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**Summary and Analysis of the  
President's FY 2010 Budget Request  
for Federal Research and Education Programs**

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## Table of Contents

|   |    |
|---|----|
| Introduction.....   | 3  |
| Department of Defense .....   | 4  |
| Department of Education .....   | 6  |
| Department of Energy.....   | 9  |
| Department of Health and Human Services.....                                    | 15 |
| National Institutes of Health .....   | 16 |
| Other HHS Agencies and Priorities .....   | 19 |
| Department of Homeland Security .....   | 21 |
| Environmental Protection Agency .....   | 22 |
| National Aeronautics and Space Administration.....                              | 23 |
| National Endowment for the Humanities and National Endowment for the Arts ..... | 26 |
| National Institute of Standards and Technology.....                             | 27 |
| National Oceanic and Atmospheric Administration .....                           | 27 |
| National Science Foundation .....   | 29 |
| U. S. Department of Agriculture.....  | 31 |
| U.S. Geological Survey.....   | 34 |
| Interagency Programs .....  | 36 |

## **Introduction**

On May 7, President Obama sent the details of his first official budget proposal to Congress. The President proposes an unprecedented \$3.6 trillion budget for FY 2010 to a Congress in which many members, including some in the President's own party, are concerned with the overall size of the budget and projected deficits. As a result, the FY 2010 budget resolution, already approved by Congress, sets the level that House and Senate Appropriations Committees will have for discretionary appropriated programs at \$10 billion below the level that the President is requesting.

As is the case with budgets—federal or family—the President has made some choices to accommodate his initiatives. Thus, the President's budget proposes to reduce or eliminate 121 federal programs for overall budget savings of \$17 billion. Approximately half of the savings would come from defense program eliminations and reforms already announced by Secretary of Defense Robert Gates. However, Congress may balk at some of the Administration's proposed program cuts and eliminations. Due to the need to find funds to restore cuts to favored programs and Congress's lower overall discretionary funding total, some of the President's proposed funding increases, may not be realized.

In his budget, the President calls on Congress to make investments to create a clean energy economy; to reform the nation's health care system to improve the quality and access to care; to prepare teachers and students for the 21<sup>st</sup> century; to rebuild America's infrastructure to support economic growth, including investments in science, research, and technology; and to enhance national security by rebuilding the military, securing the homeland, and expanding U.S. diplomatic efforts.

To accomplish these goals, the President proposes \$599 billion, an 11.2 percent increase, in spending for non-defense discretionary spending and \$534 billion, a 4.1 percent increase, for defense discretionary spending (excluding overseas operations). This marks a sharp change from the previous Administration's attempts to hold non-defense discretionary spending relatively flat.

For federal research and development programs, the President's FY 2010 budget request proposes an increase of \$555 million or 0.4 percent above the FY 2009 appropriated level and recommits to the doubling of basic research programs, consistent with the President's Plan for Science and Innovation and the America COMPETES Act. Under this plan, the budget request would provide a total of \$12.6 billion for the National Science Foundation, the Department of Energy Office of Science, and the National Institute of Standards and Technology. This represents an overall increase of \$731 million or 6.1 percent above these agencies' FY 2009 enacted funding levels (in addition to the \$5.2 billion they received in the American Recovery and Reinvestment Act). The budget projects completion of the doubling effort in 2016.

The National Science Foundation (NSF) would receive \$7.0 billion in the FY 2010 budget request, an increase of \$555 million or 8.5 percent above the FY 2009 appropriated level. This increase builds on a 7.6 percent increase NSF received in FY 2009. Overall, research programs receive greater proposed increases than education programs, with a particular focus on clean

energy research, cyberinfrastructure and computational science, and climate research and education.

Within the Department of Energy (DOE), one highlight of the FY 2010 budget is a proposal to provide \$280 million to establish eight Energy Innovation Hubs within the DOE civilian research programs to address the basic science, technology, economic and policy issues that are barriers to energy security, economic growth, and reducing Greenhouse Gas emissions contributing to climate change. The President also requests \$115 million for his RE-ENERGYSE (REgaining our ENERGY Science and Engineering Edge) initiative to focus on preparing the K through 20+ pipeline of students, teachers, and workers for the clean energy economy. NSF would also participate in this initiative, which would include providing support through existing education programs.

For health research programs in FY 2010, the President's request for the National Institutes of Health (NIH) is \$30.8 billion, an increase of \$443 million or 1.4 percent above the FY 2009 enacted level. Continued support would be provided for comparative effectiveness research through the Department of Health and Human Services to sustain the initiative begun with American Recovery and Reinvestment Act funding. In addition, the President has proposed an 8-year initiative to double support for cancer research; as the first step, the FY 2010 request would provide \$6 billion for such programs across NIH.

For higher education, the President's budget assumes his proposal to restructure the current federal student loan system, which consists of the Federal Family Education Loan program and the Direct Loan program, into an exclusive Direct Loan program. The funding saved through the restructuring would then be used to create a mandatory Pell Grant along with sustainable increases for the program and an expanded Perkins Loan Program. Overall, the discretionary accounts are level funded, although a large increase is included for the Institute of Education Sciences for evaluation and assessment activities. The budget also proposes increases to teacher training and incentive funds which will advance President Obama's education reform agenda.

**Please note that, unless otherwise specified, comparisons in the budget analyses below use as a base the funding levels provided in the FY 2009 Omnibus Appropriations Act, and exclude the stimulus funding provided in the American Recovery and Reinvestment Act (ARRA).**

### **Department of Defense**

Basic research at Department of Defense (DOD) would receive \$1.80 billion, which is \$23.9 million, or 1.3 percent, below the FY 2009 level. However, because the research accounts at DOD include Congressionally-directed projects, Administrations often emphasize that their request is based on elimination of these projects. This year, the Obama Administration has noted that its request assumes that approximately \$150 million in FY 2009 Congressional projects would not be renewed in FY 2010; this implies that the President is proposing roughly \$126 million in new funding for basic research, an increase of 7.5 percent.

Last year, Secretary Gates strongly emphasized his support for basic research in the FY 2009 request and throughout the appropriations process. This resulted in a final increase of 14 percent for the DOD basic research programs. This year, basic research, and research and development in general, are not as featured in DOD materials. The exception is medical research; the documents emphasize a total proposed \$400 million investment in FY 2010 in research on the treatment of Traumatic Brain Injuries, Psychological Health, and other casualty care issues.

One area receiving particular attention across the federal government is science, technology, engineering, and mathematics education programs, and DOD is no exception. The National Defense Education Program (NDEP), which provides scholarships and fellowships to undergraduate and graduate students entering critical fields of science, mathematics, engineering, and languages in return for a commitment of national service, would receive \$90 million in FY 2010, an increase of 30.2 percent over FY 2009. This growth would build on sizable increases provided for NDEP in FY 2008 and FY 2009.

Overall, funding for DOD Science and Technology (Basic Research, Applied Research, and Advanced Technology Development) would decrease by 14.1 percent in FY 2010 to a total of \$11.6 billion.

### **Defense-Wide Programs**

Defense-wide programs cover all DOD research and development activities outside of the service branches; this includes the Defense Advanced Research Projects Agency (DARPA), the Chemical and Biological Defense Program, the Defense Threat Reduction Agency, the Office of the Secretary of Defense, and other programs. Defense-wide basic (6.1) research programs would be funded at \$423.6 million for FY 2010, an increase of 13.2 percent from the final FY 2009 level, and the Defense-wide applied (6.2) research programs would be funded at \$1.78 billion, a decrease of 5.1 percent.

As in the FY 2008 and FY 2009 budget requests, DOD does not request any funding for the Government/Industry Cosponsorship of University Research account, through which the Focus Center Research Program for semiconductor research is funded. (In FY 2009, Congress added \$4.4 million for this program.)

### *DARPA*

DARPA would receive \$3.25 billion for FY 2010, an increase of 3.8 percent from FY 2009. In particular, DARPA basic research would grow by 11.7 percent, to \$226.1 million.

### **Army**

The Army's basic (6.1) research programs would be funded at \$377.3 million for FY 2010, a decrease of 13.8 percent from the final FY 2009 level, and its applied (6.2) research programs would be funded at \$781.2 million, a decrease of 36.5 percent.

### **Navy**

The Navy's basic (6.1) research programs would be funded at \$531.3 million for FY 2010, a decrease of 2.7 percent from the final FY 2009 level, and its applied (6.2) research programs would be funded at \$594.0 million, a decrease of 23.3 percent.

## **Air Force**

The Air Force's basic (6.1) research programs would be funded at \$466.1 million for FY 2010, an increase of 0.4 percent from the final FY 2009 level, and its applied (6.2) research programs would be funded at \$1.09 billion, a decrease of 9.8 percent.

The tables summarizing the FY 2010 DOD budget request for Research, Development, Testing, and Evaluation accounts are available online at:

[http://www.defenselink.mil/comptroller/defbudget/fy2010/fy2010\\_r1.pdf](http://www.defenselink.mil/comptroller/defbudget/fy2010/fy2010_r1.pdf).

## **Department of Education**

Overall, President Obama's first education budget would provide level funding for most programs while providing large increases in areas of policy reform. There are programs within the Department which are cut or reduced in this budget, but in many cases they have been refocused and provided with an Obama gloss rather than a Bush legacy. For example, the College Access Challenge Grant Program, which was created with mandatory funds in the College Cost Reduction Act (CCRA), would be zeroed out from \$66 million, but a new College Access and Completion Fund would be created at \$500 million which would expand the scope of the program.

In his budget briefing, Secretary Duncan stated that the FY 2010 budget request focuses on fiscal responsibility and the President's reform agenda within K-12 and higher education. Areas slated for large increases include the Teacher Incentive Fund, which would receive a \$620 million increase over FY 2009, and the Institute for Education Sciences (IES), which would be focused on evaluation and assessment activities of programs to determine what works.

Regarding higher education, the focus of the FY 2010 budget is to expand access through increased student aid and increase college completion through the establishment of new programs.

### **Student Financial Assistance**

#### *Student Loan Programs*

The President's FY 2010 budget assumes the changes to the student loan programs outlined in the initial budget request. The President's budget requests that Congress end the Federal Family Education Loan (FFEL) program and allow all federal student loans to be made in the Direct Loan (DL) program, thereby ending subsidies to private lenders. The Department estimates that this would save the federal government over \$4 billion a year.

