

examples of two and three dimensional objects known as Platonic solids. Mathematics allows us to define similar objects in an arbitrarily large dimension. However, only these three objects retain their structure in arbitrary dimensions, making them fundamental to the study of geometry. These objects have undergone intense investigation, including asking questions about which of their properties remain when these objects are 'randomly flattened'. These retained properties in this last question make possible the seven-fold faster MRI scan rates mentioned previously. Much of the foundational theory was developed in the UK, by

geometers including: P McMullen, H Ruben, and G Shephard. These, and other, researchers developed the theory of randomly projected objects, and the formulae necessary to calculate when the needed properties would be retained, which now allow engineers to design the next generation of imaging protocols. Even more abstract, nonlinear, geometric questions underlying matrix completion are currently under intense investigation by UK mathematicians. Application inspired interactions bridging mathematics, informatics and statistics portend a wealth of new technological advances.



**Presentation to Peter Simpson**  
Immediately after the Seminar Andrew Miller MP made a presentation to Peter Simpson who stood down as Scientific Secretary and Editor of Science in Parliament on 31st March. Andrew expressed the Committee's gratitude to Peter for all his hard work over the years. *Courtesy of Jonathan Tickner and the Council for the Mathematical Sciences*

# RECOGNISING THE ROLE OF TECHNICIANS



Jon Poole, Chief Executive IFST

The day-to-day running of the UK, as elsewhere in the world, is increasingly reliant on technology. The changing economic landscape, and increasingly global marketplace, has added even sharper focus to the critical role technical skills play in supporting all business sectors ... and it is no longer only an issue confined to engineering, manufacturing and science industries. Surprisingly, the largest growth in demand for technological skills is now seen in media & publishing,

public administration, service and defence sectors.<sup>1</sup>

Although demand for technical skills in the UK is rapidly increasing, recruitment of people into technical roles is failing to keep pace. Today it is calculated that some 2 million people are employed in technician-based roles across all sectors of the economy within the UK.

For the UK to keep pace with demand and hold its competitive position, it is essential to recruit, train and retain technicians in greater numbers than in the past. We need around three pupils out of every senior school class opting for a career in technology. Not only that, there is also a need to encourage more women into technician-based roles.

Against this backdrop, in 2010, Lord Sainsbury brought together a group of interested

parties to consider outputs from two White Papers<sup>2</sup> which considered the future needs for scientific and engineering skills. Following on from this, a new body – the Technician Council – was formed to address the underlying issues behind the skills shortage and to look into how a common framework for professional recognition could be provided across science, engineering, IT and health sectors.

This body, Chaired by Stephen Holliday, CEO of National Grid, was constituted of representatives from a wide range of stakeholders including the Science Council; Engineering Council; EngineeringUK; the National Apprenticeship Service; representatives from a number of individual professional bodies as well as key SET employers including Ministry of Defence; Microsoft; Lonza Biologics and BAE Systems.

The challenges facing the Technician Council and its constituent members were complex. Quantifying the numbers employed in technician-based roles was far from straightforward. Science and engineering companies employ many non-technical people and conversely, many technicians work in non-engineering or science based sectors such as food and retailing. Job titles themselves provide no help with the term 'technician' used indiscriminately – ironically often to add status to relatively non-technical roles.

A further challenge facing the Technician Council was the gender imbalance. Women make up 49% of the economically active workforce in the UK, however they remain significantly under-represented at every level in SET employment (Science, Engineering & Technology) – and in higher levels of STEM



education (Science, Technology, Engineering & Maths).<sup>3</sup>

Providing job mobility for technicians across all sectors was one of the key principles which the Technician Council needed to incorporate. More people will be attracted to technical roles if they can see that the roles can bring with them flexibility and the potential for transferability. If employers are able to recognise those with the requisite technical and softer skills (which are often very transferable) through professional recognition they will have more confidence when employing technicians.

Research conducted by the Science Council<sup>4</sup> highlighted that many technicians feel that while they do have a professional identity, this identity is not well developed – indeed, most would not describe themselves as ‘professionals’. The same research also identified that a formal framework for professional recognition was desirable, firstly in terms of gaining respect from other work colleagues, but also because of the clearer career opportunities and pathways that such recognition might provide.

March 26 saw the first phase of work by the Technician

Council culminate in a high profile launch event, attended by senior people from industry, science and technology, Government officials and the media. At this event, the Technician Council unveiled the results of its 18 month review into the gap in technical skills provision in the UK, and presented their recommendations.

The problems relating to the professional recognition of technicians may be complex but the potential benefits are expected to be significant.

Employers benefit from recruiting and retaining more highly skilled and motivated technical people. They will also find there is greater transparency in the recruitment process given that professional recognition of technicians is expected to become a ‘shorthand’ for high quality skilled practitioners.

Technicians themselves clearly benefit from greater respect; the opportunity for more focused development and the prospect of enhanced career mobility and prospects.

The UK economy will benefit because providing professional recognition for people working in technical roles raises their standing; can provide clearer

career paths and will so attract talent into these much-needed technical roles.

What has become clear is that there is already a great appetite from significant numbers of employers, educational-based organisations and other interested bodies such as Sector Skills Councils, unions and trade bodies for the proper recognition of technicians.

In the case of my own sector, the food sector, the Institute of Food Science & Technology (IFST) recognises the huge potential presented through professional recognition of technicians. The food sector, from farm to fork, employs around 117,000 skilled individuals who use some element of science within their roles – whether in quality assurance; food inspection and safety; plant or animal breeding or further along the food production chain within retailing and logistics.

IFST is pleased to have been granted a licence from the Science Council along with six other pilot bodies to offer Registered Science Technician (RSciTech) registration. We believe that offering this new form of professional status can encourage food technicians to focus on enhancing their skills through continuing professional development, and so improve the quality and safety of food produced in the UK.

The launch by the Technician Council is merely the end of the first phase. The next phase will see the translation of the initial groundwork into a viable and vibrant form of recognition.

The Technician Council has been ‘signing up’ employers and other supporting bodies who are prepared to commit formally and publicly to support the future vision for technicians. Those

institutions looking to open their doors to professional recognition of technicians are also looking carefully at the future support and services that they need to provide those involved in technical roles to ensure that they are truly relevant to the next generation of technicians.

What is needed now is for everyone who can provide support – whether in Government, education, academe, but especially employers, to acknowledge and celebrate the contribution technicians make to their businesses and to the UK economy.

To find out more about professional recognition for technicians, the future plans for the Technician Council and to see how you can support this important programme, please visit the website:

[www.techniciancouncil.org](http://www.techniciancouncil.org)

#### References

- 1 ONS Labour Force Survey 2009
- 2 Skills for Growth: The National Skills Strategy (BIS 2009) and Skills for Sustainable Growth (BIS 2010).
- 3 UKRC’s Guide (2010)
- 4 Science Council, Science Technicians in the Workforce, 2011

