Research Director's Report

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Cautious optimism for US-university detector R&D funding

This month's Research Director's Report was written by Jim Brau, co-chair of the Worldwide Study and regional detector contact for the Americas.

Several recent positive developments are moving us forward on the path towards realising the ILC. These include excellent detector R&D results and significant progress on the Letters of Intent (LOI) for the various detector concepts. These advances were reported at the recent Linear Collider Workshop at the University of Illinois in Chicago. While much of the R&D of the international ILC community has benefited from continuous support, in the US and in the UK we have struggled through a tough year. Now there is news that funding for university detector R&D in the US, which was cut severely last year, may be restored. This is good news because ILC detector R&D is far from finished, and continued and reliable support remains critical.

In the US, funding was interrupted last year by political choices high in the government, with significant negative impacts. The current fiscal year in the US is about 30 percent completed and the federal government does not yet have a formal budget. The US has been operating under a "continuing resolution" which provides a conservative level of support, based on the reduced funding levels of the previous year. This was bad for the detector R&D efforts, especially in the university community. As I write, no one knows with certainty what level of support will be possible. Despite these funding challenges, our colleagues both in the US and the UK have managed to continue serious R&D efforts and to help prepare for the detector concept LOIs within the global partnership.


Cornell/Purdue small time projection chamber (TPC) prototype (LEPP, Cornell)

In the US, there is a light on the horizon: the new President and the Congress have sent promising signs that science funding, including funding for high-energy physics, will soon get a boost. The Strategic Plan for the US high-energy physics programme outlined in the P5 report recommended that funding for detector R&D be restored. (see my Research Director's Report from 12 June 2008) It is too early to tell whether the hopeful signs will turn to reality, but in anticipation of the best outcome, the US community is organising itself to be ready. Discussions with the federal funding agencies (the US Department of Energy and the US National Science Foundation) have indicated there is a good chance for support of university efforts which are aligned with the R&D critical to advancing the ILC detector concepts. The funding agencies have asked that US leadership in each of the LOI groups submit proposals summarising those efforts. If funding becomes available, the sum total for all proposals could range from $300 000 up to $2M.

The first step in the process is for interested university groups to prepare project descriptions for the work they would like to conduct. The guidelines for preparation of these individual project descriptions are posted here. The project descriptions are due on 23 January 2009. For reference, the list of projects supported as part of the US linear collider detector R&D programme (LCDRD) over the past three years is posted here.

Next, US leadership in each of the LOI groups will incorporate information from the university project descriptions to form the basis for their proposals, which are due at the funding agencies by 18 February. Due to the long lead time required for the agencies to deliver funding in the current fiscal year, it is necessary that the due date comes prior to the LOI due date of 31 March. The LOI proposals to the funding agencies will present formal plans for a prioritised set of university projects. The proposals must explain how the proposed work relates to efforts elsewhere in the world, and within the US HEP laboratories. Further guidance for the proposals is posted here. Each proposal will identify two principal investigators, one from the US university community, and one from the US high-energy physics laboratories.

Resistive plate chamber (RPC) calorimeter prototype setup at Fermilab (Argonne)

So, the deadlines are:

- 23 January: US university groups submit individual project descriptions
- 18 February: US leadership of each LOI group submits proposal to the DOE and NSF, referencing the project descriptions

It is expected that after receiving these proposals from the US leaders in each of the LOI groups, the US federal funding agencies will put them through a review process to announce award decisions in the late spring if funding is available. This would make new funds available by the end of the current fiscal year, on 30 September.

The science case for the ILC remains very strong. However, there are also other deserving, competing needs for federal financing. We must continue to deliver the maximum productivity from the funding we secure, and to publicise our success through timely reports.

-- Jim Brau