

steve schwartz **view from the top**

A lingering sense of struggle in the slog to learn physics lessons

There was an air of contrition surrounding the senior management of the Science and Technology Facilities Council during the presentation of their controversial review of the STFC's research priorities at the Royal Society last week. The council's top officials, including Keith Mason, chief executive, and John Womersley, director of science programmes, insisted that they had learned lessons from the Programmatic Review exercise. But have they really?

As chairman of one of the 10 specialist advisory panels that the STFC hurriedly set up in March after its own efforts at ranking projects had been roundly condemned by researchers, I left the meeting still stunned by the events that have unfolded since the council revealed an £80 million hole in its budget last November. And I remain fearful for the future of the UK's physics and astronomy research.

Symptomatic of the STFC's shortcomings, ever since its founding in April last year, has been a top-down approach to the uneasy merger of pure science, from the Particle Physics and Astronomy Research Council, and major facilities, from the Council for the Central Laboratory of the Research Councils. That approach was signalled early on with the dismissal of subject-area advisory panels through which the wider scientific community had shaped the scientific priorities and strategies under PPARC. Thus began the disengagement of the community from those in charge of the purse-strings.

AS A RESULT, in January, it was small top-level advisory bodies of the STFC that conducted the biennial Programmatic Review of major projects and facilities. The Particle Physics, Astronomy and Nuclear Physics Science (PPAN) Committee and the Physical and Life Sciences (PALS) Committee advised the Science Board, which forwarded its recommendations to the council of the STFC.

But this delivery of project rankings, which implied the termination of major projects and careers, fuelled the sense of disconnection between the decision-makers and the scientific community.

In a late and enforced attempt to appease researchers, the STFC scrambled ad-hoc specialist panels, such as mine, to gather community input. We fed our informa-

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tion to PPAN and PALS, which culminated in last week's question-and-answer session that heralded the end of the Programmatic Review.

At the meeting, the STFC executive acknowledged many of the important lessons to emerge from the consultation process: get the community behind you; gather inputs through a set of specialist panels that can formulate a coherent subject-specific strategy; keep the dialogue going; consult early; and consult often.

But has the STFC really learned these lessons, or does it merely now know what they are? The omens are not good.

The STFC is still without its own formal strategy. We are told that a strategy document is being drafted, but not by whom—and certainly not with any direct community consultation. Will the community accept the strategy if and when it appears, or will they, once again, feel the sense of imposition from above?

Specialist advisory panels are being re-established; in fact, we have heard this for a while now, but implementation does indeed seem to be getting closer. We are told that these panels will be subject-based rather than facility-driven. This is a welcome sign—and a lesson learned. But will there be enough panels? Enough members? Enough influence to be seen as an effective route through which the community can channel its talents and aspirations?

Effective decision-making needs more than a small set of advisers to cover the enormous breadth of the programme, from running large facilities costing hundreds of millions of pounds at one end, through major international collaborations on fundamental science, to individual research grants at the other. The demands are too great for a handful of honest, hard-working scientists on the PPAN and PALS committees and the Science Board who are tasked with 'tensioning' the budget across the entire STFC portfolio.

The STFC boasts that more than 1,400 responses were passed to the 10 ad-hoc specialist panels, that the panel recommendations were largely in agreement with the original rankings, and that many recommendations were taken onboard.

In fact, the process was much less
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effective than it could have been because the community was provided with scant feedback to indicate why projects were ranked where they were. The panels themselves also found information difficult to obtain.

Not surprisingly, community responses often merely re-iterated project objectives or successes. The few responses from projects initially ranked high generally praised the wisdom of that ranking; while the flood of responses from projects ranked low often vented obvious frustration and anger.

What lingers in the air after all this is a sense of struggle, a perception that there is no clear direction or strategy, no transparent means for priorities to percolate up from the grassroots, nor for the peer review process to be viewed with confidence from below.

This is not to smear the integrity of the small team of undoubtedly stressed-out advisers within the present structure. It is to condemn a top-down management style that is trying to operate a 'one-size-fits-all' approach for the funding of both science and facilities within a financial straitjacket.

Will the promised Specialist Advisory Panels make a difference? Will they be given the influence to enable the scientific community to work with the STFC? As usual, we can only wait to be told.

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which no practical application is currently obvious, and here the Royal Society is proposing to launch a blue-skies research fund later this year.

The blue-skies fund, which will distribute £1 million a year, will expand the diversity of support available to people with good ideas. It will not be based on conventional peer review, but rather a single generalist panel will consider proposals from any field, looking for work that has the potential to develop wholly new areas of research. We are in the process of appointing someone to chair this panel.

The leading lights of the last century of science tended to enjoy freedoms that the modern world of risk management and audit trails finds it hard to replicate. But, by their nature, great scientists are ingenious and will be good at finding ways of slipping out of the ties with which bureaucracy tries to bind them.

One of the most important things that funding agencies can do to help them is to have a rich and diverse range of well-funded schemes that allow everyone with a good idea a decent chance of winning support. Proposals, such as Braben's, offer potential elements, but the key requirement is for an assortment of different funding vehicles that promote the widest possible variety of inspirational science.

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Mish maths

Comfort now, for those baffled by the complexities of citations analysis. Top mathematicians are baffled, too—and not in a good way. **William Cullerne Bown** returns to his roots

Alarmed by the spreading reliance on bibliometrics, the International Council of Industrial and Applied Mathematics, the Institute of Mathematical Statistics and the International Mathematical Union commissioned a report last July into the use of bibliometrics in research assessment. The conclusions, from three eminent mathematicians, were published in June. But oh dear, oh dear...the summary just doesn't add up.

Like the mathematicians (and I studied maths, once), I'm firmly in the sceptics camp. But the valid, generalised caution about the use of bibliometrics in the 26-page report sounds awfully familiar. Sadly, the report's originality seems to lie in some weird ideas about how and why people are using bibliometrics.

The result is a succession of paper tigers. For example, the report repeatedly refers to "sole reliance" on bibliometrics leading to all sorts of problems. But who is doing that? We don't need mathematicians to tell us that that's dumb. We need them to help us to judge, even to quantify perhaps, how much we can rely on bibliometrics.

The report refers to "those who promote exclusive reliance on citation-based metrics..." but does not say who these people are or give examples of this promotion. According to the report, the boosting of sole reliance on bibliometrics is rife at every level, from departmental appointment committees all the way up to national policy frameworks. Yet only two concrete examples can be found. These are the British government's plan to replace the peer review panels of the Research Assessment Exercise (RAE) with a new Research Excellence Framework (REF); and a report from Evidence Limited about bibliometric techniques.

On the REF, the mathematicians are right to criticise the original plan that the government came up with. It is about two years since I first argued in *Research Fortnight* that the plan was reckless. Yet, even so, the mathematicians fail to acknowledge that what has been presented as a 'plan' is, in reality, a 'proposal', and that it has already been watered down to the extent that oversight by peer review panels is back on the menu.