

Letter to the NCAR Director with minor edits by CISL, 6/25/09

May 19, 2009

Dr. Eric Barron, Director
National Center for Atmospheric Research (NCAR)
Boulder, CO 80307-3000

Dear Eric:

This is the customary letter to you, following the semi-annual meeting of the CISL High-performance-computing Advisory Panel (CHAP). The CHAP meeting this time provided a wealth of information and interaction on a variety of topics. We are pleased that you were able to join us for part of the meeting on May 14th and for the panel dinner that night.

We received an update on the NCAR Wyoming Supercomputing Center (NWSC) from Krista Laursen, who outlined rapid progress toward the potential groundbreaking for the site in early 2010. The entire process is of course dependent on NSF approval for the building and for a disciplinary Track-2 computing system in 2012. The Advisory Panel continues to strongly support moving ahead expeditiously on these efforts, which we regard as absolutely essential to continuing scientific progress by the nationwide atmospheric sciences community.

We heard a status report from Gene Harano and Tom Engel on Operations and Services, which NCAR continues to provide to its users with second-to-none quality. As evidence of that quality, two science presentations by Frank Bryan of NCAR and Stefan Tulich of the University of Colorado illustrated the kind of accelerated scientific discoveries that are made possible by NCAR machines when they are initially operated in a capability mode. Stunning results were shown from a simulation of ocean tracers using a global eddy-resolving model and for simulations of predominantly westward-moving tropical atmospheric waves in the presence of background vertical shear. In terms of computing turnaround, Frank Bryan indicated that he accomplished more in eight weeks on the NCAR system than in the prior eight months at other supercomputer centers available to him.

Rich Loft provided a comprehensive overview of HPC technology trends, as the Panel had requested at its last meeting. He covered technology issues of special importance to the ultimate selection of an optimal Track-2 computing system dedicated to atmospheric and related sciences, as opposed to a general-purpose machine.

Cliff Jacobs was unable to attend, because of last minute necessary changes in his schedule. We are very concerned about the situation at NSF, with its many changes in staffing as well as the overload and uncertainties regarding distribution of National Stimulus funds to important projects such as the NWSC. We know that the NWSC is listed as the top priority for stimulus funding by the State of Wyoming; and planning for the NWSC has successfully passed through enough justifications and peer reviews that there should be no doubt about its absolute need and its cost-effectiveness.

Al Kellie spoke to us about the overall CISL budget and the future directions of CISL, most of which you heard after you joined us in the afternoon. The Advisory Panel is very concerned about the flat budgets that CISL has endured in the face of inflation over the last five years, and we hope that a new era of growing support for CISL activities will be possible under your leadership and with the help of National Stimulus funds and the generous contributions from the State of Wyoming. The Advisory Panel strongly supports both the construction of the NWSC and a four-year installation cycle of new supercomputing systems. The Advisory Panel endorses the comprehensive CISL Strategic Plan for Service, Science, and Education; and the panel hopes many of the opportunities indicated therein for staffing and programming increments will be supported in the coming years.

In our own discussion with you as the NCAR Director, we realized the tremendous effort you are making at the highest levels of national planning to make the NWSC become a reality, including your frequent conversations with NSF, OMB, and OSTP. We know how much the NWSC means not only to NCAR and the Atmospheric Sciences but also to the State of Wyoming as an EPSCoR state and to the University of Wyoming with its own atmospheric- and computational-science programs as well as complementary engineering research programs in carbon-dioxide sequestration. We also expect the NWSC to provide connectivity to the TeraGrid successor programs for atmospheric and other sciences, as well as potentially providing an expandable computing resource for NSF Geosciences on a broader scale. We appreciate everything you are doing to make these things happen.

Finally, the CHAP reviewed requests for ~5.5M GAUs and allocated a total of 76% of the overall requests, with some requests being deferred for more information or for subsequent extension requests with adequate progress reports.

The next meeting of the Advisory Panel is scheduled for October 29, 2009. We hope you will be able to join us for part of that meeting.

Sincerely,

-Bert

Bert Semtner, CHAP Chair

cc: Al Kellie, Cliff Jacobs, Rick Anthes, CHAP members