#### *Pell Grant*

Using the savings from the changes to the student loan programs, the President's budget request would move the Pell Grant program from the discretionary budget into mandatory funding and tie increases to the consumer price index plus one percentage point, thereby providing the Pell Program with sustainable increases. For FY 2010, the Department's proposal would set the maximum Pell Grant at \$5,500. This is a \$200 increase over the maximum grant for the 2009-2010 academic year.

### *Perkins Loans*

The President's FY 2010 budget would zero out the loan cancellations for the Perkins program at \$67 million. Previous budget years had zeroed out the Capitol Contributions funds to Perkins. Under the President's proposal the Perkins Loan program would be restructured into a mandatory program, using funds from the changes to the student loan programs, but allow for the same 5 percent rate of interest. Schools with existing Perkins programs would be allowed to use federal funds for loan cancellations in the existing program with current federal funds. All other federal funds would be recalled by the Department for reallocation, and loan volume for institutions would be determined through a method developed in consultation with Congress. New Perkins Loans would be made directly by the Department through the Direct Loan system and the new Perkin Loans would accrue interest while students are in school. Institutions would be able to retain the institutional funds which were added to the revolving accounts over time. The Department estimates that this will allow the program to expand from \$1 billion loan volume per year to over \$6 billion, thereby expanding the program to more students.

### *Other Campus Based Aid Programs*

The Campus Based Aid programs, which consist of the Perkins Loan program, the Supplemental Educational Opportunity Grants (SEOG), and Federal Work Study, are allocated directly to institutions and allow offices of financial aid flexibility in the awarding of the grants. The SEOG program would be level funded at \$757 million and the Federal Work Study program would be level funded at \$981 million. This does not take into account the \$200 million included in the American Recovery and Reinvestment Act for Federal Work Study.

### *Leveraging Education Assistance Partnerships (LEAP)*

The LEAP program would be level funded at \$63.9 million in the FY 2010 budget proposal. Funds within the LEAP program are provided for the Grants for Access and Persistence (GAP) program which was created in the Higher Education Opportunity Act. Currently, all States operate in the Special LEAP program rather than the GAP program.

### *Academic Competitiveness (AC)/ Science and Mathematics Access to Retain Talent (SMART) Grants*

The President's budget proposal notes that the AC and SMART grants, which are funded through mandatory funding, have carried budget surpluses in previous years because the number of grants have not met the amount provided. Therefore the budget proposal would cancel an additional \$550 million for FY 2010 for these programs. The budget also notes that the programs are set to expire after 2010.

## **Higher Education**

### *Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) and TRIO programs*

In the President's FY 2010 budget request, GEAR UP would be level funded at \$313 million and TRIO would be level funded at \$905 million. Both programs received increased funding in the FY 2009 Omnibus, an increase of \$10 million over FY 2008 for GEAR UP and an increase of \$20 million for TRIO.

### *Graduate Education*

The Javits fellowship program, which provides doctoral fellowships for students with financial need in the arts, humanities, and social sciences, would be level funded at \$10 million. The Graduate Assistance in Areas of National Need (GAANN) program, which provides fellowships to graduate students with financial need, would be level funded at \$31 million. The budget proposal estimates that this request would support 218 Javits fellowships and 700 GAANN fellowships.

### *International Education and Foreign Language Studies*

This program provides funding for Domestic programs, such as the National Resource Centers, and the Overseas programs, which includes the Department's Fulbright programs. Domestic programs would be level funded at \$102.3 million. In FY 2009 the Domestic programs received an \$8.4 million increase. Overseas programs would similarly be level funded at \$14.7 million. In FY 2009, the Overseas programs received a \$1.3 million increase.

### *Institutional Development*

Overall, the funds for Institutional Development are \$131 million below FY 2009 funding. The Strengthening Native American-serving non-tribal institutions would be funded at \$2.6 million. In FY 2009, the program received \$5 million in mandatory funds and \$2.5 million in discretionary funds. The FY 2010 budget request does not include the mandatory funds. The President's budget also notes that \$11 million in mandatory funding is included in the Higher Education Opportunity Act for the "Promoting Post-baccalaureate Opportunities for Hispanic Americans" in FY 2010.

## **Teacher Training**

### *Teacher Quality Partnership Grants*

The President's FY 2010 budget proposal would move the Teacher Quality Partnership Grants from the Office of Postsecondary Education into the Office of Innovation and Improvement. The program received \$50 million in FY 2009 and \$100 million through the American Recovery and Reinvestment Act. The FY 2010 budget proposal would fund the program at \$50 million. The budget notes that the Department expects to make 30-40 grants under the newly reauthorized program in FY 2009, maintain support for 21 continuing grants, and compete four additional grants with the proposed FY 2010 funds.

### *Teacher Incentive Fund*

One of the largest increases within the President's FY 2010 budget request for the Department of Education is for the Teacher Incentive Fund. This program provides grants to States and Local Education Agencies (LEAs), sometimes in partnership with non-profit organizations, to develop and implement innovative performance based compensation systems that award schools for increasing student achievement. In the FY 2010 budget proposal, the Teacher Incentive Fund would receive a \$420 million increase over FY 2009, along with an additional \$200 million included in the American Recovery and Reinvestment Act.

### *Teach for America*

The President's budget proposal also includes \$15 million for the Teach for America program, which currently receives funding from the Corporation for National and Community Service.

The \$15 million would be used to expand efforts to recruit, select, train and support recent college graduates to serve as teachers. Not previously funded in the Department of Education, President Obama and Secretary Duncan have stated their support to expand this program.

### **Institute of Education Sciences (IES)**

For FY 2010, the Administration is requesting an increase of \$72.1 million over FY 2009. This does not take into account the \$250 million included in the American Recovery and Reinvestment Act. The IES Research, Development, and Dissemination budget would receive an increase of \$57 million, or 34 percent, over FY 2009. The increase would be used for a new reading initiative, support for assessment and evaluation, and for the scaling up of successful projects.

### **New Programs within the Department**

#### *Promise Neighborhoods*

The President's FY 2010 budget would establish a new program called Promise Neighborhoods which would receive \$10 million in FY 2010. This new program would provide one-year competitive planning grants to nonprofit, community-based organizations to develop programs that address the needs of children in poverty from birth through college. Awards will enable grantees to complete a comprehensive needs assessment, establish partnerships, and develop a comprehensive plan for the program, in preparation for future awards intended for project implementation.

#### *College Access and Completion Fund*

The FY 2010 budget proposal would create a time limited "College Access and Completion Fund" to be funded through mandatory funds at \$500 million in FY 2010. The proposal notes that the Administration plans on five years of funding for the program, bringing the total funding up to \$2.5 billion. The program would build a federal, state, and local partnership to improve college success and completion. Grants would be provided to states and national entities to create innovative programs to increase college completion, assess and evaluate the programs, and then disseminate the information.

The Department of Education FY 2010 budget request is on line at:

<http://www.ed.gov/about/overview/budget/budget10/index.html>.

## **Department of Energy**

President Obama requests \$26.4 billion overall for the Department of Energy (DOE) for FY 2010, which is essentially level funding compared to the FY 2009 level enacted in the Omnibus Appropriations Act. DOE also received approximately \$39 billion in the American Recovery and Reinvestment Act (ARRA) to develop a clean energy economy for the nation. Secretary of Energy Steven Chu characterizes the FY 2010 budget request for the Department as complementing the funding in ARRA, which will be available through FY 2010. Reflecting his opposition to Congressionally-earmarked funding, President Obama eliminates funding for such projects from his budget request. (Please note that this write-up focuses only on the civilian energy research programs of DOE. All comparisons to the FY 2009 enacted funding level exclude the funding provided in ARRA.)

The President proposes two major new initiatives in his budget request to tap universities to be part of his goal to create the clean energy economy. The President's budget would provide \$280 million to establish eight Energy Innovation Hubs within the various offices at DOE, and \$115 million for RE-ENERGYSE (REgaining our ENERGY Science and Engineering Edge).

The Energy Innovation Hubs will address the basic science, technology, and economic and policy issues that could prevent the nation from becoming energy secure and economically strong while reducing Greenhouse Gas (GHG) emissions that contribute to climate change. Energy Innovation Hubs will be established to address solar electricity; fuels from sunlight; batteries and energy storage; carbon capture and storage; grid materials, devices, and systems; energy efficient building systems design; extreme materials; and modeling and simulation. The budget would support each Hub at \$35 million in FY 2010 with anticipated annual funding at \$25 million in future years. The goal of this program is to connect the research laboratory to the industrial world.

The RE-ENERGYSE initiative is a comprehensive K-20+ science and engineering initiative to educate thousands of students at all levels in the fields contributing to the fundamental understanding of energy science and engineering systems. This initiative will provide graduate research fellowships in fields that advance the energy mission; provide training grants to universities that establish multidisciplinary research and education programs related to clean energy; support universities that dramatically expand energy-related research opportunities for undergraduates; and build partnerships with community colleges and clean energy industries. The National Science Foundation (NSF) would also participate in this clean energy education initiative by providing support through existing programs, such as the Graduate Research Fellowship Program, the Research Experiences for Undergraduates Program, and the Advanced Technological Education Program.

The President sustains support for basic research through DOE's Office of Science by requesting \$4.9 billion, an increase of \$184 million or 3.9 percent overall. While the request falls short of a year-to-year increase to double funding for the Office of Science, Congress provided a nearly 19 percent increase (\$755 million) for FY 2009 which became the base funding upon which future increases will be calculated. The Office of Science also received an additional \$1.6 billion in ARRA. In the budget briefing, Secretary Chu indicated that these additional funds were taken into account when crafting the overall DOE budget request for FY 2010.

Reflecting the President's commitment to develop a clean energy economy, the Energy Efficiency and Renewable Energy (EERE) programs receive a total of \$2.3 billion, a 6.4 percent overall increase to accelerate the development of renewable energy sources such as wind, solar, biomass, geothermal, and water energy and activities that support energy conservation and efficiency. This builds on the \$16.8 billion in ARRA to address the nation's energy challenges.

To implement the \$4.5 billion in ARRA funding to develop the smart electricity grid, the President proposes \$208 million for Electricity Delivery and Energy Reliability, an increase of \$71 million or 52 percent above the FY 2009 enacted level.

The Administration proposes a reduction in funding for Fossil Energy research and development (R&D) activities requesting \$617.6 million, a reduction of \$258.8 million or 29.5 percent below the FY 2009 enacted level.

Additional details on the President's FY 2010 budget request for DOE civilian R&D programs follow.

