INTRODUCTION

In November, Congress remained focused on deficit reduction and advancing funding bills in the Senate. The Senate passed a bill for fiscal year (FY) 2012 for the National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA) on November 2. FY 2012 funding for the Department of Energy (DOE), Department of the Interior (DOI), and the Environmental Protection Agency (EPA) still are pending. It is expected these remaining funding bills will be completed via one large “omnibus” package before the end of the calendar year. Furthermore, the failure of the Supercommittee brings into question the future of federal spending in many sectors. However, universities and science organizations are not the victims of the deficit impasse and federal funding for scientific research is not the target of deficit reduction.

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NOAA: 2011 Arctic Report Card


United Nations Environment Programme: HFCs—A Critical Link in Protecting Climate and the Ozone Layer

Woodrow Wilson International Center for Scholars: Geoengineering for Decision Makers
CONGRESSIONAL UPDATES AND NEWS

Ocean Legislation Passes Senate Committee

On November 2, the Senate Committee on Commerce, Transportation, and Science passed bills to address harmful algal blooms and marine debris.

The Trash Free Seas Act of 2011 (S. 1119), introduced by Senator Inouye (D-HI), would reauthorize the marine debris programs at the National Oceanic and Atmospheric Administration (NOAA). During the Committee’s markup, Senator Cantwell (D-WA) said this legislation is the first step toward cleaning up marine debris resulting from the Japanese tsunami. Senator Cantwell stated ocean trash, such as refrigerators and parts of homes and cars, could hit Hawaii and the West Coast as early as 2014.

The Harmful Algal Blooms and Hypoxia Research and Control Amendments Act of 2011 (S. 1701) would expand research programs in order to combat algal blooms and ocean hypoxic zones. Rep. Andy Harris (R-MD) has introduced similar legislation (H.R. 2484) in the House, which the House Science Committee has marked up while the House Natural Resources Committee has taken no action on the bill.

Both bills now await action on the Senate floor.

S. 1119 is available at http://www.gpo.gov/fdsys/pkg/BILLS-112s1119is/pdf/BILLS-112s1119is.pdf.

S. 1701 is available at http://www.gpo.gov/fdsys/pkg/BILLS-112s1701is/pdf/BILLS-112s1701is.pdf.

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Chesapeake Bay Pollution Examined by House Committee

On November 3, the House Agriculture Subcommittee on Conservation, Energy, and Forestry held a hearing entitled, “To Review the Implementation of Phase II of the Chesapeake Bay TMDL [Total Maximum Daily Loads] Watershed Implementation Plans and Their Impacts on Rural Communities.” The hearing addressed the Environmental Protection Agency’s (EPA) latest efforts to clean up the Chesapeake Bay from agricultural runoff. Phase I required Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia to submit plans to EPA outlining pollution-reduction targets for EPA’s TMDL. Phase II, due in December, requires those states to describe how they will work with local governments to achieve those targets.

House members and state officials from the Chesapeake Bay Watershed said EPA did not perform cost-benefit analyses before setting the pollution reduction targets. In a press release, Subcommittee Ranking Member Rep. Tim Holden (D-PA) said, “Efforts to improve Bay water quality, however, should not impede on the livelihood of our family farmers. It is important that EPA works with the States as true partners to ensure the proper balance between a healthy environment and a healthy economy.”


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RARE Earths Caucus Formed in House

Rep. Mike Coffman (R-CO) announced the formation of a House caucus to address rare-earth elements on November 9. Rep. Coffman created the caucus in order to educate his colleagues on the significance of rare-earth elements, especially because China controls 95 percent of the world’s supply and it repeatedly has restricted rare-earth exports. The United States mined for rare-earth elements until the 1990s when China entered the market and undercut world prices.

There is no mention of who else has joined the caucus.


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House Climate Change Champions Host Briefing on Climate Science

On November 14, Rep. Ed Markey (D-MA), Ranking Member of the House Natural Resources Committee, and Rep. Henry Waxman (D-CA), Ranking Member of the House Energy and Commerce Committee, hosted a congressional briefing entitled, “Undeniable Data: The Latest Research on Global Temperature and Climate Science.” The purpose of the event was to shed light on some of the criticism from climate change skeptics and to highlight the work of climate scientists in an effort to dispel misunderstandings among Members of Congress. Reps. Markey and Waxman, who crafted comprehensive cap and trade legislation in 2009 that successfully passed the House but fizzled in the Senate, were the only Members in attendance.

As Rep. Markey stated in his opening remarks, the halls of Congress have not seen talk on climate change recently, especially when compared to action taken by past Congresses. Climate scientists largely have been left out of the debate, except when their science is attacked in political discussions. Rep. Markey called these recent attacks on science, including on the GOP campaign trail, a “colossal distraction.” Despite the various reports by federal agencies, the National Academies, and international organizations that find the climate is warming, Rep. Markey said politicians still have doubts about the science. Rep. Waxman added that he has requested the Energy and Commerce Committee hold hearings to discuss climate science, but his requests have gone unanswered. Furthermore, he said the current Congress has taken major steps backwards in regard to climate change.

The featured speaker at the briefing was Dr. Richard Muller, Director of the Berkeley Earth Surface Temperature Project. Dr. Muller was invited to present the findings of his two-year project that concluded global land surface temperatures are, in fact, increasing and rose by 1.6 degrees Fahrenheit over the last 60 years. His study confirmed research conducted by the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the U.K. Met Office. Most notable about the study, however, is that it was financed partially by the Koch Foundation, which is known for its denial of climate change. In the study, Dr. Muller and his team addressed four common biases among climate skeptics: (1) station warming bias; (2) urban heat islands (the validity of urban versus rural weather stations); (3) data adjustment bias (adjustments to data made by hand); and (4) station selection bias. He concluded there are no biases in the data related to urban heat islands, data selection, station quality—which was Muller’s greatest concern—or data adjustments. Prior to the start of this study, Dr. Muller admitted he was a major skeptic about the climate changing.
When asked what he would communicate to other skeptics about his study, Dr. Muller responded that he hopes skeptics will review the study and agree the climate is changing. However, he said questions still remain about the extent to which the changes are attributed to human influence. He did not deny that humans have contributed, but he questions how much.

