

1 The Science Council

- 1.1 The Science Council is an umbrella organisation of learned societies and professional bodies, and currently has 41 member organisations drawn from across science and its applications: a list of current member bodies is attached. Collectively member bodies represent almost 500,000 individual members, including scientists, teachers and senior executives in industry, academia and the public sector. The Science Council awards the professional qualifications of Chartered Scientist (CSci), Registered Scientist (RSci) and Registered Science Technician (RSciTech).¹
- 1.2 In addition to providing a mechanism for the sector to work collectively, the Science Council develops and leads collaborative projects working with member bodies and the wider scientific community: examples include the Future Morph website² designed to provide young people with information about careers opportunities, and LMI analysis of the UK Science Workforce.³
- 1.3 The Science Council is the leading UK voice on the skills and professionalism of scientists. Its strength comes from its ability to be multi and inter-disciplinary in its approach to identify the changing nature of science skills needs and challenges facing society.

2 Apprenticeships and professional registration

- 2.1 Apprenticeships should provide skills and knowledge that are valuable across employment sectors and occupations and meet the broader requirements of the sector. Linking apprenticeships to professional registration can demonstrate this transferability as professional standards are designed to apply across the profession and across employment sectors.
- 2.2 Professional registration recognises an individual's achievements and continuing commitment to advancing their competence and offers the possibility of increased earnings and, through the associated membership of a professional body, provides connection to a wider community of professionals to share learning, knowledge transfer and mutual support. Benefits for employers include: assurance that individuals have the level of competence and experience they seek, the ability to demonstrate that their staff undertake continuing professional development to maintain their competence and also that they adhere to an independent ethical code.
- 2.3 The Science Council welcomes the recommendation by Lord Adonis's Growth Review⁴ to increase the number of high-quality apprenticeships for young people, and that funding for these should only be provided to employers for schemes accredited by professional bodies. The Science Council also welcomes the Government's commitment to developing employer-designed apprenticeships standards through the Trailblazer programme. However it is critical that Government provides employers of all sizes with appropriate channels, mechanisms and support to engage in shaping the design of apprenticeship schemes.

¹ http://www.sciencecouncil.org/professional_registers

² www.futuremorph.org

³ *The current and future UK science workforce* TBR, Sept. 2011 <http://www.sciencecouncil.org/content/science-workforce>

⁴ [file:///C:/Users/oliver/Downloads/Adonis%20Growth%20Review%20\(9\).pdf](file:///C:/Users/oliver/Downloads/Adonis%20Growth%20Review%20(9).pdf)

3 Growing the number of science apprenticeships

- 3.1 There is no single 'science' sector of the economy. Science and science skills are used across all sectors of the economy. Geographical areas may have different specialisms and needs that may not seem significant in national workforce data, for example in forestry, aquaculture or agriculture. These characteristics do not fit well with the skills bodies which tend to be broadly sector based and have developed relationships with large high-profile employers or a small number of sub-sectoral SMEs with similar needs. The National Apprenticeship Service and UKCES have depended upon the response-mode Employer Ownership Pilot funding mechanisms to support the development of apprenticeship schemes but appear to have no mechanism for stepping in where no employer-led proposals have been forthcoming.
- 3.2 Much of the focus of STEM workforce investment continues to be in the graduate workforce and there seems to have been little recognition among policy-makers that not every science based job is a graduate job. With increasing demand for non-graduates with high-level science skills it will be important that policy decisions are focused on increasing the non-graduate technical and science workforce. Establishing greater numbers of Higher and Advanced Apprenticeships in science occupations should be an essential element of the Government's programme to achieve this. It must also be recognised that demographic pressures mean it is unlikely that skills demands will be met entirely from younger entrants to the science workforce, and therefore a need to drive up the skills of the existing UK science non-graduate workforce. However, the UK is failing to address this issue and has made little progress in spite of the considerable investment in apprenticeship programmes. The National Apprenticeship Service has admitted that there is an almost complete absence of science apprenticeships.⁵
- 3.3 There are a variety of reasons why apprenticeships in science are not as well established as they are for engineering. There is relatively little tradition for apprenticeships in science, particularly non-graduate apprenticeships: where training programmes exist they tend to be sponsored graduate pathways rather than for technician roles. In addition, science-based employers are typically SMEs where the numbers of technicians employed overall is small, and certainly a minority of skilled staff.
- 3.4 While the Science Industry Partnership in the life sciences is a most welcome initiative, it is worth noting that the ambition of the 100 employers involved in the programme - many of them large multi-national companies - is to create only 1,360 apprenticeships⁶. There is also a concern that a significant proportion of these apprenticeships will be in engineering and manufacturing as this is the current priority need identified for the sector. Recent data available from the FE sector also suggests there were only 120 science apprenticeship completions in England compared to over 37,180 in engineering and manufacturing in 2012-13.⁷
- 3.5 There is also a need to increase the numbers and status of science technicians and to inspire young people to aim for this route to science careers. The expansion of Higher and Advanced apprenticeships will help address the need to widen access and diversity of the science workforce. The Science Council is investing significantly in this area of work and believes that professional registration will be important in raising status and aspiration. Numbers of completed science apprenticeships and numbers of registered professional science technicians could also be a useful measure of how well the UK and individual regions are responding to the need for a wider suite of science and technical qualifications and skills.

