

United States Senate

WASHINGTON, DC 20510

April 10, 2018

The Honorable Richard Shelby
Chairman
Subcommittee on Commerce, Justice
Science, and Related Agencies
U.S. Senate Committee on Appropriations
Washington, DC 20510

The Honorable Jeanne Shaheen
Ranking Member
Subcommittee on Commerce, Justice,
Science, and Related Agencies
U.S. Senate Committee on Appropriations
Washington, DC 20510

Dear Chairman Shelby and Ranking Member Shaheen,

As the Subcommittee begins deliberations on the Fiscal Year (FY) 2019 Commerce, Justice, Science, and Related Agencies Appropriations Legislation, we write to respectfully request that the National Science Foundation (NSF) receive at least \$8.45 billion in FY 2019 funding.

NSF provides a critical foundation for our nation's scientific and engineering ecosystem, generating transformative discoveries, catalyzing innovation and new technologies to drive economic development, improving education, and preparing the 21st century STEM workforce. NSF-supported research has led to scientific and technological breakthroughs that have long-term domestic economic benefits and support our security, health, and national competitiveness. Agencies such as the Department of Defense and National Institutes of Health depend on the NSF-supported scientific and engineering ecosystem to fulfill their missions as they build on NSF-funded breakthroughs and leverage the workforce trained using NSF support.

Each day NSF-supported inventions make our lives better and safer. Technologies to detect chemical and biological weapons and models that have dramatically improved storm forecasting. Other breakthroughs have assisted our military through stealth camouflage, enabled better understanding and prediction of likely adversarial decisions, and helped veterans transition home through advanced trauma research. NSF discoveries have seeded whole industries such as broadband and mobile communications, robotics, and nanotechnology. These technologies have transformed our economy and lives while providing our nation with strategic advantage and protecting our warfighters.

NSF support is the bedrock of the nation's innovation ecosystem. We thank the Committee for its diligent work in the FY18 Omnibus to ensure that NSF received an increase in funding. But we believe that more can be done. When adjusted for inflation, NSF funding has dropped 4.2 percent since FY 2015 while during the same period of time other major research agencies experienced substantial increases. Further, while NSF research funding stagnates, our competitors such as China are moving forward with accelerated investments. Findings in the National Science Board's *Science and Engineering Indicators for 2018* found that China's research and development expenditures have grown more than 350 percent over the ten years between FY 2005 and FY 2015.

Increased NSF funding would greatly enhance scientific discovery and innovation. For example, if adequately funded, the Big Ideas for Future Investment have the potential to dramatically propel research and education forward while revolutionizing drug development, quantum communications, human-AI collaboration, and other areas. Increased NSF funding would also support efforts to modernize and invest in our nation's infrastructure; NSF is a critical funder of research and workforce development to ensure smarter technologies that enhance safety, security, resilience, and performance. Investments in research and technology programs funded by NSF have already advanced connected automated vehicle testbeds and safety, and have facilitated the discovery of cutting-edge technological advances in high-performance computational modeling, nanotechnologies, adaptive systems and other cross-cutting disciplines. These investments should not come at the expense of NSF's essential core research and education programs.

NSF funding helps support our nation's brightest scientists and engineers in their endeavors to address our greatest challenges. As the foundational agency supporting our innovation ecosystem, we respectfully request that the National Science Foundation receive at least \$8.45 billion for FY 2019. This level of funding is critical to ensuring our nation's health, security, and economic strength.

Thank you for your consideration of this request.

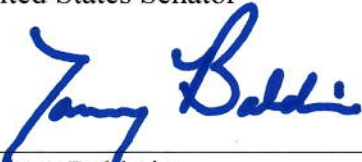
Sincerely,



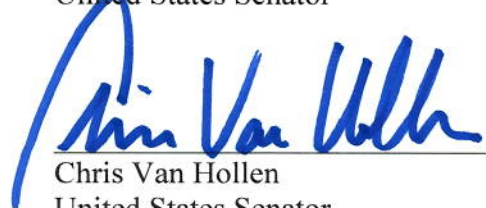
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United States Senator



Margaret Wood Hassan
United States Senator



Tammy Baldwin
United States Senator



Chris Van Hollen
United States Senator



Sherrod Brown
United States Senator



Richard Blumenthal
United States Senator



Christopher S. Murphy
United States Senator



Maria Cantwell
United States Senator



Martin Heinrich
United States Senator



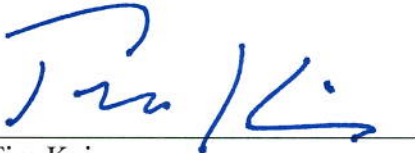
Sheldon Whitehouse
United States Senator



Debbie Stabenow
United States Senator



Richard J. Durbin
United States Senator



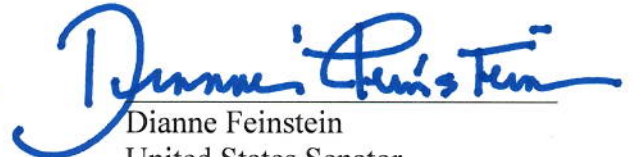
Tim Kaine
United States Senator



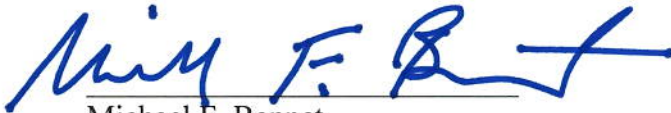
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Elizabeth Warren
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United States Senator



Jack Reed
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Bernard Sanders
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Benjamin L. Cardin
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Cory A. Booker
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