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Chairman Frank Lucas
Committee on Science, Space, and Technology
U. S. House of Representatives

Ranking Member Zoe Lofgren
Committee on Science, Space, and Technology
U. S. House of Representatives

Dear Mr. Lucas and Ms. Lofgren,

Five years ago, Congress passed the National Quantum Initiative Act (NQIA). As a result of that investment, applications that once seemed impossible now appear to be within reach.

For those applications, global private investment in quantum startups has surged, reaching \$2.35 billion in 2022. However, applied research alone won't get us there, as there remain essential science and engineering challenges to be solved. The U.S. government must strengthen its commitment to this crucial technology, broadening the investments from basic science to supporting technology and engineering.

Quantum computation will allow us to solve problems that cannot be solved on classical computers — enabling such real-world gains as greater agriculture yields and the development of new vaccines, drugs and medical treatments. Quantum sensing will allow greater precision timing than GPS systems with implications for navigation, defense applications and financial networks. And while widely used encryption will be rendered vulnerable by quantum computing, quantum communication promises physically secure communication.

Our success in delivering on quantum's potential depends on investment and talent. Investment, of course, is more than dollars. The NQIA has done a commendable job of setting clear U.S. priorities and facilitating cross-sector and multidisciplinary coordination. The proposal to invest in new quantum accelerators and testbeds is welcome, as is the mandate to strengthen NIST's role in science and standard setting. Doing so will incubate promising quantum research and development activities and position the U.S. to steer the course of quantum innovation.

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The recent National Quantum Initiative Advisory Committee (NQIAC) report called for, and we agree, greater flexibility in the use of funding, allowing researchers to remain agile in pursuing new, emerging avenues of research. Signaling long-term commitment (the current legislation ends in 2028) and fully funding NQI activities and quantum portions of the CHIPS and Science Act are essential.

Robust bipartisan support for quantum research and development will continue to catalyze private and university investment and spur start-up activity. The University of Pittsburgh recently announced a \$11.6 million investment to establish the Western Pennsylvania Quantum Information Core, providing researchers with state-of-the-art instrumentation. We are proud to play our part in the “whole-of-nation,” all-hands-on-deck push to deliver quantum technologies for the American people – and to ensure that the gains aren’t restricted to corporate interests.

The talent piece is more complicated. Funding alone, no matter how substantial, cannot generate the quantum workforce the country needs. We are in the process of training a quantum workforce; the University of Pittsburgh was one of the first in the country to offer quantum computing as an undergraduate major. Support for these and related programs as envisioned in the NQIA will be valuable. We also welcome more collaboration with our closest allies.

Congress has an opportunity to help create the next technological revolution. We support the re-authorization of the NQIA.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rob A. Rutenbar", with a long horizontal flourish extending to the right.

Rob A. Rutenbar, Ph.D.
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