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Through the NSC Alliance partnership with the American Institute of Biological Sciences, we are pleased to provide NSC Alliance members with the following public policy update. With proper attribution to NSC Alliance, all material from these reports may be reproduced or forwarded. We encourage you to share this report with colleagues at your institution. Anyone interested in receiving copies of the NSC Alliance Washington Report may subscribe at www.NSCAlliance.org -- it's free!

If you have any questions or require additional information regarding any of the following items, please contact NSC Alliance director of public policy Dr. Robert Gropp at 202-628-1500 x 250 or at rgropp@aibs.org.

House Bill Would Cut NSF Funding in 2017

Legislation is moving through the House of Representatives that would reduce funding for the National Science Foundation (NSF) by \$57 million in fiscal year 2017. This 0.8 percent cut would be accomplished by slashing more than half of the funding for the Major Research Equipment and Facilities Construction account. Consequently, this spending plan would delay by a year the start of design and construction of new regional class research vessels to support ocean research.

In spite of the smaller top line number for the agency, NSF Research and Related Activities would receive \$46 million in additional funding “targeted to programs that foster innovation and U.S. economic competitiveness, including funding for research on advanced manufacturing, physics, mathematics, cybersecurity, neuroscience and STEM education,” according to a committee press release.

The phrase “targeted” increases raises red flags for some, as 2016 appropriations contained restrictions on funding for social science and geoscience research at NSF. It is unknown if the 2017 bill contains similar policies; the committee has not yet released its report on the draft bill, where such directives would be spelled out.

Funding for Education and Human Resources at NSF would remain at the 2016 level of \$880 million.

The Commerce, Justice, Science, and Related Agencies Subcommittee approved the draft bill on May 18, 2016.

Nominations Sought for Collections Research Uses Working Group

The Biodiversity Collections Network is seeking nominations/applications for members of a new working group on next generation research uses of digitized collections. The group will consider the opportunities, needs, and limitations to next generation research uses of digitized specimens and their associated data. Learn more and apply to participate at <https://bcon.aibs.org/working-groups/bcon-next-generation-research-working-group/>.

Predicting Phenotype: An NSF ‘Big Idea’

The National Science Foundation (NSF) wants to better understand the “rules of life” that govern phenotypes. According to a new plan from NSF on the future of fundamental research, “the universally recognized biggest gap in our biological knowledge is our inability to predict the phenotype of a cell or organism from what we know about the genome and environment.”

The ‘big ideas’ document outlines several questions to pursue in this area:

- 1) How can computational modeling and informatics methods enable data integration for the purpose of analysis and prediction of complex living systems?
- 2) Variation in traits expressed by organisms is a feature of all life; what are the genetic, epigenetic and environmental factors that explain its magnitude and occurrence?
- 3) How to predict the behavior of living systems, from single molecules to whole cells, whole organisms, and whole ecosystems? To what degree do group interactions and behavior affect phenotypic expression?
- 4) To what degree is an organism’s phenotype a result of the microorganisms that live in symbiosis with it? To what degree is the production of a phenotype a ‘joint effort’ among genomes of different organisms?
- 5) Can we synthesize cells and organisms based on knowledge of genome sequence and physical features of other basic molecules?

Phenotypic emergence was one of six areas of groundbreaking research NSF would like to support. Other areas include quantum mechanics and its practical applications, the effects of climate change on the Arctic, and learning more about our universe through novel multi-method analyses in astrophysics.

The plan includes a focus on multi-discipline and convergent research, as well as greater support for mid-scale projects that currently fall in between usual funding pathways. In addition, a new NSF 2050: Integrative Foundational Fund would identify and develop long-term, foundational research opportunities that are not tied to yearly budget cycles.

The research roadmap has the approval of the National Science Board, but would require the support of future administrations, Congress, or the private sector to be properly funded.

More details about each of the nine big ideas can be found at <http://www.sciencemag.org/sites/default/files/documents/Big%20Ideas%20compiled.pdf>.

Senate Committee Takes Up COMPETES Legislation

The Senate Commerce, Science, and Transportation Committee held a hearing on “Leveraging the United States Science and Technology Enterprise” on May 11, 2016. The committee is developing legislation to reauthorize the America COMPETES Act, which governs federal investments in basic research and science education.

