Science Industry Partnership

Fixing the leaks in the STEM pipeline: improving employability, skills development and careers

Dr Malcolm Skingle, Head of Academic Liaison, GSK and Chair of the Science Industry Partnership, speaking at the Westminster HE Forum

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The Science Industry Partnership (SIP) of employers has a clear aim to work in partnership with Government to establish the vocational skills needed to build a high value, productive and competent scientific workforce.

SIP members are working collectively to build a pipeline of skilled people with the capability, drive and ambition to build a globally competitive science based industry in the UK; as well as to support the development of the workforce to acquire the skills it needs to adopt new technologies and develop innovations and services

Member representatives come from a range of science-based companies including pharmaceuticals, chemicals, biotech and medtech.

Companies from this sector have not always taken on apprenticeships; but this is changing and SIP members, as well as the wider sector, now want high-end apprenticeships, to support us in building our talent pipeline.

And the good news is that the Government is keen to transform the education training landscape so that it meets the demands of industry, while at the same time students want an education that is interesting, as well as providing a good career path – and of course one that leads to a reasonable salary.

This desire from young people to pursue a more vocationally focussed, but still academically rigorous education, is very timely: more than ever employers are keen that students are fit-for- purpose on completion of their training. And with the advent of the student fees and loans, universities are now accountable more than ever to deliver what students want, in terms of both learning and where their education can take them.

And the students know that if they have secured hands on experience, they have a much better chance of actually getting a job than if they hadn't, which is why it is very important that they get out to industry whenever they can.

The landscape is now much more encouraging to industry in becoming engaged in the development of Standards and Curricula; while it is not our core business, we do know the skills we need to grow and to bring in new talent and replace those retiring.

Apprenticeship Trailblazer Groups, led by employers, including the one for my Sector (the Life Science and Industrial Science Trailblazer), are leading the way in designing new Standards.

And this all comes at a time when industry is looking to embrace new technologies in order to improve innovation in R&D and boost our manufacturing output.

So in my world this would be areas such as cell and gene therapy which is fairly new to us, robotics which isn't so new to some industries, but it is newish to us in life sciences, and of course digital data analytics which frankly all sectors will need.

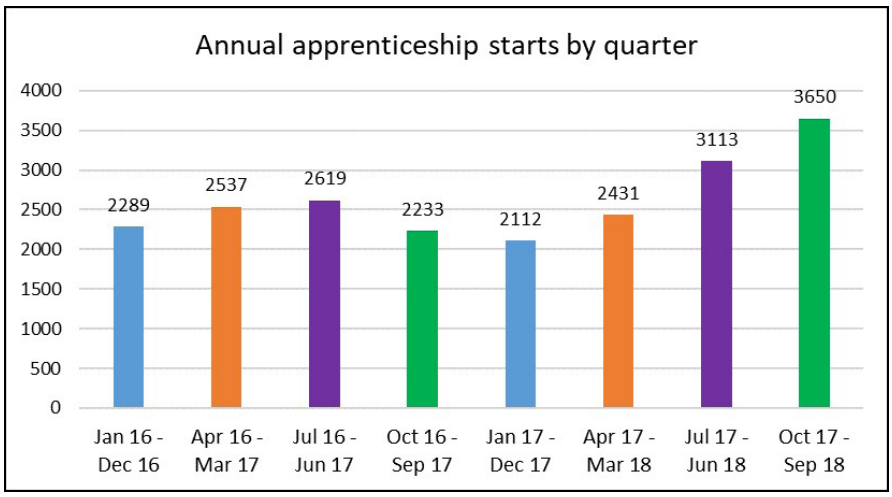
At GSK we see education and learning as a continuum of activities; one of my responsibilities is managing our CASE studentship program (Collaborative Awards in Science and Engineering) which provide doctoral students with an excellent, challenging research training experience within a research collaboration between academic and non-academic partner organisations.