The other panelists, Ben Santer of Lawrence Livermore National Laboratory and William Chameides, Dean of Duke University’s Nicholas School of the Environment and Vice Chair of the National Academies’ Committee on America’s Climate Choices, disagreed with Muller’s take on human contributions to climate change. They said natural causation alone cannot explain all of the observed changes in temperature. Dr. Chameides also noted that scientists have an imperfect ability to predict the future, but urged that this should not serve as an excuse for inaction.

Rep. Markey said he intends to continue to allow the science to be heard in these debates.

Congress Passes First Minibus – Funds NSF, NASA, NOAA, and USDA

The House and Senate passed a conference agreement on the first fiscal year (FY) 2012 “minibus” bill (H.R. 2112) on November 17, which combines three appropriations bills into one package – the Agriculture, Rural Development, Food and Drug Administration bill; the Commerce, Justice, Science bill; and the Transportation, Housing and Urban Development bill. These bills provide funding for federal research agencies, including the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Agriculture (USDA). While science agencies did well overall with most gaining modest increases over FY 2011 levels, Administration priorities, such as the Sustainable Communities Initiative and high-speed rail, were zeroed out. This may signal trouble for other White House initiatives in upcoming appropriations bills. The minibus also included a Continuing Resolution (CR) to fund the rest of the federal government through December 16, 2011.

The President signed the bill into law on November 18 before the short-term CR expired. While the Senate had hoped to continue work on additional minibus bills, that effort has stalled and appropriators are now looking at packaging the remaining appropriations bills into one large omnibus bill.

Below is additional information on funding amounts and agency directives provided for NSF, NASA, NOAA, and USDA included in the minibus agreement.

National Science Foundation (NSF)

NSF fares well in the conference agreement, receiving a total budget of $7.033 billion, which is $173 million or 2.5 percent over FY 2011 and higher than both the House and Senate marks. Within this amount, Research and Related Activities (R&RA) will receive $5.719 billion, $155 million or 2.8 percent over FY 2011 and also higher than both the House and Senate marks.

The Major Research Equipment and Facilities Construction (MREFC) account will receive $167.055 million, which is $50 million or 43 percent above the FY 2011 level and higher than both the House and Senate marks. As in the House bill, no funding levels are listed for specific projects, and the report instead directs NSF to prioritize projects nearing completion. The report includes language allowing transfer of funds from R&RA to MREFC, but this authority has been modified to allow $50 million to be transferred rather than the $100 million allowed by the Senate report. As in the House report, NSF is instructed to review its current portfolio of MREFC projects and their out-year funding profiles to ensure
they are in line with appropriated funding for FY 2011 and FY 2012. Should adjustments be needed, the Committee directs NSF to report revised profiles to the Committee and to include the new funding profiles in the FY 2013 budget request. Also, as in the House report, the Committee directs NSF to strengthen oversight of contingency funding and incentivize grantees to bring projects in under budget. The Committee directs NSF to report on its efforts to limit the use of contingency funding and ensure return of excess funds for large facility projects within 90 days of enactment.

**National Aeronautics and Space Administration (NASA)**

The conference agreement provides NASA with $17.8 billion, which is $648 million or 3.5 percent below the FY 2011 level. The conference agreement provides NASA with funding in between the House and Senate recommended levels, but closer to the Senate mark. Similarly, the Science account also will be funded at nearly the Senate level, with the Conference Committee providing $5.09 billion, $154 million or 3.1 percent above FY 2011. The major item within the Science account is the James Webb Space Telescope (JWST), which the House had recommended for termination. The Conference Committee provides JWST with $529.6 million, the same as the Senate level and accommodating a new cost baseline to ensure launch by 2018.

Levels for individual divisions within the Science Mission Directorate mostly will be funded at or near the Senate-proposed levels, with Earth Science (up 2.5 percent) receiving an increase over its FY 2011 level. Like the House, the Committee does not provide funding levels for individual mission accounts, but gives NASA the discretion to allocate the funding. However, the Committee calls for the protection of high priority decadal survey missions, the prioritization of missions scheduled to launch in the near term, and a balance between missions and enabling activities, such as research and data analysis. The report also instructs NASA to fund the DESDynI mission at FY 2011 levels and it provides $10 million, as in the Senate report, for the development of a carbon monitoring system started in FY 2010. Finally, the report instructs NASA to improve its management of flagship missions by reviewing challenges and lessons learned from previous missions.

The conference report instructs the NASA Inspector General to initiate a comprehensive assessment of NASA management and priorities utilizing an outside panel of experts across the full range of NASA mission elements (Earth and space science, aeronautics, technology development, exploration, space operations and support, and education).

**National Oceanic and Atmospheric Administration (NOAA)**

The conference report provides NOAA with $4.89 billion in FY 2012, which is $297 million or 6 percent over the FY 2011 enacted level. The conferees found common ground in between the House and Senate marks, ultimately coming closer to the Senate-supported level for NOAA. Not surprisingly, the big ticket issue in NOAA continues to be the Joint Polar-orbiting Satellite System (JPSS). The conference report includes $924 million for JPSS, which is just over the Senate mark and three percent higher than the House proposal. Also of note, the conference agreement does not endorse the creation of a Climate Service within NOAA. While the Senate bill supported a partial reorganization of the agency to create the new line office, the conferees deferred to the House bill, which called for no Climate Service in NOAA.

