

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND
TECHNOLOGY**

HEARING CHARTER

**A Review of Progress by the Science and Technology Directorate of the Department of
Homeland Security**

Tuesday, October 27, 2015
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

Purpose

On Tuesday, October 27, 2015, the Committee on Science, Space, and Technology will hold an oversight hearing to review the strategy, mission, organization, programs, projects, and other activities of the Science and Technology Directorate of the Department of Homeland Security (DHS S&T).

The purpose of this hearing is to assess any progress that has been made in addressing concerns raised one year ago in an oversight hearing¹ conducted jointly by the Committee on Homeland Security Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies and the Committee on Science, Space, and Technology Subcommittee on Research and Technology, and to determine if further legislative direction is needed to DHS S&T.

A series of General Accountability Office (GAO) reports have been critical of the DHS technology development efforts, calling them “fragmented and overlapping.” GAO reports have noted “[a lack of] policies and guidance for defining, overseeing, coordinating, and tracking R&D activities across the departments,” and failure to collect and evaluate feedback from its customers. These problems risk wasting taxpayer money through R&D delays and duplication, as well as retarding DHS capacity to develop technology to address homeland security threats.²

Witnesses

- **The Honorable Reginald Brothers**, Under Secretary for Science and Technology, Department of Homeland Security

¹ Information on the hearing from Sept 9, 2014, can be found at: <https://science.house.gov/legislation/hearings/subcommittee-cybersecurity-infrastructure-protection-and-security-technologies> and <https://science.house.gov/news/press-releases/targeted-dhs-rd-can-help-secure-our-borders-cyber-networks>.

² Written Testimony of David C. Maurer, Director of Homeland Security and Justice, GAO <https://science.house.gov/sites/repUBLICANS.science.house.gov/files/documents/HHRG-113-SY14-WState-DMaurer-20140909.pdf>

Background

The DHS S&T Directorate is the primary research and development arm of the Department and is charged with delivering effective and innovative insight, methods, and solutions for the critical needs of the Homeland Security Enterprise. To fulfill this mission, S&T conducts basic and applied research, development, demonstration, testing and evaluation activities relevant to DHS.

In 2002, Title III of the Homeland Security Act (PL 107-296) established the role of Undersecretary for Science and Technology, the Directorate for S&T, and the Homeland Security Advanced Research Projects Agency (HSARPA) within DHS. The S&T Directorate is responsible for managing and carrying out scientific research and technology development for federal homeland security needs and coordinating this research with other agencies.³ The Committee on Science, Space, and Technology shares oversight jurisdiction of the S&T Directorate with the Committee on Homeland Security.

The Science and Technology Directorate's mission is to "improve homeland security by working with partners to provide state-of-the-art technology and solutions that help them to achieve their missions."⁴

- Operationally Focused: S&T provides the Homeland Security Enterprise (HSE) with strategic and focused technology options and operational process enhancements.
- Innovation: S&T seeks innovative, system-based solutions to complex homeland security problems.
- Partnerships: S&T has the technical depth and reach to discover, adapt and leverage technology solutions developed by federal agencies and laboratories, state, local and tribal governments, universities, and the private sector - across the United States and internationally. S&T's partners and customers include the operating Components of the Department (such as Customs and Border Protection, the Federal Emergency Management Agency, and the Transportation Security Administration), as well as state, local, tribal, and territorial emergency responders and officials.⁵

³ Title III of P.L. 107-296, available at: <http://www.gpo.gov/fdsys/pkg/PLAW-107publ296/html/PLAW-107publ296.htm>

⁴ <http://www.dhs.gov/sites/default/files/publications/FY15BIB.pdf>, p. 145.

⁵ Ibid.

