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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 <http://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.

President Trump Proposes Large Budget Cuts for Science

The White House released the President's Budget Request for fiscal year (FY) 2020 on March 11, 2019, proposing deep cuts to science funding for the third consecutive year. The proposal calls for significant cuts to many federal science agencies, including the National Science Foundation (NSF), the National Institutes of Health (NIH), the U.S. Geological Survey (USGS), and the Smithsonian Institution.

The \$4.7 trillion FY 2020 budget framework includes \$1.3 trillion in discretionary spending, of which \$543 billion (-5 percent) is for nondefense discretionary spending. Defense spending would receive a 5 percent boost to \$750 billion. According to *Science Insider*, overall federal R&D funding would decrease by 11 percent.

According to the White House Office of Management and Budget (OMB) Acting Director Russ Vought, the proposal "embodies fiscal responsibility, and takes aim at Washington's waste, fraud, and abuse." The Administration's key funding priorities include "addressing wasteful Washington spending, strengthening our southern border, promoting a healthy American economy, and maintaining a strong national defense."

Some key budget items related to science include:

- NSF would receive \$7.1 billion in FY 2020, a 12.5 percent cut from the FY 2019 level enacted by Congress.
- The Smithsonian Institution would receive a 6.2 percent budget cut, with the Salaries and Expenses account receiving a boost of \$19.3 million.
- The Institute of Museum and Library Services has been proposed for termination for the third year in a row. The budget request would provide \$23 million for its “orderly closure.”
- The National Oceanic and Atmospheric Administration (NOAA) would get \$4.5 billion (-17 percent), with funding for “lower priority” NOAA grant and education programs, including the Sea Grant, Coastal Zone Management Grants, and the Pacific Coastal Salmon Recovery Fund, zeroed out.
- A \$12.6 billion (-14 percent) budget is proposed for the Department of the Interior. The National Park Service would receive \$2.7 billion (-15 percent), with \$321.6 million (-4 percent) targeted to natural and cultural resource stewardship. The Bureau of Land Management would be trimmed by 11 percent to \$1.2 billion, and the U.S. Fish and Wildlife Service would receive \$1.3 billion (-16 percent). The Administration requested \$983.5 million for USGS, more than 16 percent below FY 2019. Under the request, 7 of the agency’s mission areas will be realigned into 5 mission areas. Under the new structure, the new Ecosystems mission area would receive a nearly 35 percent budget cut. The proposal would also terminate the Biological Survey Unit and Cooperative Research Units and reduce funding for climate research.
- NIH’s budget would be slashed by 13 percent to \$34.4 billion.
- The National Institute of Standards and Technology (NIST) would receive only \$688 million, a 30 percent cut, in FY 2020.
- The Environmental Protection Agency (EPA) would see its budget slashed by nearly 31 percent to \$6.1 billion. Scientific research at EPA would be reduced by 35 percent.
- Agricultural research is also slated for large cuts. Funding for the Agricultural Research Service within the U.S. Department of Agriculture (USDA) would be slashed by 26 percent. The National Institute of Food and Agriculture (NIFA) would lose 5 percent. On the upside, the Agriculture and Food Research Initiative (AFRI) would receive an infusion of 20 percent to \$500 million.

The FY 2020 budget proposal has already largely been dismissed by lawmakers on both sides of the aisle and is unlikely to pass as proposed. However, science policy experts warn that given the myriad proposed cuts and realignments, science advocates must offer a spirited and persistent campaign to secure funding.

Describing the President’s budget, House Appropriations Committee Chairwoman Nita Lowey (D-NY) said, “President Trump has somehow managed to produce a budget request even more untethered from reality than his past two.” She added, “With such misguided priorities, the Trump budget has no chance of garnering the necessary bipartisan support to become law. I am committed to working with my colleagues, both Democrats and Republicans, to write appropriations bills that responsibly fund the government.”

House Interior-EPA Appropriations Subcommittee Chairwoman Betty McCollum (D-MN), called the budget “dead on arrival.” Republican Appropriator Senator Susan Collins (R-ME) said, “In all the years that I've been here, there's never been a president's budget that has passed as submitted, and I don't think this will be any different.”

NSF to Receive a Budget Cut of \$1 Billion Under President’s Proposal

The President has proposed a \$7.1 billion budget for the National Science Foundation (NSF) in fiscal year (FY) 2020, 12.5 percent below the levels enacted by Congress for FY 2019.

