

Monthly Review: November 2011

The American Geosciences Institute's monthly review of geosciences and policy goes out to the leadership of AGI's member societies, members of the AGI Government Affairs Advisory Committee, and other interested geoscientists as part of a continuing effort to improve communications between GAP and the geoscience community. The current monthly review and archived monthly reviews are all available online. Subscribe to receive the Government Affairs Monthly Review by email.

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1. Apply for AGI's 2012-2013 William Fisher Congressional Geoscience Fellowship

The American Geosciences Institute is accepting applications for the 2012-2013 William L. Fisher Congressional Geoscience Fellowship. Congressional fellows spend one year in Washington, DC working as a staff member in the office of a member of Congress or in a congressional committee. The fellowship represents a unique opportunity to gain first-hand experience with the federal legislative process and make practical contributions to the effective and timely use of geoscientific knowledge on issues relating to the environment, resources, natural hazards, and federal science policy. The application deadline is February 1, 2012. Several of AGI's Member Societies also sponsor Congressional Science Fellowships. For further information, contact the American Geophysical Union, Geological Society of America, or Soil Science Society of America. AAAS, AIP, ASCE, AMS and other related societies offer similar fellowships for Congress and AAAS offers fellowships for the executive branch. It is acceptable to apply to more than one society in a given year. Stipends, application procedures, eligibility, timetables, and deadlines vary.

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2. OSTP Seeks Input on Public Access to Data

In accordance with the America COMPETES Act (P.L. 110-69) of 2010 reauthorized by Congress in December of 2010, the Office of Science and Technology Policy (OSTP) is charged with improving widespread digital public access to federally funded unclassified research. As part of their efforts, OSTP has created two interagency policy groups under the National Science and Technology Council—the Task Force on Public Access to Scholarly Publications and the Interagency Working Group on Digital Data—to identify the specific objectives and public interests that need to be addressed by any policies in these two areas. OSTP released two Requests for Information (RFI) in November, soliciting comment from the public and stakeholders on ways to preserve long term access to federally funded research. Comments and answers to the RFIs are encouraged and should be sent by email to the Public Access and Digital Data policy groups.

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3. Obama Administration Delays Decision on Keystone XL Pipeline

After initially promising a decision by the end of 2011, the Obama Administration has announced that it will not issue a decision on whether to grant a cross-border permit to the proposed TransCanada Keystone XL Pipeline until 2013. The administration was under pressure from supporters of the project who cite its potential for job creation and from environmental groups who oppose it because of potential environmental degradation. The 1,700 mile-long proposed pipeline would transport crude oil from oil sand deposits in northeastern Alberta, Canada to existing Keystone pipelines in Nebraska and Oklahoma and would cost about \$7 billion to build. In response, TransCanada announced its intention to reroute the pipeline around the Sandhills, an ecologically sensitive area in Nebraska that the proposed pipeline was initially set to cross over.

Nebraska Governor David Heineman signed new pipeline construction standards into law on November 22 and approved a provision to direct the Nebraska Department of Environmental Quality, consulting with the U.S. State Department, to conduct an environmental assessment for the alternate route. The law provides up to \$2 million for the review and state officials hope to complete this study by as soon as May 2012.

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4. Appropriations for Fiscal Year 2012 Advance While Deficit Committee Does Not

Congress passed the Consolidated and Further Continuing Appropriations Act of 2012 (H.R. 2112, Public Law 112-55) to provide appropriations for fiscal year (FY) 2012 for Agriculture, Commerce, Justice, Science, Transportation, Housing and Urban Development. For FY2012, the National Science Foundation would receive \$7.033 billion (+\$165 million versus enacted FY2011), the National Oceanic and Atmospheric Administration would receive \$4.975 billion (+\$387 million versus enacted FY2011) and the National Aeronautics and Space Administration would receive \$18.7 billion (-\$1 billion versus enacted FY2011). Please visit AGI Government Affairs FY2012 Appropriations Webpage for more details on recent actions and for comparison tables of appropriations for geoscience-related programs within different federal science agencies.

The law extends continuing appropriations at FY2011 levels for other agencies until December 16, 2011. Among the appropriation bills that have not been completed and are of particular interest to the geosciences, are the Department of Energy, the

Environmental Protection Agency (EPA), the Department of the Interior and the Department of Education. These departments and agencies will continue to be funded at FY2011 levels until Congress acts on these budgets.

The Joint Select Committee on Deficit Reduction was unable to complete a bipartisan agreement on a plan to reduce the nation's deficit and announced their stalemate in a brief statement on November 21, 2011. The committee was unable to come to any compromises on the federal budget, federal revenues or entitlements. Congress and the Obama Administration will continue to grapple with the deficit through December and likely into 2012.

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5. National Earthquake Hazard Reduction Program Reauthorization

On December 1, the House Committee on Science, Space and Technology passed the National Hazard Risk Reduction Act of 2011 (H.R. 3479) after it was passed and amended by the Subcommittee on Technology and Innovation on November 15. The bill reauthorizes the National Earthquake Hazard Reduction Program (NEHRP) through fiscal year (FY) 2014. NEHRP is a long-standing cooperative program involving the National Science Foundation (NSF), the U.S. Geological Survey (USGS), the National Institute of Standards and Technology (NIST) and the Federal Emergency Management Agency (FEMA) to understand, monitor and analyze earthquakes and mitigate earthquake risks.

The Senate Committee on Commerce, Science, and Transportation passed a Senate version of the measure, the Natural Hazards Risk Reduction Act (S. 646), on May 5, 2011. The next step for the two different measures is a possible vote by the full Senate and the full House. If both measures are approved then the chambers will need to meet in conference to work out the differences between the bills. The Senate bill provides higher authorizations that match with the needs of the programs and previous authorizations, while the House bill provides lower authorizations that may not be adequate to improve resiliency and may end up costing the nation more in future losses.

