

**EMBARGOED UNTIL 00.01 GMT ON TUESDAY 11 DECEMBER 2007**

## **UK physics faces worst funding crisis in a generation**

**A press release from representatives of the UK particle physics research community**

**Tuesday 11 December 2007**

University physics departments and researchers are braced for a disastrous three years because the government has left the newly formed funding agency STFC (The Science and Technology Facilities Council) with an £80M shortfall over that period. The cuts will significantly reduce running time on Diamond, the Government's flagship synchrotron facility that was only recently opened, and will affect researchers across many disciplines.

The cuts will result in a 25% cut in STFC research grants, which will reduce the number of new PhD students, post-doctoral researchers and the UK's involvement in a number of international projects in astronomy, space exploration, particle and nuclear physics. For particle physicists the cuts come at the worst possible moment since, after years of investment, the 27km Large Hadron Collider at CERN will begin operation in 2008. The machine will open up a new chapter in our understanding of the early Universe less than a billionth of a second after the Big Bang. The subsequent leap in our understanding will provide a unique opportunity to broaden the appeal of physics: in a survey of 900 first year undergraduates in October 2007, 75% cited the study of fundamental particles and quantum phenomena at A-level as having a significant impact on their decision to study physics at university. Instead of seizing the opportunity to inspire a new generation of physicists and engineers, particle physicists are faced with managing the worst crisis in UK science since the cuts imposed by the Thatcher government.

STFC was formed this year by the merger of CCLRC and the Particle Physics and Astronomy Research Council (PPARC). Assurances were given that the merger would be properly funded and would not adversely impact scientific research volumes and university physics department finances. In April 2007 the House of Commons Select Committee on Science and Technology noted that "There were concerns that the STFC would be hampered by CCLRC liabilities, but we have been reassured by the Minister for Science that these will not be transferred to the STFC." Nevertheless, the House of Commons Public Accounts Committee identified increases in operating and construction costs of CCLRC facilities in October 2007 that were not fully provided for by DIUS in the CSR settlement despite warnings from STFC that meeting these costs would result in cuts to the research programmes.

The 25% reduction in grants and the cancellation of existing research programmes will adversely affect the finances of many of the country's leading physics departments at a time when the government is encouraging an expansion in physical sciences and when departments were encouraged by a recent uplift in HEFCE funding.

The impact of this crisis will eventually be felt across the wider economy. In November 2007, the Minister for Science and Innovation, Dr Ian Pearson, speaking at

the Institute of Physics, championed the role of physics in the wider economy:

“Physics makes a key contribution to the UK economy through the one million jobs where the use of physics based technologies or expertise is critical to the existence of the sector, concentrated in 32,000 businesses.”

5% of jobs in the UK are in sectors where the use of physics-based technologies or expertise is critical to the existence of the sector.

The particle physics community calls on Dr Pearson to act now to prevent serious damage to physics research and education in the UK, and to the reputation of the UK as a leader and reliable partner internationally.

Some quotes from UK particle physicists

Professor Phil Allport (Liverpool University)

*"Physics changes the paradigm. Physicists forged the silicon revolution and invented the World-Wide Web. The latter was a product of particle physics research. These cuts are short-sighted and threaten the UK's ability to continue to produce the paradigm shifts that spawn new industries. Physics underpins research in all branches of science, from the genome to nanochemistry."*

Dr Mark Lancaster (University College London)

*"Income from research supported by the STFC is responsible for the majority of the income maintaining the highest ranked physics departments in the UK. The CSR settlement will put in jeopardy a number of departments which is at odds with the government's aim to stem the tide of physics department closures."*

Professor Brian Foster (Oxford University)

*"The Science Minister, most recently at the Kelvin reception at the House of Commons, has emphasised his belief in the vital importance of healthy University physics departments. His advisors in DIUS cannot have made clear to him the contradiction between his support and the setting up of a new research council, STFC, with patently insufficient funds to carry out its core business; they have advised him to accept a CSR settlement that exacerbates the damage."*

Dr Brian Cox (University of Manchester)

*"Scientific research is not a luxury; it is a necessity. The Government has done an enormous amount over the past ten years to restore the UK's reputation as a scientific leader. It is short-sighted and damaging to throw this away through an ill-considered attack on fundamental science."*

Professor Mike Green (Royal Holloway University of London)

*Physics underpins many advances in science and technology. It is, for example, the science behind all modern hospital scanners and radiotherapy. Continuing advances in accelerator technology promise further improvements in the near future."*

Professor Ken Peach (John Adams Institute for Accelerator Science)

*"It is a tragedy that the Government, which has done a great deal to restore the UK's place as an international leader in science over the last decade, seems resigned to see much of this progress thrown away."*

## Notes for editors

1. STFC was formed in April 2007 by the merger of CCLRC, which was responsible for running research facilities such as the Diamond synchrotron light source at The Rutherford Appleton Laboratory, and the Particle Physics and Astronomy Research Council (PPARC), which funded UK participation in international scientific projects such as CERN, The European Space Agency and astronomical observatories such as ESO.

2. The STFC CSR award was an average increase in budget of 1.6% per annum above inflation for 2008-11. Known increases (<http://www.publications.parliament.uk/pa/cm200607/cmselect/cmpubacc/521/52105.htm>) in the construction and operation costs of Diamond, ISIS and decommissioning the SRS at Daresbury as well as increases in international subscriptions to CERN, ESA, ESO arising from currency fluctuations and UK GDP increase were not fully provided for by DIUS in the CSR settlement. STFC informed DIUS that these increases would mean the current planned baseline programme could not be maintained without cuts. The £80M deficit is against the baseline 2008-11 programme which sought to maintain a constant research volume.

3. The quote from the House of Commons Select Committee on Science and Technology can be found at the following web site (para 56):

<http://www.publications.parliament.uk/pa/cm200607/cmselect/cmsctech/203/20308.htm>

The minister was Malcolm Wicks.

4. 5% of jobs in the UK are in sectors where the use of physics-based technologies or expertise is critical to the existence of the sector. (source Physics and the UK Economy, IoP, Sep 2007).

5. Further comments can be obtained from:

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This press release is issued by representatives of the UK particle physics community listed below.

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