While the top-line NOAA budget would increase under the conference agreement, nearly all parts of NOAA would see cuts in order to finance the needed increases to JPSS. For example, the Office of Oceanic and Atmospheric Research (OAR), the entity that funds the majority of NOAA’s extramural research activities, would see a ten percent cut. The House and Senate remain concerned about OAR’s planning and have directed the agency to better articulate OAR’s purpose and goals in future budget requests. Aside from the satellite programs, the National Weather Service (NWS) is the only line office
in NOAA to see an increase in the conference agreement; NWS will receive a $24 million or a three percent increase.

Finally, the Senate bill directed NOAA to address ongoing concerns regarding JPSS. The conference report adopts the Senate language with the exception of placing a total lifecycle cost cap on the program. The Senate report sought to place a total cap of $9.4 billion on the life of JPSS, but the conference report drops this requirement. However, the conference report does direct NOAA to craft a framework for developing a “compensation policy” that would reimburse NOAA for “use of specialized data products derived from NOAA satellite imagery and data.” A fee-for-service relating to NOAA satellites is unprecedented; it is unclear if this would apply to other federal agencies using NOAA data, industry, the external research community, or all of the above. Lastly, under the conference agreement, Congress will withhold $5 million from NOAA’s Corporate Services account (the account that funds NOAA headquarters activities, salaries, and facilities) until a revised report on the lifecycle costs of JPSS and all other satellite programs is submitted to Congress.

U.S. Department of Agriculture (USDA)
The conference agreement includes nearly $2.3 billion for research throughout USDA, a reduction of $51.1 million (two percent) below the FY 2011 enacted level. The conferees recommend $1.095 billion for the Agricultural Research Service (ARS) to support USDA’s intramural research programs, disagreeing with the President’s request to terminate extramural research through ARS. The conferees do concur with the Administration’s proposal to close 12 research laboratories at ten locations and they request a report on the disposition of the facilities by January 20, 2012.

For the extramural research programs of the National Institute of Food and Agriculture (NIFA), the final bill includes $705.6 million for research and education activities, an increase of $104.8 million (17 percent) above the House recommendation and $4.2 million below the Senate-passed level. The conferees express their strong support for USDA’s agricultural research, extension, and education activities through NIFA, but they are concerned about the focus of the research programs, especially projects through the Agriculture and Food Research Initiative (AFRI). The conferees strongly encourage USDA to fund only the highest priority agricultural research authorized by Congress. The conferees approve $9 million for the Graduate Fellowship Grants, Institution Challenge Grants, and Multicultural Scholars Program.

**FY 2012 Minibus Conference Agreement:**
*Agriculture, Rural Development, Food and Drug Administration Appropriations Bill, Commerce, Justice, Science Appropriations Bill, and Transportation, Housing and Urban Development Appropriations Bill*
*As included in the Conference Report, 11/15/11*
*(In thousands)*

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### National Aeronautics and Space Administration

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<td>James Webb</td>
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<td>OIG</td>
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*The FY 2011 CR did not provide specific funding levels for individual Science Divisions. The levels shown here are from the NASA FY 2011 Revised Operating Plan.

**In FY 2011 the Astrophysics Division contained the James Webb Space Telescope and had total funding of $1.109 billion. For FY 2012, funding for Astrophysics and JWST in the conference report combines to $1.202 billion, $92 million or 8% above FY 2011.
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<td>NOAA-Wide Program Support</td>
<td>443,706</td>
<td>419,461</td>
<td>106,667 (28%)</td>
<td>-12,503 (3%)</td>
<td>-24,245 (5%)</td>
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<tr>
<td>NOAA Education Program</td>
<td>24,950</td>
<td>31,540</td>
<td>4,656 (17%)</td>
<td>--</td>
<td>6,590 (26%)</td>
</tr>
<tr>
<td>Procurement, Acquisition &amp; Construction (PAC)</td>
<td>1,332,683</td>
<td>1,825,094</td>
<td>115,322 (7%)</td>
<td>-8,500 (&lt;1%)</td>
<td>492,411 (37%)</td>
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<tr>
<td>National Environmental Satellite, Data and Information Service (NESDIS)</td>
<td>1,260,422</td>
<td>1,705,904</td>
<td>113,127 (7%)</td>
<td>-7,081 (&lt;1%)</td>
<td>445,482 (35%)</td>
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<td>JPSS</td>
<td>471,900</td>
<td>924,014</td>
<td>22,668 (3%)</td>
<td>3,220 (&lt;1%)</td>
<td>452,115 (96%)</td>
</tr>
<tr>
<td>GOES-R</td>
<td>662,373</td>
<td>617,390</td>
<td>45,000 (9%)</td>
<td>--</td>
<td>-44,983 (7%)</td>
</tr>
<tr>
<td>COSMIC-2</td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<tr>
<td>Climate Sensors</td>
<td>6,986</td>
<td>28,880</td>
<td>--</td>
<td>-77 (&lt;1%)</td>
<td>21,894 (313%)</td>
</tr>
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* NOAA values are taken from the FY 2011 NOAA Operating Plan.
† The conference agreement does not fund NOAA’s proposal to create a Climate Service.
‡‡ This number accounts for $200 million included for disaster assistance.
### Earthquake Legislation Progresses in House

The House Science Subcommittee on Technology and Innovation marked up draft legislation of the National Hazards Risk Reduction Act of 2011 on November 15. This bill contains the reauthorization of the National Earthquake Hazards Reduction Program (NEHRP) and the National Windstorm Impact Reduction Program (NWIRP). Both Democrats and Republicans offered amendments to the legislation, which were voted for and against on party lines. House Democrats’ mainly objected to the authorization levels for the NEHRP program, which are set at $121 million per year, as opposed to $171 million per year by the Senate bill (although, both are below the NEHRP Coalition’s desired level of $200 million per year).

