U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY

HEARING CHARTER

An Overview of the Federal R&D Budget for FY 2010

Thursday, May 14, 2009
2:00 p.m. – 4:00 p.m.
2318 Rayburn House Office Building

1. Purpose

On Thursday, May 14, 2009, the Committee on Science and Technology will hold a hearing to examine the Administration's proposed fiscal year (FY) 2010 funding for Federal research, development, demonstration, and commercial application programs, in particular at agencies within the jurisdiction of the Committee, and to explore how the 2007 COMPETES Act programs within the jurisdiction of the Committee are treated in the budget.

2. Witness

Dr. John Holdren is the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy (OSTP). He also serves as Co-Chair of the President's Council of Advisors on Science and Technology. Dr. Holdren is on leave from Harvard, where he is the Teresa and John Heinz Professor of Environmental Policy at the Kennedy School of Government and Director of the Science, Technology, and Public Policy Program at the School's Belfer Center for Science and International Affairs.

3. Overview of FY 2010 R&D Budget Request

The President's FY 2010 budget proposes a total of $147.6 billion for research and development (R&D) across all agencies, a $555 million or 0.4 percent increase over the 2009 enacted level. This does not include any of the estimated $21.5 billion[1] in R&D funding in the American Recovery and Reinvestment Act, which included $10.4 billion for the National Institutes of Health (NIH); $3.0 billion for the National Science Foundation (NSF); $5.5 billion for Department of Energy (DOE); $580 million for the National Institute of Standards and Technology (NIST); $1.0 billion for the National Aeronautics and Space Administration (NASA); and $830 million for the National Oceanographic and Atmospheric Administration (NOAA), all to be spent by the end of FY 2010.

[1] This is the total arrived at in the AAAS budget analysis (http://www.aaas.org/spp/rd/stim09c.htm#tb), for all Federal agencies. The Administration budget rollout documents report a Recovery Act R&D total of $18.3 billion. The discrepancy is primarily due to how Recovery Act funding for DOE is counted.

The budget would decrease for the 'development' end of R&D (much of which occurs at the Department of Defense) and increase for basic and applied research by $376 million, or 0.6 percent. This is after four years of decline in real terms for Federal research investments. According to Administration documents, the 2010 Budget invests in four key R&D priorities:

1. Basic sciences at NSF, NIST and DOE's Office of Science – keeping those three agencies on a 10-year doubling path;
2. Clean energy R&D;
3. Biomedical and health research; and
4. Safety and Security R&D – including detection and response to natural and manmade threats, biodefense, and nuclear non-proliferation.

Funding for research, development, demonstration, commercial application and science, technology, engineering, and mathematics (STEM) education activities at agencies and offices under the Committee's jurisdiction totals approximately $45 billion in FY 2010, not including Recovery Act funding.[2]

4. Summary of 2007 COMPETES Act

The America COMPETES Act (P.L. 110-69) was signed into law by President Bush on August 9, 2007. A response to the 2005 National Academies' report *Rising Above the Gathering Storm*, COMPETES seeks to ensure U.S. students, teachers, businesses, and workers are prepared to continue leading the world in innovation, research, and technology. The law implemented recommendations from the *Gathering Storm* report, and specifically:

- Authorizes $33.6 billion over FY 2008 – 2010 for STEM research and education programs across the Federal government.
- Keeps research programs at NSF, NIST and the DOE Office of Science on a near-term doubling path;
- Helps to prepare new teachers and provide current teachers with STEM content and teaching skills through NSF's Noyce Teacher Scholarship Program and Math and Science Partnerships Program;
- Expands programs at NSF to enhance the undergraduate education of the future science and engineering workforce, including at 2-year colleges;
- Expands early career graduate-level grant programs and provides additional support for outstanding young investigators at NSF and DOE;

[2] This is just a rough estimate across the agencies/offices under S&T (sole or joint) legislative jurisdiction and does not include all activities at all agencies to which we might have a claim in the case of legislation on those activities.

