

The Potential of Quantum Technology:

- Quantum technologies create potential for enormous leaps in crucial scientific and strategic areas, including high-powered computing, cryptography, secure communications, and precise sensing.
- China, Russia, and others are investing heavily in the development of operational quantum systems as part of a global tech development race.
- The United States leads in most quantum science and technology areas, but that position is not guaranteed without continued support and investment by the U.S. government and broader technology sector.
- Maintaining leadership in quantum science and technology will ensure the United States captures the strategic, economic, and scientific benefits of operational quantum systems.

The National Quantum Initiative Act:

- The National Quantum Initiative Act (P.L. 115-368), enacted in 2018, accelerated quantum research and development by authorizing new activities, programs, and centers at the National Science Foundation (NSF), National Institute of Standards and Technology (NIST), and the Department of Energy (DOE).
- The Act was supplemented by succeeding National Defense Authorization Acts and the CHIPS and Science Act.
- These efforts sparked robust investment by major U.S. technology companies in the development of leading-edge quantum systems, which has enabled the U.S. to compete with China and others.
- Continued investments in workforce development, translational research and development activities, and technology maturation programs are necessary to maintain our competitive advantage.

Key Provisions in the National Quantum Initiative Reauthorization Act:

- Requires the White House Office of Science and Technology Policy to develop a strategy for carrying out cooperative quantum research efforts with allies of the United States to bolster competitiveness against China and Russia.
- Authorizes NIST to establish up to three centers to advance research in quantum sensing, measurement, and engineering.
- Strengthens student traineeship, fellowship, and other workforce programs at NSF.
- Authorizes the creation of a new NSF multidisciplinary coordination hub to create new workforce pipelines between educational institutions and the larger quantum industry ecosystem.
- Authorizes the creation of new quantum testbeds through the TIP Directorate.
- Directs the Secretary of Energy to develop a strategy for promoting the commercialization of quantum computing.
- Authorizes the DOE to support the development of quantum foundries to meet the device and material needs of the quantum supply chain.
- Formally authorizes quantum R&D activities at NASA and the creation of a quantum institute at the agency.