### **Office of Science**

President Obama requests \$4.9 billion overall for basic research through DOE's Office of Science, an increase of \$184 million or 3.9 percent above the FY 2009 enacted level. While the request does not reflect a doubling of the program as authorized in the America COMPETES Act, the Office of Science received "catch up" funding of \$755 million (a nearly 19 percent increase) in the FY 2009 Omnibus Appropriations Act which will be available into FY 2010. The Office of Science also received \$1.6 billion in ARRA which will be available through FY 2010.

As part of the President's Energy Innovation Hub initiative, two of the eight Hubs would be funded in the Office of Science to focus on two grand challenges in energy: 1) the creation of fuels directly from sunlight without the use of plants or microbes; and 2) advanced methods of electrical energy storage.

The President's budget request would also continue to support the recently announced 46 Energy Frontier Research Centers (EFRCs) at a level of \$100 million for FY 2010.

### *High Energy Physics*

For High Energy Physics (HEP), a total of \$819 million is requested, an increase of \$23.3 million or 2.9 percent. The budget request would support a "world leadership" program at the Fermi National Accelerator Laboratory (Fermilab) including the Tevatron Collider and neutrinos research. The Tevatron would continue running through FY 2010. The budget would also support U.S. participation at the Large Hadron Collider (LHC) at CERN in Switzerland. Construction continues on the NuMI Off-Axis Neutrino Appearance (NOvA) project. Funding is provided for new experiments using the NuMI beam and other beam lines, such as the Long Baseline Neutrino Oscillation Experiment (LBNE) and the Muon to Electron Experiment (Mu2e). Support is provided for dark matter and dark energy programs. Support is anticipated for R&D efforts for experiments that may be located at the Deep Underground Science and Engineering Laboratory (DUSEL) proposed by the National Science Foundation.

### *Nuclear Physics*

The President's budget would provide \$552 million for nuclear physics research, an increase of \$40 million or 7.8 percent above the FY 2009 enacted level excluding ARRA funding. The proposed budget would support the operation of large research facilities and continue work on the new Facility for Rare Isotope Beams (FRIB) awarded earlier this year.

### *Biological and Environmental Research*

The FY 2010 budget would provide \$604.2 million for Biological and Environmental Research (BER), a \$2.6 million increase above the FY 2009 enacted level excluding ARRA funding. The

BER program funds research in global climate change, environmental remediation, and the biological effects of radiation and other mission-oriented research. The budget continues support for DOE Bioenergy Research Centers and climate change research.

#### *Basic Energy Sciences*

The President would provide nearly \$1.7 billion for Basic Energy Sciences (BES), the largest budget within the Office of Science. BES operates and maintains many of the large scientific facilities used by universities and industry for research. The budget request represents an increase of \$113.5 million or 7.2 percent above the FY 2009 enacted funding level excluding ARRA. In a new initiative, the budget would provide \$280 million to support eight Energy Innovation Hubs, which will be large multidisciplinary research groups working at the interface between discovery science and time-critical DOE mission requirements in energy, environment, and climate.

#### *Advanced Scientific Computing Research*

The budget request would provide \$409 million for Advanced Scientific Computing Research (ASCR), an increase of \$40.2 million or 11 percent above the FY 2009 enacted level excluding ARRA funding. ASCR will continue to support research, integrated with other science programs, on the application of computer simulation and modeling to science problems. The budget would support the transfer of cyber security research from the networking activity and fund a new fellowship program. Increased support is also provided for a new effort in advanced computer architecture design.

#### *Fusion Energy Sciences*

The FY 2010 budget would provide \$421 million for Fusion Energy Sciences, an increase of \$18.5 million or 4.6 percent above the FY 2009 enacted level excluding ARRA funding. The budget continues support for U.S. participation in the International Thermonuclear Experimental Reactor (ITER) to research burning plasmas. ITER is under construction in France.

#### *Workforce Development for Scientists and Teachers*

The Administration would provide \$20.7 million to help develop the scientific workforce and teachers needed to train young scientists, engineers, and technicians for the DOE national laboratories and for the nation's workforce. The request represents a 52 percent increase above the FY 2009 level.

#### **Energy Transformation Acceleration Fund (ARPA-E)**

The budget request would provide \$10 million for the administrative costs of carrying out the Advanced Research Projects Agency for Energy (ARPA-E) authorized by the America COMPETES Act and funded with \$400 million in ARRA and \$15 million in the Omnibus Appropriations Act of 2009. The Administration establishes the Energy Transformation Accelerator Fund to support the activities of ARPA-E.

#### **Energy Efficiency and Renewable Energy**

Reflecting the President's priority on developing a clean energy economy, the FY 2010 budget request would provide a total of \$2.3 billion for applied research activities relating to improving energy efficiency and developing new sources of clean, renewable energy. The request

represents a proposed \$140.1 million, or 6.4 percent, increase above the FY 2009 enacted level excluding ARRA funding.

A total of \$2 billion would be provided for EERE R&D, an increase of \$570.6 million or 39.4 percent above the FY 2009 enacted level excluding ARRA funding. The solar, wind, and technologies programs are slated for the largest funding increases as highlighted below.

The President would establish two of the Energy Innovation Hubs within EERE. One Hub will focus on integrating smart materials, designs, and systems to promote better usage of energy in buildings. A second Hub will focus on designing and discovering new concepts and materials needed for solar to electricity conversion.

The President would provide \$115 million for his RE-ENERGYSE education initiative to support students, teachers, and workers to prepare for careers in science, engineering, and industry related to clean energy. The National Science Foundation will also participate in this program.

#### *Hydrogen Technology*

The Administration budget would reduce funding for hydrogen technology from \$169 million to \$68 million, a reduction of nearly \$101 million or 60 percent below the current funding level. The focus in this program will largely remain on the development of new fuel cell technologies. This is one of two programs within the EERE budget that would be reduced below the FY 2009 level. The other program is water power R&D.

#### *Biomass and Biorefinery Systems R&D*

The budget would provide \$235 million for biomass and biorefinery systems R&D, an increase of \$18 million or 8.3 percent above the FY 2009 enacted level excluding ARRA funding. The goal of this program is to assist industry to develop commercial biorefineries that can economically convert biomass sources and algae into fuels, chemical, heat, and power.

#### *Solar Energy*

The President's budget would provide \$320 million for solar energy R&D with a goal of achieving cost parity for solar electricity by 2015. The request represents a proposed increase of \$145 million above the FY 2009 enacted level which nearly doubles the overall program.

#### *Wind Energy*

The Administration budget would provide \$75 million for wind energy R&D, an increase of \$20 million or 36.4 percent above the FY 2009 enacted level excluding ARRA funding. The program supports the development of wind energy technology in partnership with industry, including offshore wind energy sources.

#### *Geothermal Energy*

The budget would provide \$50 million for geothermal R&D, an increase of \$6 million or 13.6 percent above the FY 2009 enacted level excluding ARRA funding.

### *Water Power*

For the relatively new water power R&D program, the President would provide \$30 million, a reduction of \$10 million or 25 percent, below the FY 2009 enacted level excluding ARRA funding. The Administration indicates that the request would be sufficient funding to build upon activities begun in FY 2009.

### *Vehicle Technologies*

Reflecting President Obama's goal to have 1 million plug-in hybrid vehicles on the road that can go 150 miles per charge by 2015, the budget request would provide \$333.3 million for the vehicle technologies program, an increase of about \$60 million or 22 percent above the FY 2009 enacted level excluding ARRA funding. This program also supports the development of fuel cells and advanced vehicle technologies including combustion engines and new fuel formulations.

### *Building Technologies*

To support ongoing partnerships with the building industry, the FY 2010 budget request would provide \$237.7 million for DOE building technology activities, an increase of \$97.7 million, or about 70 percent above the FY 2009 enacted level excluding ARRA funding.

### *Industrial Technologies*

A total of \$100 million would be provided to the Industrial Technologies program under the President's FY 2010 budget request. The request represents an increase of \$10 million, or 11 percent, above the current FY 2009 enacted level excluding ARRA funding. This program supports cost-shared R&D on technologies to reduce industry's energy usage and carbon emissions.

### **Electricity Delivery and Energy Reliability**

A total of \$208 million would be provided by the President for the DOE Office of Electricity Delivery and Energy Reliability, an increase of \$71 million or nearly 52 percent, above the FY 2009 enacted level. This Office is charged with developing the smart electricity grid for which \$4.5 billion was approved in ARRA. Approximately 80 percent of the funding increase for FY 2010 will go to R&D in support of the energy grid.

In addition, one of the eight Energy Innovation Hubs would be established in this office to develop smart materials that will allow the electricity grid to adapt and respond to changing conditions.

### **Nuclear Energy**

For nuclear energy activities at DOE, the President would provide \$844.6 million, a reduction of \$513.2 million or 37.8 percent below the FY 2009 enacted level excluding ARRA funding. For nuclear energy R&D, \$403 million would be provided, a reduction of \$112 million or 21.7 percent below the FY 2009 level. The request provides funding to conclude the Nuclear Power 2010 program which is a partnership with industry.

Two of the Energy Innovation Hubs would be established within the nuclear energy program. One would focus on modeling and simulation to validate advanced modeling and simulation

tools to change the design of nuclear power and fuel cycle technologies. The second Hub would research extreme materials relevant to nuclear energy applications that could include the development of novel fuels, waste forms, and structural materials.

### **Fossil Energy R&D**

For Fossil Energy R&D, the President's budget would provide a total of \$617.6 million for FY 2010, a reduction of \$258.8 million or 29.5 percent below the FY 2009 enacted level excluding ARRA funding. The budget request would terminate funding for the Clean Coal Power Initiative which will instead be funded with ARRA funds. The budget would increase funding for carbon sequestration activities by \$30 million to \$180 million for FY 2010. The Administration would terminate the oil technologies R&D program for savings of \$5 million and support \$25 million for methane hydrate research through the natural gas program. The FutureGen program would receive \$58 million under the President's request; however, funding made available in ARRA may also be used to restart FutureGen.

One of the eight Energy Innovation Hubs would be established within the Office of Fossil Energy to focus on enabling fundamental advances and discovery of novel and revolutionary carbon capture and separation approaches to reduce the energy loss and costs associated with carbon capture.

The DOE FY 2010 budget request is on line at: <http://www.energy.gov/about/budget.htm>.