During the subcommittee markup on November 15, the bill passed on a party line vote after the subcommittee debated and voted on a series of amendments. Subcommittee Democrats attempted to pass Representative Donna Edwards' (D-MD) amendment to raise the authorization levels for the four agencies to the levels in the Senate version of the bill, but the amendment was not agreed to. Edwards argued that the authorization levels in her amendment were equal to the reauthorization bill (H.R. 3820) overwhelmingly agreed to in the 111th Congress by the House in a 355-50 vote. The subcommittee passed Representative Judy Biggert's (R-IL) amendment by voice vote. Biggert's amendment adds supporting public outreach and education to the activities of NEHRP, eliminates mandatory use of the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES), requires the NEHRP advisory committee to terminate after five years, tasks the advisory committee to assess trends in social sciences, and adds language to ensure coordination of hazard related research and development activities across the federal government. Chairman Ralph Hall's (R-TX) amendment reinstated USGS as the lead agency for post-earthquake investigations and transferred \$3.4 million in authorization from NIST to USGS.

Chairman Hall and subcommittee Republicans argued that because the House Committee on Natural Resources shares jurisdiction of the USGS with the Science Committee, the Natural Resources Committee may not agree with any changes to the USGS's current responsibilities or authorizations and could delay the passage of the bill. The reauthorization of NEHRP in 1990 (P.L. 101-614) initially gave responsibility of lead post-earthquake investigations to the USGS but S. 646, the current Senate NEHRP reauthorization bill, would transfer lead post-earthquake investigations responsibilities to NIST as recommended by a 2008 NEHRP Advisory Committee report.

The full committee met on December 1 to further discuss H.R. 3479. The bill was amended and passed on a party line vote of 21-12. Representative Biggert's amendment, agreed to by voice vote, requires NEHRP to include in their annual report a description of the current state of post-earthquake investigations by the USGS and a description of the contribution of National Laboratories to natural hazard risk reduction. Representative Hansen Clarke's (D-MI) amendment to extend public outreach and education to include households with special needs individuals was passed as was Representative Ben Ray Lujan's (D-NM) amendment to task NIST with researching fire hazards at the wildland-urban interface. Representative Zoe Lofgren (D-CA), co-chair of the Congressional Hazards Caucus, offered an amendment to transfer lead post-earthquake investigation responsibilities from the USGS to NIST as was debated at the subcommittee markup. Chairman Hall told Lofgren that Biggert had tasked NEHRP in her amendment to include in its annual report a description of the USGS's post-earthquake investigations as a way for the committee to better understand the issue before transferring responsibilities or authorizations. The committee Republicans voted together against the amendment and defeated it 11-20. Representatives Lynn Woolsey (D-CA) and Edwards attempted to raise the authorization levels with two different amendments. Woolsey's amendment would have increased NEHRP authorizations by \$209.6 million over the three year authorization and Edwards' amendment would have increased NEHRP authorizations by \$177.4 million over the three year authorization. Woolsey argued that her authorization levels were written in 2004 by House Republicans

and agreed to by President Bush while Edwards pointed out that her amendment's authorization levels were overwhelmingly agreed to in the 111th Congress by the House of Representatives. Both representatives also noted that the authorization levels they were requesting would provide the necessary funds to implement the essential programs at the four federal agencies. Without sufficient authorization levels, there was concern that resiliency would suffer and future losses would be greater. Neither amendment was adopted and the bill went on to pass on a party line vote of 21-12.

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6. Senate Committee Discusses NOAA's Potential Satellite Data Gap

On November 16, 2011, the Senate Committee on Commerce, Science and Transportation Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard held a hearing to discuss two potential satellite data gaps and the need for continued innovation in weather forecasting and prediction. Witnesses included Mary Glackin of the National Oceanic and Atmospheric Administration (NOAA), Todd J. Zinser, the Inspector General of the Department of Commerce, David Trimble of the Government Accountability Office (GAO), Real Admiral Cari Thomas of the U.S. Coast Guard, and three individuals from the private sector. The National Polar-orbiting Operational Environmental Satellite System (NPOESS), jointly operated by the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA), and the Department of Defense (DOD), was initially designed as a means for cost savings by combining military and civil remote-sensing efforts. Cost-savings were not achieved, and in 2010 the White House Office of Science and Technology Policy dismantled NPOESS and replaced it with the Joint Polar Satellite System (JPSS), managed by NOAA and NASA, and the Defense Weather Satellite System managed by the military. Both systems will be launched on the same bus, so continued coordination is essential. The NPOESS Preparatory Program (NPP) was launched in October 2011 as an effort to bridge the gaps between the two systems; however, NOAA is aware of a potential "data gap" in 2016 due to technological setbacks transitioning NPOESS to JPSS.

The Government Accountability Office (GAO) produced a report in September 2011, *Polar Satellites: Agencies Need to Address Potential Gaps in Weather and Climate Data Coverage*, which examined NOAA's current satellite programs and its efforts to improve its technological innovation and prevent such a data gap. On November 17, 2011, the Consolidated and Further Continuing Appropriations Act for 2012 (P.L. 112-55) was passed into law, providing \$924 million to continue development of NOAA's JPSS in 2012.

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7. Law Allows Foreign LNG Tankers In U.S. Waters

President Obama recently signed into law the America's Cup Act of 2011 (P.L. 112-61), which contains a provision to allow three foreign-flagged tankers to carry liquefied natural gas (LNG) from Pennsylvania to the Gulf Coast. Ethane derived from the Marcellus Shale will be processed at Sunoco's Marcus Hook refinery in Pennsylvania to LNG for tanker transport. The bill originally provided a waiver for about 60 foreign yachts that are participating in the 2013 America's Cup, starting in early December in San Diego, to enter U.S. waters. The waiver is necessary because the Jones Act (P.L. 66-261) prohibits foreign vessels from entering U.S. waters. Senator Pat Toomey (R-PA) with support from Representative Pat Meehan (R-PA) put a hold on the legislation until the LNG foreign tankers were also granted a waiver.

