Department of Energy
Washington, DC 20585

AUG 24 2001

Dr. Margaret H. Wright
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Dear Dr. Wright:

I request that the Advanced Scientific Computing Advisory Committee (ASCAC) form a composite panel to assess the high-performance computational needs and capabilities throughout the Office of Science (SC). In addition to ASCAC, the panel should draw its membership from the other five Advisory Committees to the Office of Science, namely, the Basic Energy Sciences Advisory Committee, the Fusion Energy Sciences Advisory Committee, the Biological and Environmental Research Advisory Committee, the DOE/NSF High Energy Physics Advisory Panel, and the DOE/NSF Nuclear Science Advisory Committee. By copy of this letter to the respective chairpersons, I am asking them to assist you in this effort.

High performance computing has become an increasingly important element of the Department of Energy's Office of Science, and its predecessor organizations, for the past 50 years. Today, high performance computing is widely recognized and regarded as an essential tool for enabling science and is an indispensable, integral part of virtually all SC research endeavors. Although SC's principal activities in high performance computing reside in the Office of Advanced Scientific Computing Research, there are computing efforts supported by other SC program offices that are tailored to specific research objectives. To maintain SC at the forefront of science in support of the DOE mission, we need to ensure that all computing resources across the Office of Science are appropriately aligned with our priorities. Your assessment will help ensure that SC's high performance computational needs and capabilities are fully integrated into our process of analyzing and planning programs and operations.

The panel should carry out a broad assessment of the status and the prospects for high performance computing with respect to all five SC programs: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, and High Energy and Nuclear Physics. The panel will provide recommendations and advice to the Director, Office of Science on high performance computing needs, management issues, and funding requirements. The panel may exercise wide latitude while conducting this study. However, the following topics should be addressed in detail:

1. The overall quality of high-performance computational and networking facilities, and the computing-related research throughout the Office of Science; benchmarking this quality by a comparison with similar facilities supported by organizations that support science in the context of a mission agency, both domestically and internationally.

2. The impact and effectiveness of interactions and resource sharing among Office of Science high performance computational and network facilities; the level and adequacy of funding provided by all Office of Science programs for high-performance computing and networking facilities; and the effectiveness of the current distribution of high performance computational and networking resources across the Office of Science complex.

3. The evolution of the roles of these facilities and/or their distribution, and of the computing-related research over the next 3-5 years so that SC programs can meet their high performance computational needs and maintain their national and international scientific leadership.

4. Useful metrics to measure progress and guide investment decisions in the area of computing and networking.

I would appreciate receiving a report of findings and recommendations from this review panel by September 1, 2002.

Sincerely,

James F. Decker
Acting Director
Office of Science

cc:
G. Richmond, BESAC
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