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COMMITTEE ON SCIENCE AND TECHNOLOGY

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Committee on Science and Technology
Fiscal Year 2011 (FY11)
Minority Views and Estimates

It is important that we continue to make appropriate investments in science and technology research, development, and math and science education in order for the United States to remain a world leader in competitiveness and innovation. While Committee Republicans agree with the Majority that the Administration's budget summary "recognizes the benefits that science and technology and research and development investments have for our country's economic competitiveness, energy security, job growth and environmental health," we are also mindful that in the current economic environment, the nation faces numerous and difficult budgetary decisions that will require our careful consideration, diligent oversight, and appropriate action.

We are pleased that the budget summary continues to build on the American Competitiveness Initiative and the America COMPETES Act (COMPETES) (P.L. 110-69) by providing funding for physical sciences and engineering at the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), and the Office of Science at the Department of Energy (DOE), but have some concerns that in the quest to get stimulus money out the door, the Administration may be accelerating this funding beyond authorized levels with little to no direction on spending. We are skeptical about the claims of the Administration regarding the number of jobs created by the funding that was provided by the American Recovery and Reinvestment Act and remain concerned about the lack of oversight of the funding for these programs.

National Science Foundation (NSF)

The FY11 budget request for NSF is \$7.4 billion. This \$551.9 million increase is 8 percent increase over the FY10 estimate. While Committee Republicans recognize that the budget request falls below the amounts authorized in the America COMPETES Act (COMPETES), we also note that in addition to the \$596 million in stimulus funds obligated for FY10, an additional \$450 million remains unobligated. We support a robust budget request for NSF, but remain concerned that we not exceed current authorization amounts.

With regard to education, we agree with the Majority that NSF has an important and unique role to play in strengthening science, technology, engineering, and mathematics (STEM) education at all levels. We further agree with the Majority that the FY11 budget

should provide sustained support for K-12 programs, including the Noyce Teacher scholarship program and the Math and Science Partnership Program.

The FY 11 budget request continues to make climate change research and education a priority throughout the Foundation. NSF currently funds numerous research and education programs that address climate change across all directorates; however, the FY11 budget request continues to direct funding specifically to climate change. By continuing to single out a specific area of research over myriad others for targeted funding, this budget request hinders NSF's ability to support all science and engineering disciplines, potentially depriving funding for other much needed basic research.

Department of Energy (DOE)

In general Committee Republicans agree with and support the Administration's focus on basic research in this budget, particularly the efforts to place the Office of Science on a doubling path as called for by the America COMPETES Act. However, we note that the \$300 million request for the Advanced Research Projects Agency (ARPA-E), if directed to the Office of Science, would be sufficient to provide for full funding along the doubling path endorsed by the America COMPETES Act and the Obama Administration. A majority of Republicans opposed the creation of ARPA-E in part due to concerns that it would divert funding from the Office of Science and impede the doubling effort. This budget appears to validate these concerns.

Further, those of us in opposition to ARPA-E continue to have concerns regarding the suitability of the DARPA model applied to the energy sector as well as the continued lack of clarity regarding the scope and mission of the agency. Accordingly, we believe that high-risk, high-reward R&D projects be funded through the traditional DOE structure and prioritized against existing applied energy technology programs. More broadly, we also remain concerned by the overall lack of clarity in the budget with respect to the numerous programs with overlapping goals and similar activities. In particular, the budget does not effectively articulate the details of and distinctions between energy technology development programs, such as the ARPA-E, Energy Innovation Hubs, Energy Frontier Research Centers, and traditional applied technology programs. Accordingly there appears to be a high potential for overlap and duplication of effort that must be addressed before funding increases for these programs move forward.

Committee Republicans are also disappointed and concerned with the impact of the proposed budget on American energy independence. While the budget's emphasis on renewable energy and energy efficiency programs will certainly contribute to energy independence, its hostile approach to supply side factors associated with energy independence—primarily, expanding traditional sources of domestic energy—is disturbing. For example, we are deeply disappointed that the President's budget summary proposes to eliminate the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Program established in Section 999 of the Energy Policy Act of 2005 (P.L. 109-58). Section 999H(a) sets the funding for this program at a level of \$50-million-per-year provided from Federal lease royalties, rents, and bonuses paid by oil and gas companies - not taxpayers. It should be clear that the overall program was

initiated and carried out to reach energy known to exist in the areas targeted - energy that was impossible to produce without new technology - and that the required technology would be eventually be paid for from the energy captured. The funds are to be directed towards research specifically targeting four areas: ultra-deepwater resources, unconventional natural gas and other petroleum resources, technology challenges of small producers, and research complementary to these areas.