The two members argued that transporting LNG from Pennsylvania to the Gulf Coast would boost jobs in the state. They succeeded in convincing their colleagues to add the provision to the bill, in order to allow the yacht race to continue as planned.

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8. Markey Introduces Energy and Mineral Extraction Reform Bill

Representative Ed Markey (D-MA) and House Democrats from the Committee on Natural Resources have introduced the Fair Payment for Energy and Mineral Production on Public Lands Act (H.R. 3446) that would reform rules from the General Mining Act of 1872 (30 U.S.C. 22 et seq.) on public lands. Its main sponsors are Markey, Rush Holt (D-NJ), and Raul Grijalva (D-AZ). The legislation would institute a 12.5 percent royalty on hard rock mining for materials like gold, silver, and uranium; the President suggested no less than a five percent royalty. With a seven cent-per-ton fee for all materials displaced during hard rock mining, the bill would make it easier to block mining on public lands. The money collected as a result of the fee would pay for the reclamation of the hard rock mines. The bill would increase inspection fees for offshore drilling, remove revenue sharing with the Gulf States for oil and gas production, and would require energy companies to renegotiate their oil and gas leases. Coal companies would be restricted from sending money to states that have completed reclamation of abandoned coal mines. The mining industry is not in support of the proposal.

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9. American Medical Isotope Production Act Passes Senate

On November 17, the Senate passed the American Medical Isotope Production Act of 2011 (S. 99) introduced by Senators Jeff Bingaman (D-NM) and Lisa Murkowski (R-AK). The bill was marked-up and passed by the Energy and Natural Resources

Committee in April. America relies on foreign companies in Canada and the Netherlands to produce the isotope molybdenum 99 (Mo-99) though these international companies purchase U.S. highly-enriched uranium (HEU) to produce Mo-99. Traditionally, Mo-99 is produced by concentrated neutron-bombardment of HEU. Processes based on HEU pose a threat to national security because HEU can be used to manufacture nuclear weapons. Mo-99 is preferred for medical purposes because it decays to technetium-99, which is used to detect cancer, heart disease and thyroid disease, to study brain and kidney functions and to image stress fractures. The measure supports research to increase domestic production of Mo-99 by establishing a technology neutral program within the Department of Energy (DOE) with a goal of supporting technologies to become commercially successful. Lawmakers hope this measure will help to phase out DOE's exportation of HEU to foreign reactors used in the production of the isotope. A complete description of the bill and more background of the issue can be found in Senate Report 112-17 that accompanied the bill.

The bill has been referred to the House Committees on Energy and Commerce, Science, Space and Technology, and on Budget. A similar bill (H.R. 3276), introduced by Representative Ed Markey (D-MA) in 2009, passed the House in the 111th Congress.

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10. Teaching Geography is Fundamental Act Seeks Support

Supporters of the Teaching Geography is Fundamental Act (H.R. 885, S. 434) are encouraging citizens to contact their congressional members by letters and social media through Speak Up for Geography's web site. The bill would establish geography education grant programs through the federal government to increase the geographic literacy of students in grades K-12. Senator Thad Cochran (R-MS) is the lead sponsor of the Senate bill and Representative Chris Van Hollen (D-MD) is the lead sponsor of the House bill. The Association of American Geographers, the American Geosciences Institute's 50th member society, has endorsed the bill.

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11. Representative Coffman Forms Congressional Rare Earth Caucus

Representative Mike Coffman (R-CO) has announced the creation of a congressional Rare Earth Caucus for domestic rare earth mineral exploration, production, and growing industries. This move was encouraged by the Association of Rare Earths (RARE), a new group who sent a letter to Congress in October requesting such a caucus. Chinese control over seventeen major rare earth minerals has sparked a frenzy to boost domestic production and restart U.S. mining projects. The caucus, which has bipartisan support and membership, will help increase awareness of the issue and set policies to boost related industries that have proliferated overseas.

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12. DOT and EPA Propose Higher CAFE Standards

The Department of Transportation (DOT) and the Environmental Protection Agency (EPA) announced on November 16 a proposal to increase fuel economy standards for model-year 2017-2025 passenger cars and light trucks to a corporate fleet average of 54.5 miles per gallon by 2025 through new Corporate Average Fuel Economy (CAFE) standards. CAFE standards are the sales weighted average fuel economy, expressed in miles per gallon, of a manufacturer's fleet of passenger cars or light trucks manufactured for sale in the U.S. for any given model year. In April 2010, the Obama Administration announced they would improve the CAFE standards for passenger cars and light trucks set by the Energy Independence and Security Act of 2007 (P.L. 110-140) from 35 miles per gallon by 2020 to an average 35.5 miles per gallon by 2016. The rules give each model its own mileage requirement based on the square feet it covers.

According to DOT, the new regulations will save Americans \$1.7 trillion by 2025 and cut 6 billion metric tons of greenhouse gas emissions over the period of 2017-2025.

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13. EPA Releases Final Hydraulic Fracturing Study Plan

Under the direction of the House Appropriations Conference Committee budget report for fiscal year 2010 (H.Rept. 111-316), the Environmental Protection Agency (EPA) published a study plan in November to investigate hydraulic fracturing associated with shale gas extraction. EPA scientists will look into the potential impacts of hydraulic fracturing on groundwater and drinking water. The study will examine the full lifespan of water in hydraulic fracturing: acquisition of the water, mixing of chemicals for fracturing, and the post-fracturing stage, including management of flowback and produced water and its ultimate treatment and disposal. The study's initial results will be released in late 2012 and the final results are expected in 2014.

