COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY
Lamar Smith, Chairman

National Quantum Initiative Act

The National Quantum Initiative Act establishes a federal program to accelerate quantum research and development for the United States' economic and national security.

Quantum Information Science (QIS)* is Critical to Our Nation's Economy and National Security

- Developing our current quantum research into real world applications will create scientific and technological breakthroughs that will stimulate economic growth and keep pace with accelerating global competitiveness.
- QIS will create new opportunities in areas like cybersecurity, medicine, communications, financial services and transportation.
- QIS is hugely important to our national security. The nation that develops quantum communications technology first will enable completely secure networks and possess powerful decoding capabilities.

The U.S. Must Preserve Our Global Leadership in Science and Technology

- The nation that leads the way in quantum information will have a huge advantage in other key emerging fields, including artificial intelligence and synthetic biology.
- Recognizing the promise of this groundbreaking technology, China and the European Union are investing billions of dollars in new research facilities and equipment. China, in particular, has stated publicly its national goal of surpassing the U.S. in quantum computing during the next decade.

It is vital we accelerate our quantum efforts to maintain our nation's scientific and technological leadership. The National Quantum Initiative Act will meet these challenges by creating a 10-year program to advance quantum development and technology applications.

The legislation will:

- Bring a whole of government approach to moving QIS to the next level of research and development
- Establish a National Quantum Coordination Office within the White House Office of Science and Technology Policy to oversee interagency coordination, provide strategic planning support, serve as a central point of contact for stakeholders, conduct outreach and promote commercialization of federal research by the private sector
- Support basic QIS research and standards development at the National Institute of Standards and Technology, support Energy Department basic research and establish Energy Department national research centers, and support NSF basic research and academic multidisciplinary quantum research and education centers
- Encourage U.S. high-tech companies, which are investing heavily in quantum research, and a wave of quantum technology start-ups, to contribute their knowledge and resources to a national effort
- Address fundamental research gaps, create a stronger workforce pipeline and take the lead in developing quantum standards and measures for global use and thereby give U.S. companies and workers an enduring competitive advantage

**Quantum Information Science is based on exploiting subtle aspects of quantum physics, such as "quantum superposition" and "entanglement," for valuable, real-world technologies. These technologies can handle computationally complex problems, provide communication security and enhance navigation, imaging and other sensing technologies in ways that are impossible using conventional hardware.*