



Department of Energy

Washington, DC 20585

DEC 10 2010

MEMORANDUM FOR ALAN STONE

FROM: GLEN CRAWFORD, DIRECTOR *GC*
RESEARCH AND TECHNOLOGY DIVISION
OFFICE OF HIGH ENERGY PHYSICS

MICHAEL PROCARIO *MP*
DIRECTOR, FACILITIES DIVISION
OFFICE OF HIGH ENERGY PHYSICS

SUBJECT: Charge for Scientific Computing Laboratory Review

The Department of Energy High Energy Physics (HEP) program funds scientific computing at the national laboratories to support the experimental and theoretical programs necessary to understand how our universe works at its most fundamental level. The scientific computing programs include the administration and operation of hardware facilities including storage and data management and software applications such as simulations, analysis and reconstruction code, frameworks, and database development.

This letter is to request that you conduct a review of HEP-supported laboratory scientific computing support and facilities on February 8-10, 2010, at Argonne National Laboratory. The purpose of this review is to assess the scientific computing programs necessary to support the current and planned HEP experimental and theoretical programs.

We are particularly interested (as applicable):

- Facilities, software application support and experiment specific software for the HEP accelerator based and non-accelerator experimental program including the U.S. T1 facilities for ATLAS and CMS.
- Support for theoretical programs including lattice QCD, computational cosmology, and accelerator modeling.
- Programs that develop common hardware and software solutions for use across the national and international HEP community. Examples can include the development and support of grid middleware, large scale databases, and general purpose analysis frameworks.
- Development of Monte Carlo particle generators and simulation tool kits.

The final report should outline the laboratory-based scientific programs in each of these areas and discuss any unique and important elements that the laboratory programs bring to bear in addressing these topics. In this context, we request an assessment of each laboratory's overall performance and effectiveness in these areas. The overall evaluation of the laboratory scientific computing programs will be an important input to the process of optimizing resource allocations to support the various research thrusts.



For each laboratory scientific computing program, we request a specific evaluation of:

1. The operation and provisioning of the hardware facilities at each laboratory;
2. The development, support and operation of applications that are specific to each laboratory's research program;
3. The development support and operation of general purpose applications and toolkits designed to meet broader HEP mission needs;
4. The adequacy of resources for carrying out the program, and cost-effectiveness of that program;
5. The budgetary model for the deployment and support of any hardware facilities. Where applicable, include the apportionment, use and accounting of the hardware facilities across the laboratory's HEP program;
6. The budgetary model for development and support of software applications; and
7. The quality of the support and infrastructure provided by the laboratory.

The laboratories should provide relevant information which addresses these items in advance of the review.

I encourage you to interact with the laboratory groups at the review and provide them with whatever immediate feedback you find appropriate. Upon the completion of the review, reviewers should send a letter summarizing their findings and evaluations, which address the overall assessment of laboratory contributions. The letters will be confidential within OHEP. Individual laboratory evaluations will be summarized and conveyed to the laboratories. The overall assessment of laboratory scientific computing programs to the research will be incorporated into a summary report from OHEP. I would like to receive the individual laboratory evaluations and the summary report no later than March 15, 2011.

cc: D. Kovar, DOE
G. Crawford, DOE
M. Procario, DOE
H. Weerts, ANL
S. Vigdor, BNL
Y. Kim, FNAL
V. White, FNAL
J. Siegrist, LBNL
D. MacFarlane, SLAC