



March 2, 2020

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 are writing to urge continued federal investments in Quantum Information Science (QIS) research and development (R&D). As you know, the National Quantum Initiative (NQI) Act was approved with overwhelming bipartisan support and signed into law by President Trump in December 2018. It established a coordination framework for government agencies to expand QIS R&D, which is critical to our economic and national security. It is now imperative that we work together to make the investments needed to maximize the potential of this framework including establishing the National Quantum Centers.

Specifically for Fiscal Year (FY) 2021, the NPI requests that the Committees consider approving \$210 million for the National Science Foundation (NSF), (\$10 million each for five quantum centers and \$160 million for QIS research), \$245 million for the Department of Energy (DOE) Office of Science (\$25 million each for five quantum centers and \$120 million for QIS research, including \$25 million for the DOE Office of Science to support early stage research for Quantum Internet). Additionally, we are requesting \$80 million for the National Institute of Standards and Technology (NIST), the amount authorized in the NQI Act. President Trump's FY 2021 Budget proposed significant increases in this area, which we strongly support. It is critical, however, that these increases do not come at the expense of other important R&D at the science-funding agencies.

With continued federal support, 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, accelerate scientific breakthroughs and train the workforce needed to capitalize on these scientific breakthroughs. Additional federal funds 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.



Quantum research holds tremendous potential for infrastructure management, cybersecurity, medical research and treatment, advanced communications, financial services, and transportation. The NPI applauded federal investments made in quantum research during the last budget cycle. Continuing to fund this important R&D area will ensure that we maintain our role as a global leader in the field and help bridge significant workforce gaps between leading quantum researchers and industrial product developers. Moving quantum research from the laboratory to the marketplace must be a top priority moving forward.

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

Sincerely,

Atom Computing Inc.

BlockQAI

Bra-Ket Science

Center for Quantum Information and Control (CQuIC), University of New Mexico

The Colorado School of Mines

Cryomech, Inc.

Duke University

Google

Harvard University

Honeywell

HRL Laboratories

IBM

Inrad Optics

Intel Corporation

IonQ, Inc.

Janis Research Company

Lake Shore Cryotronics

Microsoft Corporation

Montana Instruments

Northwestern University

NuCrypt, LLC

NY Center for Research Economic Advancement Technology Engineering Sciences (NY CREATES)

Pittsburgh Quantum Institute

Purdue University

Quantum Circuits, Inc.

Quantum1 Group

Qubitekk

Qunnect

Rochester Institute of Technology



SPIE

SUNY Polytechnic Institute

The Optical Society (OSA)

TOPTICA Photonics

University of Arizona

University of Colorado

University of Illinois at Urbana-Champaign

University of Maryland

University of Oregon

University of Rochester

University of Southern California

University of Washington

Yale University

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