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

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Statement by Chairman Lamar Smith (R-Texas)

National Laboratories: World-Leading Innovation in Science

Chairman Smith: Today, we welcome a diverse group of directors from five of DOE's national laboratories. They oversee innovative work in basic science and early-stage research performed daily by some of the best scientists and researchers in the world.

Our witnesses represent national labs that fulfill the Department of Energy's missions within the Office of Science, applied energy and national security programs. The Science Committee's jurisdiction over the DOE budget includes over $9 billion for civilian research, development, demonstration and commercial application programs, much of which is conducted by the national labs.

Over the past 70 years, this research community has led to monumental achievements in medicine, manufacturing, computing and energy technology development. The labs that are represented here today have made invaluable contributions to U.S. scientific progress and leadership. They have repeatedly demonstrated that basic science research is the most effective way to encourage innovation in technology.

In 1942, a group of scientists in Chicago created the first nuclear reactor. Four years later, Argonne National Laboratory was formed to continue this groundbreaking nuclear research. Using the lab's expertise in materials and nuclear science, Argonne designed the nuclear reactor used in the USS Nautilus, the first nuclear powered submarine.

These reactor designs also became the prototype for most of today's commercial nuclear power plants. The impact of Argonne's research is far beyond what the early nuclear scientists could have imagined.

In the 1960s, SLAC National Accelerator Laboratory conducted its first groundbreaking experiments in particle physics using the first linear particle accelerator. This research led to the discovery of "quarks," elementary particles that are the fundamental components of matter.

Their discovery has changed the way we understand our universe at the most foundational level.

SLAC has led the world in linear accelerator technology for decades, expanding its focus from particle physics to include materials science, alternative energy research, biology and cosmology.

Although Sandia is one of the department's four nuclear weapons labs, the lab's expertise in science and engineering has broad applications across our economy. In the 1980s, Sandia National Lab collaborated with industry to develop the primary drill-bit used in horizontal drilling.

Sandia's basic research in geology led to the development of microseismic fracture mapping techniques for hydraulic fracturing. Industry partners adapted these techniques for commercial use and deployed technology to maximize energy production across the country.

At Lawrence Berkeley National Laboratory, a large multi-purpose science lab, researchers have discovered 16 different elements, fabricated the world's smallest synthetic motor, sequenced part of the human genome and discovered dark energy through the Supernova Cosmology Project. Scientists at Berkeley lab also developed the genetic engineering technology known as CRISPR, which could one day allow scientists to remove cancerous genes.

Finally, Idaho National Laboratory is the nation's premier nuclear technology laboratory. INL scientists have designed and constructed 52 nuclear reactors, including the first reactor to generate electricity in 1951.

Today, INL's nuclear expertise supports the military's naval propulsion program, the civilian nuclear power industry, and develops tools to detect hidden nuclear material around the world.

DOE user facilities provide our nation's researchers with the most advanced tools of modern science, including particle accelerators, light sources and supercomputers. Approximately 32,000 researchers each year from academia and the private sector use DOE facilities to perform new scientific research and develop new technologies.

Last month, the House passed three bipartisan Science Committee infrastructure bills that authorize DOE funds for critical upgrades to a number of high-priority national lab user facilities. In fact, user facilities from four of the five labs represented here today are included in this legislation.

We look forward to hearing from our witnesses about the potential impact of these upgrades.

It is a central goal of this committee to ensure that our national labs remain the best in the world. To maintain our competitive advantage as a world leader in science, we must continue to support the research that will lead to next generation energy technologies.

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