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

For Immediate Release
May 22, 2018

Media Contacts: Thea McDonald, Brandon VerVelde
(202) 225-6371

Statement by Chairman Randy Weber (R-Texas)

Empowering U.S. Veterans Through Technology

Chairman Weber: Today, we will hear about the Department of Energy (DOE) and the Department of Veterans Affairs (VA) collaboration on an early-stage research program that will utilize DOE's unique capabilities in big data analytics, artificial intelligence (A.I.), and High Performance Computing (HPC).

The DOE and VA national research program, housed within the agencies' Big Data Science Initiative, is called—and it's a mouthful—the Million Veterans Program-Computational Health Analytics for Medical Precision to Improve Outcomes Now or MVP-CHAMPION.

The MVP-CHAMPION initiative provides VA researchers access to DOE's HPC research facilities and scientific expertise, while the DOE receives access to a massive collection of data from the VA.

VA patients volunteer genomic and health care data that uploads into the enclave. Part of the data includes the deepest levels of DNA sequencing that allows for high quality genomic research. With a rich and expansive dataset, the VA Million Veteran Program provides an incredible opportunity to use DOE's next generation computing capabilities to solve complex healthcare challenges.

Oak Ridge National Laboratory is leading the effort to store VA data in a secure enclave developed at the lab.

Through DOE's Energy Sciences Network, or ESNet, eight national labs can securely access this data. This allows DOE scientists and VA researchers to work remotely and collaborate from sites around the country.

As the VA transfers more data to the enclave, researchers can leverage the HPC infrastructure within the national laboratory system to analyze the data.

The application of artificial intelligence, machine learning and natural language processing for computational science has the potential to surpass the algorithmic models used by current data scientists.

For example, the ability to predict an outcome through computational modeling yields both raw input data and experimental output data in equally large amounts. The accuracy of the outcome remains limited by the ability of a human researcher to ascertain the most salient features from the data, leaving the majority of data unused.

A.I. and machine learning can do what a human researcher cannot, and can use all of the vast amounts of data and explore complex relationships and produce previously unseen results. A.I. has unlimited potential to combine big data analytics with computational modeling that can produce more accurate predictions.

For the VA, this means predicting the health care needs of VA patients. For the DOE, this application of computer science tools could transform basic and early-stage research. DOE's core mission areas are full of complex, big data challenges like physics, environmental systems, combustion and nuclear weapons modeling. DOE also has the potential to enhance its expertise in biosciences and materials design.

Experience working with big datasets and applications in data science has the potential to improve computational science methods for any big data problem. And with the next generation of supercomputers, the exascale computing systems DOE is expected to field by 2021, DOE will be able to tackle even bigger challenges.

Increasing computing power will expand HPC capabilities and improve the quality of computational research for any big data set or complex problem.

Ultimately, the goal of MVP-CHAMPION is for the DOE national laboratories to provide the VA with information it can use to improve health care services for veterans. The access to the breadth, depth and complexity of the VA dataset will also advance the next generation of data science tools.

It's clear that DOE is the right partner for this important research. I look forward to hearing more about the unique assets DOE has to improve the VA health care delivery system and transform fundamental research in the years ahead.

###