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14. BOEM Releases Proposed 2012-2017 OCS Oil and Gas Leasing Program

On November 8, 2011 the Bureau of Ocean Energy Management (BOEM) released its proposed 2012-2017 Outer Continental Shelf Oil and Gas Leasing Program and its accompanying draft Environmental Impact Statement (EIS). The five year leasing

program consists of a schedule of oil and gas lease sales and sets out the size and locations of proposed leasing activity to meet the nation's energy needs for the next five years. This proposed 2012-2017 program would make 15 plots available in the Western and Central Gulf of Mexico, the Chukchi Sea, the Beaufort Sea, and Cook Inlet in Alaska. The proposal does not include lease sales on the Atlantic or the Pacific Oceans outer continental shelf. Most of the Eastern Gulf of Mexico remains in a congressionally-mandated moratorium and is not included in the proposed plan for 2012-2017. BOEM plans to conduct environmental analyses for potential seismic studies in the Mid- and South Atlantic but will not schedule leases there until at least mid-2017.

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15. Salazar Announces Replacement for BSEE Director Bromwich

Secretary of the Interior Ken Salazar announced in November that Rear Admiral James Watson will take over leadership of the Bureau of Safety and Environmental Enforcement (BSEE) on December 1, 2011 as Director Michael Bromwich leaves the Department of the Interior (DOI). Brought in to lead the reorganization of the Minerals Management Service in June 2010, Bromwich served as the director of the former Bureau of Ocean Energy, Management, and Regulation (BOEMRE) until it was split into the Bureau of Ocean Energy Management (BOEM) and BSEE on October 1, 2011. He then took over leadership of BSEE for two months. Rear Admiral Watson comes to BSEE from the Coast Guard where he served as the Federal On-Scene Coordinator for the all-of-government response to the BP *Deepwater Horizon* oil spill in the Gulf of Mexico.

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16. NSF Seeks New Management of SAFOD

The National Science Foundation (NSF) has written a Dear Colleague Letter (DCL) regarding the future of the San Andreas Fault Observatory at Depth (SAFOD), a research facility that ceased drilling operations about three years ago shortly after its installation in September 2008.

SAFOD is one of three components of EarthScope, a multipurpose geophysical and geological network supported by the Division of Earth Sciences at NSF. The SAFOD observatory is devoted to understanding the physical and chemical processes of large plate boundaries through the collection of seismic and physical data along the San Andreas Fault.

Shortly after the observatory's closure, an independent SAFOD Engineering Subcommittee appointed by NSF's Advisory Committee for Geosciences, published a report that suggested a number of potential causes for the shutdown as well as recommendations for future drilling attempts. In July 2011 the EarthScope Steering Committee presented to NSF a letter summarizing the importance of SAFOD. Now NSF has distributed a similar DCL, agreeing that SAFOD is vital for understanding earthquake mechanisms. NSF's colleagues include UNAVCO, USGS, the EarthScope Steering Committee, and the SAFOD Advisory Committee.

The DCL from NSF acknowledges its search for a new awardee to manage and operate the redefined facility, shifting management away from UNAVCO. The letter invites proposals until July 2012 for principal investigator-driven experiments using the SAFOD borehole. NSF will be taking a staged approach to its new long-term observatory at SAFOD, beginning with a workshop on borehole observatories for earthquake and fault physics studies.

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17. FEMA Seeks Public Comment to Improve Emergency Management System

The Federal Emergency Management Agency (FEMA) is reaching out to state, local, and tribal governments, and to all members of the public to receive input on ways to improve the emergency management system. The FEMA Think Tank, which comprises an online forum and monthly conference call discussions, will help facilitate these conversations and encourage further discussion for exploring best practices and generating new ideas. The monthly calls will begin in December of 2011.

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18. Mars Launches: One for Two in November

The Russian space agency, Roscosmos, launched its Phobos-Grunt mission to orbit Mars, land on the Martian moon Phobos, collect a soil sample and return the sample to Earth. Unfortunately after the launch on November 8, 2011, the spacecraft did not fire its rockets to boost it into interplanetary space and Roscosmos was unable to communicate with the spacecraft. With the spacecraft stranded in low Earth orbit, a feedhorn antenna hooked up to a 15-meter diameter deep space communication dish in Perth, Australia has come to the rescue. The European Space Agency (ESA) which operates the dish has re-established some communications with the spacecraft, but neither Roscosmos nor ESA has been able to nudge the spacecraft into a higher Earth orbit yet. A feedhorn is being added to another ESA dish in the Canary Islands, while the National Aeronautics and Space Administration's (NASA's) deep space antenna in Goldstone, California has stopped trying to communicate with Phobos-Grunt in order to concentrate on the latest NASA Mars mission.

The United States successfully launched the Mars Science Laboratory on November 30, 2011. NASA's Curiosity rover is the largest rover ever sent to Mars by any nation. The nuclear-powered rover is about the size of a passenger vehicle, weighs one ton,

includes 10 instruments and costs about \$2.5 billion. It will travel about 354 million miles and arrive at Mars in August 2012. Curiosity will use rockets, a parachute, and a sky crane to ensure a precise landing near the Gale Crater on Mars.

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19. NASA Worries About Plutonium Fuel Resources for Space Exploration

Resources of plutonium-238, a radioactive isotope used to power unmanned space rovers and probes, are running low in the U.S. and expected to last only through 2022. This important fuel, different from plutonium-239 used for nuclear weapons, has been used for multiple scientific missions into space, including the Voyager spacecraft in the 1970s and the Cassini spacecraft that is now orbiting Saturn. Plutonium-238 production boomed during the Cold War but has since come to a halt. Because the U.S. is the only nation with access to the material, many scientists are worried that a shortage of plutonium may result in fewer space-based scientific missions beyond Mars.

The National Aeronautics and Space Administration (NASA) has agreed to split costs with the Department of Energy (DOE) to fund plutonium production by small companies, which could range between \$75 million and \$90 million over a five year span. However, Congress has not yet agreed on any legislation to allow this to go through. While supporters believe this cost-sharing is an effective collaboration, those in opposition feel that NASA should fund the startup because the project will likely reduce funding from other types of nuclear research within DOE. Given such opposition, experts do not expect production of new plutonium-238 to begin before 2020.