During the markup, Ranking Member Donna Edwards (D-MD) offered an amendment to raise the authorization levels. In her comments, she expressed her concerns about funding cuts to the program. However, the amendment was defeated by a partisan vote—with all Subcommittee Republicans voting no. Rep. Biggert (R-IL) offered an amendment to make several changes, including adding social sciences, extending the Advisory Committee on Earthquake Hazards Reduction (ACEHR) from three years to five years, and adding “public outreach and education” to NEHRP. This was passed unanimously.

Full Committee Chair Ralph Hall (R-TX) offered an amendment to keep post-earthquake investigations at the U.S. Geological Survey (USGS) and to change the authorization levels for USGS from $54.2 million to $57.7 million and for NIST from $7.5 million to $4.1 million. These numbers are consistent with keeping post-earthquake investigations at USGS. The amendment also passed on a partisan vote, with all Democrats voting no. Rep. Edwards stated ACEHR recommended the change from USGS to NIST and that recommendation originally came from a 2008 report by the National Research Council. Rep. Lipinski proposed (D-IL) an amendment to add social sciences to the wind section (NWIRP), which was successful.

Finally, Rep. Luján (D-NM) offered an amendment to restore the fire research title to the bill, which was in last year’s House bill and this year’s Senate bill. However, Rep. Luján withdrew the amendment when Rep. Quayle (R-AZ) promised to take up the issue later.

#### U.S. Department of Agriculture

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<tr>
<td>USDA, Research</td>
<td>2,348,028</td>
<td>2,296,911</td>
<td>283,566 (14%)</td>
<td>-12,138 (&lt;1%)</td>
<td>-51,117 (2%)</td>
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<td>ARS</td>
<td>1,133,230</td>
<td>1,094,647</td>
<td>101,302 (10%)</td>
<td>-402 (&lt;1%)</td>
<td>-38,583 (3%)</td>
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<td>NIFA</td>
<td>1,214,798</td>
<td>1,202,264</td>
<td>182,264 (18%)</td>
<td>-11,736 (1%)</td>
<td>-12,534 (1%)</td>
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<td>Research and Education</td>
<td>698,740</td>
<td>705,599</td>
<td>104,799 (17%)</td>
<td>-4,226 (&lt;1%)</td>
<td>6,859 (1%)</td>
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<td>Extension</td>
<td>479,132</td>
<td>475,183</td>
<td>63,983 (16%)</td>
<td>-2,995 (1%)</td>
<td>-3,949 (1%)</td>
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<td>Integrated</td>
<td>36,926</td>
<td>21,482</td>
<td>13,482 (169%)</td>
<td>-4,466 (17%)</td>
<td>-15,444 (42%)</td>
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<td>AFRI</td>
<td>264,470</td>
<td>264,470</td>
<td>39,470 (18%)</td>
<td>-1,530 (1%)</td>
<td>--</td>
</tr>
<tr>
<td>Hatch Act</td>
<td>236,334</td>
<td>236,334</td>
<td>38,333 (14%)</td>
<td>334 (&lt;1%)</td>
<td>--</td>
</tr>
<tr>
<td>Smith-Lever Act 3(b) and 3(c)</td>
<td>293,911</td>
<td>294,000</td>
<td>34,800 (13%)</td>
<td>-2,000 (&lt;1%)</td>
<td>89 (&lt;1%)</td>
</tr>
<tr>
<td>Food Safety and Inspection Service (USDA)</td>
<td>1,006,503</td>
<td>1,004,427</td>
<td>31,709 (3%)</td>
<td>-2,887 (&lt;1%)</td>
<td>-2,076 (&lt;1%)</td>
</tr>
</tbody>
</table>

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The bill (H.R. 3479), with the approved amendments, was formally introduced by Rep. Judy Biggert (R-IL) on November 18. The Senate’s version of the bill (S. 646) passed the Senate Committee on Commerce, Science, and Transportation on May 5, 2011, and awaits action on the Senate floor.

S. 646 is available at http://www.gpo.gov/fdsys/pkg/BILLS-112s646is/pdf/BILLS-112s646is.pdf.


The list of amendments is available at http://science.house.gov/markup/technology-and-innovation-subcommittee-markup-0.

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NOAA’s Weather and Climate Endeavors Discussed by Senate Committee

On November 16, the Senate Commerce Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard held a hearing entitled, “Weathering Change: Need for Continued Innovation in Forecasting and Prediction.” Chairman Mark Begich (D-AK) said the purpose of the hearing was to provide oversight of the weather and climate functions of the National Oceanic and Atmospheric Administration (NOAA). In particular, the Subcommittee addressed NOAA’s proposal to create its Climate Service as well the status of NOAA’s weather satellite programs. With respect to the latter, Chairman Begich noted his support for NOAA’s Joint Polar-orbiting Satellite System (JPSS) and expressed his satisfaction with the conference funding level for JPSS in fiscal year (FY) 2012.

Subcommittee Ranking Member Senator Olympia Snowe (R-ME) said continuity is needed in weather and climate information, but that JPSS represents a huge chunk of NOAA’s total budget. She still has concerns about the program, including the certain data gap in 2016 due to past insufficient funding that has stunted the program’s progress. She added that the private sector is looking at ways to provide this data more cheaply, but she did not elaborate.

The first panel of witnesses included representatives from the federal government. Mary Glackin, Deputy Under Secretary for Operations at NOAA, discussed the costs of natural disasters on the U.S. economy, noting there were at least ten disasters this year that cost $1 billion or more. She highlighted two ways NOAA works to ensure the U.S. is prepared for extreme weather events. The first is through the deployment of dual polarization radar technology, which is the latest weather radar upgrade and will provide “both horizontal and now vertical components to what NEXRAD Doppler radar is seeing.” This technology will lead to better prediction of total precipitation, impacting those who deal with water management, flooding, and severe thunderstorms.

