Physics bears the brunt of research council's accountability demands

London. British physicists are up in arms over a plan by the Engineering and Physical Sciences Research Council (EPSRC), one of the principal sources of support for research in UK universities, to cut their funding two years from now by almost four per cent below its currently projected level.

In contrast, the EPSRC has also provisionally decided to increase funding in the same financial year for both chemistry and mathematics by 5.2 per cent. But marine technology and the 'built environment' have, like physics, both been selected for a cut, in each case by 4.8 per cent.

The proposed redistribution in 1988—89 of the £375 million that the council allocates every year to British researchers — the figures could still be revised before a final decision is reached — represents an explicit attempt to reshuffle funding priorities between different fields of science, taking into account both scientific quality and potential contribution to wealth creation.

EPSRC officials say that the decision to cut the physics budget is intended to send a signal to physicists that, in contrast to chemists and mathematicians, they do not seem to be generating enough innovative ideas, or building enough links with industry, to justify their current funding level.

"This is not a plea to physicists to become more applied," insists Richard Brook, chief executive of the EPSRC, and previously a professor of materials science at the University of Oxford. "We are hoping that physicists will come back with some basic physics proposals that look exciting; if they can do this, then the figures will be changed."

But physicists reject the charge that their field has become static. They claim in reply that the council's move reflects a lack of understanding of the way that physics, in contrast to fields such as chemistry, contributes to wealth creation not through a specific industry but by underpinning developments across a range of industries.

"We are disappointed at the EPSRC's decision," says Alun Jones, chief executive of the Institute of Physics (IOP). He says that the institute is already preparing detailed evidence of the contribution of physics to British industry, and plans to ask its own committees to identify "burgeoning areas" of the subject, to be used to refute the charge that the subject is becoming stale.

The pressures facing British physicists have some of their origins in the government's decision to split the former Science and Engineering Research Council (SERC) in its white paper of May 1993. As a result of this split, much of SERC's more fundamental research has now been hived off into the new Particle Physics and Astronomy Research Council (PPARC).

EPSRC, which took on most of SERC's remaining activities, retains responsibility for both basic and applied research. But it also has a more explicit mission than PPARC to ensure that the research it funds contributes to national wealth creation (and to enhancing the quality of life).

In line with this new mission, the success of individual scientific disciplines in building links to industry was high among 17 explicit criteria used by EPSRC's new Technical Opportunities Panel — known as TOP, and made up of leading researchers from universities, industry and elsewhere — in preparing recommendations to the full council on how the distribution of research finds in 1998–99 should be adjusted from merely a neutral extension of current funding trends (see next page).

The council, acting largely on the recommendations of TOP, has now suggested increased funding for some areas of obvious application; for example, it proposes that support for research into control and instrumentation technologies be increased by 5.2 per cent, and for information technology by 2.8 per cent.

But EPSRC officials point out that — as the proposed cutback in marine technology illustrates — a field's potential contribution to wealth creation is not sufficient to protect its research budget. Conversely, they say, disciplines such as mathematics which have demonstrated both an intellectual vitality and a commitment to closer industrial linkages should be rewarded with the prospect of increased funding.

Thus the council's proposed 3.8 per cent cut in the physics programme, with the implicit threat that the cut could be even deeper if physicists do not pull their socks up, is defended as a deliberate judgement on the current state of those aspects of the discipline — such as solid-state physics and nuclear structure — that have not been taken on by PPARC.

"Many physicists seem to be ignoring the result of the Technology Foresight exercise, and to lack any great interaction with industry," says Brook. He points out, for example, that physicists have done relatively badly compared to those from other ▶

Einstein paper on the path to riches

Washington. **Who says basic physics does not make money (see above)? A 1912 manuscript by Albert Einstein on relativity theory — the longest and earliest known manuscript on the subject penned by Einstein himself — will be auctioned in New York next month. Sotheby's, which is handling the sale planned for 16 March, expects the 72-page document to fetch between $4 million and $6 million, placing it among the most valuable manuscripts ever sold.**

AP

Pride of place: a float representing Albert Einstein in last week's carnival in Rio de Janeiro.

Written for an unpublished scientific text commissioned by the German publisher Akademische Verlagsgesellschaft, the document's existence was unknown until 1987, when heirs of the publisher sold it for $1.2 million to the current owner, an anonymous collector.

Einstein made no effort to preserve his own papers before the 1920s, making this document — written between his development of the special theory of relativity in 1905 and the general theory in 1916 — all the rarer. All but one of the handful of early Einstein papers previously known to exist, the exception being a short paper written when the scientist was 16 years old, are in public collections in Israel and elsewhere.

Although the edited text of the manuscript being auctioned next month has appeared in print, in a multi-volume set of Einstein papers published by Princeton University last year, the handwritten version contains extensive revisions and deletions that give clues to Einstein's thinking during one of his most creative periods as a scientist, according to David Redden, a senior vice president at Sotheby's. Tony Reichhardt