

UK faces physics 'catastrophe' without funding increase

Report to funding council warns UK could lose leading international position.

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STFC

Physicist John Womersley is the chief executive of the UK's Science and Technology Facilities Council.

Physics research in the land of Isaac Newton and Peter Higgs faces a "catastrophic" future and the United Kingdom will "lose leadership and credibility" on the world stage if current levels of funding continue, according to a panel of experts. Their report was completed last year at the request of the country's major funder and released today.

The stark warning was produced by a board of independent scientists for the Science and Technology Facilities Council (STFC), which distributes government money for astronomy, particle physics and nuclear physics. The STFC used the report in negotiations with the government over its budget for 2015/16. But despite the expert panel's claim that "the consequences of further constraining the [STFC] programme over a prolonged period of time would be catastrophic", the core budget for the council was not increased by the government in its latest allocations, announced in February (see '[English research gets cuts reprieve as ministers hit teaching](#)'). This continuing 'flat cash' scenario — a budget trend that did not keep pace with inflation — since 2010 has led to severe belt tightening across academia.

The review warns that not increasing the budget for a prolonged period would mean that "the UK would lose leadership and credibility as an international partner on the world's scientific stage". Experienced researchers will leave and the ability to train the next generation will be reduced, it also warned.

UK researchers have complained for years that the real-terms decline of science budgets are damaging science and the country's economy. For example, the purchasing power of the money allotted to the STFC's particle physics, astronomy and nuclear physics programme (PPAN) has declined by 32% since 2010. But the STFC review lays out in stark detail the possible consequences of continuing on this path of austerity. In a letter published with the review, STFC chief executive John Womersley wrote that the council shares its expert panel's concerns over the impact of the funding freeze on the PPAN programme.

However, the STFC says, the government has heeded the warnings in the programmatic review, not least by increasing 'capital funding' — which provides for building new facilities and large equipment — and by providing additional money for UK contributions to international projects such as CERN and for operating large facilities. The council also says the review is taking a ten-year view of what flat cash would mean, while the current budgets are set only till 2016, when the UK will have a new government.

"We still got flat cash; most other areas of government got cutbacks," Womersley says. "It's not a bad outcome. Will we be arguing for more [in the future]? Absolutely."

The review looked at what might happen if the STFC budget stayed the same, increased 10% or decreased 10%. Because the government has provided some additional funding for capital and international subscriptions the council's actual budget does not exactly match any of these scenarios. The council has redacted the sections that lay out exactly what might be funded under each scenario but says it will have a programme for what is to be funded ready in May.

"It is very clear that significant damage will be done to STFC science under -10% or flat cash," says Yvonne Elsworth, a solar physics researcher at the University of Birmingham and a member of the science panel behind the review. "There are many areas in which the UK has had major scientific impact and it will be a great loss if we cannot continue to capitalize on previous investment in people and facilities."

In a statement, the Department for Business, Innovation and Skills, which has responsibility for the research councils, said, "This Government has a history of strong support for science despite the considerable financial pressures. We are maintaining our £4.6 billion science budget and have increased our long term investment in science to over £1 billion per year."