The second program Glackin highlighted was JPSS. She said NOAA is anticipating and preparing for a data gap in 2016. When Chairman Begich asked about NOAA’s specific preparations, Glackin replied the agency is strengthening international partnerships to possibly help fill in U.S. data needs. Furthermore, NOAA will use available data it currently has from in situ and other satellite systems.

In addition, Glackin noted it is not enough to provide longer lead times for extreme events; people must hear warnings and take appropriate action if the U.S. is to become a true “weather-ready nation.” NOAA will work with other federal agencies, the private sector, academic institutions, state and local governments, and nongovernmental organizations to work toward this goal.
The next witness, Todd J. Zinser, Inspector General of the Department of Commerce (DOC), summarized the Inspector General’s September 30 oversight report, “Audit of the Joint Polar Satellite System: Challenges Must be Met to Minimize Gaps in Polar Environmental Satellite Data” (http://www.oig.doc.gov/Pages/Audit-of-the-Joint-Polar-Satellite-System.aspx), which made three main observations about the program. First, JPSS is critically important to the nation, but even with its new configuration (the program was reorganized and renamed in the President’s FY 2011 budget request), it still must overcome years of setbacks by its predecessor, NPOESS. Second, many challenges remain for JPSS, which are now met with fiscal constraints. DOC is concerned with both preventing the near-term data gap between the end of NOAA-19 (the current polar-orbiting system) and NPP, which launched in October 2011 but will take a few years to come on board, as well as mitigating a longer term coverage gap between the end of NPP and the operational date for JPSS-1. NPP, which originally was designed as a test project, has become the JPSS contingency. The data gap could be as long as 21 months with the actual launch date for JPSS depending heavily on full funding for the program in the next several fiscal years. Finally, the Inspector General’s third observation was that NOAA senior management must ensure there is no more slippage in JPSS’s schedule.

Additionally, the Inspector General’s report made two main recommendations. First, NOAA should finalize a program baseline and update DOC and Congress on the status of that baseline. Second, NOAA should improve coordination across the agency in order to obtain the needed data to manage the data gap. According to the report, NOAA is not currently adequately bringing NOAA line offices together to troubleshoot data issues; for example, the National Weather Service (NWS) and the National Environmental Data and Information Service (NESDIS) are not coordinating activities.

The third witness, David C. Trimble, Director of the Natural Resources and Environment Branch at the Government Accountability Office (GAO), discussed NOAA’s climate change activities and its proposal to create a new climate service. He pointed out that climate adaptation will continue to receive increasing attention as state and local authorities grapple with the impacts of climate change. While local officials desire usable climate information, federal agency officials do not have a shared understanding of climate adaption priorities, thereby preventing any major federal climate adaptation action. It is important to note that the FY 2012 conference agreement did not endorse NOAA’s creation of a climate service. As such, the fate of NOAA climate service information remains unknown.

The second panel included users of NOAA data, including Tom Iseman, Program Director for Water Policy and Implementation, Climate Adaptation, Western Governors’ Association; Peter Neilley, Vice President, Global Forecasting Services, The Weather Channel Companies; and Robert Marshall, President and CEO of Earth Networks. Their testimonies included specific ways their respective organizations benefit from NOAA weather and climate information.

The witnesses’ testimony and an archived webcast are available at http://commerce.senate.gov/public/index.cfm?p=Hearings&ContentRecord_id=21b6cc05-b6ca-4e86-9b25-36f92c08af5b.

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Climate Change Planning Bill Introduced in Senate

On November 16, Senator Sheldon Whitehouse (D-RI), along with Senator Max Baucus (D-MT), introduced the Safeguarding America’s Future and Environment Act (S. 1881). The bill requires federal agencies with oversight of natural resources to plan for projected long-term effects of climate change. According to a press release from Senator Whitehouse, “The SAFE Act would establish planning
requirements and identify specific federal programs through which natural resource adaptation would be undertaken. The proposed legislation would require the development of a coordinated national adaptation strategy. It would also encourage, but not require, state-specific adaptation plans.”


Text of the legislation is available at http://www.gpo.gov/fdsys/pkg/BILLS-112s1881is/pdf/BILLS-112s1881is.pdf.

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Supercommittee Collapse Implications for Science Funding and Higher Education

Media attention has focused on the failure of the 12-member congressional Supercommittee to reach agreement on a package to reduce the federal deficit by at least $1.2 trillion over the next nine years. However, universities and science organizations are not the victims of the deficit impasse. Generally, federal funding for scientific research is not the target of deficit reduction for several reasons: (1) the amount of domestic discretionary funding for science is not large enough to have significant impact on deficit reduction; (2) science has bipartisan support among politicians since it is part of the innovation economy upon which the country’s financial recovery is partially dependent; and (3) dismantling the scientific infrastructure of the country is counter-productive considering the global technology-driven forces of the 21st century. There are aspects of the current federal deficit paralysis that indirectly affect higher education, but reducing direct federal support of scientific research at academic institutions is not front-and-center.

Now, many are trying to determine what happens next as Congress still has much work to do before adjourning next month. With funding fully enacted for the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the National Oceanic and Atmospheric Administration (NOAA), with modest increases (NSF and NOAA) or a slight reduction (NASA), completion of the fiscal year (FY) 2012 appropriations process is an important challenge. In addition to funding the remaining appropriations bills, which are currently operating under a Continuing Resolution (CR) through December 16, there are other issues looming before Congress, such as extension of unemployment benefits, doctor payments, and tax extenders. This report describes the impact of the collapse of the Supercommittee at the federal level; however, state and local governments might take action to respond to possible implications associated with the collapse of the Supercommittee process.