Science and Technology Directorate (DHS S&T) Spending
(dollars in millions)

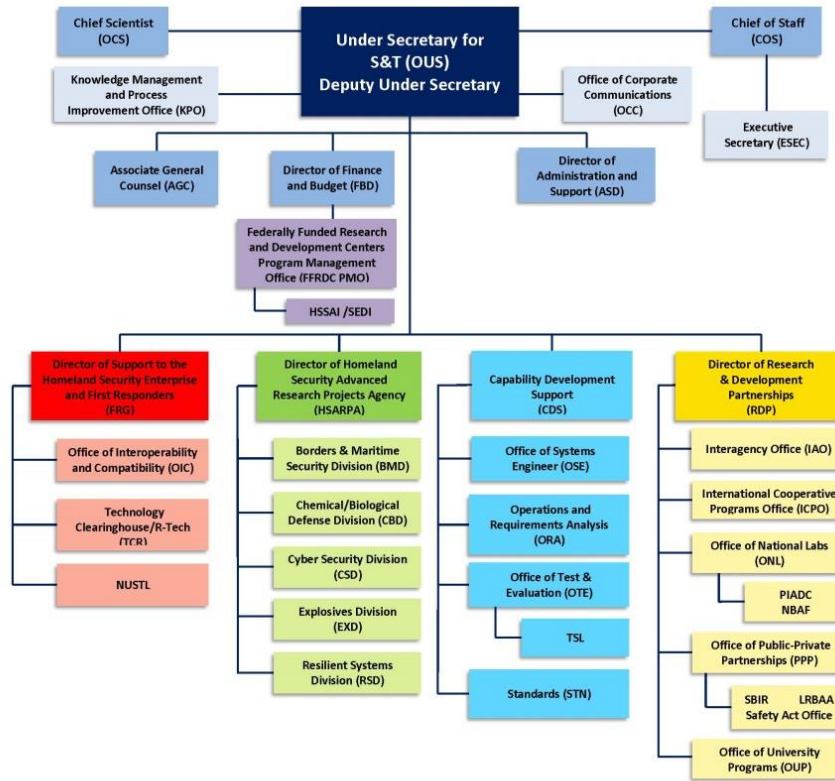
Account	*FY14 Enacted	**FY15 Enacted	FY16 Request	FY16 Request versus FY15 Appropriation	
				\$	%
Science and Technology Directorate					
Acquisition and Operations Support	41.7	41.7	47.1	5.4	13
Laboratory Facilities	547.8	435	133.9	(301.1)	(69)
Research, Development, and Innovation	462	457.5	434.9	(22.6)	(5)
University Programs	39.7	39.7	31	(8.7)	(22)
Management and Administration	129	130	132.1	2.1	2
Totals:	1,220.2	1,103.9	779.0	(324.9)	(29)

*FY14 Lab Facilities: NBAF Construction \$404M

**FY15 Lab Facilities: NBAF Construction \$300M (final request for NBAF construction funding)

Source: FY 2015 Budget in Brief – Homeland Security⁶

Organization for the S&T Directorate:⁷



⁶ Ibid., p. 143.

⁷ DHS Science and Technology Directorate, available at:
https://www.dhs.gov/sites/default/files/publications/ST%20Org%20Chart-12-2012_0.pdf.

The Government Accountability Office has produced several reports related to DHS S&T. In a June 2011 report titled, *DHS Science and Technology: Additional Steps Needed to Ensure Test and Evaluation Requirements are Met*,⁸ GAO found that the Testing & Evaluation Standards Office (TES) needed to develop mechanisms to record and verify DHS component acquisition documentation.