Additionally, while we are wholly supportive of research into renewable and alternative forms of energy, we feel that domestically produced oil and natural gas will continue to play an important role in powering our country and must therefore receive support to increase our domestic supply and reduce our foreign dependence. The budget eliminates funding for research and development in fossil energy and appears to focus funding solely on carbon capture and sequestration research and development associated with coal fired electricity generation and industrial sources. We are pleased that research into carbon capture and storage is playing a prominent role in the budget summary, but we encourage the Budget Committee to continue to recognize the importance of oil and natural gas research and development to our country's future. The domestic oil and natural gas industry experienced nine (9) percent job growth from 2002-2008. With the Administration's recent focus on jobs proposals in the budget that stymie job growth should be fully examined.

While we commend the administration's efforts to provide additional loan guarantees for nuclear power plants and support efforts to focus research and development into reprocessing of spent nuclear fuel and the next generation of nuclear plants, we note the President's determination that Yucca Mountain is not a workable option and the subsequent decision to withdraw, with prejudice, the license application for the Yucca Mountain repository program raises significant regulatory and legal issues that may not only adversely affect the licensing and construction of a new fleet of nuclear power plants, but also may impact existing operating nuclear plants and license renewals. We believe that it is premature to withdraw this application, which has already cost the American taxpayers upwards of \$10 billion, prior to consideration of all the options for disposal of nuclear waste by the Blue Ribbon Commission. Nuclear energy should be fully supported as the type of clean energy technology that will reduce dependence on foreign oil and all options should be allowed to be considered with regard to addressing spent fuel.

National Institute of Standards and Technology (NIST)

The Department of Commerce's NIST supports U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology to enhance economic competitiveness and address important societal challenges. The Administration's FY11 budget request for NIST is \$918.9 million, a 7.3 percent increase over the FY10 level. This amount does not reflect the recently announced \$123 million in FY10 stimulus funds for the NIST Construction Grant program (NCGP) to build new university research facilities or the \$180 million in stimulus funds to maintain and renovate current NIST facilities.

NIST's core research and facilities programs are widely recognized as well-managed, high-leverage activities supported by world-class researchers. Accordingly, Committee Republicans agree with the Majority that these activities should receive priority in the budget, and, along with the Manufacturing Extension Partnership (MEP) and the Technology Innovation Program (TIP), be funded in accordance with the levels authorized in COMPETES.

At the same time, Committee Republicans intend to continue close oversight of NIST's budget and activities and hope to work with the Majority and the Administration to ensure appropriate and effective use of taxpayer dollars. Of particular concern is oversight for the new NCGP program, which received Stimulus funds but was not authorized by Congress or formally reviewed and considered by this Committee. Also, Committee Republicans are concerned that even though the Construction of Research Facilities (CRF) request is \$22.2 million below the FY10 levels (not including Stimulus funding), it is still \$124.8 million. Given that NIST received \$180 million in Stimulus funds to address maintenance and renovation at its facilities, we would like a more thorough accounting of how these funds are being used in FY10 and the need for additional funding in FY11.

National Aeronautics and Space Administration (NASA)

NASA is at a critical juncture. The agency is preparing to retire the Space Shuttle at the end of this year without a successor vehicle in place. Our nation faces the prospect of sending hundreds of millions of dollars to Russia over several years to buy seats on their launcher until a replacement vehicle is in place. Given this national challenge, the President's FY2011 budget request of \$19.0 billion for NASA, which represents an increase of \$276 million (1.5%) over FY2010 enacted, is justified. While we are supportive of this increase, we differ significantly on the direction of the agency.

The FY2011 budget request reflects a radical departure for the agency. It cancels NASA's successor to the Space Shuttle, the Constellation program, which would be capable of launching astronauts to the International Space Station as well as to destinations beyond low Earth orbit. Two successive Congresses (109th and 110th) under different party leadership have overwhelmingly supported Constellation in NASA authorization bills. Over the last five years taxpayers have invested \$9.1 billion on Constellation, and NASA engineers are confident that most of its technical challenges have been addressed. To cancel this program now without reaping the benefits of this investment would be a huge waste of taxpayer dollars. It also jeopardizes our nation's ability to return humans to space as quickly and safely as possible, and could have detrimental effects on our national security and global preeminence.