Near-Term Outlook for Science Funding

Among its many to-dos, Congress must still complete nine remaining FY 2012 appropriations bills, including bills that fund the Department of the Interior (DOI), the Environmental Protection Agency (EPA), and the Department of Energy (DOE). It is expected this will be done through one large “omnibus” package before the end of the calendar year. As previously reported, other science agencies for which appropriations bills have passed—namely NSF, NASA, and NOAA—fared relatively well in FY 2012, receiving budgets that are about flat or slightly increased above the FY 2011 enacted level. A similar outcome is expected for basic research in agencies like DOE in the final appropriations agreement.

However, it is not uncommon for Congress to include a modest across-the-board reduction in an omnibus appropriations bill if Congress deems it necessary to keep discretionary appropriations within the overall cap of $1.043 trillion enacted in the Budget Control Act (debt limit agreement). If the
appropriations process stalls, there has been some discussion of extending the current CR into early next year. This would result in a freeze for all programs at the current (FY 2011) level until Congress completes an omnibus bill or enacts a CR for the remainder of the fiscal year.

Agencies also are planning for the President’s FY 2013 budget request, which is expected to be more conservative than in past years and may be delayed due to the uncertainty of future budget cuts. The FY 2013 process remains very uncertain at the moment with flat funding for federal research agencies considered a “win” in the coming years.

Budget Scenarios for FY 2014 and Beyond
In August, the Budget Control Act enacted a process that would institute automatic across-the-board budget cuts over nine years, known as sequestration, in the event the Supercommittee could not reach a deal. However, given that the cuts are not scheduled to go into effect until January 2013 (after the election) and are subject to subsequent revision by Congress, it is possible they will be delayed or never triggered. In the event no changes are made to the automatic budget cuts, the White House Office of Management and Budget would be required to reduce the discretionary appropriated budget by $109 billion per year for nine years, allocated equally between defense spending and nondefense spending.

The sequester would reduce the aggregate overall caps on spending for each year from 2014-2021 in order to reduce discretionary spending. While the President could propose cuts to targeted agencies, such as NSF, specific appropriations still would be subject to the annual congressional appropriations process and program funding could be increased or further decreased within the overall capped amount for all discretionary spending. As a general rule of thumb, if these cuts were allocated proportionately, it would mean six to eight percent reductions to domestic spending agencies.

In short, the budget outlook for the next several years is uncertain. The main question on the table is whether and how to skirt the automatic cuts that would be levied against FY 2013 appropriations as required under the Budget Control Act. However, flat funding for science agencies remains a possibility over the next few years and should be viewed as a “win” in the current budget climate.

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FEDERAL AGENCY AND ADMINISTRATION UPDATES AND NEWS

EPA to Study Potential Hydraulic Fracturing Impacts on Drinking Water

On November 3, the Environmental Protection Agency (EPA) announced its final research plan for studying the potential impacts of hydraulic fracturing on drinking water. EPA will release its initial research results in 2012 and hopes to finalize its report by 2014. According to a press release, “The final study plan looks at the full cycle of water in hydraulic fracturing, from the acquisition of the water, through the mixing of chemicals and actual fracturing, to the post-fracturing stage, including the management of flowback and produced or used water as well as its ultimate treatment and disposal.”


Earthquake Hazards Advisory Committee Meets, Seeks New Members

On November 8-9, the Advisory Committee on Earthquake Hazards Reduction (ACEHR)—the advisory committee for the National Earthquake Hazards Reduction Program (NEHRP)—met to discuss the NEHRP program. While much of the talk pertained to emergency management, ACEHR briefly discussed the recent Oklahoma earthquake (despite reports to the contrary, the U.S. Geological Survey has not ruled out induced seismicity due to fracking as a potential cause). NEHRP also is planning two tentative workshops for 2012—one on post-earthquake investigations planning and one on lifeline research needs. Finally, ACEHR discussed the House draft legislation of the NEHRP reauthorization; many members expressed their concern over the low authorization levels. More information about the House draft legislation is available here.

Additionally, ACEHR is looking for new committee members. It currently has three vacancies and it will have even more next spring. Nominations should be sent to Jack Hayes, Director of NEHRP, at jack.hayes@nist.gov. More information is available in the Federal Register notice at http://www.nehrp.gov/pdf/ACEHRFRNJuly2011.pdf.

New EPA Science Advisory Board Committee Seeks Nominations

On November 18, the Environmental Protection Agency (EPA) announced its new Science Advisory Board Chemical Assessment Advisory Committee is looking for nominations for committee members. Committee members will advise EPA on the Integrated Risk Information System (IRIS) program, which, according to the website, “provides science-based human health assessments to support [EPA’s] regulatory activities.” EPA has not determined yet how many members will sit on the committee.

R&D and Satellites Discussed by NOAA SAB

On November 29-30, the Science Advisory Board (SAB) of the National Oceanic and Atmospheric Administration (NOAA) met in Washington, D.C. During the meeting, Administrator Jane Lubchenco gave a presentation on the status of NOAA, noting NOAA received an overall increase to its budget for fiscal year 2012. However, departments within NOAA will see a crunch in order to support the Joint Polar-orbiting Satellite System. Additionally, the SAB will undertake a review of NOAA’s research and development portfolio. NOAA will release a preliminary report on the first phase of the review in April 2012 and will release the final report in April 2013. Finally, the SAB is working toward finalizing the members of the SAB Satellite Task Force, which will craft recommendations for NOAA to move forward with “more affordable, flexible and robust satellite services architecture.” SAB expects a report from the task force in spring 2012.

NOAA’s SAB generally meets three times per year and the next meeting will be in March 2012.

More information on the SAB meeting is available at http://www.sab.noaa.gov/Meetings/meetings.html.

NOTABLE FUNDING OPPORTUNITIES

CREATIV – Creative Research Awards for Transformative Interdisciplinary Ventures at NSF

On November 9, the National Science Foundation (NSF) issued a Dear Colleague Letter for Creative Research Awards for Transformative Interdisciplinary Ventures (CREATIV). CREATIV is a pilot mechanism to support ambitious interdisciplinary projects across the various directorates and divisions at NSF. It is the first and only mechanism to be announced in fiscal year (FY) 2012 under the Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) initiative. NSF Director Subra Suresh announced the INSPIRE initiative in the FY 2012 budget request to foster cross-discipline, highly creative, and potentially transformative research through new mechanisms and techniques in the merit-review process.

