



Department of Energy
Office of Science
Washington, DC 20585

Office of the Director

Professor Daniel A. Reed, Chair of the ASCAC
Senior Vice President for Academic Affairs
Professor of Computer Science and Electrical & Computer Engineering
The University of Utah
201 Presidents Circle, Room 205
Salt Lake City, Utah 84112-9007

Dear Professor Reed:

Thank you for your work as Committee Chair on the Advanced Scientific Computing Advisory Committee (ASCAC's) and for the ongoing review of the collaboration with the National Cancer Institute. The ASCAC recommendations will help us to improve the management of this important program.

As you know, the Administration and Congress have been keenly interested in the recent issues with the supply chain and U.S. competitiveness and innovation. Looking to the future, we want to ensure that the U.S. continues to be a leader in advanced computing, high end computational science and engineering, advanced scientific networks, and the fields and workforce that underpin these efforts.

To that end, we must develop and maintain world-leading capabilities in key technologies, especially microelectronics, high performance computer architectures and software, computer science, applied mathematics Artificial Intelligence, Quantum Information Science; and also provide compelling, inclusive, and equitable opportunities for all those who want to work in this fast paced and ever-changing area of research.

Therefore, I request that ASCAC develop a report to address the following questions:

- How can the Department maintain critical international cooperation in an increasingly competitive environment for both talent and resources? In areas where the U.S. is leading, how can we sustain our roles and attract the best industry and international partners? In other areas, how can the Department build and maintain its reputation as a "partner of choice"? In general, are there barriers that can hinder our ability to form effective and enduring international and industry partnerships?
- Identify key areas where the U.S. currently has, or could aspire to, leadership roles in advanced computing and high-end computational science and engineering, including unique or world-leading capabilities (i.e., advanced scientific facilities, testbeds and networks) or leading scientific and technical resources, such as highly trained personnel and supporting infrastructure. This may include emerging areas or opportunities that offer significant promise for leadership.
- To preserve and foster U.S. leadership roles within reasonable resource constraints, are there particular technical areas or capabilities that could be emphasized? Are there

other technical resources and capabilities that could be leveraged in to achieve these goals, possibly through collaborations within and beyond the ASCR community?

- How can programs and facilities be structured to attract and retain talented people? What are the barriers to successfully advancing careers of scientific and technical personnel in advanced computing, computational science and engineering, and related fields and how can the Department address those barriers? A complete answer to these questions should address how we can ensure that we are recruiting, training, mentoring, and retaining the best talent from all over the world, including among traditionally underrepresented groups within the U.S.

We would appreciate receiving a written report by the Spring meeting in 2023.

If you or the subcommittee chair have any questions, please contact Christine Chalk, Designated Federal Official for ASCAC at 301-903-5152 or by e-mail at christine.chalk@science.doe.gov.

I appreciate ASCAC's willingness to undertake this important activity.

Sincerely,

J. Stephen Binkley
Acting Director
Office of Science