



Department of Energy

Washington, DC 20585

November 24, 2010

Bruce Strauss
Program Manager
Department of Energy
Office of High Energy Physics
Germantown, MD 20874

Dear Bruce:

The General Accelerator Development subprogram supports the DOE High Energy Physics (HEP) mission by fostering developmental research into the science, technology and engineering of particle accelerators. This subprogram nurtures the technologies needed to design and build the future accelerator facilities that will be used to carry out the HEP research program and also to provide new accelerator-based tools for other scientific research disciplines, thereby advancing our strategic goals for science and technology.

This letter is to request that you conduct a review of OHEP-supported laboratory and university research efforts in the area of General Accelerator Development on January 24–26, 2011 at Argonne National Laboratory. The purpose of this review is to assess the quality and impact of the recent scientific achievements by each of these research groups, and the feasibility, relevance and impact of the proposed research and development on achieving the scientific goals and milestones of the HEP mission. *For each research group*, we request a specific evaluation of:

- The quality and impact of the research by the group in the recent past;
- The scientific significance, merit, and feasibility of the proposed research;
- The competence and future promise of the group for carrying out the proposed research;
- The adequacy of resources for carrying out the proposed research, and cost-effectiveness of the research investment;
- The quality of the support and infrastructure provided by the institution; and
- For national laboratories examine how the group enriches the laboratory's experimental program (as applicable), and how well the group's activities relate to the overall HEP mission.
- For each of the university groups evaluate how their program relates to overall HEP development.

The research efforts should be presented in terms of the group's contributions (as applicable) along the following programmatic thrust lines:



- Accelerator and Injector Systems
- Superconducting Magnets and Materials
- High Power RF Systems
- Beam Instrumentation
- Other research being carried out with General Accelerator Development funding

Each of the research entities should provide information in this format on both their accomplished and proposed research in advance of the review, including the level of effort for each thrust line (FTEs and funding).

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

The OHEP General Accelerator Development (GAD) program gives high priority to R&D that holds the promise of producing new techniques, approaches or technologies to extend the reach of accelerator-based physics. In that context, we are interested in developing a strategic plan for GAD that can help guide research priorities and developmental milestones for the future of the program. As part of this review, we are also requesting the reviewers provide general findings and comments about the current status and future promise of the programmatic thrust areas listed above as input to this strategic plan, for example:

- What are the expected deliverables of this research thrust in the next 5-10 years? Approximately what level of investment is needed to achieve these goals?
- What is the benefit of additional investments in this particular thrust? What are the likely impacts of reduced investments?
- Is the current level of investment appropriate, given the current technical status, near-term milestones, and long-term promise?
- Do the institutions have sufficient technical and management infrastructure to reliably deliver the goals for this programmatic area and respond to new developments?

I encourage you to interact with the 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 includes their overall findings on the GAD research thrusts, an assessment of lab contributions to these thrusts, and the individual lab evaluations. The letters will be confidential within OHEP. Individual lab evaluations will be summarized and conveyed to the laboratories. The summary findings on the GAD research thrusts and overall assessment of laboratory contributions therein, will be incorporated into a summary report. I would like to receive

the individual laboratory evaluations and the summary report no later than April 30, 2011. Thank you for taking on this important task.

Sincerely,



Michael Procario
Director of the Facilities Division
Office of High Energy Physics
Office of Science

cc: D. Kovar, GTN
G. Crawford, GTN
LK Len, GTN
T. Ludlam, BNL
S. Vigdor, BNL
P. Wanderer, BNL
S. Gourlay, LBNL
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