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

The President requests a \$78.3 billion discretionary budget for the Department of Health and Human Services (HHS) for FY 2010. This funding level is comparable to the \$78.5 billion HHS received in the final FY 2009 Omnibus Appropriation Act (not including the funding HHS received in the American Recovery and Reinvestment Act [ARRA]). However, within this relatively level funding, priorities for the department have vastly changed, as evidenced by increases in many programs within operating divisions to support major health care reform. The stated priorities in the President's FY 2010 budget for HHS and its offices and agencies include:

- investing in scientific research and development;
- securing and promoting public health;
- delivering human services to "vulnerable populations;" and
- improving quality and access to care.

The President's budget request is reflective of his previous public support for scientific research and development, highlighting it as a main priority within the HHS budget. Overall, the FY 2010 budget request for the HHS agencies incorporates the context of funding that agencies are receiving through ARRA and the framework of health care needs. While many agencies have mandatory allocations for services, support for research and development in the HHS discretionary budget is strongly evident across the department. Synergism among HHS components engaged in research is now a more prominent feature of this President's budget request. Consistent with previous fiscal years, the National Institutes of Health remains the lead research agency, with funding for research at NIH at about 39.7 percent of the total HHS discretionary budget.

## **National Institutes of Health**

For the National Institutes of Health (NIH) in FY 2010, the President requests \$31.0 billion, which is \$443 million, or 1.4 percent, above NIH's final FY 2009 funding level (excluding the funding HHS received in ARRA). Approximately 84 percent of NIH's budget would be allocated for extramural funding mechanisms in FY 2010.

The FY 2010 NIH budget request includes a \$300 million pass-through for the Global HIV/AIDS, Tuberculosis, and Malaria Fund (the same amount as the FY 2009 enacted level). It also includes \$8.2 million for evaluation funds and \$150 million for juvenile diabetes research, the same as provided in FY 2009.

Additionally, the President's budget request proposes to reduce the Office of the Director's account by \$64 million, a decrease of 5 percent from the FY 2009 enacted level of \$1.2 billion. The reason for the decrease is that the budget does not include funds for the NIH Director's Bridge Award program, as ARRA funds enable NIH to support additional awards just missing the nominal payline. However, the oversight of trans-NIH activities will be enhanced, along with the launch of a new effort in bioethics funded in coordination with the institutes and centers (ICs). Both are intended to enhance public trust in the results of NIH-funded research.

### *Cancer Research*

The President's budget would support over \$6 billion for cancer research across all 27 ICs in FY 2010, which is \$268 million, 5 percent, over the estimated amount to be spent in FY 2009. This funding is part of the President's initiative to double basic cancer research funding within eight years. Though cancer research is performed at all NIH ICs, the President requests \$5.2 billion specifically for the National Cancer Institute in FY 2010, which is \$181.2 million, or 3.6 percent, over the FY 2009 enacted level, while most other ICs received only between a 1 to 2 percent increase.

### *Autism Research*

The President's budget would support \$141 million for autism spectrum disorder research at NIH in FY 2010, which is \$19 million, or 16 percent, over the estimated amount to be spent in FY 2009. This accounts for 66.8 percent of the \$211 million that would be provided to all HHS agencies. The Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA) are the other lead agencies in that effort.

### *Stem Cell Research*

The President's budget does not propose a funding amount that would support stem cell research at NIH at the current time, but states that funding in this field is expected to expand substantially in FY 2010. A proposed funding amount will be offered by NIH after the new stem cell research guidelines have been finalized. Draft guidelines are currently open for public review and comment until May 26, 2009. Final guidelines are expected to be released in July.

### *HIV/AIDS Research*

The President's budget would support \$3.1 billion for HIV/AIDS research at NIH in FY 2010 to continue efforts to develop a vaccine.

### *Nanotechnology-related Environment, Health, and Safety*

The President's budget includes a request for \$9 million in additional funding to support a new initiative on safety research.

### *Common Fund*

The FY 2010 budget request would allocate \$549 million for the Common Fund, an increase of \$8 million, or 1.5 percent, over FY 2009. The funds would support trans-NIH initiatives and research out of the Office of the Director.

### *New and Young Investigators*

NIH has established and will continue programs in FY 2010 to increase the success rates for new investigators, which remains a priority. ARRA funds will be used in FY 2009 and FY 2010 to also accomplish these goals.

### *Clinical and Translational Science Awards*

NIH is still in the process of phasing out the General Clinical Research Centers Program and continues to implement a new, more advanced clinical and translational research framework through the Clinical and Translational Science Awards (CTSAs) administered by NIH's National Center for Research Resources (NCRR). The President's FY 2010 request would provide \$492 million for CTSAs—\$20 million of which would be transferred from other existing programs within NCRR to the CTSA account and \$25 million of which would be transferred from the Common Fund. The agency notes its intent to provide growth in the CTSA program.

### *Institutes and Centers*

Please see the chart below for individual Institutes and Centers funding levels in the FY 2010 budget request.

The budget request documents for NIH are available online at:

<http://officeofbudget.od.nih.gov/ui/HomePage.htm>.

## FY 2010 President's Budget Request for Individual Funding Levels for National Institutes of Health (NIH) Institutes and Centers (Amounts in Millions of Dollars)

| Institutes/Centers  | Final FY 2009 Enacted | FY 2010 President's Budget Request | Dollar Comparison to FY 2009 Actual | Percent Comparison to FY 2009 Actual |
|---|-----------------------|------------------------------------|-------------------------------------|--------------------------------------|
| National Cancer Institute (NCI)   | \$4,969               | \$5,150                            | \$181                               | 3.6%                                 |
| National Heart, Lung, and Blood Institute (NHLBI)                         | \$3,016               | \$3,050                            | \$34                                | 1.1%                                 |
| National Institute of Dental & Craniofacial Research (NIDCR)              | \$403                 | \$408                              | \$5                                 | 1.2%                                 |
| National Institute of Diabetes & Digestive & Kidney Diseases (NIDDK)*     | \$1,911               | \$1,932                            | \$21                                | 1.1%                                 |
| National Institute of Neurological Disorders and Stroke (NINDS)           | \$1,593               | \$1,613                            | \$20                                | 1.3%                                 |
| National Institute of Allergy & Infectious Diseases (NIAID)**             | \$4,703               | \$4,760                            | \$57                                | 1.2%                                 |
| National Institute of General Medical Sciences (NIGMS)                    | \$1,998               | \$2,024                            | \$26                                | 1.3%                                 |
| National Institute of Child Health and Human Development (NICHD)          | \$1,295               | \$1,314                            | \$19                                | 1.5%                                 |
| National Eye Institute (NEI)  | \$688                 | \$696                              | \$8                                 | 1.2%                                 |
| National Institute of Environmental Health Sciences (NIEHS)***            | \$741                 | \$763                              | \$22                                | 3.0%                                 |
| National Institute on Aging (NIA)   | \$1,081               | \$1,093                            | \$12                                | 1.1%                                 |
| National Institute on Arthritis & Musculoskeletal & Skin Diseases (NIAMS) | \$525                 | \$531                              | \$6                                 | 1.1%                                 |
| National Institute on Deafness & Other Communication Disorders (NIDCD)    | \$407                 | \$413                              | \$6                                 | 1.5%                                 |
| National Institute of Mental Health (NIMH)                                | \$1,450               | \$1,475                            | \$25                                | 1.7%                                 |
| National Institute on Drug Abuse (NIDA)                                   | \$1,033               | \$1,045                            | \$12                                | 1.2%                                 |
| National Institute on Alcohol Abuse and Alcoholism (NIAAA)                | \$450                 | \$455                              | \$5                                 | 1.1%                                 |
| National Institute of Nursing Research (NINR)                             | \$142                 | \$144                              | \$2                                 | 1.4%                                 |
| National Human Genome Research Institute (NHGRI)                          | \$502                 | \$510                              | \$8                                 | 1.6%                                 |
| National Institute of Biomedical Imaging and Bioengineering (NIBIB)       | \$308                 | \$313                              | \$5                                 | 1.6%                                 |
| National Center for Research Resources (NCRR)                             | \$1,226               | \$1,252                            | \$26                                | 2.1%                                 |
| National Center for Complementary and Alternative Medicine (NCCAM)        | \$125                 | \$127                              | \$2                                 | 1.6%                                 |

| Institutes/Centers  | Final FY 2009 Enacted | FY 2010 President's Budget Request | Dollar Comparison to FY 2009 Actual | Percent Comparison to FY 2009 Actual |
|---|-----------------------|------------------------------------|-------------------------------------|--------------------------------------|
| National Center on Minority Health and Health Disparities (NCMHHD)                                    | \$206                 | \$209                              | \$3                                 | 1.5%                                 |
| John E. Fogarty International Center (FIC)  | \$69                  | \$69                               | \$0                                 | 0.0%                                 |
| National Library of Medicine (NLM)****  | \$331                 | \$334                              | \$3                                 | 0.9%                                 |
| Office of the Director (OD)   | \$1,247               | \$1,182                            | -\$65                               | -5.2%                                |
| Buildings and Facilities  | \$126                 | \$126                              | \$0                                 | 0.0%                                 |
| <b>Total</b>  | <b>\$30,545</b>       | <b>\$30,988</b>                    | <b>\$443</b>                        | <b>1.4%</b>                          |
| <b>Total (Global HIV/AIDS Transfer, Health Information Systems Improvement, and Evaluation Funds)</b> | <b>\$30,017</b>       | <b>\$30,677</b>                    | <b>\$660</b>                        | <b>2.2%</b>                          |

\*NIDDK includes mandatory juvenile diabetes research

\*\*NIAID includes transfer to Global HIV/AIDS Fund

\*\*\*NIEHS includes both Labor/HHS and Interior Appropriations

\*\*\*\*NLM includes Evaluation Funds

It is important to note that comparison may not be exact due to unit size (millions)

### Other HHS Agencies and Priorities

The President's request for the remaining operating divisions within HHS would support other initiatives that have been prioritized. The Obama Administration has geared its budget request to enforce a comprehensive approach to the core mission of health care reform. All agencies within HHS would have distinct roles to play to enhance public health and ensure access to healthcare for all Americans.

