



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

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**Statement by Chairman Randy Weber (R-Texas)**  
*Artificial Intelligence – With Great Power Comes Great Responsibility*

**Chairman Weber:** Today, we will hear from a panel of experts on next generation artificial intelligence—or AI—technologies. While some have raised concerns about the negative consequences of AI, this technology has the potential to solve fundamental science problems and improve everyday life.

In fact, it is likely that everyone in this room benefits from artificial intelligence. For example, users of voice assistants, online purchase prediction, fraud detection, and music recommendation services are already utilizing aspects of this technology in their day to day life.

In the past few years, the use of AI technology has rapidly expanded due to the increase in the volume of data worldwide, and to the proliferation of advanced computing hardware that allows for the powerful parallel processing of this data. The field of AI has broadened to include other advanced computing disciplines such as machine learning, neural networks, deep learning computer vision and natural language processing, to name a few.

These learning techniques are key to the development of AI technologies, and can be used to explore complex relationships and produce previously unseen results on unprecedented timescales.

The Department of Energy (DOE), is the nation's largest federal supporter of basic research in the physical sciences, with expertise in big data science, high performance computing, advanced algorithms and data analytics and is uniquely positioned to enable fundamental research in AI and machine learning.

DOE's Office of Science Advanced Scientific Computing Research program, or ASCR, program develops next generation supercomputing systems that can achieve the computational power needed for this critical research. This includes the Department's newest and most powerful supercomputer, called Summit, which just yesterday was ranked as the fastest computing system in the world.

AI also has broad applications in the DOE mission space. In materials science, AI helps researchers speed the experimental process and discover new compounds faster than ever before. In high energy physics, AI finds patterns in atomic and particle collisions previously unseen by scientists.

In fusion energy research, AI modeling predicts plasma behavior that will assist with building tokamak reactors, making the best of our investment in this space. Even in fossil energy production, AI systems will optimize efficiency and predict needed maintenance at power generating facilities.

AI technology has the potential to improve computational science methods for any big data problem.

And with the next generation of supercomputers, the exascale computing systems that DOE is expected to field by 2021, American researchers utilizing AI technology will be able to tackle even bigger challenges.

We can't afford to fall behind in this compelling area of research—and big investments in AI by China and Europe already threaten U.S. dominance in this field. With the immense potential for AI technology to answer fundamental scientific challenges, it's clear we should prioritize this research.

I want to thank our accomplished panel of witnesses for their testimony today and I look forward to hearing what role Congress should play in advancing this critical area of discovery science.

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