- Creates the Technology Innovation Program (TIP) at NIST (replacing the existing Advanced Technology Program or ATP) to fund high-risk, high-reward, pre-competitive technology development with high potential for public benefit;
- Puts the Manufacturing Extension Partnership (MEP), which provides cost-shared technical assistance to small manufacturers to modernize their operations, on a path to doubling over 10 years;
- Establishes an Advanced Research Projects Agency for Energy (ARPA-E), a nimble and semiautonomous research agency at DOE to engage in high-risk, high reward energy research;
- Includes provisions throughout the bill to help broaden participation by women and minorities in science and engineering fields at all levels; and
- Strengthens interagency planning and coordination for research infrastructure and information technology (i.e. high-speed computing).

5. Descriptions of Agency R&D Budgets

National Science Foundation

The National Science Foundation budget request for FY 2010 totals $7.045 billion, $555 million or 8.5 percent more than FY 2009 funding, not including the $3.0 billion included for NSF in the Recovery Act. The COMPETES Act authorized a total of $8.1 billion for FY 2010. NSF provides approximately 22 percent of support for basic research at U.S. colleges and universities and is second only to NIH in support for all academic research. NSF research, education and infrastructure funding is divided into three main accounts: Research and Related Activities, Education and Human Resources, and Major Research Equipment and Facilities Construction.

Research and Related Activities (R&RA)

The Administration's budget would provide $5.73 billion for R&RA in FY 2010, an increase of $550 million or 10.6 percent over FY 2009 funding. Research and Related Activities is made up of six disciplinary directorates, in addition to three offices, and a handful of other functions. The largest relative increase (12.6 percent) went to the Geosciences Directorate (GEO), which funds atmospheric, earth and ocean sciences. Most of NSF's climate change research is supported by GEO. The Biological Sciences Directorate (BIO) also saw a large (11.8 percent) increase. NSF accounts for two-thirds of all Federal support for non-medical biological sciences research. The R&RA request stands in contrast to the previous Administration's American Competitiveness Initiative, which prioritized the physical sciences and engineering. The Social, Behavioral and Economic Sciences Directorate (SBE) saw the smallest (6.9 percent) increase. All six directorates were treated equally in the Recovery Act, which provided a total of $2.5 billion for R&RA.

Education and Human Resources (EHR)

The Education and Human Resources Directorate, which funds education and broadening participation programs at all levels "from K to Gray," would be funded at $858 million in FY 2010, an increase of only $12.5 million or 1.5 percent over FY 2009 funding. When asked at a budget briefing last week why EHR funding remains essentially flat for FY 2010, Dr. Cora Marrett, Acting Deputy Director of NSF, responded that funding for EHR alone represents an incomplete picture of the education and training programs distributed across NSF. For example, while the EHR contribution to Graduate Research Fellowships decreases by $4.4 million, the R&RA contribution increases by $11.4 million.

In the COMPETES Act, the Committee focused on the teacher training programs at NSF, including the Noyce Teacher Scholarship Program and the Math and Science Partnerships Program (MSP). In the FY 2010 budget, Noyce would be funded at $55 million, the same level as in FY 2009, and MSP would be funded at $58.2 million, a 4.6 percent decrease from the $61 million provided in FY 2009. Both Noyce and MSP received considerable funding in the Recovery Act ($60 million and $25 million, respectively). In his testimony before the CJS Appropriations Subcommittee earlier this year, Chairman Gordon requested that Noyce be funded at $70 million in FY 2010.

Another education program highlighted in the COMPETES Act for its effectiveness and importance is the Advanced Technological Education (ATE) program. The ATE program funds two-year institutions in partnership with local industry to build or improve upon STEM programs focused on training technicians for the high-tech jobs in that region. The request for ATE in the FY 2010 budget is $64 million, the same level authorized in COMPETES and an increase of $12.4 million or 24 percent over FY 2009 funding. Finally, NSF's collection of programs to broaden participation in STEM fields would be funded at $719 million in FY 2010, a $48 million or 6.2 percent increase over FY 2009.

