



Opening Statement of Chairman Brian Babin

Full Committee Hearing

From Policy to Progress: How the National Quantum Initiative Shapes U.S. Quantum Technology Leadership

May 7, 2025

Good morning, and thank you for joining us to discuss an incredibly important and forward-looking topic: America's leadership in quantum science and technology. I appreciate our witnesses sharing their time and expertise as we examine this cutting-edge area of science—one with the potential to fundamentally transform computing, communications, sensing, and our understanding of the physical world.

Seven years after President Trump signed the National Quantum Initiative Act (NQIA), I am pleased to report that the United States has firmly established itself as a formidable leader in the quantum sector.

The NQIA elevated quantum information science to a national priority, attracting top talent and driving investments in the field.

The quantum centers established under the NQIA have become innovation hubs—fostering collaboration between academia, industry, and government while advancing fundamental quantum science research. Our universities, national laboratories, and private enterprises have made impressive progress in quantum computing hardware, algorithms, networking, and sensing technologies.

As we will hear from our witnesses, quantum computing has evolved from devices with dozens of qubits to systems nearing quantum advantage in specific applications.

We have seen the development of more stable qubits—with longer coherence times and lower error rates—alongside promising quantum algorithms for chemistry, materials science, and optimization problems.

Fundamental research in quantum mechanics, photonics, quantum sensing, and metrology underpins these advances.

Federal agencies, including the DOE's Office of Science and National Laboratories, NSF, and NIST, play a crucial role in conducting and supporting this work.

Global competition in quantum research, development, and technology is increasing, with countries like China, the United Kingdom, Japan, Canada, and Australia making significant advancements.

While the United States currently leads in quantum computing hardware and algorithms, China has made notable strides in quantum communications—including launching the world's first quantum communications satellite.

However, the global quantum race is more than academic—it is a competition for 21st-century technological supremacy, with major implications for America's economic strength and national security.

Quantum technologies hold immense economic potential. According to the Quantum Economic Development Consortium's (QED-C) *"2025 State of the Global Quantum Industry"* report, the global quantum market is projected to reach \$1.88 billion this year—a 27.3 percent increase from 2024.

Quantum technologies could revolutionize industries—from accelerating drug development to advancing mineral exploration, environmental monitoring, and medical diagnostics.

Quantum information science is also vital to our national security. If exploited by adversaries, it could jeopardize government communications, financial systems, and critical infrastructure by breaking current encryption methods.

In contrast, quantum-resistant cryptography and quantum key distribution ensure secure communications against quantum attacks.

Additionally, quantum sensing technologies could dramatically enhance military navigation, timing, and detection capabilities.

Nations that lead in quantum computing will gain drastic intelligence advantages—making it critical that we not fall behind strategic challengers like China.

As global competitors race ahead, the U.S. must bolster its strategic and collaborative efforts to stay in front.

We must use taxpayer dollars more effectively by leveraging private sector investment to propel quantum discoveries and develop real-world applications.

In a recent letter to White House OSTP Director Michael Kratsios, President Trump called for revitalizing America's science and technology enterprise by pursuing truth, cutting red tape, and empowering researchers.

I look forward to working with the President and Director Kratsios to accomplish these goals—including reauthorizing the NQIA to cement America's leadership in the quantum science domain.

Lastly, I would be remiss if I did not address the President's recent skinny budget proposal. This marks the beginning of the budget process—an opening dialogue, not a final decision. As the GAO recently warned, America's fiscal health is at risk, and without course correction, we could jeopardize our science and technology future.

Congress holds the power of the purse, and I will review this proposal thoroughly. However, I was pleased that the Administration proposed maintaining funding for quantum R&D at current levels, including at the NSF and DOE.

Thank you again to our witnesses for being here today—I am ready for a productive discussion.