



July 18, 2018

The Honorable John Thune
Chairman
Committee on Commerce, Science
and Transportation
512 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable William Nelson
Ranking Member
Committee on Commerce, Science
and Transportation
425 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman Thune and Ranking Member Nelson,

The National Photonics Initiative (NPI) and its co-signed industry and university stakeholders commend the Senate Commerce, Science, and Transportation Committee for introducing the National Quantum Initiative Act of 2018. This legislation represents an important first step in the establishment of a comprehensive federal policy to foster quantum research and technology development and build the needed workforce.

We believe this commitment to quantum research and technology is critical to our nation's position as a global economic leader as well as our national security. We applaud the bill's emphasis on coordinated research at the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST), overseen by National Quantum Coordination Office within the White House Office of Science and Technology Policy (OSTP). Coordination will fill in critical gaps between different activities, especially between academic and government laboratories. The NPI also appreciates that the bill encourages its industry stakeholders to contribute to this national effort—a necessary element to propel quantum research into technological applications.

We strongly urge the inclusion of authorization for new quantum research activities at the Department of Energy (DOE) before final passage of the bill. DOE, as a significant supporter of research and technology transfer, is well-placed to have a key role in the NQI. OSTP's coordination of quantum research should therefore include DOE, as well.

We believe that the level of funding commitment established in the bill is essential to fully realize the many transformative benefits of quantum technology. However, it is important to note that in order for the NQI to be truly successful new commitments in funding will need to be allocated to ensure that the U.S. does not fall behind in research and development across the agencies involved. Therefore, we request Section 303 of S. 3143 be removed before final passage of the bill.

Additionally, we recommend improving the legislation by including an access program, as recommended in the NPI's National Quantum Initiative Action Plan. This important program will support the activities of NQI research and laboratory programs by providing access to new quantum computing and communications systems and simulations to U.S. researchers and users across academia, laboratories, and industry. Additionally, the program would leverage high-performance computing resources to allow application developers to simulate aspects of quantum algorithms and hardware in NQI programs. The House Science Committee included an

amendment during markup to promote access to existing quantum computing and communications systems through the agencies. We encourage the Senate Commerce Committee to consider including similar language.

Again, we thank the Committee for its bipartisan commitment to furthering the development of quantum technology in the U.S. and we look forward to continuing to work with the Committee to advance this important legislation in the national interest.

Sincerely,

David Awschalom, University of Chicago
Duke University
Edward White, Chair, National Photonics Initiative Steering Committee
Google Inc.
Harris Corporation
Harvard University
IBM
IEEE Photonics Society
Intel Corporation
IonQ Inc.
Mark Kasevich, Stanford University, and AOSense, Inc.
OSA, The Optical Society
Rigetti Computing
SPIE, the international society for optics and photonics
SUNY Polytechnic Institute
Toptica Photonics Inc.
University of Arizona
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Yale University