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20. United States Earth Observations in Peril

On November 18, the United States Geological Survey (USGS) announced that it has stopped acquiring images from Landsat 5 because of degrading electronics. If this is the end of Landsat 5, then only Landsat 7's limited imaging capability would be available, and there is limited confidence about the long-term sustainability of Landsat 7's operation. The Landsat Data Continuity Mission (Landsat 8) is scheduled for launch in January 2013, more than a year from now. Landsat "represents the world's longest continuously acquired collection of space-based moderate-resolution land remote sensing data. Nearly four decades of imagery provides a unique resource for those who work in agriculture, geology, forestry, regional planning, education, mapping, and global change research. Landsat images are also invaluable for emergency response and disaster relief," according to the mission web site description. Loss of Landsat would be a huge detriment to government, commercial, industrial, academic and educational initiatives that rely on land imaging.

Other Earth-observing missions are in trouble due to a lack of resources. NOAA's next generation weather satellite, Joint Polar Satellite System is behind schedule and likely to leave a data gap. Senators from the Senate Select Committee on Intelligence have written a letter asking the Department of Defense (DOD) not to cut about \$7 billion for commercial satellite support from GeoEye and DigitalGlobe for the DOD's Enhanced View program and last but not least, there are growing concerns about cuts to the development of Global Positioning System III (GPS 3), which is the next generation GPS used by more people than ever imagined.

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21. Federal Geographic Data Committee Unveils Geospatial Web Platform

On November 9, 2011, the Federal Geographic Data Committee (FGDC), an interagency committee established in 1990, unveiled its prototype Geospatial Web Platform, open to public and government use. The web site combines user-friendly map-based data and tools with the latest internet technologies to deliver geospatial information. The official launch of the Geospatial Platform improves the availability and usability of geospatial information from all federal agencies.

On the web site, users can create their own maps utilizing the web site's data as well as their own data brought to the platform, without any software download requirements. Users can also collaborate in public or private groups through the platform, giving them the ability to share data.

This project brought together the efforts of many related agencies. The FGDC is composed of representatives from the Executive Office of the President, and cabinet level and independent federal agencies including the Department of the Interior, the Environmental Protection Agency and the National Oceanic and Atmospheric Administration. In conjunction with feedback from stakeholders and experts, FGDC will collaborate with its partners to continuously expand the content and resources available through the site.

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22. Arun Majumdar Nominated for Undersecretary of Energy at DOE

President Obama has announced his intent to nominate Arun Majumdar to serve as Undersecretary of Energy and Environment at the Department of Energy. If confirmed by the Senate, Majumdar will oversee the Office of Fossil Energy, the Office of Energy Efficiency and Renewable Energy, the Office of Electricity Delivery and Energy Reliability, the Office of Legacy Management, the Office of Nuclear Energy, Science & Technology, the Office of Environmental Management, and the Office of Civilian

Radioactive Waste Management. Majumdar currently serves as the director of the Advanced Research Projects Agency - Energy (ARPA-E) and previously served as deputy director of Lawrence Berkeley National Laboratory under then Director Steven Chu. The Senate Energy and Natural Resources Committee will hold a hearing to consider the nomination on Majumdar on December 8, 2011 in Dirksen Senate Office Building Room 366.

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23. UNESCO Faces Funding Shortfall As U.S. Withholds Contributions

On October 31, 2011 the United Nations Educational, Scientific and Cultural Organization (UNESCO) voted to accept Palestine as member state at their biennial General Conference. The United States is against Palestine becoming a member state of any United Nations entity and by law the U.S. is required to halt contributions to UNESCO. As a result, UNESCO Director General Irina Bokova announced that all budgets would be frozen until the end of the year. A large proportion of science funding at UNESCO comes from voluntary contributions from member states of which the United States is the largest contributor. UNESCO faces an immediate loss of \$65 million through 2011 and a 22 percent drop in its \$653 million budget for 2012-2013. The United States will continue to be a member of UNESCO. Ironically, the U.S. was just approved as a member of the UNESCO Executive Committee, but will now have a non-voting role because of the stoppage of contributions. The State Department issued a press release on October 31 that said, "The United States will maintain its membership in and commitment to UNESCO and [the State Department] will consult with Congress to ensure that U.S. interests and influence are preserved."

UNESCO's Natural Science Sector supports geoscience related programs such as the International Geosciences Programme, the International Hydrological Programme, and the Intergovernmental Oceanographic Commission and is the largest beneficiary of UNESCO's extra-budgetary contributions. These long-standing programs fund international researchers among UNESCO's member states, often in collaboration with American researchers, and a funding shortfall would be detrimental to ongoing international research on oceans, climate change, clean water, renewable energy, natural hazards, and other critical issues. Bokova announced in a video response that until the United States' contributions return, "It will be impossible for [UNESCO] to maintain [its] current level of activity" and that the United States' actions would "immediately affect our ability to deliver programs in critical areas."

Two laws from the 1990's (P.L. 103-236 and P.L. 101-246) declare that no United States funding "shall be available for the United Nations or any specialized agency thereof which accords the Palestine Liberation Organization the same standing as member states." UNESCO was one of the first UN entities to vote on Palestine's membership and many other UN bodies are poised to conduct similar votes. The United States may have to halt contributions and lose voting status to the World Health Organization, the International Atomic Energy Agency, and the United Nations Environment Programme (UNEP), which is responsible for the Intergovernmental Panel on Climate Change, if the laws are not reversed. Palestinian UN Envoy Ibrahim Khraishi has said that Palestine is considering joining at least 16 U.N. agencies.