Certain initiatives and goals in particular were highlighted as priorities within the agencies, including prevention and wellness efforts, enforcing a strong health care workforce, providing access to vulnerable populations, and preparing for biomedical emergencies. HHS agency budget requests and priorities for FY 2010 include:

#### *Health Resources and Services Administration (HRSA)*

The President's request would provide HRSA with \$7.1 billion in discretionary budget authority, which is \$100 million less than the FY 2009 enacted level of \$7.2 billion. Priorities for the agency include increasing access to health care in underserved areas of the country through programs like the National Health Service Corps (which would receive \$169 million in FY 2010, a \$34 million increase) and the Nurse Loan Repayment and Scholarship Program, and would also provide \$100 million for Training and Diversity Programs to increase opportunities for minorities to enter a health profession. The President's request terminates 967 earmarks for local health projects, which sends a significant message. Examples of such programs include: Health Care Facilities and Construction (\$310 million in FY 2009), the Denali Commission (\$20 million in FY 2009), and the Delta Health Initiative (\$26 million in FY 2009). The Administration notes that meritorious projects should be able to receive funding under a competitive process.

*Substance Abuse & Mental Health Services Administration (SAMHSA)*

The President's request would provide SAMHSA with \$3.39 billion in discretionary budget authority, which is \$60 million more than the FY 2009 enacted level of \$3.33 billion. Priorities for the agency include prevention and treatment programs for substance abuse and mental health including expanding the treatment capacity of drug courts, supporting community-based services for those who suffer from addiction or mental illness while facing homelessness, and providing infrastructure for community mental health services.

*Agency for Healthcare Research and Quality (AHRQ)*

The President's request would provide AHRQ with \$372 million in discretionary budget authority, which is flat funded from the FY 2009 enacted level. This is due to the \$700 million received by the agency through ARRA funds. Priorities for the agency include comparative effectiveness research (which would invest \$50 million for FY 2010 in addition to the \$700 million received through ARRA) and improving health information technology (which would be provided with \$45 million for FY 2010).

*Administration for Children and Families (ACF)*

The President's request would provide ACF with \$15.6 billion in discretionary budget authority, which is \$1.6 billion less than the FY 2009 enacted level of \$17.2 billion. Though additional funding is included in the discretionary budget for Head Start, Refugee programs, and a new child welfare initiative, the most critical community needs in FY 2009 and FY 2010 are being met by ARRA funding.

*Administration on Aging (AOA)*

The President's request would provide AOA with \$1.491 billion in discretionary budget authority, which is flat funded from the FY 2009 enacted level. Priorities for the agency include providing a broad range of home and community-based support services to assist the elderly in their day-to-day activities, ensuring adequate nutrition and positive behaviors, and providing support to family caregivers. In addition, \$31 million is requested to continue implementation and evaluation of three health and long-term care programs: Aging and Disability Resource Centers, Evidence-Based Disease Prevention Programs, and Nursing Home Diversion.

*Indian Health Service (IHS)*

The President's request would provide IHS with \$4 billion in discretionary budget authority, which is \$400 million more than the FY 2009 enacted level of \$3.6 billion. Priorities for the agency include improving the Indian health system by reducing disparities and leading the innovation of health IT development.

*Center for Medicare & Medicaid Services (CMS)*

The President's request would provide CMS with \$3.5 billion in discretionary budget authority, which is \$300 billion more than the FY 2009 enacted level of \$3.2 billion. Priorities for the agency include targeting healthcare fraud and abuse, and creating a \$30 million program for FY 2010 to research long-term reform of the Medicare and Medicaid systems. These priorities are aligned with consolidation of 86 to 75 field offices of the HHS Office of Inspector General to those geographic areas most at risk.

### *Food & Drug Administration (FDA)*

The President's request would provide FDA with \$2.4 billion in discretionary budget authority, which is \$300 million more than the FY 2009 enacted level of \$2.1 billion. Priorities for the agency include increased food safety in the wake of the FY 2009 food contaminations and recalls, and lowering the cost of prescription drugs by increasing the availability of generics and imports.

### *Centers for Disease Control & Prevention (CDC)*

The President's request would provide CDC with \$6.39 billion in discretionary budget authority, which is \$30 million more than the FY 2009 enacted level of \$6.36 billion. Priorities for the agency include the development and implementation of behavioral and prevention programs for HIV/AIDS and other infectious and chronic diseases, and maintaining a high level of preparedness to combat biomedical terrorism or emergency situations such as pandemic flu. The President's request for FY 2010 is largely directed toward reinvigorating CDC's mission as the lead agency for public health.

### *HHS-Wide Efforts in Health Information Technology*

The President's FY 2010 budget requests a total of \$61 million for health information technology (IT) in the HHS Office of the National Coordinator for Health Information Technology, \$100,000 above the FY 2009 level. This level of support would allow the office to continue its role as the federal health IT leader and coordinator. An additional \$45 million is requested for the Agency for Healthcare Research and Quality to support its efforts in enhancement of patient safety. Additional FY 2010 funds are requested for independent evaluations of electronic health record adoption and economic factors. The President also requests support for the second year of a demonstration project under the auspices of the Center for Medicare and Medicaid Services, to encourage small physician practices to adopt electronic health records.

The budget request documents for HHS are available online at:

<http://www.hhs.gov/asrt/ob/docbudget/index.html>.

## **Department of Homeland Security**

The President's budget request would provide \$42.7 billion in appropriated funds for the Department of Homeland Security (DHS) in FY 2010, up \$2.7 billion or 6.6 percent over the FY 2009 level (not including the funding DHS received in the American Recovery and Reinvestment Act).

### **Science and Technology Directorate**

The DHS Science and Technology (S&T) Directorate would receive \$968.4 million in FY 2010, up \$35.8 million or 3.8 percent over the FY 2009 appropriated level. Proposed increases include funding for the Explosives portfolio to support efforts to develop technologies to screen cargo and counter threats to mass transit, for the Command, Control and Interoperability portfolio for cybersecurity research, and for the Borders and Maritime portfolio for research to improve border patrol capabilities. Increases are also requested for a variety of technology development activities.

### *University Programs*

The University Programs account within the S&T Directorate would receive \$46.0 million in FY 2010, down \$4.3 million or 8.5 percent from the FY 2009 appropriated level. This account provides funding for the university-based DHS Centers of Excellence (COEs), a minority-serving institutions program, and educational programs that provide tuition and stipends to undergraduates, graduate students, and post-doctoral researchers.

The Centers of Excellence program would receive \$35.0 million in FY 2010, down \$1.7 million or 4.7 percent from the FY 2009 appropriated level. The budget request does not indicate any plans to start supporting new Centers of Excellence; the decrease would be a result of DHS's proposal to cease supporting the Center of Excellence in Transportation Security.

The educational programs (scholarships and fellowships) would receive \$6.0 million in FY 2010, down \$2.1 million or 26.2 percent from the FY 2009 appropriated level. The decrease would be a result of DHS's proposal to cease supporting a program at the Naval Postgraduate School.

### **Research and Development Programs in the Domestic Nuclear Detection Office**

The DHS Domestic Nuclear Detection Office (DNDO) has a variety of operational responsibilities related to designing a global strategy for preventing radiological or nuclear attacks and testing and supporting the deployment of equipment to detect radiological or nuclear material. In addition, DNDO supports research to improve relevant technological capabilities for radiological and nuclear detection.

The Transformational Research and Development account within DNDO would receive \$110.5 million in FY 2010, up \$7.2 million or 7.0 percent from the FY 2009 appropriated level. This account includes Advanced Technology Demonstrations, Exploratory Research, and an Academic Research Initiative (ARI). The ARI is executed in partnership with the National Science Foundation.

The full DHS FY 2010 budget request is on line at: <http://www.dhs.gov/xabout/budget/>.

## **Environmental Protection Agency**

The President's FY 2010 budget request includes \$10.5 billion for the Environmental Protection Agency (EPA), an increase of about \$2.9 billion, or 38 percent, over the FY 2009 appropriated level (not including the funding EPA received in the American Recovery and Reinvestment Act). This represents the highest proposed funding level for EPA in its history. The EPA budget request is organized according to the Agency's five goals:

1. Clean Air and Global Climate Change – \$1.07 billion, a 3 percent increase, most of which can be attributed to EPA's activities around reducing greenhouse gas emissions;
2. Clean and Safe Water – \$5.1 billion, which is nearly double the FY 2009 appropriation;
3. Land Preservation and Restoration – \$1.76 billion, a 1.6 percent increase;
4. Healthy Communities and Ecosystems – \$1.7 billion, representing an increase of 38.5 percent, much of which comes from a tripling of EPA's proposed investment in ecosystem health; and
5. Compliance and Environmental Stewardship – \$789 million, an increase of 5 percent.

## **Science and Technology**

The President's request includes \$842 million for the EPA Science and Technology account, which provides funding for research and development at EPA laboratories and the external community, such as universities. Most of the proposed funding for EPA's Office of Research and Development (ORD) is provided from the Science and Technology account. Proposed funding for EPA's major research activities include:

### *Clean Air*

The request would provide a total of \$104 million for clean air research, including \$20.9 million for the Global Change Research program to "enhance understanding of the effects of global change on the environment." This represents a \$3 million increase over the FY 2009 enacted level.

### *Clean Water*

The request would provide \$110 million for clean water research, a \$4 million or 4 percent increase over the FY 2009 enacted level.

### *Human Health and Ecosystems*

The President's budget would provide \$245 million for human health and ecosystem research, a 7 percent increase. This includes \$10.9 million for the Science to Achieve Results (STAR) grants program, a 12.8 percent increase which would allow EPA to award approximately 131 new fellowships; \$11.4 million for endocrine disruptor research, which would include the continued development, evaluation, and application of innovative tools for endocrine disrupting chemicals; and \$19.6 million for computational toxicology research to support application of mathematical and computer models to help assess chemical risk to human health and the environment.

### *Superfund*

In addition to the funding requested directly for EPA's Science and Technology account, the Superfund program transfers funding for hazardous waste research to the account. For FY 2010, the President requests a transfer of \$26.8 million, a 1.5 percent increase.

The EPA FY 2010 Budget-in-Brief document can be accessed here: <http://www.epa.gov/budget/>

## **National Aeronautics and Space Administration**

President Obama's FY 2010 budget request would provide the National Aeronautics and Space Administration with \$18.7 billion, which is \$900 million, or 5 percent, above the FY 2009 enacted level. However, NASA is projected to receive stagnant funding levels in subsequent years.

The NASA budget is organized into seven (formerly three) funding accounts—Science, Aeronautics, Exploration, Education, Space Operations, Cross-Agency Support, and Inspector General accounts. The funding levels below for Mission Directorates, themes, programs and projects compare the FY 2009 enacted appropriations levels in direct dollars to the FY 2010 budget request in direct dollars. *For comparison purposes, the funding levels below do not*

*include the additional \$1 billion provided to NASA by the American Recovery and Reinvestment Act earlier this year.*

### **Science Mission Directorate (SMD)**

The Obama Administration has requested \$4.48 billion for the Science account, a reduction of \$36 million, or 0.8 percent, from the FY 2009 enacted level. However, all of the science themes would see an overall increase with the exception of Astrophysics, which would receive an overall decrease.

