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July 16, 2018

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

The Honorable Bill Nelson  
Ranking Member  
U.S. Senate Committee on Commerce,  
Science, and Transportation  
427 Hart Senate Office Building  
Washington, DC 20510

Dear Chairman Thune and Ranking Member Nelson,

On behalf of the American Physical Society (APS) and its more than 55,000 members from universities, industry and national laboratories, I would like to thank you for your leadership in introducing S. 3143: The National Quantum Initiative (NQI) Act, a companion bill to H.R. 6227. This legislation's strong bipartisan, bicameral support is a clear indication that Congress recognizes the need to establish a coordinated, multi-agency effort in quantum information science (QIS).

APS fully supports the establishment of a federal policy aimed at bolstering America's early-stage research program in QIS, accelerating progress in quantum technology development, and preparing our students for careers in this emerging field. In addition, APS strongly encourages that authorization language for new quantum research activities at the Department of Energy (DOE) be added to the bill before final passage. A coordinated research effort that includes the National Science Foundation, National Institute of Standards and Technology and DOE is necessary to fully realize the potential benefits and applications of QIS.

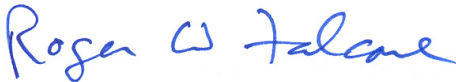
While APS is supportive of the research principles of this legislation, the Society has strong concerns with the currently proposed funding mechanism for the NQI. During the June 27<sup>th</sup> markup of H.R. 6227, House Science, Space and Technology Committee Chairman Lamar Smith commented that funding required for the NQI would come from the relevant agencies' baseline appropriations. Given an unpredictable budget process – and sequestration scheduled to return in fiscal year 2020 – requiring federal agencies to allocate funding to fulfill the bill's mandates within their current baseline appropriations would inevitably create funding deficiencies for other critical areas of research supported by the agencies.

APS believes that using an alternative, previously successful authorization model for the NQI would strengthen the bill and foster more widespread support from our community. In previous sessions, Congress has authorized similar initiatives focused on a specific area of research. The National Nanotechnology Initiative (NNI) Act, for example, provided agencies the authority to establish programs designed to strengthen U.S. research and development in an urgently important field without necessitating that a designated amount be spent annually. This legislation enjoyed bipartisan, bicameral support in Congress, was lauded by the federal

agencies involved and received broad support from the scientific community. This authorization model gives agency leaders guidance to move in a new direction in a robust way while still providing flexibility.

We appreciate Congress' recognition of the importance of QIS as a potentially transformative field and thank you for your leadership in advancing this initiative. We look forward to working with you and your colleagues as this bill moves forward. If you have questions or would like further information, please do not hesitate to contact Francis Slakey, APS Chief Government Affairs Officer ([slakey@aps.org](mailto:slakey@aps.org); 202.662.8706).

Sincerely,

A handwritten signature in blue ink that reads "Roger W. Falcone". The signature is written in a cursive, flowing style.

Roger W. Falcone