The plan states that NSF would accelerate its progress on its “10 Big Ideas for Future Investments,” allocating support to high-priority areas that integrate science and engineering fields and create partnership opportunities with industry, private foundations, other federal agencies, and the education sector. The agency would provide \$30 million to each of the six research-focused Big Ideas, that include Understanding the Rules of Life (URoL) - Predicting Phenotype; Navigating the New Arctic (NNA); The Future of Work at the Human Technology Frontier (FW-HTF); and Harnessing the Data Revolution (HDR), among others, for a total of \$180 million.

Research at NSF would receive a 13 percent cut. All the research directorates across the agency would receive decreased funding compared to FY 2018: Biological Sciences Directorate (BIO) would receive \$683.4 million (-9.7 percent); Geosciences would get \$787 million (-13.3 percent); Office of Polar Programs would receive \$403.4 million (-20 percent), and Integrative Activities would get \$491 million (+4.2 percent).

Overall, the BIO directorate is slated for a 9.7 percent cut compared to FY 2018. NSF's request would provide \$683.4 million in spending for BIO, which provides 69 percent of federal funding for fundamental non-medical biological research at academic institutions. Within the request for BIO, funding would be allocated to the five divisions as follows (relative to FY 2018 levels):

- Molecular and Cellular Biosciences: \$125.8 million (-12.1 percent)
- Integrative Organismal Systems: \$169 million (-12.1 percent)
- Environmental Biology: \$141.7 million (-8.6 percent)
- Biological Infrastructure: \$163.2 million (-10 percent)
- Emerging Frontiers: \$83.8 million (-1.5 percent)

Major Investments for BIO in FY 2020 include stewardship for Understanding the Rules of Life (URoL), Advanced Manufacturing, Artificial Intelligence, Quantum Information Sciences (QIS), and Understanding the Brain (UtB), which includes the BRAIN initiative. URoL would continue to emphasize research on how complex traits of organisms emerge from the interaction of its genetic makeup with the environment. BIO would support Advanced Manufacturing in collaboration with the Directorate for Engineering, by supporting advances in synthetic biology. BIO would also support investments in Artificial Intelligence through the Division of Biological Infrastructure by applying machine learning and genetic algorithms in biological research to solve problems such as genome sequence alignment and prediction of protein structure. BIO

would increase funding for QIS through investments in fundamental research in biophysics to understand quantum phenomena within living systems.

National Ecological Observatory Network (NEON) would receive \$62.6 million in FY 2020, a decrease of almost 8 percent from FY 2018, with their operations and maintenance funding included in the budget for the Division of Biological Infrastructure. Workforce development programs within BIO would receive decreased support. Support for CAREER grants to support young investigators who excel as educators would decrease by 9.8 percent relative to FY 2018.

The Education and Human Resources (EHR) Directorate would receive a 9.5 percent budget cut. Within EHR, the Division of Graduate Education and the Division of Undergraduate Education are slated for budget cuts. NSF's investments in the STEM workforce would be cut by 15 percent compared to FY 2018 to \$393 million. Support for Major Research Equipment and Facilities Construction (MREFC) would be decreased by 24.5 percent as a result of completion of the construction of the National Ecological Observatory Network (NEON), the Daniel K. Inouye Solar Telescope, and three Regional Class Research Vessels, which provide scientific infrastructure to enable better understanding of the impacts of storms, natural resource identification and extraction, and fisheries and aquaculture.

Support for Agency Operations and Award Management would receive a 2.2 percent boost. Office of the National Science Board would receive a 6 percent budget cut and the Office of the Inspector General would receive flat funding.

Funding for NSF's cross-disciplinary initiatives would remain flat or decline in FY 2020. Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS), which supports research on the natural, social, and human-built factors involved in these interconnected systems, would receive \$15 million, a 55 percent decrease from FY 2018. The NSF Innovation Corps, which improves researchers' access to resources that help transfer knowledge to downstream technological applications, would receive \$33 million (+0.5 percent). Understanding the Brain (UtB), which improves scientific understanding of the complexity and function of the brain, would receive \$123.4 million in FY 2020, 22 percent below FY 2018.

Cross-cutting programs would receive funding cuts all across the board. The Long-Term Ecological Research (LTER) network would receive \$28.4 million, 3.5 percent below FY 2018. The Research Experiences for Undergraduates program would be slashed by 12.7 percent compared to FY 2018. Graduate Research Fellowships would be cut by 10 percent compared to FY 2018 to \$257 million and support for NSF's Research Traineeship program would be decreased by 8 percent below FY 2018 to \$49.5 million. Support for Faculty early career development programs would also be cut by 13.2 percent compared to FY 2018.

USGS Slated for Restructuring, 16 Percent Budget Cut

Under President Trump's budget plan for fiscal year (FY) 2020, the United States Geological Survey (USGS) would be funded at \$983.5 million, a 17 percent cut from the FY 2019 level.

