

# Viewpoint

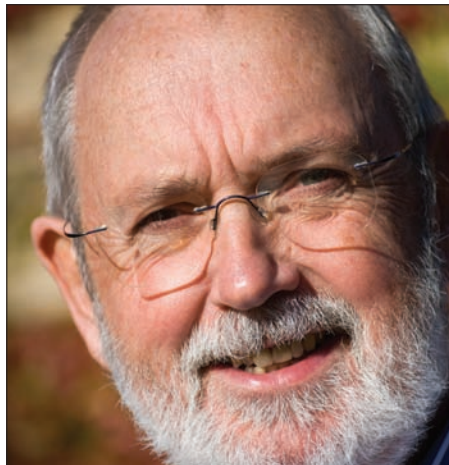
## Towards a more confident future

**Colin Carlile** argues the case for collaboration and science as drivers of confidence – something that is surely needed in 2012.

Gloom and despondency about the economic climate fill the newspapers to saturation point. The eurozone is, once again, destined to fragment and disappear – there is a depressingly strong sensation that many people never wanted it to thrive in the first place and would be delighted (not openly of course) should it disappear. Interestingly, the issue of the real climate has fallen off the radar screens for the moment. There is no doubt that these issues and many others – most notably the atrocious inequality of living standards worldwide – are of immense importance as we enter another new year. As one year follows another, are we, as a society, content to accept that these problems are insoluble and, if not, how are we – international scientists, engineers and administrators – able to contribute best?

In my view there is a strong element of lack of confidence floating around but confidence is what is needed now. Science has, in the past and increasingly so today, often been the source of inspiration, meaning and confidence in people's lives. The moon landing is an obvious example – vision creates the confidence and the confidence creates the reality. The all-important and necessary details follow from the vision and not the other way around as many people today believe.

When we stand back and look at big-science facilities today we are justified in feeling awed. The LHC has been a lesson in determination and belief. Well done to all! The space telescopes as well as the ground-based telescopes provide



(Image credit: Roger Eriksson/ESS AB.)

breathtaking images and insights, and move the whole human race away from superstition towards a more realistic and healthy view of our place in the universe.

Today, the fragmentation of science into different disciplines, which was very evident in the second and third quarters of the previous century, is in reverse. Collaboration across these boundaries is today evident and productive, and this will surely continue. When I went to the Institut Laue-Langevin in Grenoble in 1999 I came into contact with the incipient grouping of the then seven large European science laboratories, which became EIROforum. Not the snappiest name in the universe, it has to be said, but a surprisingly effective and egalitarian organization in which not only the minnows certainly benefited but also the big-hitters gained. In many ways the international organizations mirror the national/international dilemma of the EU's Directorate-General for Research and there was a natural affinity, which opened doors, increased influence and created togetherness between the different players. I was a big fan of EIROforum and remain so. It has added an extra dimension.

However, the European Spallation Source (ESS), which I now head up, is not yet ready

to join this group of eight laboratories. The ESS sits plum in the middle of the size-scale between the cosmic scale of the telescopes and the submicroscopic scale of the LHC; it deals with materials science in all of its complexity and in all of its diversity. The ESS is not yet operational and it will not be such until the end of this decade when it will be the world's most intense source of slow neutrons for the investigation of materials – from bio membranes and drug-delivery mechanisms to magnetic structures and metallurgical properties. But, crucially, the ESS is driven by the same engine that drives the LHC: a high-intensity proton linear accelerator, with its superconducting niobium accelerating cavities. And collaboration between the ESS and CERN is thriving.

Costs are important, however, and the spending of taxpayers' contributions to scientific endeavours carries with it immense responsibility. This also, it must be said, applies to the spending of investors' contributions in private companies. Not before time it is becoming increasingly recognized that there are not two distinct colours of money in our economies. The capital cost of the ESS (€1.5 bn) could be funded comfortably from the bonuses awarded to US bankers – for 24 days! (All in 2008 values.)

To put this figure into context with other public building projects – the proposed 160 km high-speed rail link between London and Birmingham is expected to cost €20 bn. Travellers would barely have reached the outskirts of London before the cash registers had exceeded the €1.5 bn figure for the ESS.

So let us keep matters in perspective and press our governments to stand by their promises made in Lisbon in 2000 and in Barcelona to lift the percentage of European GDP spent on science from the 1.85% then to 3% (by 2010). The figure remains below 1.9% today. Science has a role in society!

● Colin Carlile is director-general of the European Spallation Source, which is to be built in Lund as the first carbon-neutral research facility (p26).

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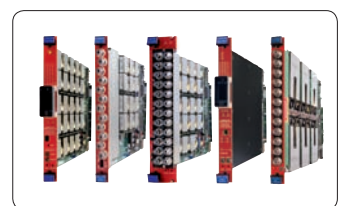
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