Major Research Equipment and Facilities Construction (MREFC)

The MREFC request for FY 2010 is $117 million, a decrease of $35 million from FY 2009 funding. The reason for this substantial decrease is the $400 million provided to MREFC in the Recovery Act to initiate construction on three projects: The Alaska Region Research Vessel, the Advanced Technology Solar Telescope, and the Ocean Observatories Initiative. There are no additional MREFC new starts in the FY 2010 budget request. Funding will go toward ongoing construction projects.

<u>National Institute of Standards and Technology</u>

The Administration's FY 2010 budget requests $846.1 million for NIST, a $27.1 million or 3.3 percent increase over FY 2009 funding. Specifically, the budget would provide $534.6 million for NIST's core scientific and technical research and services; $117 million for construction of research facilities; $124.7 million for the Manufacturing Extension Partnership (MEP); and $69.9 million for the Technology Innovation Program (TIP). The Bush Administration spent years trying to eliminate both MEP and TIP.

Research and Facilities

COMPETES put the internal research laboratory account on a ten-year path to doubling, authorizing $585 million in FY 2010. The current Administration, similar to the previous Administration, also intends to keep NIST research on a 10-year doubling path. The $19 million increase in the construction budget would fund renovation work at the NIST campuses in both Gaithersburg and Boulder and expansion and reliability improvements at the NIST Center for Neutron Research. NIST also received $580 million in Recovery Act funding: $220 million for research and $360 million for construction and maintenance.

Manufacturing Extension Partnership (MEP)

The MEP program is a public/private partnership in all 50 states and Puerto Rico that provides technical assistance for small manufacturers to modernize their operations and adapt to foreign competition. MEP Centers are supported by equal contributions from Federal funds, state funds, and client fees. In FY 2006, MEP clients reported increased or retained sales of $6.76 billion, cost savings of over $1.1 billion, new client investment of over $1.6 billion, and more than 51,000 jobs created or retained. The COMPETES Act put the MEP program on ten-year path to doubling, authorizing $132 million in FY 2010. The FY 2010 budget request represents a $14.7 million or 13.4 percent increase over FY 2009 funding.

Technology Innovation Program (TIP)

The Technology Innovation Program was created in COMPETES to replace the Advanced Technology Program (ATP). TIP awards cost-shared grants to small companies and joint ventures for the development of high-risk, high-reward technologies that meet critical national needs. The FY 2010 budget request represents a $5 million or $75 million increase over FY 2009 funding.

<u>Department of Energy</u>

Office	FY09 Approps	Recovery Act (2-yr money)	FY10 Request	Change over FY09 Approps
ARPA-E	15	400	10	-33.3%
Office of Science	4757.6	1600	4941.7	3.9%
EERE	2178.5	16800	2318.6	6.4%
Fossil Energy	1110.2	3400	881.6	-20.6%
Nuclear Energy	1357.8	0	844.6	-37.8%
Electricity	137	4500	208	51.8%
TOTAL	9556.1	26700	9204.5	-3.7%

Advanced Research Projects Agency for Energy (ARPA-E)

The FY 2010 budget proposes $10 million for the Energy Transformation Acceleration Fund to be used solely for the establishment of the Advanced Research Projects Agency for Energy, or "ARPA-E". ARPA-E is a new program authorized in the COMPETES Act designed to sponsor high-risk, high-payoff technology R&D projects with universities, the private sector, and National Labs. Modeled on the defense agency, DARPA, this new program will operate under a very flat organizational structure with limited overhead expenses and no research facilities of its own. Program Managers will report to the Director, who will report directly to the Secretary. The Department is in the process of recruiting a Director and the first round of Program Managers and support personnel.