The budget proposes to consolidate the agency's seven mission areas into five new mission areas to reflect "stakeholder-focused realignment of program priorities." The five new mission areas would be: Ecosystems, Energy and Mineral Resources, Natural Hazards, Water Resources, and Core Science Systems. Programs formerly under the Environmental Health area would be moved into the Ecosystems and Water Resources areas and programs formerly under Land Resources would be transferred to Ecosystems and Core Science Systems.

Under the new structure, the Ecosystems mission area would receive \$141 million in FY 2020, 35 percent below FY 2019 enacted levels. The plan restructures the Ecosystems account to include programs formerly under Land Resources and Environmental Health mission areas, specifically the National and Regional Climate Adaptation Science Centers, significant portions of Land Change Science, and Contaminant Biology.

Other mission areas are also slated for budget cuts. Water Resources would be slashed by nearly 22 percent; Natural Hazards would be reduced by nearly 13 percent; Core Science Systems faces an 8.6 percent cut; and Energy and Mineral Resources would receive a 3.3 percent cut. The Science Support and Facilities accounts at USGS would remain essentially flat at \$102.9 million and \$121.3 million.

The plan proposes reductions for several research programs, including species-specific research, research on toxicological and pathogenic diseases, White-nose syndrome, the Whooping Crane restoration program, habitat research, biological carbon sequestration, and research on the Everglades, Chesapeake Bay, and Arctic ecosystems.

Funding for Museum collections, which supports the Biological Survey Unit (BSU), a group of USGS scientists stationed at the Smithsonian Institution's National Museum of Natural History, would also be zeroed out under the proposal. Established in 1885, the BSU maintains an extensive collection of bird, reptile, and mammal specimens.

Drastic cuts have been proposed to climate research. The National and Regional Climate Adaptation Science Centers, responsible for developing the science and tools to address the effects of climate change on land, water, wildlife, fish, ecosystems, and communities, have been slated for a 46 percent budget cut.

The request once again proposed the elimination of the Cooperative Research Units (CRUs), which are located on 40 university campuses in 38 states. The CRUs allow USGS to leverage research and technical expertise affiliated with these universities to conduct research, provide technical assistance, and develop scientific workforces through graduate education and mentoring programs. Congress has rejected the Administration's repeated attempts to shutter this program in the past and provided CRUs with a \$1 million increase in FY 2019.

President Proposes to Cut Smithsonian by 6 Percent in FY 2020

The Administration has requested a \$978 million (-\$64.7 million) budget for the Smithsonian Institution in FY 2020.

Federal support for the Smithsonian Institution would decrease by 6.2 percent overall. The decrease in support is accounted by the fact that in 2019, Congress allocated additional funds for the renovation of the National Air and Space Museum that are not requested in FY 2020. Smithsonian is also funded by private donations and a trust fund.

Facilities capital account would receive \$219 million, including \$118.4 million for the National Air and Space Museum; \$27.5 million for the National Zoo's ongoing infrastructure work; \$9.7 million for the Hirshhorn Museum and Sculpture Garden; and \$17 million for the future renovation of the Smithsonian Institution Building.

The Salaries and Expenses account request is \$759.3 million for FY 2020, an increase of \$19.4 million from FY 2019. The increases are allocated to fixed-cost increases in rents, utilities and communications (+\$4 million), security (+\$5 million), and overall maintenance of museums and the National Zoo (+\$5 million).

Other budget details for the Smithsonian Institution, including those for the National Museum of Natural History, are still emerging.

NSC Alliance Urges Congress to Support Funding for Federal Collections

The NSC Alliance provided testimony to the House Appropriations Committees regarding fiscal year (FY) 2020 funding for certain programs that curate natural history collections within the Department of the Interior and Smithsonian Institution.

“Scientific collections, and the collections professionals and scientists who make, care for, and study these resources, are a vital component of our nation’s research infrastructure. Whether held at a museum, government managed laboratory or archive, or in a university science department, these scientific resources consist of data (for example, genetic, tissue, organism, and environmental) that are a unique and irreplaceable foundation from which scientists are studying and explaining past and present life on earth. Research results improve human health, enhance food security, and provide monitoring for responses to environmental change and species conservation.”

The NSC Alliance called for new investments within the Department of the Interior and the Smithsonian Institution’s National Museum of Natural History.

[Read NSCA’s FY 2020 Interior testimony.](#)

NSF Announces First Convergence Accelerator Pilot

The National Science Foundation (NSF) released a Dear Colleague Letter (DCL) on March 15, 2019 for its first, pilot Convergence Accelerator (C-Accel) activity. The pilot program intends to

fund 50 Phase 1 projects (up to 9 months) at up to \$1 million each. In 2020, Phase 1 projects will be eligible to apply for Phase 2 C-Accel funding, for up to \$5 million.