In place of Constellation, the FY2011 budget increases spending for technology research and development activities that someday may provide new propulsion, sensor, and materials capabilities for yet-to-be-determined missions. It also shifts money toward a commercial crew program (\$500 million in FY2011; \$5.8 billion over five years) to seed the development of commercial entities proposing to launch humans into low Earth orbit. Without offering any proof or programmatic details, the budget proposal assumes that

commercial launch providers will be able to offer human spaceflight services that are safer, faster, and cheaper. Committee Republicans have long supported the development of commercial cargo services and have ensured that authorization bills include funding for commercial cargo ventures. But, we also believe that until these entities can demonstrate an ability to safely put cargo into space it is not prudent to gamble American lives.

Committee Republicans are also concerned that the FY2011 budget significantly increases NASA's spending for Earth Sciences, adding \$381 million (27%) over the FY2010 enacted, and \$1.8 billion over four years (FY2011 – FY2014) compared to FY2010. The other science divisions receive modest increases or are flat-funded. Earth Science will eventually consume 40% of the agency's overall science program, crowding out funding for exciting science missions flown by the astrophysics, planetary sciences, and heliophysics communities.

The Committee believes it is imperative for NASA to maintain world leadership in human spaceflight capabilities. We are at the tipping point with the retirement of the Space Shuttle, and many industry experts firmly believe the Constellation program is the safest and most prudent investment. Given that the Science and Technology Committee has deliberated on this issue for several years and advanced bipartisan, broadly-supported legislation, it is disconcerting that this budget proposal suggests such a radical and unsupported direction for the agency.

Department of Commerce – National Oceanic and Atmospheric Administration (NOAA)

Committee Republicans have reservations about the FY11 budget request for NOAA of \$5.6 billion, an \$806 million (17 percent) increase over the FY10 enacted level. This substantial increase reflects several momentous policy decisions that have not been vetted by the Committee on Science and Technology.

The minority notes a significant change in this budget request from previous budget requests with the dissolution of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) tri-agency program with NASA and DOD, and the creation of the Joint Polar Satellite System (JPSS), in which NOAA will be solely responsible for the cost of development and procurement of instruments for polar-orbiting weather satellites. The DOD is currently reviewing its options in moving forward with its own separate weather satellite system. Severing the tri-agency venture is a drastic attempt to ensure the prevention of potential data gaps in weather and climate information in the next few years. Over the last several Congresses, the Committee has held numerous hearings regarding the problems and delays in NOAA's next generation of satellites. However, we have not yet had a chance to evaluate the implications of this decision since it was announced just prior to the release of the President's budget.

Although this separation is still in transition with no clear path forward and no plan how to get there, NOAA has submitted a budget request that would cover the increased expense of building this satellite system independently. Accordingly, the minority

believes that the FY11 request for \$2.2 billion for the National Environmental Satellite Data and Information Service (NESDIS) is premature at this time. This request is \$810.5 million (58 percent) above the FY10 enacted levels as a result of the JPSS program. We believe that this radical shift in policy requires much more oversight and scrutiny by Congress and we strongly urge a more comprehensive policy be developed before moving forward with this plan.

Committee Republicans are extremely hesitant about the request of \$464.9 million for the Office of Ocean and Atmospheric Research (OAR), which is a \$15.7 million (3.5 percent) increase over FY10 enacted levels. Coupled with the \$170 million OAR received in stimulus funding, this increase represents a continued commitment to enhance climate change research. While another increase at this time also begs the question of fiscal responsibility, our chief concern is that NOAA has recently announced its intent to establish a NOAA Climate Service as a new line office. This announcement came after the release of the President's budget, so it was not included in the FY11 request. It is our understanding that NOAA intends to request a reprogramming from the Appropriations Committees which will simultaneously move several key programs into the new line office, including the physical science parts of climate research and modeling from OAR, 3 data centers from NESDIS, and the climate observing network from the National Weather Service (NWS). As a result, OAR will be left with approximately \$200 million and will become nothing more than a collection of random research programs.