CREATIV is open to all areas of research within NSF’s purview and will support innovative interdisciplinary projects that show unusual promise for societal benefit. Proposals must be truly interdisciplinary and applicants must have written authorization from at least two program directors from intellectually distinct NSF directorates or programs before submitting an application.

Proposals will be assessed by an internal NSF merit review process; if at least two program directors agree to recommend funding, the proposal will go to an NSF-wide group for approval. NSF could make funding decisions within two to three months.

Letters of Intent: Not applicable; however, principal investigators must discuss proposal ideas with relevant program directors at NSF and obtain advanced authorization in writing as described above.

Due Dates: CREATIV proposals may be submitted at any time between December 1, 2011 and June 15, 2012.

Total Funding and Award Size: The FY 2012 budget request for INSPIRE (and therefore CREATIV) is $12 million, which would come from “central funds” administered by the Office of the NSF Director. An additional $12 million would be available from cost sharing by individual NSF programs that have authorized the proposals. Individual grant requests may be up to $800,000 for two co-funding programs and $1 million for three or more co-funding programs over five years. NSF expects the budget for INSPIRE to reach a steady state of around $100 million by FY 2016.

Eligibility and Limitations: Individual principal investigators or small teams from U.S. academic institutions and U.S. non-profit, non-academic organizations are eligible for funding under the CREATIV pilot. Other organizations can be included as subawardees. Multi-organization proposals must be submitted as a single proposal with subawardees.

Additional Resources: The complete Dear Colleague Letter is available at http://www.nsf.gov/pubs/2012/nsf12011/nsf12011.jsp. A webinar to launch the CREATIV program took place on November 9; it is archived at http://www.tvworldwide.com/events/nsf/111109/. In addition, NSF is developing a set of Frequently Asked Questions (FAQs).

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Environmental Research and Development Program at DOD Releases FY 2013 BAAs

The Department of Defense’s (DOD) Strategic Environmental Research and Development Program (SERDP) recently released its fiscal year (FY) 2013 Broad Agency Announcements (BAA) for environmental research and development projects. SERDP, DOD’s environmental science and technology program run in partnership with the Department of Energy (DOE) and the Environmental Protection Agency (EPA), funds research and development projects to solve DOD’s environmental challenges and looks to develop and apply innovative technologies to meet these challenges and improve military readiness. SERDP supports basic and applied research as well as advanced technological development projects at federal agencies as well as private sector organizations and universities. While federal researchers submit proposals through a call for proposals, private organizations and universities must submit proposals through the BAA process.

SERDP has released two solicitations – the Core solicitation and the SERDP Exploratory Development (SEED) program solicitation – annually since FY 2008. For both Core and SEED proposals, SERDP focuses on four key topic areas: (1) environmental restoration; (2) munitions response; (3) resource conservation and climate change; and (4) weapons systems and platforms. Projects must respond to specific topics within each focus area as outlined through various Statements of Need (SON). For the FY 2013 Core solicitation, SERDP has issued ten SON across the four areas while the SEED solicitation will focus solely on munitions response.

**SERDP Core Solicitation**

Through its Core solicitation, SERDP funds environmental research and development projects. Proposals must address a specific SON outlined in the solicitation. These topic areas span the four primary research areas SERDP supports and vary from year to year. SON for FY 2013 include:

- In situ remediation of 1,4-dioxane-contaminated groundwater
- Improved assessment and optimization of remediation technologies for treatment of chlorinated solvent-contaminated groundwater
- Advanced technologies for detection, classification, and remediation of military munitions on land
- Improvements in the detection, classification, and remediation of military munitions underwater
- DOD Pacific Island installations: impacts of and adaptive responses to climate change
- Improved understanding of soil ecology to meet DOD natural resource management challenges
- Non-isocyanate polymers for military topcoats
- Ionic liquids technology
- Environmentally advantaged submunitions
- Application of synthetic biological techniques for energetic materials

Projects funded under the Core solicitation vary in cost and duration and typically range from $150,000 to $1 million per year. All Core SON allow researchers to submit a standard proposal for complete research efforts or submit limited scope proposals that entail high-risk, innovative approaches to the specific SON addressed. These limited proposals will receive up to one year of funding at $150,000; the goal of limited scope proposals is to acquire necessary data and establish proof of concept that will lead to a future standard proposal.

Pre-proposals will be rated on technical merit, qualifications and capabilities of researchers, and reasonableness of costs. SERDP will rate invited full proposals in these areas as well as evaluate proposals’ transition plans for implementation, especially for late-stage development projects, and proposals’ small business participation. While private sector partners are not required for universities, DOD aims to have five percent of the total contract value for its Core solicitation from small business.
Letters of Intent: Not required

Application Deadline: Preliminary proposals are required and due January 5, 2012. Full proposals will be accepted by invitation only and are due March 8, 2012.

Total Funding and Award Size: DOD anticipates spending a total of $8 million on multiple proposals under its Core solicitation for FY 2013, pending funding availability and quality of proposals. SERDP does not specify funding limits for Core proposals, but Core projects typically range from $150,000 to $1 million per year. Researchers may submit limited scope proposals for a SON that focuses on high-risk, innovative research; these proposals will receive $150,000 for one year.

Eligibility and Limitations: There is no limit to the number of proposals an institution may submit. Universities, as well as private sector companies, are eligible for funding through this solicitation.

Additional Resources: More information about the Core solicitation, including the full BAA, statements of need, and submission instructions, can be found at http://www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations/Non-Federal-Core-Proposal-Instructions.