#### *Earth Science*

Overall this theme would receive \$1.4 billion, which is \$25 million, or 1.8 percent, more than the FY 2009 enacted level, including increases in the Research and Analysis awards, accelerated development for the first four Decadal Survey missions (SMAP, ICESat II, DESDynI, and CLARREO), and continued funding for Landsat Data Continuity Mission (LDCM), NPOESS Preparatory Project (NPP), Global Precipitation Measurement (GPM) mission, Aquarius, and other ongoing precursor missions to maintain current schedules. In addition, NASA is still evaluating its options to recover from the loss of the Orbiting Carbon Observatory (OCO) earlier this year. Revitalizing NASA's earth sciences funding is a high priority politically because of the growing public concern about climate change.

#### *Planetary Science*

Overall this theme would receive \$1.35 billion, which is \$21.4 million, or 1.6 percent, more than the FY 2009 enacted level. This level would include funding for the Mars Exploration Program and ongoing development of the Mars Science Laboratory (MSL) for launch in 2011 as well as future development of an outer planets flagship mission to Jupiter's Europa. Additional priorities that would be funded in this theme include new opportunities and funding for the Discovery and New Frontiers programs, and increases for the Research and Analysis awards.

#### *Heliophysics*

Overall this theme would receive \$605 million, which is \$13.4 million, or 2.3 percent, more than the FY 2009 enacted level. The theme is expected to grow over the next five years and the increase for FY 2010 would be primarily to fund Solar Terrestrial Probes and 2009 awards in the Explorer program.

#### *Astrophysics*

Overall this theme would receive \$1.12 billion, which is \$85 million, or 7 percent, less than the FY 2009 enacted level, making it the big loser among the four Science themes for the second year in a row. The request would continue funding for the James Webb Space Telescope and Hubble servicing mission as well as other ongoing missions such as Kepler, the Wide-field Infrared Survey Explorer (WISE) and SOFIA, but it would delay new mission starts and other missions under development pending the results of the ongoing National Academies Decadal Survey for Astronomy and Astrophysics.

### **Aeronautics Research Mission Directorate (ARMD)**

The Administration has requested \$507 million for the Aeronautics account, an increase of \$7 million, or 1.4 percent, from the FY 2009 enacted level. The recommended flat funding marks a

sharp departure from the previous Administration which had proposed four consecutive years of large decreases to the budget, which Congress partly restored.

The request would include:

- \$228.4 million for the Fundamental Aeronautics Program, focusing on physics-based methods and technologies to improve low-cost, reliable entry and re-entry from space;
- \$81.4 million for the Airspace Systems Program to further enable development of NextGen;
- \$60.1 million for the Aviations Safety Program;
- \$74.7 million for the Aeronautics Test Program to bolster aeronautics test facilities; and
- \$62.4 million for a new Integrated Systems Research Program to take a systems level approach to reduce the environmental impact of aviation in the area of air vehicle technologies.

Within these amounts, funding would be available for FY 2010 grants, contracts, and cooperative agreements with academia, non-profit organizations, and industry, including:

- \$40 million through the Fundamental Aeronautics Program;
- \$13.6 million through the Airspace Systems Program;
- \$8 million through the Aviations Safety Program;
- \$2 million through the Aeronautics Test Program; and
- \$10 million through the new Integrated Systems Research Program.

#### **Exploration Systems Mission Directorate (ESMD)**

The Administration has requested \$3.96 billion for the Exploration account, an increase of \$450 million, or 11.4 percent, from the FY 2009 enacted level. This increase is consistent with a similar increase provided by Congress over the FY 2008 level and would continue funding for the Lunar Reconnaissance Orbiter, the Lunar Precursor Robotic Program, and other high profile missions begun by the Bush Administration.

NASA and the White House Office of Science and Technology Policy will be conducting a review of post-Shuttle human space flight activities this summer through a new independent blue ribbon panel. The panel's findings will be due by August 2009, in time to influence the FY 2011 budget request; the panel will be chaired by Norm Augustine.

#### **Education**

The Administration has requested \$126.1 million for the Education account, a reduction of \$43.1 million, or 25.5 percent, from the FY 2009 enacted level. This reduction is primarily the result of the President eliminating funds for Congressional earmarks included in the final FY 2009 appropriations bill and would return the account nearer to its FY 2007 level after an increase by Congress for two consecutive years.

#### **Space Operations Mission Directorate (SOMD)**

The Administration has requested \$6.2 billion for the Space Operations account, an increase of \$411 million, or 7.1 percent, from the FY 2009 enacted level.

This amount would include:

- \$3.0 billion for the Space Shuttle program;
- \$2.1 billion for the International Space Station; and
- \$722.8 million for Space and Flight Support.

In addition, NASA notes that the Alpha Magnetic Spectrometer (AMS) science mission will be flown in 2010 provided all other shuttle missions can be completed by that time.

### **Cross-Agency Support**

The Administration has requested \$3.4 billion for the Cross-Agency Support account, an increase of \$94 million, or 2.8 percent, from the FY 2009 enacted level.

The full FY 2010 NASA budget document can be found at:

<http://www.nasa.gov/news/budget/index.html>

### **National Endowment for the Humanities (NEH) and National Endowment for the Arts (NEA)**

The President's FY 2010 budget requests \$171.3 million for NEH, an increase of \$16.3 million or 10.5 percent over the FY 2009 appropriated level. Of this increase, \$10 million would be directed to administering the National Capital Arts and Cultural Affairs program, which the U.S. Commission of Fine Arts currently operates. The budget request notes that NEH will manage a redesigned program of competitive grants to arts, historical, and cultural institutions in the District of Columbia.

Of the remaining \$6.3 million proposed increase, \$3.5 million would be used to increase the Federal/ State Partnership program; \$250,000 for Preservation and Access; \$250,000 for Public Programs; \$250,000 for Education programs; \$1.5 million to increase the Research programs; and \$200,000 for an increase to the Challenge Grant program. An increase of \$350,000 would be used for Program Development.

Regarding the previous Administration's initiatives at NEH, the Digital Humanities program would be level funded at \$4 million and the We the People program would receive \$14.5 million, a decrease of \$1.3 million from FY 2009.

The FY 2010 NEH budget document can be found at:

[http://www.neh.gov/pdf/NEH\\_BudgetReq\\_FY2010.pdf](http://www.neh.gov/pdf/NEH_BudgetReq_FY2010.pdf).

The President's FY 2010 budget request also includes \$161.3 million for the NEA, a \$6.3 million increase over the FY 2009 level. This does not include the \$50 million included for NEA in the American Recovery and Reinvestment Act. The NEA budget documents do not include any details regarding where the increases would be directed.

The FY 2010 NEA budget document can be found at: <http://www.nea.gov/about/Budget/NEA-FY10-Appropriations-Request.pdf>.

## **National Institute of Standards and Technology**

The National Institute of Standards and Technology (NIST), housed within the Department of Commerce, would receive \$846.1 million in the FY 2010 budget request, an increase of \$27.1 million or 3.3 percent above the FY 2009 appropriated level. As part of the President's commitment to double support for NIST intramural research programs and associated facilities by 2016, the FY 2010 budget provides \$651.5 million for these programs, an increase of \$7.5 million or 1.2 percent above the FY 2009 appropriated level. While this rate of increase may not seem to be consistent with a doubling track, when Congressionally-directed projects in the FY 2009 budget are removed, the proposed increase would be \$54.5 million.

NIST's Scientific and Technical Research and Services (STRS) account would receive \$534.6 million in the FY 2010 budget request, an increase of \$62.6 million or 13.3 percent above the FY 2009 appropriated level. The NIST budget request includes funding increases for intramural initiatives in the following areas: health information technology; Smart Grid standards; medical diagnostics; next generation photovoltaics; measurement of greenhouse gas emissions; security for America's computer networks; cost effective revitalization of America's infrastructure; and net-zero energy buildings.

NIST has few programs that support extramural activities. Among those programs, the Hollings Manufacturing Extension Partnership (MEP) would receive \$124.7 million, an increase of \$14.7 million above the FY 2009 appropriated level. The Technology Innovation Program (TIP) would receive \$69.9 million, an increase of \$4.9 million above the FY 2009 appropriated level. TIP funds joint ventures between universities and small and medium-sized businesses in research areas to address national needs; the past two competitions have included support for infrastructure research.

In both FY 2008 and FY 2009, Congress provided \$30 million for a grant program that gives competitive awards for construction of research science buildings at colleges, universities, and other research organizations. President Obama, like President Bush, has not included funding for this program in his budget request.

Information about the NIST budget request is available at:

<http://www.osec.doc.gov/bmi/budget/10BIB/2010%20budget%20in%20brief%20final.pdf>

## **National Oceanic and Atmospheric Administration**

The President's FY 2010 budget request includes nearly \$4.5 billion for the National Oceanic and Atmospheric Administration (NOAA), an increase of \$110 million or 2.5 percent above the FY 2009 enacted level. Similar to the FY 2009 budget request, funding for NOAA satellite programs would receive the bulk of this increase in FY 2010. In addition, the White House Office of Science and Technology Policy reports that the President' request for NOAA actually represents an 8 percent or \$56 million decrease in research and development activities below FY 2009.

Below is a breakdown of funding by each NOAA line office:

### **NOAA Research – Office of Oceanic & Atmospheric Research (OAR)**

The President is requesting \$404 million for NOAA's Office of Oceanic and Atmospheric Research (OAR), a decrease of \$3.7 million or less than one percent below the FY 2009 level. Within OAR, the request includes a total of \$209.8 million for climate research, including \$144 million for the Competitive Research Program, a \$12 million increase. Weather and Air Quality Research would receive \$63.9 million, a small increase. The Ocean, Coastal and Great Lakes Research would receive \$107 million, including level funding for both the National Sea Grant College Program at \$55 million and the Marine Aquaculture Program at \$1.6 million. In addition, as has been done in recent budgets, the FY 2010 request seeks to merge the National Undersea Research Program (NURP) with the Ocean Exploration Program. The requested funding for the combined program is \$27.8 million, which represents nearly flat funding when taking into account the combined funds appropriated in FY 2009 for the separate NURP and Ocean Exploration programs.

