Science Council’s Chief Executive Diana Garnham opens the book on the current state of the UK’s science workforce. She explores the need to increase diversity, improve education and offer alternative career routes in order to strengthen this workforce and, in turn, attract global investment.
Could you reveal why you wanted to be a part of the Science Council?

I joined the Science Council in 2006, during its early stages, and was excited to be part of shaping and developing its role to support the UK science workforce. In my previous roles, I had done a great deal of work around public engagement with science and realised that the public did not relate to the scientists at all. There was little understanding of the role of the scientist, and the focus and discussion had always been about research rather than the application of science. It was extremely different to medicine and health where there is a much greater appreciation of the skills needed to apply medical science.

What aspects of your role as Chief Executive do you most enjoy?

Our sector is one of widely differing stakeholders with a diversity of passions and views about science. I enjoy the challenge of bringing them together, knowing that if the sector works collaboratively it will be more effective in every area of endeavour, from research to policy. The key has been to build understanding and respect between the differing perspectives – both single disciplines and broader subjects, research and academic views with applied scientists, public and commercial sectors, and so on.
When I was appointed, the founding President, Sir Gareth Roberts, charged me with developing ‘science councilness’ in the organisation, which I think we have now achieved. Member organisations say that they get a buzz from working together to tackle common concerns, and all those who attend our meetings are amazed by the breadth of our discussions.

**Can you outline the key policy issues affecting the UK science community at present?**

We are primarily interested in the UK maintaining a strong and stable science base that creates an attractive environment for investment in science and technology businesses. We also seek to ensure that the nation is a global leader in the way it attracts and retains its science workforce. The quality of UK science education from primary through to degree level is a priority; for example, we have concerns about secondary and pre-graduate level science qualifications, particularly for the technical workforce. The UK is lagging behind other leading science economies in the way it develops these non-graduate, vocational routes to science careers and the science community has leaned towards a ‘one-size-fits-all’ science degree route.

There is also a need to tackle diversity in the science workforce. This is not only with regard to gender, but also social and economic characteristic and ethnicity. Many areas of science are currently facing skills shortages, but there is clear evidence that they are not recruiting from across society – we must improve this quickly.

Related to this is the need to raise awareness of science-based careers. Evidence suggests that young people enjoy the science they are taught at school and also see being a scientist or engineer as valuable work, but for the most part they do not want to be a scientist (see http://bit.ly/KCL_ASPIRES). That’s the key perception we need to understand and change. I think we need to tell more of the story of what scientists do, why they do it and what sort of people they are.

At the Science Council we take a thematic approach in our careers work (see www.futuremorph.org) and provide information about numerous science-based careers available in various employment sectors. Projects like ‘10 types of scientist’ and ‘100 leading professional scientists’ help us to illustrate the range of careers available. At present, careers awareness, information, advice and guidance is underfunded and fragmented in the UK; for a number of years we have been calling on successive governments to commit to addressing the issue.

Finally, one of the biggest policy issues we are dealing with is the UK’s future role in Europe, and how this will affect UK science. We have benefited greatly from attracting global talent over the years, so we need to remain at the heart of Europe. This runs alongside the need for a measured and balanced immigration policy to ensure the UK remains an open and welcoming place to do science.

**What activities does the Council conduct to support the science workforce?**

A key area has been to better understand the UK science workforce and how various employment sectors draw down on science skills and knowledge at different levels. We have identified 10 types of scientist as a way of illustrating the range of knowledge and skills that are needed to enable science to maximise its impact for the benefit of society and the economy. Our research found that 20 per cent of the UK workforce (5.6 million workers) uses science in their role, with 1.2 million people in jobs that are primarily science based. This is set to grow: if the UK achieves its ambition to be a leading science- and technology-based economy, we predict that as many as one-quarter of jobs will involve science.

The types of roles and level of science knowledge and skills needed varies for different sectors. A relatively small number of graduates now enter the science workforce having studied a single science discipline. Outside of research and academia there has been growing demand for students with a broader base of knowledge and skills, perhaps topped up with specialist Masters’ degrees. Alongside the core science disciplines such as physics and chemistry, there is a demand for graduates with broader biological science, environmental science and Earth science qualifications. Across the economy there is a need for workers with a good level of science and maths knowledge, combined with softer business-related skills such as marketing and project management.

**How does the Council inform and influence science policy?**

In a variety of ways. We have organisational and individual points of contact with UK government departments and Parliament and in Europe. With 41 member organisations we have many different entry points and, more importantly, listening and intelligence gathering opportunities with other science policy organisations and industry. A key part of our role is to respond to policy consultations as and when they happen. Over the past decade, this has given us a good bank of evidence and views to draw upon: everything from school science curricula to science-based funding through to homeopathy. We seek to develop a broad approach as it is clear that it is not just science funding issues that impact the UK science base: skills, education, regulation and regional strategy investment are all areas in which we have developed positions and sought to influence UK and European policy.

**Can you outline the current challenges facing society and the best approach to overcoming them?**

Global challenges include food security, ageing populations, disease prevention and the need to develop sustainable low-carbon economies. The Science Council believes the UK has a responsibility to actively work with its global partners to tackle these issues. These are overlapping issues for the UK as well; we need to confront existing obstacles related to the health and wellbeing of our population.

**What are the Council’s key objectives regarding policy over the coming years?**

Key policy goals include enhancing local and regional science and innovation capacity; there is a great deal more that can be done to unlock the potential of science to drive growth and job creation across the country.

Public engagement is a hot topic right now and, when done well, performs a great service. We need to involve the public in discussions on where we are taking science. It is also important for us to consider the public’s concerns and anxieties on certain science issues, such as genetically modified foods, and meet these concerns in a humble and modest way.

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