



April 23, 2019

The Honorable José Serrano
Chairman
Subcommittee on Commerce, Justice, Science
Science, & Related Agencies
House Committee on Appropriations
2354 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Robert Aderholt
Ranking Member
Subcommittee on Commerce, Justice, Science
Science, & Related Agencies
House Committee on Appropriations
1203 Longworth House Office Building
Washington, D.C. 20515

The Honorable Marcy Kaptur
Chairwoman
Subcommittee on Energy & Water Development
House Committee on Appropriations
2186 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy & Water Development
House Committee on Appropriations
2084 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Serrano, Chairwoman Kaptur, Ranking Member Aderholt, and Ranking Member Simpson,

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: Chairwoman Nita Lowey, House Appropriations Committee
Ranking Member Kay Granger, House Appropriations Committee