On Tuesday, March 22, the House Committee on Science, Space and Technology’s Subcommittee on Research and Technology held a hearing, “An Overview of the Budget Proposals for the National Science Foundation for Fiscal Year 2017.”

MEMBERS PRESENT
Committee Chairman Lamar Smith (R-TX); Subcommittee Chair Barbara Comstock (R-VA); Subcommittee Ranking Member Dan Lipinski (D-IL); Representatives John Moolenaar (R-MI); Bruce Westerman (R-AR); Elizabeth Esty (D-CT); Paul Tonko (D-NY) and Suzanne Bonamici (D-OR).

WITNESSES
- The Honorable France Córdova, Director, National Science Foundation (NSF)
- The Honorable Daniel Arvizu, Chairman, National Science Board (NSB)

OPENING STATEMENTS
Subcommittee Chairwoman Comstock opened the hearing by thanking the witnesses and began to highlight the President’s Fiscal Year (FY) 2017 Budget Request for NSF. Comstock, who has been suffering from a cold, began to cough so badly that she was unable to finish her remarks and had to yield to her ranking member.

Subcommittee Ranking Member Lipinski stated his support for the NSF and its importance in contributing to basic research, including social and behavioral sciences and computer science. He took issue with what he considers to be the Administration’s paltry request for increased NSF funding, noting the agency’s ability to translate research into new innovations and jobs, and credit its research with integrating technology into everyday life. He cited his interest in hearing from Cordova about expanding science, technology, engineering and math (STEM) learning programs. Finally, he highlighted concerns about proposals for directorate-level funding and quoted Appropriations Subcommittee on Commerce, Justice and Science Chairman John Culberson (R-TX), who said at a hearing, last week, “I think we should let NSF pick the most promising areas and give the agency the flexibility to pursue them.”

Chairman Smith asked that his opening statement be part of the record. He did note, however, that he had met with Cordova in his office before the hearing and they had “exchanged views” on some of the issues he intended to raise in his opening remarks. He remarked that he had left out one question and
asked, “How is the NSF implementing the STEM Act and prioritizing computer science in its STEM education grants?”

**WITNESS STATEMENTS**

**The Honorable France Córdova**

Córdova began her remarks by noting the most recent breakthrough in science as a result of funding basic research—the discovery of the first detectable gravitational waves. She noted the importance of NSF research to other agencies, such as the National Oceanic and Atmospheric Agency, which just mapped the spread of the Zika virus. She further noted that NSF provides primary academic support in many fields, and many award-winning scientists got their first grants through the NSF. Córdova noted the many excellent proposals go unfunded at NSF due to inadequate overall funding of the agency, and hypothesized that for many young scientists, being unable to get initial funding could affect their longevity in the field. She said that some of the $400 million in mandatory budget authority requested in the NSF budget proposal would be invested in young scientists.

**The Honorable Daniel Arvizu**

Arvizu highlighted the Agency Operation and Awards Management account (AOAM), which is the fund that manages the administrative process and provides high-quality customer service to NSF scientific, professional and administrative staff. He cited his concern that AOAM has remained under-resourced for the past five years while the workload steadily increases. He also cited what NSF refers to as an impending “silver tsunami” of retirement-aged employees leaving the agency, and voiced his concern that the pressure to move the Foundation from Arlington to Alexandria may speed up retirement for many employees. Fully funding AOAM would help ensure that staff are replaced by talented newcomers and existing staff are provided with adequate resources to fulfill their duties.

**MEMBER QUESTIONS**

Subcommittee Chairwoman Comstock asked Córdova about a $70 million budget line (a $20 million increase from FY 2016) to recruit and train the next generation of cybersecurity professionals. Specifically, she asked how many cybersecurity professionals the funding could train and how NSF would work with industry to understand cyber-workforce needs. Córdova said that with the $20 million augmentation of the program, she would work with universities to ensure a high-quality curriculum to train the future workforce. She added that because NSF funds are matched by institutional and private funds, it is difficult to discern exactly how many students would be served by the $20 million increase.

Comstock followed up with a question about STEM education. She asked, “What have we learned from previous investments in STEM… and what are the things we are finding most helpful?” She wondered if specific investments, such as targeted age groups, yielded better results. Córdova began by responding to Smith’s question from his opening remarks, noting that the STEM Act added computer science to the definition of STEM. New goals for FY 2017 include “computer science for all, which partners with the U.S. Department of Education and the private sector to ensure that all students have access to computer sciences education,” she added. In regard to what NSF is learning, she told the Committee that NSF is always engaged in evaluation, and that thus far, successes are correlated to institutional investments, hands-on learning, community participation and teacher training.

Ranking Member Lipinski noted that Arvizu mentioned the social, behavioral and economic sciences (SBE) in the context of big data in his written statement, and said he would take the opportunity to reiterate the importance of the SBE directorate at NSF. He turned to Córdova to ask about the SMART
Cities initiative to help more cities pursue technological advances. He asked her to elaborate on the initiative, and she cited energy efficiency, transportation, communications and security as specific areas of growth. She added that computing models and social sciences allow NSF to make headway on this initiative.

Lipinski went on to ask about informal STEM education funding, and said he is concerned about the proposed funding cut in that portfolio. Córdova assured Lipinski that she is committed to advancing informal STEM, and said that the program was funded at the same level as FY 2016.

Representative Moolenaar asked Córdova whether she was encouraging collaboration with the U.S. Department of Energy (DoE) on clean energy research and development, and how she could ensure there would be no duplication of funding with the DoE. She responded that NSF works very closely with DoE, and that she is very pleased to be working in an interagency relationship on this issue. She explained that NSF’s contribution to the project is through very basic research. Arvizu added that there is close coupling between the agencies, and that while DoE is focused on application, NSF is focused on innovation. Moolenaar followed up by asking how the private sector is involved, and Córdova responded that both agencies work closely with the private sector to fund engineering research centers and in other ways.

Representative Esty asked Córdova about the scalability of STEM education programs at NSF. She replied that scalability is a challenge facing STEM, particularly when it comes to reaching underserved populations. She agreed that to move the needle, the challenge really is scalability, and that as a country we are not good at scaling up. She cited a call-out for new proposals that can truly be replicated. Esty noted that she was at a “hackathon” coding event for young girls in her District two weeks ago where they were able to meet with local businesses and develop an app within one day. She stressed the need to work with younger grade-levels and populations that do not generally gain exposure to STEM.

Representative Westerman asked why the NSF had requested flat funding for brain research and where Dyslexia research has gotten since the READ Act. Córdova said that she has begun to see proposals for research on Dyslexia. She added that the brain research investments have doubled over the last few years, so NSF is taking this year to reflect on where they have come to and what needs to be done moving forward.

Representative Bonamici elaborated on Córdova’s comments about hands-on learning and engaging students, and she invited her colleagues to join the bi-partisan science, technology, engineering, arts and math (STEAM) Caucus. She went on to ask Córdova to highlight some success stories from the SBE directorate and the geosciences directorate, both of which have been under funding attack by Chairman Smith over the last few years. Córdova remarked that NSF is in support of any programming that can enhance STEM learning, including STEAM. She noted that SBE is an integral part of every cross-discipline research project at NSF. “That alone shows their importance in everything that we do.” She briefly cited an SBE project in intelligence data that aids national defense and added that she would submit other specific examples of SBE programs for the hearing record.

CONCLUSION
Comstock thanked the witnesses for their testimony and adjourned the hearing. For more information about the hearing with written testimony and an archived webcast, go here.