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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.

BCoN Survey: Operational Status, Economic Impacts, and Plans for Re-Opening Natural History Collections

The Biodiversity Collections Network (BCoN) is working to help the scientific and natural history collections/museum community understand how COVID-19 related economic disruptions are affecting research, education, specimen and data management and care, institutional administration, and other factors. Results of a community survey of collections professionals were shared recently. BCoN continues to track impacts to natural history collection institutions and the people who care for and use these scientific resources.

Individuals are invited to share information about their institutions operating status – plans to re-open, operational status and limitations, closures, staff furloughs and Reductions in Force, program closures or terminations, and other disruptions to institutional operations in the forms available here: https://bcon.aibs.org/2020/06/02/collections-and-covid-19-operating-status/

BCoN invites information from all types of natural history collection holding institutions, which includes natural history museums, natural science collections, arboreta and herbaria, or other facilities with natural science collections.

This information will be regularly compiled and consolidated and made available publicly on the BCoN website. The name of the individual sharing this information is not requested and will not be published.

Lawmakers Propose $100 Billion Investment in Technology at NSF

Lawmakers in both chambers of Congress have introduced legislation that would establish a new Directorate for Technology within the National Science Foundation (NSF) and authorize an additional $100 billion for the agency over 5 years.

The Endless Frontier Act (S. 3832), sponsored by Senate Minority Leader Chuck Schumer (D-NY) and co-sponsored by Senator Todd Young (R-IN), aims to ensure American leadership in innovation. "For over 70 years, the United States has been the unequivocal global leader in scientific and technological innovation, and as a result the people of the United States have benefitted through good-paying jobs, economic prosperity, and a higher quality of life," the Senators wrote in the preface to the bill. "Today, however, this leadership position is being eroded and challenged by foreign competitors, some of whom are stealing intellectual property and trade secrets of the United States and aggressively investing in fundamental research and commercialization to dominate the key technology fields of the future."

An identical version of the legislation has been introduced in the House of Representatives by Representatives Ro Khanna (D–CA) and Mike Gallagher (R–WI).

If enacted, the legislation would rename NSF to the National Science and Technology Foundation (NSTF). The Science and Technology Directorates within NSTF would each be led by a Deputy Director reporting to the NSF Director. The additional investment of $100 billion over 5 years would support research in ten key focus areas, which would be reviewed periodically and revised if "the competitive threats to the United States have shifted." However, the bill limits the total number of key technology areas to ten.

Key technology focus areas currently listed in the legislation include:

- artificial intelligence and machine learning;
- high performance computing, semiconductors, and advanced computer hardware;
- quantum computing and information systems;
- robotics, automation, and advanced manufacturing;
- natural or anthropogenic disaster prevention;
- advanced communications technology;
- biotechnology, genomics, and synthetic biology;
- cybersecurity, data storage, and data management technologies;
- advanced energy; and
- materials science, engineering, and exploration relevant to the other key areas.

To advance its objectives, the Technology Directorate could partner with and provide funding to other federal research entities as well as other NSF Directorates pursuing basic research that

could enable advances in the key technology areas. However, the Technology Directorate would be prohibited from taking funding from other programs at NSF.

A large portion of the new funds would be directed to university-based technology centers to conduct research to advance innovation in the ten key technology areas. The bill would authorize an additional $10 billion over five years for the Commerce Department to designate 10 to 15 regional technology hubs across the country to foster innovation and create innovation sector jobs in locations "that have clear potential and relevant assets for developing a key technology focus area but have not yet become leading technology centers."

The legislation would also allocate funds for education and training activities, including new undergraduate scholarships, industry training programs, graduate fellowships and traineeships and post-doctoral support to create a workforce capable of advancing the key focus areas.

Many members of the scientific community have welcomed the proposal to infuse more research dollars into NSF. "These investments will help NSF catalyze innovation, support scientific leadership, and keep America globally competitive," stated Mary Sue Coleman, President of the Association of American Universities, according to *Science Insider*. Others have expressed concerns, including former NSF Director Dr. Arden Bement: "I believe it would be a mistake for a technology directorate at NSF to serve as an offset to private funding for commercial innovation and entrepreneurship...Federal funding for applied technology research and development should be need-based and channeled through mission agencies."

Senate Passes Major Public Lands Package

On June 17, 2020, the Senate voted 73-25 to pass the Great American Outdoors Act (S. 3422), which would fully reauthorize the Land and Water Conservation Fund (LWCF) and fund deferred maintenance projects on federal lands.

The bill was introduced by a bipartisan coalition of Senators led by Senator Cory Gardner (R-CO). If enacted, the legislation would fully and permanently fund the LWCF with $900 million annually. LWCF was created in 1964 to use revenues from offshore oil and gas to support the conservation of land and water resources. The legislation would also establish a five-year trust fund, called the National Parks and Public Land Legacy Restoration Fund, to support some of the $20 billion backlog of deferred maintenance projects at national parks and public lands across the country.

