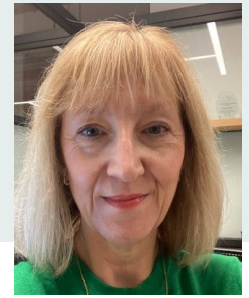


Building the workforce to deliver our modern industrial future

If we are to meet the government's ambitions for regional growth, net-zero innovation and global competitiveness, we must ensure that the science workforce is broad, inclusive, and professionally equipped at every level.



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Powering progress: why science skills matter to the UK's industrial future

Delivering the UK's Modern Industrial Strategy depends on having a skilled and adaptable scientific workforce available. From life sciences to clean energy and digital technologies, the government's priority sectors rely on people who can apply scientific knowledge in real-world contexts. Yet persistent skills shortages are undermining the UK's capacity to innovate and compete globally.

The Modern Industrial Strategy and the Science and Technology Framework both recognise that talent and skills are critical to maintaining the UK's reputation for excellence. But despite these ambitions, the STEM workforce pipeline remains fragile – constrained by uneven provision of technical education, financial pressures on Small and Medium Enterprises (SMEs), limited collaboration between employers and training providers, and a persistent perception that science is an elite or academic-only career.¹

The challenge: a strained pipeline and missed potential

The UK faces an ongoing shortage of skilled scientists and technicians. At the same time, higher education provision in STEM subjects is contracting – particularly in regions where it is most needed. Universities trimming costs often cut expensive science courses, creating “cold spots” that limit local opportunities and stifle regional innovation.²

This shortage is compounded by cultural and structural barriers. Science careers are too often portrayed as the domain of the academic elite, rather than as a diverse ecosystem of research, technical, industrial and applied roles. Funding models and rigid career structures can hinder flexibility, making it more challenging for individuals to enter or transition between sectors. As a result, promising talent – particularly from underrepresented backgrounds – is being lost.³

The Science Council believes that every person with scientific capability should have a pathway to professional recognition and career progression, regardless of their educational starting point. That vision requires systemic change: closer integration between education, employers and professional bodies, and greater recognition of technical routes into science.

A practical solution: linking technical education and professional recognition

The Science Council represents over 30 professional bodies and learned societies, supporting more than 320,000 science professionals across disciplines from physics and geology to food science and environmental management. This community is united by a shared commitment to professional excellence and public trust in science.

Our professional registration framework recognises and assures competence across the full spectrum of science roles.

From Registered Science Technician (RSciTech) and Registered Scientist (RSci) to Chartered Scientist (CSci) and Chartered Science Teacher (CSciTeach), registration validates the skills, integrity and professional development of practitioners throughout their careers.

By linking professional registration with apprenticeships and technical qualifications, the Science Council provides a joined-up route from learning to professional credibility. Our mapping of more than 30 science apprenticeships to registration standards enables apprentices to gain early-career recognition as Registered Science Technician or Registered Scientist via a shortened application process. This approach helps to ensure that professionals are not only qualified in their specialist area of science but are able to apply their expertise, knowledge and understanding in real-world situations, using strong interpersonal skills, professional practice and equipped to take personal responsibility.

Technical pathways: building the bridge between learning and work

The Science Council's Technical Pathways Programme is central to our mission to open science careers through vocational routes. Over the past two years, the programme has engaged more than 11,500 teachers, students and early-career scientists through five complementary strands: curriculum-resource downloads, live CPD webinars, online career workshops, regional roadshows and a digital-mentoring pilot.

This engagement helps to:

- Equip educators to communicate technical science career options confidently.
- Support employers to offer T Level placements and apprenticeships.
- Ensure that technical learners understand the value of professional registration as a benchmark of competence and integrity.

In practice, this means that a school leaver starting a science apprenticeship today could gain early professional recognition, progress through their career with a clear CPD framework, and eventually achieve Chartered Scientist status – all through pathways that are inclusive, affordable and responsive to the needs of a rapidly changing and innovative industry.

To encourage talent retention, we need employer-friendly environments where employers can afford to invest in their workforce. This includes removing the barriers that currently exist for employers to take on apprentices.

Supporting the modern industrial strategy through skills

The success of the Modern Industrial Strategy will be determined by how effectively the UK can translate scientific discovery into innovation and application which depends on developing and sustaining the right technical and professional skills.

Professional registration provides the practical mechanism to deliver the quality and assurance set out in government strategies. It provides portable standards across sectors, enhancing mobility, transparency and confidence in the science workforce. It also supports ethical practice, with registrants bound by codes of conduct and committed to ongoing professional development.

As new technologies such as artificial intelligence reshape the workplace, human scientific expertise – in critical thinking, communication, and governance – will be more important than ever. Ensuring that these skills are cultivated, recognised and continually developed is fundamental to a resilient industrial future.⁴

Building a talented and resilient workforce

Maximising the UK's scientific potential depends on drawing from the widest possible pool of talent. To meet national needs in research, innovation and industrial capability, we need scientists and technicians trained through a variety of routes – from apprenticeships and technical qualifications to degrees and postgraduate research. Each pathway develops complementary skills that together strengthen the national science base and build the next generation of technicians, researchers, innovators and entrepreneurs.

The Science Council's work – particularly through Technical Pathways – is helping to shift perceptions, showing that there are many routes into meaningful and respected scientific careers. Professional registration provides a common framework that recognises the achievements of individuals at every level and ensures that all science professionals are equipped to contribute effectively and progress throughout their careers.

Employers that invest in professional registration report benefits in staff retention, morale and organisational reputation.⁵ For the public and policymakers, registration offers reassurance: that scientific decisions, innovations and advice are underpinned by competence, ethics and accountability.⁶

Securing a future for UK science

The UK's global reputation for excellence in science is a cornerstone of its economic and diplomatic strength.⁷ But in a world where reputation is a currency, we must invest continually in the skills and integrity of our scientific workforce. Professional registration is not merely a credential – it is the foundation of public trust, industrial capability, and international influence.

By empowering people through technical pathways and promoting professional recognition, we are building a workforce that can help to deliver on the promise of the Modern Industrial Strategy.

One approach to support the science skills ecosystem is to fund regional 'Technical Science Skills' clusters, based

around high-performing science parks, to strengthen links between cutting-edge science-based enterprises, regional strategic authorities, training providers, and professional bodies to strengthen local skills pipelines.

How you can help

We invite parliamentarians to work with the Science Council to champion science as a career for all – supporting apprenticeships, professional registration and lifelong learning as essential tools for national competitiveness by:

- Raising parliamentary questions or supporting debates on the inclusion of professional registration in the government's Skills and Science Strategies.
- Connecting the Science Council with strategic regional authorities, Skills Improvement Plans, Local Skills Partnerships, or sector skills bodies to explore partnership opportunities.
- Advocating for funding allocations within UKRI, DfE or local skills budgets to expand science-based apprenticeships to ensure that every region of the UK benefits from this investment.
- Endorsing or co-sponsoring a cross-party briefing or roundtable on "Building the Technical Science Workforce for a Modern Industrial Future", hosted jointly with the Science Council.

References

¹ HM Government (2023). *UK Science and Technology Framework*.

² Office for Students (2024). *Analysis of Subject Provision in Higher Education in England*.

³ Royal Society (2019). *Research and the Missing Millions*.

⁴ OECD (2023). *AI and the Future of Skills: Policy Directions for the UK*.

⁵ Engineering Council (2023). *Employer Benefits of Professional Registration*.

⁶ Science Council (2023). *Why Registration Matters*.

⁷ Royal Society (2024). *The UK Science System: Global Standing and Future Challenges*.