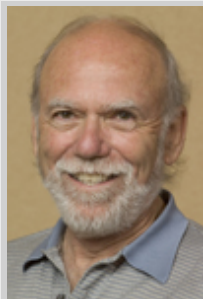


Director's Update: STFC Report



Barry Barish

Earlier this week on 11 December, the UK's Science and Technology Facilities Council (STFC) announced funding cuts in a number of their physics and astronomy programmes. To my disappointment, the International Linear Collider is one of these programmes. The [STFC report](#) states: "We will cease investment in the International Linear Collider. We do not see a practicable path towards the realisation of this facility as currently conceived on a reasonable timescale."

The announcement comes as a surprise not only to our colleagues in the UK but to many others involved in the ILC. The STFC, a merger of the former British funding agencies PPARC and CCLRC, currently faces a budget crisis and has a deficit of 80 million pounds. As a virtual project in its planning phase, the ILC was particularly vulnerable to these budget cuts.

The ILC is currently in an R&D phase. Over the next three years, we will develop a detailed project plan at which time we hope to have results from the Large Hadron Collider at CERN. We will also develop more robust and reliable costing and are undertaking R&D to demonstrate some key features of our design. The UK's contributions during this planning phase are very important, particularly in terms of leadership and intellectual contributions.

The UK is involved in several areas of R&D for the ILC. These include the beam delivery system, electron and positron sources, beam diagnostics, damping rings and detector development. Work on the beam delivery system, for example, includes the lattice design, beam diagnostics, alignment, and crab cavity development. Laser wire system R&D is another example of work led by a team of universities in the UK. The laser-based beam diagnostics develop technology for determining the dimensions of the particle bunches inside a linear collider, an important part of colliding nanometre-sized beams. In yet another example, the UK plays a significant role in developing the low-emittance damping rings for the ILC. The damping rings are perhaps one of the most challenging pure accelerator and beam dynamics issues in the ILC concept and the loss of our UK colleagues' contributions and leadership in this area would be particularly damaging. Finally, I might add that UK scientists are also active in advanced detector R&D for the ILC, which again is developing detector technology with broad particle physics applications in the future.

All of this R&D work is driven by the ILC. Its value, however, stretches far beyond this one project. The UK ILC scientists are developing technologies that can be used for all kinds of future accelerators, and much of the R&D has broad applications for other areas of science and industry.

It will take us some time to understand the total impact of the STFC decision. What is clear, however, is that losing the UK's contributions to the ILC will have a significant negative impact on our R&D programme. This would be considerably mitigated, if we are able to find a way to retain the intellectual contributions of our key UK colleagues. In a few years from now, when we have a fully developed project plan, I truly hope that the UK will be able to commit to be part of the implementation of the ILC.

-- Barry Barish