The State Department is working with Congress to restore funding to UNESCO and sent a memo to congressional staffers titled, How the Loss of U.S. Funding Will Impact Important Programs at UNESCO. In this memo, the State Department cites the immediate suspension of the Afghan Mapping Initiative for Geospatial Technologies Capacity Building and Training Program as a result of the budget freeze which had received support from the U.S. Geological Survey in 2011. Other programs highlighted in the memo that would be negatively impacted but not necessarily suspended include the management of the Tsunami Early Warning Systems, efforts to manage hydrological extremes and geo-hazards in Pakistan, and water resource programs in Africa and the Middle East.

The U.S. Agency for International Development (USAID), which provides assistance to countries responding to natural hazards and funds international environmental, climate, and water programs, is facing budget problems of its own. The House of Representatives proposed a budget that would give USAID \$1.038 billion for fiscal year (FY) 2012 and the Senate has proposed \$1.437 billion (S. 1601) but neither State, Foreign Operations, and Related Programs Appropriations bill has been passed. The President requested \$1.744 billion for FY 2012.

The American Geosciences Institute's executive director, P. Patrick Leahy, serves as a commissioner to the United States National Commission to UNESCO.

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24. Next Steps for Nuclear Power After Earthquakes

The Institute of Nuclear Power Operations (INPO), a U.S.-based think tank, issued a press release with a report (Special Report on the Nuclear Accident at the Fukushima Daiichi Nuclear Power Station) about the first four days of the Fukushima Daiichi nuclear disaster after the March 11, 2011 magnitude 9 Tohoku earthquake and subsequent tsunami. The report was prepared for the U.S. nuclear industry, the Nuclear Regulatory Commission (NRC) and the U.S. Congress. The tsunami was larger than expected and may have been enhanced by the displacement of splay faults on the sedimentary wedge above the subduction zone earthquake.

The huge tsunami led to at least one 46-foot high wave rushing over the breakwater barrier (18 to 30 feet high) at the Daiichi nuclear power plant. The tsunami killed two workers, flooded emergency generators and disabled water intakes needed to cool the reactors. Plant workers bravely tried to avert further catastrophe without electricity, without information about the status of the reactors and without any outside help. They had to deal with flooding, structural damage, aftershocks, hydrogen gas explosions and radiation releases while they tried to cool the reactors and safely shutdown systems. Three important lessons learned include: 1. Earthquakes and tsunamis can be larger than previously thought and can combine across segments to produce higher intensity events, 2. Emergency electricity backups for nuclear power plants need to be more resilient and 3. Hydrogen gas pressure buildup in older nuclear reactors remains a considerable known concern.

On November 30, the Associated Press reported that a simulation by the Tokyo Electric Power Company (TEPCO) of the damage in nuclear reactor number 1 at Fukushima Daiichi shows more damage than previously thought. The simulation suggests the melted fuel rods bore through much of the primary containment (i.e. concrete and steel bottom) and almost leaked out.

Back in the United States, the NRC authorized the North Anna nuclear power plant in Louisa, Virginia to initiate a restart of its two reactors on November 14, 2011. The reactors automatically shut off due to the magnitude 5.8 Virginia earthquake that struck about 11 miles from the plant on August 23 (see Virginia Earthquake – NRC Actions for more information). The shaking was greater than the plant was designed to handle. Dominion, the power company that owns and operates the facility, is spending more than \$21 million to inspect and assess the damage. So far, even though the shaking intensity was about two times greater than expected, the damage is confined to minor cracks and damaged bolts. Massive spent fuel storage containers did shift by as much as one inch as the earth moved beneath them. Dominion is upgrading seismic monitoring equipment for the reactors and the dry cask spent fuel facility. The NRC is in the midst of a review of nuclear power plants and has called for U.S. plants to upgrade their seismic risk analyses.

Communities and the public in the U.S. and abroad remain wary of nuclear power plants. On November 29, the NRC's Atomic Safety and Licensing Board denied a state attempt to halt the relicensing process for the Pilgrim nuclear power plant in Plymouth, Massachusetts based on the accident in Japan.

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25. Energy and Climate Change Assessments as United Nations Meeting Begins

At the beginning of November 2011, the International Energy Agency (IEA) stated in its annual report, World Energy Outlook 2011, that global energy demand will rise by 40 percent by 2035 and most of that need will be met with fossil fuels. Oil demand will rise as the global passenger fleet is expected to double to 1.7 billion vehicles by 2035 and alternative vehicles, such as hybrids or electrics, will make only small penetrations into the global market. Coal-fired power plants which met about 50 percent of global demand in the first decade of the twenty first century may rise to 65 percent of demand by 2035. Natural gas is expected to rise in use and compete with coal. With regards to greenhouse gas emissions, the IEA states "cumulative CO2 emissions over the next 25 years amount to three-quarters of the total from the past 110 years, leading to a long-term average temperature rise of 3.5 degrees Celsius."

In a related study, HSBC Bank, one of the largest financial institutions in the world, completed an analysis of finances for alternative energy resources and suggests the global economy could reduce greenhouse gas emissions and stall global warming over the next few decades. Their conclusions are based on lower costs for alternative energy as demand grows and more financial institutions refuse loans to inefficient coal-fired power plants.

Both assessments directly preceded the start of the United Nations Climate Change Conference 2011 in Durban, South Africa (November 29 – December 9). Early news from the conference suggests debate about reducing greenhouse gas emissions is pitting developed countries with greater energy use and greater emissions against developing countries with less energy use and fewer emissions. In particular, many countries would like the United States to commit to greater emissions reductions, but the U.S. State Department has refused to consider possible actions including a European Union proposal unless major industrializing countries such as China and India agree to reductions. In addition, an assessment by an outside group, BankTrack, suggests commercial banks have doubled their financial support for the coal industry since 2005 when the Kyoto Treaty was adopted.

