



Department of Energy
Office of Science
Washington, DC 20585

Office of the Director

October 8, 2020

Dr. Bruce Hungate
Regents' Professor, Biological Sciences
Northern Arizona University
SLF Building 17, Room 300A
600 South Knoles Dr.
Flagstaff, Arizona 86011

Dear Dr. Hungate:

I sincerely appreciate the work that the Biological and Environmental Research Advisory Committee (BERAC) and the Committee of Visitors recently completed on the review of the Earth and Environmental Systems Sciences Division management processes. I am also grateful for the continued service that BERAC has provided despite the challenges of the COVID-19 situation. Please know that the Office of Science and the Department of Energy value the important work of BERAC.

I am writing because I would like BERAC to consider the Office of Biological and Environmental Research's (BER) international leadership in the research community and whether there are opportunities or pathways available to increase this leadership. Recent completion of the BERAC reports on Grand Research Challenges in 2017 and on Scientific User Facilities in 2018 have helped to identify future paths of research for BER. Understanding the future research needs and how user facilities may respond to those needs is an important component of maintaining scientific excellence. Another important component is leadership in the international arena. This is particularly important in a time with changing technologies, changing economies, and changing environmental threats and conditions.

Therefore, I would like BERAC to consider strategies to increase BER's international research competitiveness. These strategies will strengthen BER's ability to conduct world-class science in research areas that have been previously identified in the Grand Challenges report. I ask BERAC to consider the following questions when considering useful and appropriate strategies that might be included in an implementation plan:

- Within the BER-supported topical research areas and facility capabilities, in which areas and capabilities, presently or in the foreseeable future, does BER lead in the international community, and in which areas does leadership require strengthening? In identifying these areas, please consider their critical mission relevance, recent history, the status quo, observable trends, and evidence-based projections.
- Are there key international partnerships that could strengthen BER science output and increase global visibility of BER?

- To preserve and foster U.S. leadership with resource constraints, is there a preferred optimization for organizing research, collaboration, and funding mechanisms among labs, universities, and other federal agencies? Are there other key efficiencies and balances that should be considered and modified to improve U.S. leadership in BER research areas?
- For someone deciding whether to pursue a scientific career, or a mature scientist considering whether to stay in the U.S., how can BER programs and facilities be structured and managed to create incentives that will attract and retain talented people? What are the key opportunities for BER in attracting and enhancing careers in BER-supported science?

In general, this study will serve as a benchmark for BER's international standing in core research areas within the BER research portfolio. Existing core areas are represented in the Grand Challenges report and by the BER Science Focus Areas. This study should consider any programmatic or management areas that may be modified in order to increase BER's international standing in the core areas, and these should be presented as specific strategies that DOE Office of Science could implement and track. Results of this study should be reported out at the Spring BERAC meeting in 2022.

Thank you again for your service and that of the committee. I hope that you and yours remain safe and healthy in this challenging time.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Chris Fall', with a stylized flourish extending to the right.

Chris Fall
Director
Office of Science

cc. Sharlene Weatherwax