"Permanent LWCF funding will help improve access to public lands, including providing important access for hunting and fishing opportunities, and will ensure the program remains an important contributor to a strong and growing outdoor recreation economy that will benefit state and local economies throughout our nation," said Senator Joe Manchin (D-WV), a cosponsor of the package.

The bill will now be considered in the House of Representatives, where it is expected to pass. However, due to other competing legislative priorities it is currently unclear when the legislation

might move to the floor. "It's a little premature to talk about exact timing given the enormity of the issues our country is facing right now, but I'm very optimistic we can get this done," said House Natural Resources Chairman Raúl Grijalva (D-AZ), according to *E&E News*.

Academies Report Outlines Vision for NSF Earth Sciences for the Next Decade

The Board on Earth Sciences and Resources at the National Academies of Sciences, Engineering, and Medicine (NASEM) has released a new report, *A Vision for NSF Earth Sciences 2020-2030: Earth in Time*, detailing recommendations to help the National Science Foundation (NSF) plan and support the next decade of earth science research. The report was sponsored by NSF and was synthesized by the Committee on Catalyzing Opportunities for Research in the Earth Sciences (CORES): A Decadal Survey for NSF's Division of Earth Sciences.

According to the report, NSF's Division of Earth Science (EAR) "should invest in new initiatives, partnerships, and infrastructure to answer priority research questions in the next decade." The report identifies 12 high-priority science questions that aim to advance the understanding of how the Earth impacts society, including, "How do geological processes influence biodiversity?" These questions "reflect the importance of geological time, connections between Earth's surface and interior, the co-evolution of geology and life, and the effects of human activities."

"Volcanic eruptions, climate change, changes to the global water cycle — geologic understanding of the Earth has profound implications for people all across the globe," said James A. Yoder, Dean Emeritus of Woods Hole Oceanographic Institution and Chair of the committee that authored the report. "This is an all-hands-on-deck moment for earth sciences, and our report offers EAR a guiding vision as it leads the field through the next decade of discovery."

The report recommends EAR invest in several new initiatives that "provide potentially transformative capabilities and address gaps between existing and needed infrastructure in earth sciences." The panel emphasized the importance of highly trained STEM professionals for future earth science breakthroughs and acknowledged that the field faces challenges in recruiting and retaining a workforce with data science expertise. The report suggests that EAR should fund technical staff for grantees on a long-term basis and improve its current efforts "to provide leadership, investment, and centralized guidance to improve diversity, equity, and inclusion within the earth science community."

Since all priority earth science questions identified in the report will require high-performance computing, improved modeling capabilities, and enhanced data curation and standardization, the panel recommends establishing a standing committee to advise EAR on cyber infrastructure requirements and implement a strategy to support earth science data standards across the research community. The report also urges EAR to partner with other federal agencies, NSF divisions, and international partners to advance earth sciences research.

Research Funding in House Approved Coronavirus Stimulus

The U.S. House of Representatives passed a new coronavirus relief package, The Heroes Act, on May 15, 2020. If passed by the Senate and signed by the President, this will be the fifth measure adopted by Congress to respond to the COVID-19 pandemic.

The $3 trillion stimulus package includes $1 trillion in assistance for state, local, territorial, and tribal governments; $75 billion for coronavirus testing, contact tracing, and isolation measures; emergency supplemental appropriations to federal agencies; another round of direct payments; and $200 billion for a "Heroes' fund" to provide hazard pay for essential workers.

The bill includes funds to support coronavirus-related research. The National Institutes of Health would receive $4.721 billion to "expand COVID-19-related research on the NIH campus and at academic institutions across the country and to support the shutdown and startup costs of biomedical research laboratories nationwide." $4 billion would be directed to the Office of the Director, of which $3 billion would be available for "offsetting the costs related to reductions in lab productivity resulting from the coronavirus pandemic or public health measures related to the coronavirus pandemic" and the remaining $1 billion would "support additional scientific research or the programs and platforms that support research." The National Institute of Allergies and Infectious Diseases would receive $500 million and the National Institute for Mental Health would get $200 million, "to prevent, prepare for, and respond to coronavirus."

The National Science Foundation would receive $125 million for grants to "prevent, prepare for, and respond to coronavirus." The bill allocates $1 million for a study on "the spread of COVID-19 related disinformation." NSF could also transfer up to $2.5 million of its allocation to its "Agency Operations and Award Management" account for management, administration, and oversight of the funds provided.

