



Department of Energy  
Office of Science  
Washington, DC 20585

July 29, 2013

Professor Roscoe Giles, ASCAC Chair  
Department of Electrical & Computer Engineering  
Boston University  
8 St. Mary's Street  
Boston, MA 02215

Dear Professor Giles:

Thank you for the recent Advanced Scientific Computing Advisory Committee (ASCAC) report on the synergistic challenges in data-intensive science and exascale computing. The report was both informative and timely.

As we move forward with exascale computing during a time of significant budget restrictions, it is important that we focus our efforts on the principal research challenges required to develop a practical exascale computing system. We are at a point in our planning where input from the community would be enormously useful, but only if gathered quickly.

By this letter, I am charging the ASCAC to assemble a subcommittee to gather this information from the community. Specifically, we request a list of no more than ten technical approaches (hardware and software) that will enable the development of a system that achieves the Department's exascale goals, particularly the usability goals for the Department's mission-critical applications, as articulated in the attached presentation. That is, given the known technical barriers that could prevent the development of a computer that achieves the Department's exascale goals, what are credible technical approaches for overcoming these barriers? The subcommittee's report should provide compelling justifications for including each item in the list and describe the expected impact on overall system performance.

To inform our budget process, I would appreciate receiving the committee's preliminary comments by October 15, 2013 and a final report by November 30, 2013. I appreciate ASCAC's willingness to undertake this important assignment.

If you have any questions regarding this request, please contact either Barbara Helland, the acting Associate Director of the Office of Science for Advance Scientific Computing Research or Christine Chalk, the Designated Federal Official for the ASCAC.

Sincerely,

A handwritten signature in cursive script that reads "Patricia M. Dehmer".

Patricia M. Dehmer  
Acting Director, Office of Science

