

**Testimony of Hon. Chris Fall**

**Director, Office of Science**

**U.S. Department of Energy**

**Before the Committee on Space, Science, and Technology**

**Subcommittee on Energy**

**U.S. House of Representatives**

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Chairwoman Fletcher, Ranking Member Weber, and Members of the Committee:

Thank you for the privilege of being here today to discuss the great work being done in the Office of Science at the U.S. Department of Energy. I've been the Director of the Office of Science since my swearing in at the end of May 2019. Together with the researchers we support at our laboratories, at American universities, and in the private sector, we're working both to discover the secrets of the physical world and to bring scientific discovery to bear on critical needs for energy security, economic competitiveness, and national security.

I came to DOE at a special time of opportunity for American science. The House and Senate clearly are aware of the intense international competition in research and development (R&D), and the critical importance of maintaining U.S. leadership in science. The Office of Science continues to fund tens of thousands of scientists, students, and technical and administrative staff. We continue to build some of the most amazing scientific instruments and open access user facilities in the world, and to upgrade those that we already have. The Office of Science is currently beginning work on the Deep Underground Neutrino Experiment, a mile underground in South Dakota, and astronauts just extended the life of the alpha magnetic spectrometer orbiting 200 miles above ground in space. We are upgrading both the Advanced Photon Source at Argonne National Laboratory and the Advanced Light Source at Lawrence Berkeley National Laboratory. And we are building not one but three game-changing exascale supercomputers in conjunction with the National Nuclear Security Administration. Just last week we announced the launch of a new effort to build a game-changing electron ion collider for Nuclear Physics.

While robustly supporting the traditional physical science mission of the Office of Science, we are in the process of launching and expanding a number of exciting new initiatives, including:

- Building the new Quantum Information Sciences Centers as part of the National Quantum Initiative;
- Incorporating artificial intelligence and machine learning into many of the things we do across the Department;

- Developing the knowledge and technologies that will enable advanced biotechnologies and enhance biosecurity;
- and other research to promote the growth of other industries of the future being supported by the Administration.

We collaborate with the best scientists from around the world at our laboratories and in our 27 scientific user facilities, as well as in other labs and facilities around the world. At the same time, we are paying attention to emerging threats like the misappropriation of technology and where appropriate, we are taking necessary steps to help mitigate threats.

As we strive to push back the frontiers of science, we are mindful of the need to conduct the best possible stewardship of the Department's labs and major user facilities we provide. Most of the 10 Office of Science laboratories date to the cold war or earlier. I have made it clear to my team that, in our planning and our budget requests, we need to make sure we renew and refurbish the physical infrastructure of these laboratories in order to sustain them for the future. It simply is irresponsible to build something like a new accelerator or light source on a foundation of crumbling and unreliable electricity, water, and other critical infrastructure. As we build new capabilities, we must continue to maintain and modernize our laboratories' basic infrastructure. I hope that you, and your staffers, will appreciate what we are trying to do as you evaluate our budget requests.

I'm going to mention in closing that the 2019 Nobel Prize in Chemistry was awarded to John B. Goodenough, M. Stanley Whittingham, and Akira Yoshino for the development of lithium-ion batteries. Both Goodenough and Whittingham are longtime DOE supported researchers. I mention this almost in passing because as amazing as winning a Nobel prize is, the Department has supported over one hundred Nobel prizes. For the Department of Energy's science enterprise, it's part of the everyday commitment to push the boundaries of what is thought to be possible. Because of the investment the American people make in robust support for basic research, because of the scope and scale of our laboratory system and the universities we partner with, and the remarkable talent we attract, the amazing happens each and every day.

So, thank you Mr. Chairman for the opportunity to share my pride in the people and programs of DOE's Office of Science. I am in awe every day of their accomplishments and deeply honored to be their Director. I am happy to answer any additional questions you may have.