⁵ National Apprenticeship Service (2012), Written Evidence Submitted to the House of Lords Science and Technology Committee

⁶ <http://www.scienceindustrypartnership.com/news/%C2%A352-million-boost-for-skills-and-training-in-uk-science-sectors/>

⁷ <https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships--2>

4 Apprenticeships in the broader policy landscape

- 4.1 Apprenticeship policy must sit within a broader and coherent national skills strategy. Government policies will need to link direct investment in science apprenticeships with policies across schools and higher education, skills development, regional initiatives and infrastructure projects, planning, and regulation to achieve greater coherence, collaboration and productivity.
- 4.2 Local Enterprise Partnerships have the potential to play a leading role in developing visionary and appropriate skills and apprenticeship strategies that leverage partnerships between local employers, schools, colleges, universities and employers. Such strategies would need to fit with a broader national strategy and provide learners with training and qualifications that enabled progression and transferability across sectors and employers, but they could drive the development of local and regional high-quality apprenticeship opportunities based on geographical labour market needs.
- 4.3 There is a case for linking investment in science apprenticeships with investment in capital infrastructure projects in science and beyond. Large facilities in particular require large numbers of skilled technicians and other support staff to maximise their outputs. With growing economic demand for a workforce with higher level technical and practical science skills, the ability to develop high-quality technical skills in real laboratory conditions using high-quality apparatus could provide science apprenticeships with opportunities to develop the necessary skills to meet future demand.

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Member Bodies of the Science Council

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Association for Clinical Biochemistry and Laboratory Medicine
Association of Neurophysiological Scientists
Association for Science Education
British Academy of Audiology
British Association of Sport and Exercise Science
British Computer Society
British Psychological Society
British Society of Soil Scientists
Chartered Institution of Water and Environmental Management
College of Podiatry
Energy Institute
Geological Society of London
Institute of Biomedical Science
Institute of Brewing and Distilling
Institute of Corrosion
Institute of Food Science and Technology
Institute of Marine Engineering, Science and Technology
Institute of Materials, Minerals and Mining
Institute of Mathematics and its Applications
Institute of Measurement and Control
Institute of Physics and Engineering in Medicine
Institute of Physics
Institute of Science and Technology
Institute of Water
Institution of Chemical Engineers
Institution of Environmental Sciences
London Mathematical Society
Mineralogical Society
Nuclear Institute
Oil and Colour Chemists' Association
Operational Research Society
Physiological Society
Royal Astronomical Society
Royal Meteorological Society
Royal Society of Chemistry
Royal Statistical Society
Society for Cardiological Science and Technology
Society for General Microbiology
Society of Biology
Society of Dyers & Colourists
The Organisation for Professionals in Regulatory Affairs