The minority does not support NOAA's plan for creating a Climate Service for both policy and process reasons. We are extremely concerned that moving research into an operational program office will leave the research needs vulnerable since operational priorities will take precedence. NOAA has had experience with research suffering in an operational office in the past and the result was the NWS research components were moved to OAR in order to keep the focus of NWS on operations. With this proposal, NOAA is choosing to ignore the lessons of the past.

Furthermore, by moving the essential climate research programs into a new line office, NOAA abandons the interdisciplinary benefits gained by housing physical climate research with research from other scientific branches. The proposed Climate Service will attempt to provide adaptation products, which require the successful integration of biological, physical, environmental and social sciences into products and tools. However, the focus on solely the physical science research as part of the Climate Service indicates a shortsighted approach to meeting future climate product demands. One only needs to look at the National Integrated Drought Information System program (NIDIS) and its success to see the need to integrate many different types of science pulled from many different sources to provide a complete picture of impacts and tools for planning. Finally, OAR would effectively be crippled by the removal of half its research program and funding, thus weakening overall science at NOAA.

Therefore, we do not support the increase request for climate research in OAR until we can be satisfied that any new Climate Service would not irreparably harm research, as this current plan most certainly does, and until NOAA reorganization proceeds through

proper legislative channels, including consideration by the Committee on Science and Technology, which is the appropriate course of action for a reorganization of this magnitude.

Environmental Protection Agency (EPA)

Committee Republicans share the Majority's view that investments in research and development will be beneficial in the form of greater cost-efficiency of environmental protection programs. However, we are concerned that EPA's request includes funding for the promulgation of regulations that Congress does not yet support. The \$847 million FY11 budget request for science and technology is a 0.1 percent increase over the 2010 enacted levels. Despite the heavy focus of the EPA budget on the anticipated implementation of a host of new regulations triggered by the EPA's endangerment finding finalized in December 2009, we are extremely concerned that only \$16.9 million of the Climate Protection Program budget request is for science and technology, a \$2.9 million decrease from FY10 enacted levels. As this is the program under which the Agency intends to promulgate these new regulations, such a request is indicative of EPA's "putting the cart before the horse" mentality in planning to create and implement new regulations that reduce greenhouse gas emissions with very little consideration of the need to develop the technology that would be required to do so.

U.S. Department of Transportation

Federal Aviation Administration – Research, Development and Technology

The FY2011 budget request provides \$400.57 million for FAA research and development activities, a \$11.53 million (3%) reduction below FY2010 enacted. Agency R&D is spread across four accounts:

1. **Office of Commercial Space Transportation (OCST).** The FY2011 budget request provides \$15.75 million for OCST, a \$510 thousand (3%) increase over FY2010 enacted. OCST is responsible for licensing and regulating commercial space launches and reentries to ensure compliance with standards designed to protect public safety. In addition, OCST encourages the commercial space launch industry to maintain pace with latest technological improvements in launch hardware and practices, and it serves to promote the growth of the US industry.
2. The **Research Engineering and Development** account (Aviation Trust Fund), with an FY2011 request of \$190.00 million, compared to \$190.50 million enacted in FY2010. RE&D conducts research to support a safe, efficient and environmentally acceptable aviation system in five key areas: air traffic services, airport technology, aircraft safety, human factors, and the environment.
3. A portion of the **Facilities & Equipment** account (Aviation Trust Fund) dedicated to engineering, development, test and evaluation, with an FY2011 request of \$155.16 million, a 10% reduction compared to FY2010 enacted.
4. A portion of the **Airports Improvement Program** account (Aviation Trust Fund) with an FY2011 request of \$42.22 million, a 13% increase compared to FY2010 enacted.

At a programmatic level we support the FAA's budget request for development and implementation of NextGen, our nation's future air traffic management (ATM) system.

NextGen technologies will ensure that our national airspace system can readily accommodate future growth while maintaining the highest levels of safety. Whether speaking about NextGen R&D, or NextGen generally, it is essential these efforts be supported.

Research and Innovative Technology Administration (RITA)

The FY2011 budget request provides \$17.2 million for RITA, a \$4.2 million (32%) increase over FY2010 enacted. RITA is responsible for coordinating DOT's research and development programs, as well as coordinating and developing Positioning, Navigation and Timing (PNT) technology, PNT policy coordination, and spectrum management. RITA is the program manager for the Nationwide Differential Global Positioning System. Most of the requested increase will support maintenance and equipment capitalization for the PNT services, especially through its Nationwide Differential Global Positioning System.