The NSF C-Accel pilot seeks to transform how NSF supports innovative science and engineering to accelerate convergence research in areas of national importance by facilitating convergent team-building capacity around high-risk proposals. The initiative reflects NSF's commitment to invest in fundamental research while encouraging rapid advances through partnerships between academic and non-academic stakeholders. It will begin with three convergence tracks that align with two of NSF's 10 Big Ideas: Harnessing the Data Revolution for 21st-Century Science and Engineering and the Future of Work at the Human-Technology Frontier. The three tracks are:

- An Open Knowledge Network (as part of Harnessing the Data Revolution)
- AI and Future Jobs (as part of Future of Work)
- A National Talent Ecosystem (as part of Future of Work)

The [DCL](#) provides more detailed information about participating in the pilot Convergence Accelerator initiative. The first step in participation, submission of a Research Concept Outline, is due April 15, with full proposals due by June 3.

A webinar to answer questions about the submission process will be held on April 3 at 2:00 pm Eastern Time. Details to join the webinar are below.

Event URL:

<https://nsf2.webex.com/nsf2/onstage/g.php?MTID=e04d3fd93478e4f349d47b0dc6db31fb0>

Meeting ID/Event number: 902 798 511

Event Password: Ca2019!

Audio Conference:

To receive a call back, provide your phone number when you join the event, or call the number below and enter the access code.

USA Toll: +1-510-210-8882

Access code: 902 798 511

New Article on Evolution of Natural History Collections

The journal *BioScience* has published a new Feature article on natural history collections in its March issue, titled, "The Evolution of Natural History Collections: New research tools move specimens, data to center stage."

The article discusses the traditional contributions of collections to taxonomic studies and public education, the role of digitization and natural history databases in making discoveries, and the future of natural history collections in addressing national challenges.

Read the article here: <https://academic.oup.com/bioscience/article/69/3/163/5304486>

Invite: BCoN Report Release in Washington, DC

The Biodiversity Collections Network (BCoN) will release its new report, *Extending U.S. Biodiversity Collections to Promote Research and Education*, at 9:00 AM eastern time on April 4, 2019, at the National Press Club in Washington, DC.

You are invited to this event to learn more about this important report and what it means for science and society. The report is the outcome of a series of workshops and stakeholder conversations that BCoN has held over the past four years. Scientists familiar with the report have expressed enthusiasm for its recommendations.

This event is free and open to the public. Space is limited. Individuals confirmed to attend this briefing will be notified by e-mail by April 3, 2019.

Location: National Press Club, 529 14th St NW, Washington, DC 20045

Time: 9:00 – 10:00 AM

Date: April 4, 2019

Briefing participants include:

- Dr. John Bates, The Field Museum of Natural History
- Mr. Andrew Bentley, Biodiversity Institute at the University of Kansas
- Dr. Linda Ford, Harvard Museum of Comparative Zoology
- Dr. Robert Gropp, American Institute of Biological Sciences
- Mr. David Jennings, iDigBio
- Dr. Anna Monfils, Central Michigan University
- Dr. Barbara Thiers, New York Botanical Garden
- Dr. Jennifer Zaspel, Milwaukee Public Museum

Registration is required. Sign up here to attend or to receive a copy of the report:

https://www.aibs.org/events/registration_for_biodiversity_collections_network_report_release.html

Register Now: Digital Data in Biodiversity Research Conference

The Yale Peabody Museum in collaboration with iDigBio, NSC Alliance, and the Ecological Society of America has announced that registration is open for the 3rd annual Digital Data in Biodiversity Research conference, to be held on June 10-12, 2019 at Yale University, New Haven, CT.

Register here: <https://www.eventbrite.com/e/3rd-annual-digital-data-conference-methods-protocols-and-analytical-tools-for-specimen-based-tickets-54760252389>.

The deadline for submitting abstracts for an oral or poster presentation is April 30, 2019. The deadline for general registration is May 17, 2019. You will receive an abstract link in your registration confirmation letter.

The conference wiki, which includes the agenda (subject to updating), is under construction but available at:

https://www.idigbio.org/wiki/index.php/3rd_Annual_Digital_Data_Conference_Yale.

More conference info (including a list of keynote and plenary speakers) is available at:

<https://www.idigbio.org/content/save-date-methods-protocols-and-analytical-tools-specimen-based-research-biological-sciences>.

For further information or to ensure that you are on the conference email list, please contact Jill Goodwin (jvgoodwin@fsu.edu) or Gil Nelson (gnelson@floridmuseum.ufl.edu) at iDigBio.

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 dbosnjak@aibs.org.