The $10 million requested for FY 2010 would be used for Program Direction expenses, and follows on $15 million appropriated in the FY 2009 Omnibus, and $400 million provided in Recovery Act. Program Direction typically includes expenses such as salaries, equipment, office leasing, travel, contractor services, legal and financial management, and technology transfer. When added to the existing $415 million, this would allow for the initial start-up costs and approximately two years of full operations. ARPA-E has already issued a Funding Opportunity Announcement for $150 million, with specific project funding packages ranging from $500,000 to $20 million.

Energy Innovation Hubs

In FY 2010 DOE proposes to fund eight Energy Innovation Hubs at a total of $280 million to support cross-disciplinary R&D focused on the barriers to transforming new energy technologies into commercially deployable materials, devices, and systems. The aim of these Hubs will be to advance promising areas of energy science and technology identified by the Secretary from their early stages of research to the point that the risk level will be low enough for industry to deploy into the marketplace. Another goal is to create research environments similar to the industrial laboratories that existed decades ago, such as Bell Labs, where significant resources were dedicated to large teams solving specific problems for several years without the need to spend large portions of time applying for new funding. The budget for each will be ~$30 million per year for five years, none of which may be spent on new buildings, and after which each will be either recompeted or terminated. Each Office in DOE that supports ongoing energy R&D programs would steward at least one Hub.

Office of Science

The Office of Science (SC) request for FY 2010 is $4.94 billion, an increase of $184 million, or 3.9 percent over FY 2009 funding. SC supports large-scale research programs in materials science for energy applications, climate science, biofuels, carbon management, advanced computing, fusion energy, high-energy physics, and nuclear physics. It also oversees 10 National Labs and provides the U.S. research community with state-of-the-art user facilities. The request continues support for the 46 Energy Frontier Research Centers recently awarded to various university, Lab, and industry collaborations on advanced energy research topics. The budget of each of these Centers

will be $2-5 million per year. It also maintains support for the U.S. contribution to the ITER international fusion project. Two new Energy Innovation Hubs are proposed in FY 2010 focusing on new methods of electrical energy storage and the creation of fuels directly from sunlight without the use of plants or microbes. SC received an additional $1.6 billion of funding in the Recovery Act, which will be used to support long-deferred lab infrastructure modernization and instrumentation upgrades, as well as better utilization of current facilities and a larger fraction of high-quality research proposals.

Office of Energy Efficiency and Renewable Energy (EERE)

The FY 2010 Energy Efficiency and Renewable Energy (EERE) request is $2.32 billion, an increase of $140 million, or 6.4 percent over the FY 2009 appropriation. EERE's activities promote the development and use of clean, reliable, and cost-effective energy efficiency and renewable energy technologies. Every program within EERE, except the Fuel Cell Technologies (formerly Hydrogen Technology) and the Water Power programs, received an increase in their programmatic funding. The EERE request also includes two Hubs for a total of $70 million; one will focus on better integration of systems, materials and designs into buildings and the other will focus on discovering new concepts and materials needed for solar to electricity conversion. This portfolio of investments will build upon the initiatives funded by the Recovery Act, which provided $2.5 billion for R&D in EERE.

EERE will also launch a new joint DOE-NSF STEM education and workforce initiative called RE-ENERGYSE, funded at $115 million in FY 2010, to educate thousands of students at all levels in the fields contributing to the fundamental understanding of energy science and engineering systems.

Office of Fossil Energy (FE)

The FY 2010 funding request for fossil energy R&D in the Office of Fossil Energy (FE) is $617.6 million, compared to $876.3 million in FY 2009. In particular, the request for coal programs is $404 million, which represents a $288.5 reduction from FY 2009. The request maintains the FY 2009 funding level for fuels and power systems research; however, it does not provide any demonstration funds due to the $3.4 billion provided in the Recovery Act for carbon capture and storage (CCS) demonstrations. The existing demonstration program, the Clean Coal Power Initiative (CCPI), will expand and extend its current Round III solicitation for CCS demonstrations using the $800 million provided in the Recovery Act, and zero additional funds are requested. Funding for Carbon Sequestration would increase by $30 million to $180 million for additional site selection and characterization as well as related work on regulatory permits and community outreach for DOE's large-scale geologic carbon storage tests under the Regional Partnership Program. The FE request also includes a Hub for CCS that will focus on advancing new capture and separation approaches to dramatically reduce the energy penalty and costs associated with CO_2 capture.

