



April 23, 2019

The Honorable Jerry Moran  
Chairman  
Subcommittee on Commerce, Justice,  
Science, & Related Agencies  
Senate Committee on Appropriations  
521 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Jeanne Shaheen  
Ranking Member  
Subcommittee on Commerce, Justice,  
Science, & Related Agencies  
Senate Committee on Appropriations  
506 Hart Senate Office Building  
Washington, D.C. 20510

The Honorable Lamar Alexander  
Chairman  
Subcommittee on Energy & Water Development  
Senate Committee on Appropriations  
455 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Dianne Feinstein  
Ranking Member  
Subcommittee on Energy & Water Development  
Senate Committee on Appropriations  
331 Hart Senate Office Building  
Washington, D.C. 20510

Dear Chairman Moran, Chairman Alexander, Ranking Member Shaheen, and Ranking Member Feinstein,

On behalf of the scientific societies, companies and universities listed below, we request full support for the National Quantum Initiative (NQI) Act in the Fiscal Year 2020 appropriations bills. The NQI Act was approved with overwhelming bipartisan support and signed into law by President Trump in December 2018. This legislation establishes a coordination framework for government agencies to expand research and development of quantum information science (QIS), which is critical to both our economic and national security.

Quantum research holds tremendous promise for infrastructure management, cybersecurity, medical research and treatment, advanced communications, financial services, and transportation. Providing funding for this important research will maintain our country's role as a global leader in the field and at the same time help bridge significant workforce gaps between leading quantum researchers and industrial product developers. Moving quantum research from the laboratory to the marketplace remains both a challenge and an opportunity.

To fulfill the NQI Act's authorized levels, we are requesting \$80 million for the National Institute of Standards and Technology (NIST), \$50 million for the National Science Foundation (NSF) for the establishment of five National Quantum Initiative Centers (\$10 million per center) and \$85 million for enabling principal investigator-led quantum research, and \$100 million for the Department of Energy (DOE) for the establishment of five National Quantum Initiative Centers (\$20 million per center) and \$120 million for enabling principal investigator-led quantum research.

NSF, NIST, and DOE are well positioned to expand their research efforts in QIS. The National Quantum Initiative Centers will conduct basic and applied research in QIS, and with the right support, will be able to accelerate scientific breakthroughs and train the workforce needed to capitalize on these scientific



breakthroughs. The significant federal investments will help engineer, industrialize, and automate quantum technology, including quantum computers, communications/networking systems, and sensors. This support will lay the groundwork for the development of conventional technology and intellectual property needed to bring quantum technology to full fruition.

As other countries make significant investments in quantum (\$10 billion in China and \$1.3 billion in the European Union), it is critical that the U.S. keep pace. We appreciate your commitment to advancing this important research and technology and look forward to working with you on these requests.

Sincerely,

Atom Computing  
Carnegie Mellon University  
Center for Quantum Information and Control (CQuIC), University of New Mexico  
Duke University  
Edward White, Chair, National Photonics Initiative Steering Committee  
Google  
Harris Corporation  
Honeywell  
IBM  
Intel Corporation  
IonQ, Inc.  
Microsoft  
Northrop Grumman Corporation  
OSA  
Pittsburgh Quantum Institute  
Quantum Circuits Inc.  
Rochester Institute of Technology  
SPIE  
The State University of New York  
SUNY Polytechnic Institute  
TOPTICA Photonics  
University of Arizona  
University of Chicago  
University of Colorado  
University of Maryland  
University of Oregon  
University of Rochester  
University of Southern California  
University of Wisconsin-Madison

CC: Chairman Richard Shelby, Senate Appropriations Committee  
Ranking Member Patrick Leahy, Senate Appropriations Committee