Opening Statement of Ranking Member Randy Weber

Energy Subcommittee Hearing – "Accelerating Discovery: the Future of Scientific Computing at the Department of Energy"

May 19, 2021

Thank you, Chairman Bowman, for hosting this hearing, and thank you to our esteemed witness panel for being here this afternoon. I am excited to hear about the critical advanced scientific computing research and development activities being carried out through the Department of Energy's (DOE) Office of Science.

The Advanced Scientific Computing Research Program, or ASCR program, is one that enjoys bipartisan support as a priority within the Office of Science. For the past thirty years, researchers within this program have led advances in mathematics and computing that form the foundation for complex models and simulations. These developments, in turn, have translated to increased knowledge and understanding of everything from bioenergy and climate change to Alzheimer's disease and health models.

Today, ASCR hosts some of the world's most powerful supercomputers and a high-speed network that moves enormous volumes of scientific data at light speed. In the rapidly evolving fields of quantum computing and artificial intelligence, ASCR is dedicated to maintaining U.S. competitiveness and leadership. The program also supports DOE's goal of completing the world's first exascale computing system this year and a second system within the next year.

As our competitors race to develop exascale systems of their own, DOE's strong support of advanced computing research within ASCR is essential to maintaining U.S. leadership in this field. And it's more than just hardware that needs additional focus.

We need significant modifications to today's tools and techniques to deliver on the promise of high-performance computing. Researchers are in need of a new suite of software tools, programming models, and applications to enable effective use of exascale systems. Without software and application R&D, we will simply have high-powered machines collecting dust.

Additionally, in order to fully and effectively support innovation in next-generation science, DOE must also encourage cross-cutting research initiatives within the Department and with other Federal agencies. Within the Office of Science alone, ASCR resources and capabilities can be used to drive innovation in computational chemistry and nanomaterials for energy applications, improve simulations of fusion energy reactors, and enhance our ability to predict changes in the global climate with next generation Earth System Models.

Other federal agencies could also capitalize on these unique, world-leading resources. As authorized by the [Energy Act of 2020](#), the Department of Veterans Affairs is partnering with DOE to use high performance computing in analyzing massive amounts of health data. This data analysis will help the VA better understand diseases and improve veterans' overall quality of life.

We should seek to build upon and expand partnerships like this so that the entire federal government benefits from ASCR's tools and technologies. At the end of the day, we are all supporting one thing: U.S. leadership in science, technology, and innovation. There is no federal entity in a better position to lead this charge than DOE's Office of Science.

That is why I am pleased we are very close to finalizing legislation that provides strong support and long-term guidance for the Office of Science. We are making sure rubber meets the road, and that the U.S. research enterprise is equipped with all available resources to successfully overcome the generational challenges they face.

I want to again thank my colleagues for their bipartisan outreach and collaboration. And I want to thank the witnesses for offering their input on our efforts. Thank you, Mr. Chairman, and I yield back the balance of my time.