Office of Nuclear Energy (NE)

The Office of Nuclear Energy (NE) is funded from two appropriations accounts: Nuclear Energy and Other Defense Activities. Within these two accounts, the President is requesting a total of $844.6 million for NE activities in FY 2010, a decrease of $513 million from FY 2009 funding. This decrease of 38 percent is due primarily to a shifting of the funding request for the mixed oxide fuel fabrication facility (funded at $487 million in FY 2009) back to the National Nuclear Security Administration.

NE conducts R&D on nuclear energy generation, security, materials, systems, safety, and waste management technologies and tools. The FY 2010 request for NE R&D is $403 million, a $112 million decrease that reflects a cut in the Nuclear Power 2010 program from $177.5 million to $20 million. The remaining funds in this account will be used to complete support of industry interactions with the Nuclear Regulatory Commission for development of licensing demonstration activities. Fuel cycle R&D, on the other hand, would increase $47 million to $192 while undergoing a significant shift away from near-term demonstration and toward longer-term, science-based transformational R&D focused on waste storage and disposal. This increase also includes the initiation of a Hub for Extreme Materials Research. A second Hub is proposed to focus on providing validated advanced modeling and simulation tools necessary to enable significant change in how the U.S. designs and licenses nuclear power and fuel cycle technologies, which may improve the performance and reduce the costs of new nuclear facilities. The NE budget also includes $203 million for management of the Idaho National Lab and $83 million for safeguards and security at the Lab.

Office of Electricity Delivery and Energy Reliability (OE)

The Office of Electricity Delivery and Energy Reliability (OE) is charged with managing programs to modernize the electric grid, enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to our energy supply. The FY 2010 request includes $208 million for these activities, a 52 percent increase from FY 2009 funding levels. This significant funding increase will enhance R&D efforts on energy storage, smart grid technologies, and cyber security needs. In particular, the Clean Energy Transmission and Reliability program, funded at $42 million, will develop advanced real-time grid monitoring technologies and accelerate research on advanced cables and conductors. The FY 2010 request includes $67 million for Smart Grid R&D and will establish a Grid Materials, Devices and Systems Hub. The FY 2010 request also includes $15 million for R&D on energy storage materials and devices and $50 million for Cyber Security for Energy Delivery Systems. This is in addition to $4.5 billion provided to OE in the Recovery Act, which will be used to fund demonstration projects, development of interoperability standards, and matching grants to deploy smart grid technologies.

National Aeronautics and Space Administration[3]

Overview

The FY 2010 budget request for NASA is $18.686 billion. That represents a 5.1 percent increase over the FY 2009 appropriation. The Recovery Act includes an additional $1.0 billion in funding for NASA. For the years FY 2011 through FY 2014: the budget would decline to $18.6 billion in FY 11 (a 0.3 percent decrease), decrease another 0.1 percent in FY 2012, and remain flat at that level until FY 2014 when it would receive a slight (1.3 percent) increase to $18.9 billion. Including Recovery Act funding, the total funding that would be made available for NASA over the period FY 2009-14 is essentially the same as was projected in the Bush budget plan for that same period – the main difference is that the Obama budget cuts out-year funding for Exploration and shifts that money to Earth Science and to expenses related to Shuttle retirement and ISS crew and cargo resupply requirements. It also augments Exploration funding in FY 2009 and 2010 for Constellation-related work. The Bush Administration funding projections are relevant because they represent the latest OMB funding guidance that NASA was following in planning its programs prior to the release of the FY 2010 budget request.