### **National Weather Service**

The request includes \$963.8 million for the National Weather Service, a \$5 million increase over FY 2009 (less than one percent). The request highlights the inclusion of \$7 million for the installation of an additional NEXRAD Radar and an increase of \$5.3 million for the Advanced Weather Interactive Processing System, for a total proposed budget of \$24 million.

### **National Environmental Satellite, Data and Information Service**

The budget request identifies NOAA's satellite programs as a "top priority" for FY 2010. In total, the National Environmental Satellite, Data and Information Service would receive \$1.4 billion, a \$250 million or 21 percent increase. The budget includes \$737 million for Geostationary Systems-R series (GOES-R) satellites, an increase of \$272 million or 58 percent. The budget summary states that these funds will be used for systems engineering, continued development of the satellite instruments and ground systems, risk reduction activities, transition to the system-level acquisition and operations phase of the program, and support of an initial GOES-R launch date in April 2015. In addition, the Integrated Baseline Review will be completed in FY 2010.

The National Polar-orbiting Operational Environmental Satellite System (NPOESS) would receive \$382 million, a \$94 million or 32.7 percent increase over the FY 2009 enacted level. The budget summary states that this request supports "a revised life-cycle cost estimate of \$14 million through 2024 to reflect additional resource requirements necessary to address continued difficulties in instrument developments and outyear operations and sustainment costs."

### **National Ocean Services (NOS)**

The President's budget request includes \$502 million for the National Ocean Service (NOS), an 11 percent decrease from the FY 2009 enacted level. Within NOS, the President's request would provide \$16 million, an increase of \$6 million, for implementation of the near priorities within the Ocean Research Priorities Plan, \$14.5 million for Integrated Ocean Observing System regional observations, \$20.6 million for the Coastal Services Center, \$51.9 million for the

National Centers for Coastal Ocean Science, and \$102 million for coastal zone management activities.

### **National Marine Fisheries Service**

The President proposes a total of \$912 million for the National Marine Fisheries Service. This would represent an increase of about \$33 million or 3.7 percent. The request highlights \$60 million for the establishment of a national grants program in support of species listed under the Endangered Species Act.

### **NOAA Education Program**

The budget request includes \$20.6 million for NOAA Education Programs, which is \$25.4 million less than the FY 2009 appropriated amount. This cut appears to be due to the proposed elimination of a number of education programs and projects within the account, including the Bay Watershed Education and Training programs and a number of earmarked education projects. The Educational Partnership Program with Minority Serving Institutions would receive \$14 million, a 5 percent decrease. In addition, the budget states that the request “continues NOAA’s support for environmental literacy with an increase of \$4 million for a national competitive education grant program,” to fund development of curricula and environmental educators for formal and informal education. The National Competitive Educational Grant Program addresses the educational mandate for NOAA established in America COMPETES Act.

The NOAA FY 2010 Budget Blue Book can be accessed here:

[http://www.corporateservices.noaa.gov/~nbo/10bluebook\\_highlights.html](http://www.corporateservices.noaa.gov/~nbo/10bluebook_highlights.html)

## **National Science Foundation**

The National Science Foundation (NSF) would receive \$7.045 billion in the FY 2010 budget request, an increase of \$555 million or 8.5 percent above the FY 2009 appropriated level. This increase builds on a 7.6 percent increase NSF received in FY 2009, and the rate of growth is consistent with the Administration’s stated goal to complete a doubling of NSF by 2016. (None of these numbers include the one-time infusion of \$3 billion to NSF from the American Recovery and Reinvestment Act [ARRA].)

### **Research and Related Activities (R&RA)**

The NSF Research and Related Activities (R&RA) account would receive \$5.733 billion in the FY 2010 budget request, an increase of \$550 million or 10.6 percent above the FY 2009 appropriated level. The R&RA account includes funding for research in Biological Sciences; Computer and Information Sciences and Engineering; Engineering; Geosciences; Mathematical and Physical Sciences; and Social, Behavioral and Economic Sciences. It also contains funding for cyberinfrastructure, polar research, international activities, and some agency-wide programs, such as the Major Research Instrumentation program and the Experimental Program to Stimulate Competitive Research (EPSCoR).

A complete breakdown of the NSF R&RA budget by division and program is not yet available, but a comparison between the FY 2010 request and the FY 2008 level by directorate is possible. (Data separating the regular FY 2009 and ARRA funding for each directorate in FY 2009 has not

yet been provided by NSF.) Proposed funding increases appear to be spread relatively equally—the six major research directorates and the Office of Cyberinfrastructure all would grow between 17.8 percent (Mathematical and Physical Sciences) and 19.9 percent (Geosciences) over the two year period from FY 2008 to FY 2010.

While program-level detail is not available, NSF's plans to support the major priorities of the Administration have been emphasized in several areas by staff from NSF and the White House Office of Science and Technology Policy.

- NSF would increase support for climate research by approximately \$200 million across all fields of science and engineering, including the social sciences. Example areas of focus would include ecosystems vulnerabilities, the carbon cycle, ocean acidification, abrupt climate change, and adaptation and mitigation of climate change.
- NSF also plans to continue and expand its basic research programs that support work to overcome barriers to the use of clean energy.
- NSF will support work on computational models, simulation, and software development to open new pathways in all science and engineering fields.
- The emphasis placed by NSF for its ARRA funds on high-risk transformative research and support for early career investigators, especially through the CAREER program, is proposed to continue in the FY 2010 budget.

### **Education and Human Resources (EHR)**

The NSF Education and Human Resources (EHR) account would receive \$857.8 million in the FY 2010 budget request, an increase of \$12.5 million or 1.5 percent above the FY 2009 appropriated level, excluding ARRA funds. In past years, proposed EHR increases have usually been lower than the increases proposed for the R&RA account (comparing percentages), but Congress often increases the EHR funding levels during the appropriations process.

In public briefings, NSF leadership has emphasized that education programs at NSF are not limited to EHR, and noted that many of the proposed increases for education in fact occur in the R&RA account. Documents from the White House Office of Science and Technology Policy state that science, technology, engineering, and mathematics education funding NSF-wide would increase by \$43 million, or 4.0 percent from FY 2009 to \$1.109 billion FY 2010.

A complete breakdown of the NSF EHR budget by program is not yet available, but NSF's plan to support major priorities of the Administration have been emphasized.

- In FY 2010, NSF would establish a climate change education program that would support programs for K-12 up to graduate level and efforts to increase public understanding of climate change and its consequences.
- The budget request would begin to grow the Graduate Research Fellowship (GRF) program at NSF, consistent with the President's plan to triple the number of new GRFs, bringing the level to 3,000 by 2013. In FY 2010, the GRF program, which is funded in EHR and across the research directorates in R&RA, would receive \$122 million, enough for 400 additional fellowships, bringing the level to 1600.
- Within EHR, \$64 million, an increase of \$12 million, would be provided for the Advanced Technology Education (ATE) program, to support community college programs focused on training a workforce for high-technology sectors.

Finally, NSF would also join with DOE and other agencies in a clean energy education initiative to inspire and enable students to pursue careers in science, engineering, and entrepreneurship related to clean energy. Earlier press releases from NSF indicate that this effort would include:

- Energy research opportunities for undergraduates.
- Partnerships between industry and two-year and four-year colleges to strengthen education for technicians in the clean energy sector, focusing on curriculum development, teacher training, and career pathways from high schools to community colleges.
- Interdisciplinary energy graduate programs at the master's and Ph.D. level that integrate science, engineering, entrepreneurship, and public policy.
- Individual fellowships to graduate students and postdoctoral researchers involved in the frontiers of clean energy research.
- Study of how students learn about science and technology to enable enhanced learning in the K-12 setting on topics relating to clean energy and development and evaluation of innovative technology experiences for students and their teachers.
- Education in conducting computationally-enabled modeling and analyses of complex interrelationships among energy systems, environmental and economic impacts, and human factors.

At NSF, this initiative would include use of existing programs, such as Graduate Research Fellowship Program, the Integrative Graduate Education and Research Traineeship Program, Research Experiences for Undergraduates, and the Advanced Technological Education Program.

### **Major Research Equipment and Facilities Construction (MREFC)**

The NSF Major Research Equipment and Facilities Construction (MREFC) account would receive \$117.3 million in the FY 2010 budget request, a decrease of \$34.7 million or 22.8 percent below the FY 2009 appropriated level. The lower total reflects the use of ARRA funds for several new and ongoing MREFC projects, including the Alaska Region Research Vessel, thereby reducing the amount of MREFC spending that would be needed in regular FY 2010 appropriations.

The complete budget materials for NSF are not yet available on line.

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

The FY 2010 President's budget request would provide a total of \$25.7 billion in discretionary funding for the U.S. Department of Agriculture (USDA). If adopted, this would represent an increase of \$1.6 billion, or 7 percent over the level enacted in the FY 2009 Omnibus Appropriations Act. This amount does not include the funding that USDA received in the American Recovery and Reinvestment Act (the economic stimulus bill).

### **National Institute of Food and Agriculture**

Created in the 2008 Farm Bill to replace the former Cooperative State Research, Education, and Extension Service (CSREES), the National Institute of Food and Agriculture (NIFA) facilitates a nationwide agriculture research and education program through partnerships with State institutions.

### *Integrated Activities*

NIFA would receive a total of \$127 million for its Integrated Activities account in the FY 2010 budget request. This represents an increase of \$2 million, or 2 percent, over the FY 2009 enacted level. The Integrated Activities account awards competitive and noncompetitive research, education, and extension grants on topics relating to agriculture, crops, and water. Topics of specific interest to the research community include water quality (\$13 million), food safety (\$15 million), and international science and education grants (\$3 million).

### *Research and Education Activities*

NIFA also supports funding for agriculture research, development, and education through its Research and Education Activities account. Research and Education Activities would receive \$637 million in the FY 2010 budget request, a decrease of \$68 million, or 10 percent, below the FY 2009 enacted level. The majority of this reduction results from the elimination of earmarks from the account.

Agriculture Food and Research Initiative - Within the Research and Education Activities account, the Agriculture Food and Research Initiative (AFRI) would receive \$202 million in the FY 2010 budget request. This figure represents a decrease of \$109 million, or 35 percent below the FY 2009 enacted level. A product of the 2008 Farm Bill, AFRI will replace the National Research Initiative (NRI) as USDA's core program to sponsor fundamental and applied competitive agriculture research and development. While its priorities will mirror many of those of NRI, AFRI was created to allow greater flexibility in the programs that can be funded. The proposed decrease for FY 2010 reflects the removal of Congressionally-directed earmarks from the account.