We also support the proposed funding levels for research and development for the **Federal Highway Administration** (\$652.8 million in FY2011, a 1% increase over FY2010 enacted) and the **Federal Transit Administration** (\$33.1 million in FY2011, a 124% increase over FY2010). Both of these essential activities will help America develop transportation solutions needed to sustain economic growth.

Department of Homeland Security (DHS)

The FY11 budget request for the Department of Homeland Security's Science and Technology Directorate is \$1.02 billion, a 1.2 percent increase from the FY10 level. This increase reflects the movement of the Domestic Nuclear Detection Office's transformative research program to S&T. Without the program transfer, S&T funding would be 9.7 percent below FY10 funding levels. Committee Republicans are in strong agreement with the Majority that the work of the Science and Technology Directorate is important, and we will work to ensure that it has the resources it needs to carry out the research and development required to keep our nation safe.

Recognizing the importance of both Assistance to Firefighter Grants (AFG) and Staffing for Adequate Fire and Emergency Response (SAFER) grants to our Nation's fire departments, Committee Republicans remain concerned that with the consolidation of the Firefighter Assistance Grants Program into the State and Local budget line, the AFG program will continue its declining trend of funding. We strongly encourage the Administration to make sure that both grant programs, AFG and SAFER, remain balanced.

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Committee on Science and Technology
U.S. House of Representatives
Additional Views

The Minority Views and Estimates for the Committee on Science and Technology incorporate many positions that I support regarding the future of the various agencies under the Committee's jurisdiction. However, I want to emphasize the need to be vigilant in our oversight of these agencies and their budgets. In these difficult economic times and the record breaking deficits and debt levels, it is vital that the Committee not let the taxpayer down. As the American people are being forced to tighten their belts and make tough financial decisions for their families, this Committee must do the same. I am very concerned that some of the spending in certain agencies, coupled with the massive outlays in last year's American Recovery and Reinvestment Act of 2009 are unsustainable, in many areas unwarranted. With each program, the Committee must ask the tough questions. Is this program necessary? Can we afford this program? Are these programs constitutional? Is this program already being done? How do we measure success or failure of the program?

Additionally, the Administration's budget continues to make climate change a priority. As money is dispersed to this end, I believe we need to make sure that whatever conclusions that may be drawn are in fact based on sound science and that any policy initiatives should not be implemented without Congressional approval and oversight and with this Committee's active participation.



Paul Broun, M.D.
Member of Congress

Committee on Science and Technology
Additional Views - Fiscal Year 2011 (FY11)
Rep. Pete Olson, TX-22, Ranking Member
Subcommittee on Space and Aeronautics

I am deeply concerned about a proposed cut to NASA's human spaceflight program. Although NASA's top line amount has been increased, the proposed cancelling of the Constellation program is unwise, unwarranted, and unnecessary. Without Constellation, we have no concrete plans to develop a manned spaceflight system and our country will instead have to rely on purchasing seats from the Russians for the foreseeable future.

Furthermore, Constellation was designed to take humans beyond low Earth orbit to enable our eventual return to the Moon and to other interesting destinations. Without it, we are putting ourselves at risk of ceding US preeminence in space, especially in light of efforts now underway by other space-faring nations to develop their own manned spaceflight systems.

Contrary to recommendations made by the Augustine Commission to provide additional resources to ensure the agency can develop and sustain a "sound exploration program" – the administration has chosen to not take this path. Surprisingly, the budget proposal took current spaceflight program funding and shifted it toward technology research efforts, but without providing a destination, strategy or goal for their intended use. The lack of resources in itself is troubling and puts NASA in a very difficult position, but the proposed cancellation is devastating, making it very difficult to sustain funding over a long period of time if we do not have a clear goal.

The negative impact on our economy, to our industrial base, and on the ability to inspire students and young people to pursue studies in science and engineering, should make it very clear to anyone that this is the wrong decision to make.

Just as importantly, if our goal is to inspire students to learn about and pursue careers in STEM, we should maintain a commitment to the most visible and exciting program that has motivated more students and young professionals than any other: our nation's human spaceflight program.

This budget sets the priorities for our nation, and there is no doubt that American leadership in the area of human spaceflight should continue to be one of those national priorities.



Rep. Pete Olson