The FY 2010 budget request appears to be responsive to the NASA Authorization Act of 2008 (P.L.110-422) in a number of key areas: augmentation of NASA's Earth Science budget to make progress on Decadal Survey missions; augmentation of NASA's aeronautics budget and initiation of work on "green aircraft" technologies as well as focus on NextGen R&D needs. The budget request adds funding for the Shuttle mission to deliver the Alpha Magnetic Spectrometer to the International Space Station (ISS) per the Authorization Act's direction, and it anticipates completing all of the Shuttle flights to assemble the ISS, again per the direction of the Act. It should also be noted that $30 million in funding is included in the DOE budget to restart the production of Plutonium 238 for NASA's and other missions, which was another issue addressed in the NASA Authorization Act. However, the budget request's treatment of NASA's Exploration Systems programs—particularly in terms of the five-year budget plan for Exploration—is not consistent with the NASA Authorization Act's direction to accelerate the Orion and Ares I projects and instead removes about $3.1 billion from the out-year funding profile for Exploration Systems over the years FY 2009-13. At the same time the budget request retains the goal of returning Americans to the Moon by 2020.

Human Space Flight Review

As part of the submission of its FY 2010 NASA budget request, OSTP Director Holdren announced that the Obama Administration was asking Mr. Norman Augustine to chair an independent review of NASA's planned human space flight activities. The stated goal of the review is *"to ensure that the nation is pursuing the best trajectory for the future of human space flight—one that is safe, innovative, affordable, and sustainable."* The panel is to report its results by August of this year. According to Dr. Holdren's May 7th letter to NASA's Acting Administrator:

[3] The Full Committee will hold a separate hearing to review the NASA budget request on May 19.

"The review should aim, specifically, to identify and characterize a range of options that spans the reasonable possibilities for continuation of U.S. human space flight activities beyond retirement of the Space Shuttle. Results and supporting analysis should be provided to involved Administration agencies and offices in sufficient time to support an August 2009 decision on the way forward. The identification and characterization of options should be cognizant of—and should address the implications for—the following objectives: (1) expediting a new U.S. capability to support utilization of the International Space Station; (2) supporting missions to the Moon and other destinations beyond low Earth orbit; (3) stimulating commercial space flight capabilities; and (4) fitting within the current budget profile for NASA exploration activities."

Environmental Protection Agency

The FY 2010 budget request for the Environmental Protection Agency (EPA) is $10.5 billion, approximately $2.9 billion more than the FY 2009 enacted budget of $7.6 billion. The bulk of the increase is derived from additional funds for State and Tribal Assistance Grants, the account that funds maintenance and upgrading of wastewater treatment infrastructure across the nation. The President's FY 2010 proposal for EPA's Science and Technology (S&T) programs is $868.8 million. This includes $842 million in the S&T program account and a transfer of $26.8 million from the Superfund account to support Superfund-related research. This request reflects a 6 percent increase from the FY 2009 enacted level of $816 million, which also included $26 million for Superfund research. The increase in funding is spread across most EPA research areas including air quality, water quality, climate, human health and ecosystems, land protection, sustainability, toxics, and homeland security.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) provides daily weather forecasts, severe storm warnings, climate monitoring, coastal restoration, and various services that support marine commerce. NOAA uses research and advanced instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information. The FY 2010 budget request includes almost $4.5 billion in discretionary appropriations for the agency, an increase of $110 million over FY 2009 funding levels. This will enable NOAA to make the investments required to improve forecasting, further our understanding of climate and weather patterns, and to better manage our coastal and ocean resources. Specifically, the National Weather Service and Oceanic and Atmospheric Research would be held essentially flat at $964 million and $405 million, respectively, but the National Environmental Satellite, Data, and Information Service would increase by $250.6 million, to $1.43 billion. In addition, NOAA received $830 in Recovery Act funds, of which $600 million will be invested in construction and repair of NOAA facilities, ships and equipment, to improve weather forecasting, to support satellite development and to support supercomputing capability and climate data record development — critical to improving climate modeling and to continuing research into ways to mitigate climate change.

