

Laboratory Reviews by the S&T Committee of the UT-Battelle Board High Performance Computing

Purpose: to give advice to the Laboratory on the status of its programs of science and technology. Such an evaluation is required as a part of the UT-Battelle contract with DOE.

Review committee:

1. Dwayne McCay – chair - Vice President for Research and Information Technology, University of Tennessee; member of S&T Committee

Thom Dunning, University of North Carolina and the Director of North Carolina Supercomputing Center; chemistry
<http://www.ncsc.org/news/pr/DunningTestifiesBeforeNSv2.html>
2. Ellen Stechel – Ford Research Lab; Manager of the Chemistry and Environmental Science Department in the Scientific Research Laboratories at Ford Motor Co.
http://www4.nas.edu/dels/bcst.nsf/web/ellen_b._stechel?OpenDocument
3. Mark Dean – IBM – Vice President, IBM Research, an IBM Fellow, and a member of the National Academy of Engineering
<http://domino.research.ibm.com/Comm/bios.nsf/pages/6E216CBC0D24C8AE8525659F007D3707.html>
4. Mike Colvin, Livermore; leader of Computational Biology Group in the Biology and Biotechnology Research Program
<http://stars.llnl.gov/ScienceDay/michaele.html>
5. James Hack, National Center for Atmospheric Research; computational climate research

Proposed schedule:

1. Review is held at ORNL on February 11 and 12, 2002
2. Review committee sends report to Laboratory on February 27
3. Laboratory Director makes reply to review committee report on March 6
4. Review committee chair reports to S&T committee on March 11 at 2 pm at NCSU
5. The S&T committee reports to UT-B board on March 14

Self study – a set of presentation and background material for the on-site review:

1. The vision for the Laboratory's program in high-performance computing
2. Strategic objectives and measures of accomplishment, including:
 - a. Major scientific accomplishments
 - b. List of publications, presentations
 - c. Description of assets, including people, tools, and funding in different divisions

- d. Investments made by Laboratory
 - e. Role of partnerships
3. Future plans
 4. List of questions for the committee

Possible questions for the committee:

1. Program Quality. Over the last three years, ORNL has established a leadership role in the nation's computational sciences capabilities. Would the committee evaluate the quality of ORNL's computational sciences program and ascertain its position relative to other programs. Also, evaluate what will be required of ORNL to increase its competitive position.

2. Program focus. The new computational sciences directorate at ORNL will build on ORNL's historical strengths in computer sciences and networking and, through the CCS, will focus its computational sciences enterprise on computational material sciences, computational biology, and computational climate and carbon modeling. Would the committee comment on the CCS focusing on these specific research areas and make suggestions as to the viability of the future program plans of each of these technical application areas.

3. Partnerships. We are building current R&D programs and the planned expansion of computational sciences at ORNL on partnerships with key universities, industries, and DOE laboratory partners. Through the CCS we are extending the computational capabilities of ORNL to individual PIs (or R&D teams) to help ensure the success of key DOE science programs. Would the committee comment on how best to enhance DOE's R&D enterprise and how ORNL's commitment to working collaboratively with other research institutions and with individual PIs can best be achieved.

4. Future directions. Our future direction is constrained by the ever-increasing demands for increased computational capabilities at ORNL to meet sponsor research requirements. The committee has heard how ORNL intends to keep ahead of the pace of improving and replacing our computational infrastructure. Would the committee comment on our future plans and offer advice on the scope and timing of these planned activities. We would also appreciate suggestions of how best to institutionalize this commitment to excellence.

Lee Riedinger
January 30, 2002