Formula Payments Under the Hatch Act - \$207 million would be provided for formula grants under the Hatch Act in the FY 2010 budget. This is the same amount at which the program was funded in FY 2009. The Hatch Act provides funds to agriculture experiment stations at the nation's land grant colleges in all 50 states and a number of U.S. territories.

Higher Education - The budget request would provide \$80 million for activities related to higher education. This figure represents an increase of \$33 million, or 70 percent, over the FY 2009 level. These funds would be dedicated to graduate fellowships, challenge grants, a Hispanic-serving institutions education grants program, and a multicultural scholars program. These programs are designed to allow universities to expand curricula, increase faculty development, and train the next generation of scholars and researchers in the food and agricultural sciences.

Special Research Grants - The FY 2010 budget request would provide \$40 million in special research grants. This would be a reduction of \$82 million, or 67 percent, below the FY 2009 enacted level. These funds would be used to sponsor research projects in priority areas including global change, pest management, aquaculture, and supplemental and alternative crops. As with other USDA accounts, the reduction reflects elimination of funding for earmarks in the FY 2010 request.

### *Extension Activities*

Extension activities within NIFA would receive \$528 million in the FY 2010 President's budget request. This represents an increase of \$14 million, or 3 percent over the final FY 2009 funding level.

Formula Payments Under the Smith-Lever Act - The majority of funding in the Extension Activities account is administered to the states through formula funding under the Smith-Lever Act. The FY 2010 budget request would allocate \$289 million, the same amount at which the program was funded in FY 2009, to formula grants through the Smith-Lever Act. Most of the major education efforts of the Cooperative Extension Service are financed by these funds.

### **Agricultural Research Service**

The Agricultural Research Service (ARS) is the primary in-house research agency for USDA.

### *Salaries and Expenses*

Within ARS, the Salaries and Expenses account would receive \$1.3 billion in the FY 2010 budget request. This represents a slight increase of \$13 million, or 1 percent, above the FY 2009 enacted level. Besides the programs specifically described below, the Salaries and Expenses account funds initiatives on topics such as bioenergy, crop and livestock production and protection, and the repair and maintenance of ARS facilities.

Food Safety - The FY 2010 budget request would allocate \$99 million, an increase of \$2 million, or 2 percent, above the FY 2009 level to food safety programs at ARS. These funds are dedicated to internal, cooperative, and international programs to ensure that the country's food supply is protected at every stage from production through consumption. ARS also partners with numerous other federal agencies on food safety initiatives.

Human Nutrition Research - Human nutrition research efforts would receive \$92 million in the FY 2010 budget request. This would be an increase of \$7 million, or 8 percent over the FY 2009 level. Human nutrition programs at USDA seek to provide information regarding the maintenance of lifelong health and the prevention of obesity and chronic diseases. Current research foci include nutrition monitoring, dietary guidance, prevention of obesity, and life stage nutrition.

Environmental Stewardship - Environmental stewardship activities within ARS would receive \$234 million, an increase of \$8 million or 4 percent over the FY 2009 enacted level. Many of ARS's activities related to global climate change are funded through this account. Current efforts include developing means to meet the water resource challenges resulting from climate change, work to develop measurement techniques for greenhouse gas emissions, and creating the next generation of biofuels. The increase for this account reflects the Obama Administration's commitment to curbing the harmful effects of global warming and reducing the nation's dependence on foreign oil.

Complete budget materials have not yet been made available on line by USDA.

## **U.S. Geological Survey**

The U.S. Geological Survey (USGS) would receive \$1.1 billion in the President's FY 2010 budget request for the Department of Interior. The request is \$54 million (5.2 percent) above the FY 2009 appropriated level.

In recent years, the Bush Administration would propose the elimination or reduction of USGS programs, and Congress then would reject the cuts and restore the funding. Thus, the proposed increase, while not large, is a significant sign of support from the new Administration. Not surprisingly, the request follows the Obama Administration's priorities and would propose increased funding in the areas of climate change, renewable energy, and education and training programs.

### **Initiatives**

#### *New Energy Frontier Initiative*

The budget request would provide an additional \$3 million to USGS as part of a larger initiative with the Bureau of Land Management, Fish and Wildlife Service (FWS), and Bureau of Indian Affairs. The proposed increase would be used to investigate renewable energy resources and would build on previous efforts to study geothermal resources.

#### *Climate Impacts Initiative*

The budget would provide a \$22 million increase in climate change science activities. The request would provide \$7 million for USGS to conduct a national assessment for both geological and biological forms of carbon sequestration; \$5 million would be provided to expand climate change monitoring; an increase of \$5 million would be provided to the National Climate Change and Wildlife Science Center; and another \$5 million would be used for other climate change science program increases to provide support to FWS.

#### *21<sup>st</sup> Century Youth Conservation Corps*

As part of a large Department of Interior initiative, the budget request proposes a \$2 million increase to USGS to expand education, training, and workshop opportunities to high school and college students. The initiative would also expand the number of internships and fellowships supported by USGS.

### **Geography**

The President's budget would provide \$143.9 million for Geography, an increase of \$71.6 million (99 percent) above the FY 2009 enacted level. This proposed increase is largely due to the realignment of the National Geospatial Program from the Enterprise Information discipline into the Geography discipline. Land Remote Sensing would receive an increase of \$339,000 to \$62.1 million, and Geographic Analysis and Monitoring would be funded at \$11.1 million, an increase of \$537,000 over FY 2009.

### **Geology**

The FY 2010 budget request would provide \$247 million for Geology, an increase of \$4.8 million (2 percent) above the FY 2009 enacted level. Of this proposed increase, \$1 million would go toward research to map the limits of the continental shelf in the Arctic Ocean;

\$375,000 to wind and solar research in coastal and marine geology; \$100,000 to biofuels research; and \$1 million to geothermal research.

For Geologic Landscape and Coastal Assessments, an increase of \$2 million to \$74.4 million would be provided. Finally, the budget would provide \$81.4 million, an increase of \$2.2 million, to the Geologic Resource Assessments account.

The FY 2010 budget would provide \$91.3 million for the Geologic Hazards Assessments account, an increase of \$678,000. Information regarding the Earthquake Hazards Grant program and the Advanced National Seismic System was not available at the time of this writing.

### **Water Resources**

The Water Resources discipline would receive \$227.9 million in the FY 2010 budget request, an increase of \$6.5 million (2.9 percent) over the FY 2009 enacted level. In contrast to previous Administrations which zeroed out the program, the Obama Administration would fund the Water Resources Research Act program at the FY 2009 level of \$6.5 million. This program funds the 54 Water Resources Research Institutes. An increase of \$5 million would be provided to the National Streamflow Information program to reestablish streamgages.

### **Biological Research**

The FY 2010 budget request would provide \$199.3 million for the Biological Research activity, an increase of \$13.9 million (7.5 percent) over the FY 2009 enacted level. Proposed increases would be \$5 million in partnership with FWS to coordinate science support strategies; \$4.2 million for polar bear and arctic ecosystems research; \$400,000 for biofuels research to support the New Energy Frontier initiative; \$625,000 for wind and solar research; and \$2 million for Biology's Cooperative Research Units.

### **Enterprise Information**

The budget request for FY 2010 would include \$46 million for the Enterprise Information account, a decrease of \$66.5 million (59 percent) under the FY 2009 enacted level. This decrease is due to the realignment of the National Geospatial Program to the Geography discipline. The budget request proposes an increase of \$2 million in Enterprise Information Resources to expand education, training, and workshop opportunities for high school and college students.

### **Global Change**

The President's budget request would provide \$58.2 million for the Global Change activity in FY 2010, an increase of \$17.6 million (43.2 percent) over the FY 2009 enacted level. The proposed budget would provide \$7 million for USGS to conduct a national assessment for both geological and biological forms of carbon sequestration; \$5 million would be provided to expand climate change monitoring; and an increase of \$5 million would be provided to the National Climate Change and Wildlife Science Center.

### **Science Support**

The FY 2010 budget request would provide \$69.2 million for the Science Support activity, an increase of \$1.8 million (2.7 percent) above the FY 2009 enacted level.

## **Facilities**

The President's FY 2010 budget would provide \$106.4 million for facilities, an increase of \$4.3 million (4.2 percent) above the FY 2009 enacted level.

The USGS FY 2010 budget request is on line at:

<http://www.doi.gov/budget/2010/10Hilites/BH045.pdf>.

## **Interagency Programs**

### **Climate Change Research and Development**

The U.S. Climate Change Science Program (CCSP) coordinates the climate research efforts of 13 federal departments and agencies. The FY 2010 request would provide \$2.03 billion for CCSP, an increase of \$46 million or 2.3 percent over the FY 2009 level. The budget identifies the following CCSP research activities for FY 2010:

- Development of an integrated earth system analysis capability;
- A focus toward creating a high-quality record of the state of the atmosphere and ocean since 1979;
- Development of an end-to-end hydrologic projection and application capability;
- Enhanced carbon cycle research on high latitude systems;
- Quantification of climate forcing and feedbacks by aerosols, non-carbon dioxide greenhouse gases, water vapor, and clouds;
- Assessment of abrupt change in a warming climate;
- Examination of the feasibility of development of an abrupt change early warning system;
- Understanding climate change impacts on ecosystem functions; and
- Refining ecological forecasting.

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

The FY 2010 budget request would provide an estimated \$3.93 billion across 12 agencies for the Networking and Information Technology Research and Development (NITRD) Program, an increase of \$44 million, or 1.1 percent, from the estimated FY 2009 level. The appearance of flat funding is primarily a result of proposed reductions at DOD due to the elimination of Congressionally-directed projects. Significant increases are proposed at NSF (up \$107 million) and the Department of Energy (up \$48 million). Particular areas of emphasis will include high-end computing research for both national security and large-scale scientific applications, particularly in advanced scalable simulations, and foundations for assured computing and secure hardware, software and network design and engineering to improve Internet security and reliability.

### **National Nanotechnology Initiative**

The FY 2010 budget request would provide an estimated \$1.64 billion across 11 agencies for the National Nanotechnology Initiative, a decrease of \$17 million, or 1.0 percent, from the estimated FY 2009 level. The decrease is primarily a result of proposed reductions at DOD due to the elimination of Congressionally-directed projects. Increases are proposed in nanotechnology programs at other agencies. In particular, \$88 million would be provided for nanotechnology-related environmental health and safety research in FY 2010, an increase of 23 percent over the estimated FY 2009 level.