Department of Homeland Security

Science and Technology Directorate

The FY 2010 funding request for the DHS Science and Technology Directorate is $968.4 million, a $35.8 million or 3.8 percent increase from FY 2009 funding. An increase of $16.3 million for the Transition office will support the efforts of a First Responder Capstone Integrated Product Team (IPT). This new IPT was created to address the concerns of the first responder community about the direction of research efforts and the resulting products. An increase of $6.6 million in the Command, Control, and Interoperability office is for research in cyber security. In general, the allocation of funds across the S&T Directorate is according to threat estimations that only consider the impact of a threat, not the likelihood. There is an ongoing call for a comprehensive risk assessment to be used to guide the allocation of funds.

Domestic Nuclear Detection Office

The FY 2010 funding request for DHS's Domestic Nuclear Detection Office (DNDO) is $366.2 million, a $148 million or 29 percent decrease from FY 2009 funding. This significant decrease is due to the elimination of funding for Systems Acquisition ($153.5 million in FY 2009) as DNDO strives to spend down uncommitted funds from FY 2009 and transition to a different model for acquiring radiation detection equipment. Also cut are the funds for the acquisition and deployment of the Advanced Spectroscopic Portal (ASP) monitors until further testing can validate the technology. However, the DNDO research budget received a modest increase of $3.3 million or 1 percent, to $326.5 million.

Federal Aviation Administration: R&D and NextGen Activities

The Federal Aviation Administration (FAA) carries out a range of research, development, and demonstration programs, including those associated with the NextGen, a joint effort between FAA, NASA, and the Departments of Defense, Homeland Security and Commerce that will transform the entire national air transportation system. NextGen will gradually allow aircraft to safely fly more closely together on more direct routes, reducing delays, and providing benefits for the environment and the economy through reductions in carbon emissions, fuel consumption, and noise.

FAA is requesting $180 million in FY 2010 for the Research, Engineering, and Development (RE&D) account, an increase of $9 million over FY 2009 enacted. FAA's funding for NextGen-related programs in FY 2010 will be provided by three accounts, namely Facilities & Equipment ($790 million), RE&D ($65 million), and Operations ($9 million) for a total of approximately $865 million. This is an increase of almost $170 million (24 percent) over that enacted for FY 2009. According to FAA, the requested budget allows NextGen to continue on schedule, enabling the agency to successfully develop NextGen capabilities and acquire NextGen transformational programs.

Department of Transportation

The President's FY 2010 budget request for the Research and Innovative Technology Administration (RITA) at the Department of Transportation is $1 million above the FY 2009 request of $40 million. The $1 million increase is requested for the Bureau of Transportation Statistics, within RITA. The role of RITA is to coordinate research across DOT. In FY 2009, the Federal Highway Administration funded $258 million in surface transportation research, development, technology transfer, and training and education, with an additional $103 million for intelligent transportation systems, and $73.9 million for university transportation centers. However, the Federal Highway Administration has not included proposed R&D funding in its FY 2010 request, stating that it is in the process of developing a comprehensive approach to surface transportation reauthorization.

6. Function of the Office of Science and Technology Policy

Congress created OSTP, including the position of its Director, within the Executive Office of the President (EOP) in 1976. The 1976 law (P.L. 94-282) states that "the Office shall serve as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal government." More specifically, OSTP's responsibilities include:

- Advising the President and others within the EOP on the impacts of S&T on domestic and international affairs;
- Leading the interagency effort to develop and implement S&T policies and budgets;
- Coordinating with private sector to ensure that Federal investments in S&T contribute to our economic prosperity, sustainability and national security;
- Building partnerships among Federal, state and local governments, other countries and the scientific community; and
- Evaluating the scale, quality and effectiveness of Federal efforts in S&T;
- Managing the National Science and Technology Council (NSTC).

OSTP does not have any programmatic budget authority. Their FY 2010 budget request is only $6 million – to fund staff and operations. Total OSTP staff peaked near 100 during the Clinton Administration: approximately 20 were career staff, another 10 political staff, and the remainder Agency detailees and fellows. The Bush OSTP total was never greater than 70.