I also oversee Visiting Chairs – and that is in both directions, where we place visiting Chairs in Universities and also when we have Chairs from Academia who come and work with us for a short time.

And I admit I used to be a bit of an apprenticeship snob – that was until I saw apprenticeships in operation up at our Ulverston site. At that time was had a cohort of six, five of whom were female. And they were staggeringly good – that was the light bulb moment, when I realised that GSK really needed to get behind apprenticehips.

A growing number of science industry employers are now looking at how they might use their Apprenticeship Levy to fund high quality apprenticeship programmes, which have been designed to not only equip the learner with key technical and scientific skills, but also the knowledge and behaviours required to work in both small and large life science organisations.

And it is really great to see that against a backdrop of apprenticeship uptake decline, new starts in science occupations are rising, bucking the national trend - with the most recent data at 3,650 (covering Oct '17 to Sep '18). This is the highest this has been since the SIP has started reporting data and the 4th consecutive 4-quarter increase (see below).



Of course we will always have a commitment to the traditional training routes, and we take lots of people, with degrees and with PhDs, and frankly with post-doc experience.

But increasingly we are taking apprenticeships, so in 2011 we had 10 learners in one of our manufacturing sites; we have now got just over 300 across the whole business and it ranges from roles in Process Control at L2 up to Clinical Research Associates which we are just developing up to L6/7.

And they are getting a good press! So we currently have 286 CASE students, undertaking part of their PhD studies in GSK labs; we have more than 300 undergraduate placements, where the student works in GSK laboratories for the third year of a four year Degree – and now the numbers for apprenticeships we have in the business are in that ballpark.

One of our apprenticeship cohort, Charlotte Hughes recently achieved national "Graduate Apprenticeship of the Year" and we were all very proud of her achievements. And she is already considering which Masters course to go on. This will of course increase her employability and her career progression and that's what we want to see more and more of.

As we all know, we are in the midst of the Fourth Industrial Revolution now; AI, big data, robotics - we're going to have to put a lot of people in that "skills hopper", to get the digitally savvy people out that we need for our sector in the coming decade.

Frankly all sectors will want these skills, so we face a massive upskilling programme. We insist that 20% of our students undertake data analytics, data visualisation; and we encourage all of the PhD studentships we sponsor to spend at least 20% of their doctoral training focussed on digital data analytics in order to extract more information and knowledge from their existing data sets. We are taking this drive to increase digital data analytics very seriously.

The challenge for us, is that the numbers we need in the science industry are low compared with other sectors, but they are very high in value and high gross value added. We are growing people that are going to be loyal to the company and actually will want to stay because of the training and development they have experienced.

So the SIP's research forecasted we needed 4,000 technical and scientific people coming into the sector per annum - and we're not there yet. We know we don't have to do it all ourselves particularly in data analytics, where we need to work with expert partners.

We will always remain committed to the more traditional training routes at GSK, but we are now fully on board with apprenticeships being a part of our continuum of training activities. We will need to fix the leaks in the STEM pipeline, particularly as new technologies are developed and they start to shape our business.

It will be important for employers to work with Government and training providers to ensure that any new training fits the needs of rapidly evolving businesses.

The SIP's next key deliverable, as part of the Life Sciences Sector Deal 2, is to work with key partners including Government, The Association of the British Pharmaceutical Industry (ABPI) and the BioIndustry Association (BIA) to lead and deliver a Life Sciences 2030 Skills Strategy.

This will build a clear evidence base of the status of life science skills and future scenarios to 2030, focusing on medicines manufacturing, as well as emerging technologies, such as Artificial Intelligence (AI), to identify what is needed in addition to current available training provision.

This Skills Strategy 2030 will deliver the Blueprint for the People Pillar of the Life Sciences Sector Deal, driving productivity and promoting confidence in doing business in the UK. It will be published towards the end of this year.

Contact us:

For a discussion about SIP membership please contact the SIP Membership help desk.

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