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26. National Academies and Canadian Embassy Host Discussion on IPY

On November 29, the National Academies and the Canadian Embassy hosted a discussion on the legacy of the International Polar Year (IPY) in preparation for the IPY's 2012 Conference, From Knowledge to Action, in Montreal, Canada. The IPY was held in 2007-2008 and involved 60 countries that contributed over \$1 billion, making it the largest international science collaboration since the International Geophysical Year in 1957. The Polar Research Board of the National Academies acts as the U.S. National Committee for the IPY and is working on a report, "The Legacies and Lessons of the International Polar Year 2007-2008," that will highlight the outcomes of the IPY, integrate the lessons learned from different disciplines, and record America's IPY

activities.

Julie Brigham-Grette and David Holland described the success of the polar educational program, Polar Palooza, funded in part by the National Science Foundation. The program, held in conjunction with the IPY, traveled around the country educating students and the general public by interactive lectures with props, videos, and demonstrations of polar research.

The American Geosciences Institute maintains the Cold Regions Bibliography Project which contributes to the collaborative International Polar Year Publications Database.

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27. Kentucky Unveils Most Detailed State Geologic Map Series in United States

Through a partnership with the U.S. Geological Survey's National Cooperative Geologic Mapping Program, the Kentucky Geological Survey has published all 26 geologic maps in its series in a 30 by 60 minute scale. The Kentucky Geological Survey will make these maps freely available to the public online, with an application for electronic devices, and through printed hard copies.

Geologic maps can show surface and subsurface rock types, formations, and structures and are a tremendous economic and recreational contribution to society. Information provided by geologic maps assists in the production of resources, protection of groundwater and the environment, stability of foundations and infrastructure, and avoidance of hazards. The Kentucky Geological Survey has found that its geologic maps value at \$2.25 - \$3.35 billion in 1999 U.S. dollars.

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28. MIT Graduate Student Group Organizes Letter to Supercommittee

In an effort to convince the Joint Select Committee on Deficit Reduction (the "supercommittee") of the value of science funding, a group of graduate students from Massachusetts Institute of Technology (MIT) organized a campaign to attract graduate student signatures to support federal funding for science. The campaign, titled "Stand with Science: A Call to Action to America's Science and Engineering Graduates," produced a YouTube video and collected over 8,000 signatures to its letter that outlines the value of federal support for science to the economy.

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29. Education Report Shows Physical Science Students Are Hard Workers

In a study conducted at about 700 colleges and universities in the United States, the National Survey of Student Engagement found that on average, full time college students study 15 hours per week. The study, titled "Fostering Student Engagement Campuswide," grouped majors into seven academic disciplines and found that seniors majoring in engineering spend more hours per week on average than other students. The study found physical science seniors to spend the second most amount of time studying per week followed in order by biological sciences, arts and humanities, education, social sciences, and business. In the report, 42 percent of seniors majoring in engineering reported that they spend at least 20 hours studying per week. Interestingly, the trend in disciplines reversed when students were asked to estimate the hours per week spent at a paying job. Seniors majoring in economics spend an average of 16 hours per week at a paying job while seniors majoring in engineering only spend an average of 9 hours per week.

The survey asked students questions about studying habits and found that 88 percent of first-year students and 86 percent of seniors take notes in class but less than two thirds review them later. Only 70 percent of those surveyed said that they ask for help when they do not understand the course material. The report is issued annually.

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30. U.S. Has Lowest Percentage of STEM Graduates Among G-8 Countries

A recent report written by the National Center for Education Studies (NCES) titled "Comparative Indicators of Education in the United States and Other G-8 Countries: 2011" shows that the United States graduated the lowest percentage of science, engineering, and mathematics (STEM) university students across the Group of Eight countries (G-8) in 2011. The G-8 countries include the U.S., the United Kingdom, Canada, France, Italy, Germany, Japan, and the Russian Federation. According to NCES, only 15 percent of university graduates in the U.S. studied in STEM fields, while Germany took the lead with 29 percent STEM graduates. The report shows a significant gap between the U.S. and the next-lowest percentile: Canada and Italy outdid the U.S. with 22 percent STEM graduates.

This report describes key education outcomes and contexts of education in the G-8 countries and is organized into five topical areas: population and school enrollment, academic performance, contexts for learning, expenditures for education, and educational attainment and income. Results are drawn from the Organization for Economic Cooperation and Development's (OECD) ongoing Indicators of Education Systems program, as well as the Program for International Student Assessment.

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31. AGU Accepting Applications for Spring 2012 Policy Internship

The American Geophysical Union (AGU) Public Affairs department is accepting applications for a spring internship. This is an opportunity for undergraduates, graduate students, and recent grads to learn more about the intersection of public policy and Earth and space science. The Public Affairs intern will work closely with the Public Affairs and Outreach staff. This internship provides an opportunity to learn about the public policy process first-hand and to gain knowledge about Earth and space science policy issues. Applications will be reviewed on a rolling basis and the anticipated start date is February 1, 2012.

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32. Key Reports and Publications

*****Government Accountability Office (GAO)*****

Nuclear Fuel Cycle Options: DOE Needs to Enhance Planning for Technology Assessment and Collaboration with Industry and Other Countries

Due to growing concerns for radioactive spent fuel from nuclear reactors, the Government Accountability Office (GAO) reviewed the Department of Energy's (DOE) research and development (R&D) plan for selecting nuclear fuel cycle technologies, and efforts to reduce proliferation and terrorism risks. GAO also evaluated select countries' experiences with reprocessing and recycling spent fuel. GAO recommended that DOE incorporate into its R&D plan the current readiness levels of fuel cycle technologies, the estimated time required to develop them, a strategy for long term collaboration with the nuclear industry, and a specification of its international efforts.

Environmental Protection Agency: Actions Needed to Improve Planning, Coordination, and Leadership of EPA Laboratories

Representative Brad Miller (D-NC) requested that the Government Accountability Office (GAO) examine the Environmental Protection Agency's (EPA) internal scientific processes and make recommendations for improvement. According to the GAO report released in the summer of 2011, EPA independently runs thirty-seven regional laboratories but does not collaborate between facilities or across program boundaries. The report also noted that EPA lacks a top science official, property management of its labs, and a comprehensive workload analysis.