In September 2012, GAO released a report titled, *Department of Homeland Security Oversight and Coordination of Research and Development Should Be Strengthened*.⁹ GAO found that DHS does not know how much its components spend on research and development (R&D) and does not have policies and guidance for defining R&D and overseeing R&D resources across the Department. According to DHS, the S&T Directorate, the Domestic Nuclear Detection Office (DNDO), and U. S. Coast Guard are the only components that conduct R&D. However, GAO identified an additional \$255 million in R&D being conducted by other DHS components. Some of this R&D was found to be similar or duplicative of other work already on-going. As a result, GAO recommended that DHS develop policies and guidance for defining, reporting, and coordinating R&D activities across the Department. GAO also recommended that DHS establish a better mechanism to track R&D projects.¹⁰

In a September 2013 report titled, *Department of Homeland Security Opportunities Exist to Better Evaluate and Coordinate Border and Maritime Research and Development*,¹¹ GAO found that DHS border and maritime R&D components reported producing 97 R&D deliverables between 2010 and 2012, at an estimated cost of \$177 million. Customers expressed mixed views on the impact of these wide-ranging R&D products.¹²

According to the 2013 report, while DHS is working to develop policies to define and coordinate R&D, additional actions could strengthen internal and external coordination of border and maritime R&D. Work still needs to be done at the agency level to make sure border and maritime R&D efforts are mutually reinforcing and being directed towards the highest priority needs. As a result, GAO recommended that S&T establish “timeframes and milestones for collecting and evaluating feedback from its customers to determine the usefulness and impact of its R&D efforts.”¹³ GAO also recommended that S&T ensure potential challenges with data reliability, accessibility, and availability are reviewed and understood before approving R&D projects through the network of universities that make-up the DHS Centers of Excellence.¹⁴

⁸ GAO Report, “DHS Science and Technology: Additional Steps Needed to Ensure Test and Evaluation Requirements are Met,” June 2011, available at: <http://www.gao.gov/assets/320/319754.pdf>.

⁹ GAO Report, “Department of Homeland Security Oversight and Coordination of Research and Development Should Be Strengthened,” September 2012, available at: <http://www.gao.gov/assets/650/648152.pdf>.

¹⁰ Ibid.

¹¹ GAO Report, “Department of Homeland Security Opportunities Exist to Better Evaluate and Coordinate Border and Maritime Research and Development,” September 2013, available at: <http://www.gao.gov/assets/660/658112.pdf>.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

Issues and Concerns

Coordination of Research and Development Department Wide

One of the authorities and requirements given to the Under Secretary for Science and Technology in the Homeland Security Act of 2002 is “coordinating and integrating all research, development, demonstration, testing, and evaluation activities of the Department.”¹⁷ The Congressional Research Service (CRS) noted in a 2003 report that this is a very difficult task because R&D is also conducted in other DHS components where the Under Secretary has limited authority.¹⁵

Fundamental Questions in Prioritizing Research and Development

Concerns have been expressed that in responding to immediate needs, DHS has experienced challenges in pursuing basic research and development that could aid the development of innovative, long-term capabilities needed to protect the homeland now and in the future.

- What are measurable results for homeland security R&D?
- Does DHS have a strategy, plan, and appropriate resources to address near- and medium-term R&D homeland security needs while also carrying out a long-term research for game-changing breakthroughs?
- How is DHS ensuring an effective use of resources, without wasteful duplication?
- How is DHS S&T coordinating with component agencies to ensure vulnerabilities are addressed in its research portfolio?

Vision and Strategy

In its “Strategic Plan 2015-2019,”¹⁶ DHS S&T sets forth five “visionary goals.” These are:

- Screening at Speed: Security that Matches the Pace of Life
- A Trusted Cyber Future: Protecting Privacy, Commerce, and Community
- Enable the Decision Maker: Actionable Information the Speed of Thought
- Responder of the Future: Protected, Connected, and Fully Aware
- Resilient Communities: Disaster-proofing Society

Questions about these goals include: “How were these S&T goals selected?” and “How do these visionary goals compare with the various homeland security mission areas?”

¹⁵ Homeland Security Act of 2002 (P.L. 107-296), Sec. 302.

¹⁶ “Strategic Plan 2015-2019.” Available at:

http://www.dhs.gov/sites/default/files/publications/st/ST_Strategic_Plan_2015_508.pdf.