to flesh out its S&T infrastructure.] In the meantime, Congress will have to reorganize its committee structure to handle the new department, which could mean changes in appropriations committees and authorizing committees, with uncertain impacts on the S&T portions of DHS.

AAAS will continue to monitor the new DHS and its implications for federal R&D as it organizes, and will update this analysis as events warrant. (Further AAAS R&D Funding Updates on the AAAS R&D Web site will provide up-to-date information on R&D in FY 2003 appropriations, including the eventual funding status of Department of Homeland Security R&D programs.)

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AAAS R&D Budget and Policy Program
1200 New York Ave, NW
Washington, DC 20005
(202) 326-6607; -6600
fax (202) 289 4950
www.aaas.org/spp/rd (Note: New URL)