“While we could hope for more resources, tough budget realities underscore the importance of developing policy solutions that maximize our federal investments so we can stay competitive, get the biggest bang for our buck, and leverage even more private sector resources to expand the reach of our R&D,” said Committee Chairman John Thune (R-SD).

Senator Gary Peters (D-MI) acknowledged the important role that scientific innovation plays in the U.S. economy, with as much as half of all economic growth over the past 50 years due to research discoveries. “But today the picture is troubling. The United States is quickly losing ground in the global market place. We are spending less on science, research, and education while our competitors are spending more.”

Peters and Senator Cory Gardner (R-CO) co-led the effort to collect input from the scientific and business community about the needs of the U.S. innovation ecosystem. That effort is anticipated to result in legislation to further America’s scientific and economic competitiveness.

“The funding issues are critically important,” said Senator Gardner. “We have to recognize the U.S.’ leadership role in funding. We are doing it better than any other nation in the world, but we can always do a better job. And that is what this effort is about—how we can make sure we can continue competing as a leader, not a follower.”

When questioned by Senator Peters, witness Dr. Jeannette Wing, corporate vice president for research at Microsoft, described the central role of the federal government in supporting basic research. “The company’s mission is to typically to make money for their shareholders and it’s not about doing basic research and certainly it’s not about funding academia. So the federal government has a unique role in this research ecosystem, which is really to fund the basic research, that then leads to new technologies, that can then can become new innovations that either turn into start-ups or that go into industry.”

Senator Edward Markey (D-MA) raised the issue of political interference in science. He asked witnesses whether research should be “micromanaged” by policymakers. The answer was a

resounding “no” for several members of the witness panel, who stated their support for scientific experts to set the direction of investments in research.

NAGPRA Public Forum

The Native American Graves Protection and Repatriation Act Review Committee will hold a public forum in conjunction with their upcoming committee meeting. The forum will include panel discussions and an open networking session for NAGPRA practitioners. The forum will be held at the Holiday Inn Missoula Downtown on July 12 from 8:30 am to 3:30 pm. Register at https://docs.google.com/a/aibs.org/forms/d/1OWVVMWDA3lhDRpZVOQ8gLZfpXwGwHl9gUwYRdGz_law/viewform?c=0&w=1.

Oklahoma Museum Recognized by Governor Fallin

NSC Alliance member Sam Noble Oklahoma Museum of Natural History was presented with a proclamation by Governor Mary Fallin declaring May 2016 as “Sam Noble Oklahoma Museum of Natural History Month” in the state of Oklahoma. The proclamation recognizes the important work of the museum “to serve the people of Oklahoma through natural science expertise, collections preservation, research, education, public programs in Native American language preservation, research on Native American heritage and history, and experiencing science through ExplorOlogy and other programs.”

America's New National Mammal

On May 9, 2016, the American bison officially became the national mammal of the United States. This was the result of a multiyear effort led by a coalition of wildlife conservation groups, ranchers, and Native American tribes that ultimately garnered the support of Congress. The legislation was led by Senators John Hoeven (R-ND) and Martin Heinrich (D-NM) and Representatives William Lacy Clay (D-MO), Jeff Fortenberry (R-NE), Kristi Noem (R-SD), and Jose Serrano (D-NY).

Bison join bald eagles as an official animal of the nation. In addition, the U.S. has an official flower (the rose) and tree (the oak).

Call for Science Media Entries

Do you have a great science media project? Enter your film, podcast, or virtual reality project in the Science Media Awards, which celebrates innovation and excellence in science media storytelling. There has never been a more dynamic time in scientific discovery and innovation and the need for communicating science to public audiences and policy-makers has never been more important. Winning and finalist films will be celebrated at a Harvard Art Museum gala

on Sept. 21, 2016. Submissions are due by June 1, 2016. Enter at <http://www.sciencemediasummit.org/media-awards.html>.

The Natural Science Collections Alliance is a Washington, D.C.-based nonprofit association that serves as an advocate for natural science collections, the institutions that preserve them, and the research and education that extend from them for the benefit of science, society, and stewardship of the environment. NSC Alliance members are part of an international community of museums, botanical gardens, herbariums, universities, and other institutions that house natural science collections and utilize them in research, exhibitions, academic and informal science education, and outreach activities. Website: www.NSCAlliance.org.

The NSC Alliance Washington Report is a publication of the NSC Alliance. For information about membership in the NSC Alliance, please contact spotter@aibs.org.