SERDP SEED Solicitation

The SERDP Exploratory Development (SEED) program allows researchers to test proof of concept for innovative environmental technologies and methods relevant to the outlined SON. Projects are funded at no more than $150,000 for approximately one year. FY 2013 SEED proposals will address improvements in the detection, classification, and remediation of military munitions underwater under the munitions response topic area. Successful SEED projects may lead to more extensive follow-on funding activities. Proposals will be rated on technical merit and how the project will provide proof of concept and future technological development if successfully completed.

Letters of Intent: Not required

Application Deadline: Full proposals are due March 8, 2012. Pre-proposals are not required.

Total Funding and Award Size: At least one award of $150,000 will be made from this solicitation with the possibility of multiple projects funded.

Eligibility and Limitations: There is no limit to the number of proposals an institution may submit. Universities, as well as private sector companies, are eligible for funding through this solicitation.

Additional Resources: More information about the SEED solicitation, including the full BAA, statements of need, and submission instructions, can be found at http://www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations/Non-Federal-SEED-Proposal-Instructions.

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Chesapeake Bay Stormwater Management & Green Infrastructure at EPA STAR

The Environmental Protection Agency’s (EPA) Science to Achieve Results (STAR) program has announced a funding opportunity for research pertaining to the Chesapeake Bay. EPA is seeking integrated research proposals that will further the science and understanding of “community-based stormwater management for reducing water-borne pollution entering the Chesapeake Bay.” EPA encourages research proposals to engage both non-scientists and scientists to create solutions to stormwater problems.

**Letters of Intent:** Must be included with final application.

**Application Deadline:** Full proposals are due January 11, 2012. Pre-proposals are not required.

**Total Funding and Award Size:** EPA will award $2.1 million total and $700,000 maximum to awardees.

**Eligibility and Limitations:** Institutions of higher education and non-profits are eligible to apply. However, Federally-Funded Research and Development Centers (FFRDCs) are not eligible.

**Additional Resources:** The full funding-opportunity announcement is available at [http://epa.gov/ncer/rfa/2012/2012_star_chesapeake.html](http://epa.gov/ncer/rfa/2012/2012_star_chesapeake.html).

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**NSF Announces Recompetition for San Andreas Fault Observatory at Depth**

The National Science Foundation (NSF) announced it will recompete the management and operation contract for the San Andreas Fault Observatory at Depth (SAFOD), which is one of three main EarthScope facilities and is supported by the Division of Earth Sciences (EAR) at NSF. The facility also includes the Plate Boundary Observatory and USArray. Currently, SAFOD is managed by UNAVCO and the Incorporated Research Institutes for Seismology (IRIS). The deadline for proposals is July 2012.


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**Water Resources Research at USGS**

On November 22, the U.S. Geological Survey (USGS) and the National Institute for Water Research (NIWR) announced they are seeking proposals for matching grants for water research that increase and improve water supply, including “infrastructure, development of drought indicators, evaluation of the dynamics of extreme hydrological events and associated costs, […] integrated management of ground and surface waters, the resilience of public water supplies, and the evaluation of conservation practices.” Proposals must include a letter of intent of matching funds from another institution.

**Letters of Intent:** Not applicable

**Application Deadline:** Proposals are due March 8, 2012. Pre-proposals are not required.
Total Funding and Award Size: USGS will award $1 million total, with a maximum award ceiling of $250,000 per awardee. Funds are contingent upon fiscal year 2012 appropriations levels.

Eligibility and Limitations: Institutions of higher education are eligible to apply. Funds must be matched by another institution.


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Urban Waters at EPA

The Environmental Protection Agency (EPA) seeks proposals for projects that improve urban water quality and support community revitalization. According to a press release, “Examples of projects eligible for funding include: (1) education and training for water quality improvement or green infrastructure jobs; (2) public education about ways to reduce water pollution; (3) local water quality monitoring programs; (4) engaging diverse stakeholders to develop local watershed plans; and (5) innovative projects that promote local water quality and community revitalization goals.” Partnerships also are strongly encouraged.

Letters of Intent: Not applicable

Application Deadline: The deadline for submitting proposals is January 23, 2012. EPA will host two webinars – one on December 14, 2011, and one on January 5, 2012. The deadline for submitting questions is January 16, 2012.

Total Funding and Award Size: EPA will award $3.8 million total, with $1.8 million in current funds and $2 million with fiscal year 2012 funds. Applicants may not request more than $60,000.

Eligibility and Limitations: Institutions of higher education are eligible to apply. Applicants must provide at least $2,500 in non-federal cost sharing.


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PUBLICATIONS AND REPORTS OF INTEREST

Department of the Interior

Geospatial Platform (website)
http://www.geoplatform.gov/home/.

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Georgetown Climate Center

Adaptation Clearinghouse (comprehensive climate website and sea-level rise toolkit)

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Government Accountability Office

Environmental Justice: EPA Needs to Take Additional Actions to Help Ensure Effective Implementation

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Infrastructure Security Partnership

Regional Disaster Resilience

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Interagency Climate Change Adaptation Task Force

National Action Plan: Priorities for Managing Freshwater Resources in a Changing Climate

Federal Actions for a Climate Resilient Nation: Progress Report on the Interagency Climate Change Adaptation Task Force

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Intergovernmental Panel on Climate Change

Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (Summary for Policymakers)

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National Oceanic and Atmospheric Administration

2011 Arctic Report Card
http://www.arctic.noaa.gov/reportcard/.

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National Science Foundation

FY 2011 Agency Financial Report

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United Nations Development Programme

Human Development Report 2011: Sustainability and Equity—A Better Future for All

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United Nations Environment Programme

HFCs: A Critical Link in Protecting Climate and the Ozone Layer

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Woodrow Wilson International Center for Scholars

Geoengineering for Decision Makers

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