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

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# Statement from Chairman Lamar Smith (R-Texas)

*American Leadership in Quantum Technology*

**Chairman Smith:** Good morning. The technology that we will review today is complex, but it has the potential to revolutionize computing and to strengthen or undermine our future economic and national security.

Quantum technology can completely transform many areas of science and a wide array of technologies, including sensors, lasers, materials science, GPS, and much more.

Quantum computers have the potential to solve complex problems that are beyond the scope of today's most powerful supercomputers.

Quantum-enabled data analytics can revolutionize the development of new medicines and materials and assure security for sensitive information.

But even Bill Gates finds quantum technology to be challenging. He reportedly said, "I know a lot of physics and a lot of math. But the one place where they put up slides and it is hieroglyphics, it's quantum."

We are fortunate this morning to be able to learn from expert witnesses who thoroughly understand and can explain in plain English all of quantum's complexities.

Although the United States retains global leadership in the theoretical physics that underpins quantum computing and related technologies, we may be slipping behind others in developing the quantum applications – programming know-how, development of national security and commercial applications.

Just last year, Chinese scientists successfully sent the first-ever quantum transmission from Earth to an orbiting satellite.

A team of Japanese scientists recently invented an approach that apparently boosts calculating speed and efficiency in quantum computing.

European research teams are focusing on training quantum computer programmers and developing essential software.

What if the Bill Gates and Steve Jobs of quantum computing are from Germany?

According to a 2015 McKinsey report, about 7,000 scientists worldwide, with a combined budget of about $1.5 billion, worked on non-classified quantum technology.

Of those totals, the United States' estimated annual spending on non-classified quantum-technology research was the largest. But China, Germany and Canada were close behind.

We need to continue to invest in basic research. We must also take steps to ensure that we have the workforce that the future will demand.

The Bureau of Labor Statistics projects that employment in computer occupations will increase by 12.5 percent, or nearly a half-million new jobs, by 2024. This is more than in any other STEM field.

But future jobs in engineering, health sciences and all of the natural sciences will require computing and electronic information skills.

The United States must also cultivate a new generation of visionary entrepreneurs and additional millions of scientists, engineers, designers, programmers and technicians who can compete in quantum-enabled technologies and other emerging fields.

I thank our witnesses today for testifying on this important topic. I look forward to their testimony on the current state of quantum research and their recommendations about how to improve efforts in this area.

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