Other research related highlights from the relief package include:

- $40 million for the U.S. Geological Survey for biosurveillance and research related to wildlife-borne disease.
- $50 million for the Environmental Protection Agency for environmental justice grants, including those investigating "links between pollution exposure and the transmission and health outcomes of coronavirus in environmental justice communities.
- $8.4 billion for higher education institutions "to defray expenses (including lost revenue, reimbursement for expenses already incurred, technology costs associated with a transition to distance education, faculty and staff trainings, and payroll) incurred by institutions of higher education."

The bill would provide $71 million to the U.S. Fish and Wildlife Service "to support activities related to wildlife-borne disease prevention, with $50 million for grants through the State and Tribal Wildlife grant program."

The Institute of Museum and Library Services would receive $5 million to support libraries and museums with expenses associated with the pandemic, including operational support and providing technology and resources for their communities.

Republican lawmakers in the Senate have said they do not consider the House's plan a serious legislative endeavor, according to *E&E News*. Some Democratic lawmakers have indicated that the bill is only a starting point for negotiations with the Senate and White House on government measures that need to be taken to respond to the pandemic. Senate Majority Leader Mitch McConnell (R-KY) criticized the bill as a "totally unserious effort" and a "Democratic wish list." House Republicans characterized some of the research allocations as "wasteful spending."

NSF BIO Shares Impact of No-Deadline Proposal Submission Policy

In October 2017, the National Science Foundation's (NSF) Biological Sciences Directorate (BIO) had announced a no-deadline system for proposal submissions with the goal to reduce the number of rejected proposals that were later resubmitted without major changes and to encourage collaborations between scientists. On June 2, 2020, BIO shared impacts of that policy change.

Proposal data from fiscal years (FY) 2018 and 2019 were analyzed by BIO with the help of a subcommittee of the BIO Advisory Committee. The analysis provides a review of the impact of the no-deadline policy on the number of proposal submissions, funding rates, and other metrics.

According to the analysis, there was an increase in the funding rate across BIO from 21 percent in FY 2018 to 28.1 percent in FY 2019, although the number of proposals submitted decreased from 3,226 in FY 2018 to 1,965 in FY 2019.

The analysis showed no substantial impacts on the gender, race, or ethnicity of PIs or co-PIs on proposal submissions. However, there was an increase in the number of individuals who did not provide these data. A significant number of co-PIs also did not report the year of their highest degree. According to BIO, they are "actively monitoring this trend and encourage submitters to provide this information as it helps us better understand the biological sciences community and those seeking funding from BIO."

Additionally, there was "a slight shift to shorter periods between submission and funding decision in FY 2019 as compared to FY 2018." BIO acknowledges that there were possibly external circumstances that could have caused this, including the "lapse in appropriations" during that period.

NSF Extends NEON Operations and Management Competition Deadlines

In response to the uncertainties resulting from the COVID-19 pandemic, the National Science Foundation (NSF) has further extended the deadline for submission of full proposals for the competition of management and operations of the National Ecological Observatory Network (NEON) until September 2021.

"Extending the deadline is necessary to ensure a fair and equitable process, allowing all applicants to participate in activities such as NEON site visits at a time when we can better maintain the health and safety of everyone involved including NEON employees," stated Assistant Director for the Biological Sciences Directorate Joanne Tornow. "Maintaining the stability of the Observatory while we conduct a robust and open review process is a key priority for the agency. As such, Battelle Memorial Institute, the current manager of NEON operations, will continue to manage the Observatory through the extended review process, and NSF anticipates no adverse impact to operations as a result of the full proposal deadline extension."

Any questions about the extension or NEON in general may be directed to Roland Roberts, NEON Operations Program Director, at rolrober@nsf.gov.

Senate Panel Advances President's NSF Nominee

On June 3, 2020, the Senate Committee on Health, Education, Labor and Pensions approved President Trump's nominee to lead the National Science Foundation.

The White House nominated Dr. Sethuraman "Panch" Panchanathan, a computer scientist and Chief Research and Innovation officer at Arizona State University, to serve as the next NSF Director in December 2019. Dr. Panchanathan must still be confirmed by the full Senate. Dr. Kelvin Droegemeier, Director of the White House Office of Science and Technology Policy, is currently serving as Acting Director for the science agency.

USGS Announces Ecosystems Newsletter and Webinar Series

The Ecosystems Mission Area at the United States Geological Survey (USGS) has announced a new quarterly newsletter, *EcoNews*, highlighting science and activities coming out of USGS Ecosystems Science Centers and Cooperative Research Units across the country. Interested individuals can subscribe here.

Additionally, a public webinar series, *Friday's Findings*, hosted by the USGS Ecosystems Mission Area will be held the first Friday of each month at 2:00 PM Eastern time. These half hour webinars will provide an overview of a science topic within the Mission Area and an opportunity to ask questions. The next webinar, entitled "How Social Science Informs the Management of North American Waterfowl Hunting and Birdwatching," will be held on July 10, 2020.

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.

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