Climate Change Adaptation: Federal Efforts to Provide Information Could Help Government Decision Making

Because climate adaptation has become extremely important due to lingering effects of greenhouse gases in the atmosphere, the Government Accountability Office (GAO) addressed in this report the data challenges that federal, state, and local agencies face during adaptation efforts, actions federal agencies can take to address these obstacles, and federal climate change strategic planning efforts. The report found that federal officials do not have a shared understanding of strategic government-wide priorities for climate adaptation policies and strongly recommended the development of a strategic plan.

*****National Academy of Sciences (NAS)*****

Sharing the Adventure with the Public--The Value of Excitement: Summary of a Workshop

The National Research Council's Space Studies Board held a public workshop on how the National Aeronautics and Space Administration (NASA) and its related science communities communicate major NASA activities and programs to the public. The event was organized around five "Grand Questions" in space science exploration, and the discussion from the event is detailed in this report.

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33. Key Federal Register Notices

DOE – The Nuclear Energy Advisory Committee is holding a general open meeting on December 13, 2011 in Washington D.C. [Wednesday, November 2, 2011 (Volume 76, Number 212)]

OSTP – The Office of Science, Technology and Policy (OSTP) has submitted two Requests for Information regarding the preservation of widespread public access to digital data and unclassified federally-funded scientific publications. The public input provided through this notice will inform deliberations of the National Science and Technology Council's Interagency Working Group on Digital Data. Comments will be accepted until January 12, 2012. [Friday, November 4, 2011 (Volume 76, Number 214)]

NSF – The Interagency Ocean Observation Committee (IOOC) has announced a 60-day public comment period for non-federal asset certification criteria to establish eligibility for non-federal assets to be integrated into the U.S. Integrated Ocean Observation System (IOOS) and to ensure compliance with all applicable standards and protocols. Comments will be accepted until January 6, 2012. [Monday, November 7, 2011 (Volume 76, Number 215)]

DHS – The Federal Emergency Response Agency announces the availability of the final National Disaster Recovery Framework.

[Wednesday, November 9, 2011 (Volume 76, Number 217)]

DOE – The Energy Information Administration is soliciting comments on the proposed 3-year extension of EIA Form EIA-914 Monthly Natural Gas Production Report. Comments should be submitted by January 9, 2012. [Thursday, November 10, 2011 (Volume 76, Number 218)]

DOI – The Bureau of Ocean Energy Management has announced the availability of the Proposed 5-Year OCS Oil and Gas Leasing Program for 2012-2017 draft and requests comments from the public by February 8, 2012. [Thursday, November 10, 2011 (Volume 76, Number 218)]

EPA – The Environmental Protection Agency Science Advisory Board (SAB) is hosting a public teleconference of the Chartered SAB on December 6, 2011. Members of the public planning to participate should read the notice for instructions. [Monday, November 14, 2011 (Volume 76, Number 219)]

NOAA – The National Oceanic and Atmospheric Administration (NOAA) announces a meeting of its Integrated Ocean Observing System's Data Management and Communications Steering Team. The meeting will be held on January 18-19 in Washington, D.C. [Thursday, November 17, 2011 (Volume 76, Number 222)]

NRC – The Nuclear Regulatory Commission's Advisory Committee on Reactor Safeguards is holding a meeting of its Subcommittee on Reliability and Probabilistic Risk Assessment on December 14 in Rockville, Maryland. [Friday, November 18, 2011 (Volume 76, Number 223)]

OSTP – The White House Office of Science, Technology and Policy (OSTP) is holding a public conference call of the President's Council of Advisors on Science and Technology on December 12, 2011. The purpose of this conference call is to discuss PCAST's report on STEM education. [Tuesday, November 22, 2011 (Volume 76, Number 225)]

DOE – The Department of Energy is renewing the National Coal Council for a two-year period beginning on November 23, 2011. The Council will provide advice and recommendations to the Secretary of Energy on general policy matters relating to coal issues. [Wednesday, November 30, 2011 (Volume 76, Number 230)]

NSF – The National Science Foundation announces an open meeting of its National Science Board's Subcommittee on Facilities, Committee on Strategy and Budget on December 5, 2011 in Arlington, VA. This meeting will be held to discuss and approve COMPETES Mid-scale Instrumentation Report. [Wednesday, November 30, 2011 (Volume 76, Number 230)]

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34. Key AGI Government Affairs Updates

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Monthly Review prepared by Wilson Bonner and Linda Rowan, Staff of Government Affairs Program; Erin Camp AAPG/AGI Fall 2011 Intern.

Sources: Associated Press, AAAS, Environment and Energy Daily, Greenwire, New York Times, Washington Post, National Academies Press, Government Accountability Office, Open CRS, Thomas, House of Representatives, U.S. Senate, the White House, Department of Energy, Department of the Interior, National Aeronautics and Space Administration, Environmental Protection Agency, National Science Foundation, National Oceanic and Atmospheric Administration, Nuclear Regulatory Commission, Department of Commerce, United Nations, Department of Education, Department of Defense, Department of State, Federal Emergency Management Agency, Federal Geographic Data Committee, United Nations Educational, Scientific and Cultural Organization (UNESCO), Institute of Nuclear Power Operations, Dominion, International Energy Agency, HSBC Bank, BankTrack, Kentucky Geological Survey, National Survey of Student Engagement, National Center for Educational Studies

This monthly review goes out to members of the AGI Government Affairs Program (GAP) Advisory Committee, the leadership of AGI's member societies, and other interested geoscientists as part of a continuing effort to improve communications between GAP and the geosciences community that it serves. For additional information on specific policy issues, please visit the web site or contact us at govt@agiweb.org.

Compiled December 2, 2011.
