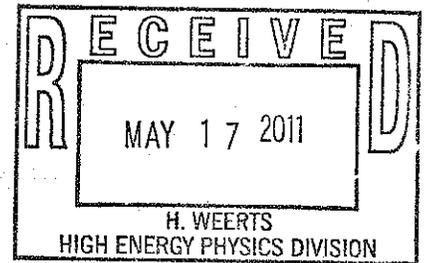




Department of Energy  
Washington, DC 20585

MAY 9 2011



MEMORANDUM FOR SIMONA ROLLI

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

SUBJECT: Charge for Theoretical Physics Research Review

The mission of the Department of Energy (DOE) High Energy Physics (HEP) program is to seek understanding of how our universe works at its most fundamental level. The Theoretical Physics subprogram supports that mission by fostering fundamental research that provides new insights and understanding into the basic constituents of matter and the forces between them, thereby advancing our strategic goals for science. The HEP has supported research in Theoretical Physics since its inception, because theoretical interpretation and analysis underpin almost all progress in high energy physics.

This letter is to request that you conduct a review of HEP-supported laboratory research efforts in the area of Theoretical Physics on July 25-27, 2011, in the Washington, DC area. The purpose of this review is to assess the quality of the recent scientific achievements by these research groups, their impact on achieving the scientific goals and milestones of the field, and the relevance of their research efforts to the overall HEP mission.

We are particularly interested in a review of the laboratories research contributions (as applicable) along these programmatic thrust lines:

- Phenomenology and Model Building
- Lattice Gauge Theory
- Formal Quantum Field Theory and String/Gravity Theory
- Cosmology and Particle Astrophysics Theory

The final report should outline the laboratory-based HEP research program in each of these thrusts and discuss the unique and important elements that the laboratory programs bring to bear in addressing these research topics. In this context, we request a comparative assessment of each laboratory's overall performance in these areas relative to its peers, as well as an assessment versus comparable university groups. The overall evaluation of the laboratory research groups will be an important input to the process of optimizing resource allocations within the various research thrusts.



*For each individual laboratory research group, we also request a specific evaluation of:*

1. The quality and impact of the contributions by the group in the recent past;
2. The scientific significance, merit, and feasibility of the proposed research;
3. The competence and future promise of the group for performing the proposed research;
4. The adequacy of resources for carrying out the proposed research;
5. The cost-effectiveness of the research investment and the degree to which the proposed research requires or is significantly enhanced by a laboratory setting;
6. The quality of the support and infrastructure provided by the laboratory; and
7. How the group enriches the laboratory's experimental program (as applicable), and how well the group's activities relate to the overall HEP mission.

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, which address both the overall assessment of laboratory contributions to the research thrusts noted above, and the individual laboratory evaluations. The letters will be confidential within HEP. Individual laboratory evaluations will be summarized and conveyed to the laboratories directly. The overall assessment of laboratory contributions to the research thrusts will be incorporated into a summary report from HEP. I would like to receive this report no later than September 27, 2011.

cc: M. Procaro, DOE  
L. Yaffe, DOE  
J. Kogut, DOE  
H. Weerts, ANL  
T. Ludlam, BNL  
J. Siegrist, LBNL  
G. Bock, FNAL  
D. MacFarlane, SLAC