

Apprenticeships: building new vocational pathways to success

The focus on apprenticeships and technical education as a means of decreasing the UK's skills gap is offering an increasing number of different pathways into bioscience careers. A close relationship between education providers and industry is a key component of making these new routes a success. In this article, we explore the value of vocational training with Malcolm Skingle, Amy Mercer and Stephen Stewart, who highlight its benefits to companies and students alike.

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Malcolm Skingle, Chair of the Science Industry Partnership and Director, GSK

There is no doubt that the UK has recently witnessed the most far reaching changes to further and higher education in decades.

The skills environment has, of course, recently changed due to the introduction of the Apprenticeship Levy and the Post 16 Skills Plan. This sees the roll out of a new system where students who have finished their GCSEs will be able to choose from up to 15 technical routes, including Health and Science, providing a much clearer path to skilled employment at the highest levels of the life sciences industry.

The Science Industry Partnership (SIP) is an established industrial membership organization which provides strategic employer leadership on skills for the sector. It is playing a pivotal role in connecting Skills Strategy to Industrial Strategy and is a key enabler, helping government put in place the mechanisms that employers need to make vocational education work for industry. We have been working hard to influence all of this, and indeed have been very positive about what we see as an unprecedented opportunity to position academic and technical qualifications on an equal footing.

The SIP has also been inputting into a newly developing Industrial Strategy, which set out to build the foundations necessary to ensure our technical and STEM skills are world class. One of the Industrial Strategy's 10 'pillars' is to build a 'proper system' of technical education.

The SIP's employer members across life sciences have always delivered high-paid, high-skilled jobs; but in recent years, we have put out a clarion call for much better, higher quality, vocational education to meet the demands of our high skill STEM occupations.

Our SIP Skills Strategy tells us that there are a range of occupations where appropriately skilled people are in critically short supply – indeed we will need to see up to 260,000 new entrants through to 2025. We also evidenced a rising demand for a range of cross-cutting transferrable skills in areas such as international business awareness, intellectual property and computational and mathematical skills.

The solution lies in the continued pursuit of excellence in delivery of science vocational skills, supported by industry. The need to build greater capacity in the college and university system for evolving skill areas. And the appropriate funding to sit alongside this.

For example, new Degree apprenticeships carry parity of value for both learners and employers. They offer a fantastic route to a STEM career, creating a new type of graduate who becomes technically competent through doing advanced work-based learning while studying.

The SIP has worked hard to promote apprenticeships over the last two years. In particular, it has brought new life science employers to apprenticeships, with 43% taking them for the first time. The SIP has so far secured and influenced a total of over 1,600 new STEM apprentices entering a sector that has traditionally relied on a mainly graduate intake. It has an ambition for a further 20,000 over the next five years.

The SIP recognises that all of this change presents both challenges and opportunities for industry and our members will continue to work, in conjunction with the government and its agencies, trade and professional bodies, providers and higher education institutes to meet the skills gaps and shortages facing the science sector both now and in order future proof a rapidly evolving sector.





Stephen Stewart, Global Talent Programmes Lead – Apprenticeships, GSK

Our programme is a company-wide initiative that we have been growing since 2011, increasing from 10 apprentices to over 230 currently, with 99 due to start in the UK and Ireland in September. A key driver is the need to address the changing dynamics of particularly our manufacturing and engineering areas, but also our laboratory areas. An ageing workforce means that in the short-to-mid-term, the company, the industry and the UK will see crucial skills exit the workplace. Apprentices are fundamental to replenishing the talent pipeline. Combined with our efforts around science education, this will have an impact beyond our company by up-skilling young talent in the UK.

We offer 14 routes into the business ensuring that GSK is accessible to a varied and diverse talent pool. Due to the success of the scheme in the UK, we are

now expanding apprenticeships into Ireland, the US and Canada with several more countries to follow.

Our strategic workforce planning ensures that each apprentice is working towards a permanent role in the business, supported by Manager, Mentor and Programme Team. We aim to place all our successful apprentices. In 2015, 100% of apprentices were offered permanent roles and in 2016 this figure was 95%.

In our R&D business we have laboratory apprenticeships in the UK and US across a range of scientific and technical functions. Our chemistry and biology laboratory apprentices have responsibility for their own projects, as well as routine monitoring and lab duties. For example, one of our lab apprentice's responsibilities is providing microbiological environmental monitoring support to two non-sterile Pilot Plants used for manufacture of drugs for clinical trials; the apprentice works on planning, performing and reporting results.

Amy Mercer, Higher Apprentice, Pfizer



Why did you become an apprentice?

During school and later college, it became evident to me that my strengths lay in my practical skills and that I prefer a more hands on approach to learning than the traditional classroom style. In addition, I benefitted from being able to reinforce teachings through practical application.

At the end of my college course I was in a financially independent position, which I enjoyed and was not keen to sacrifice. Consequently, I found that I was not attracted to the typical university lifestyle. Together these factors led me to consider what other options were available for me. As a result, I found out about the apprenticeship scheme, which seemed to fit my requirements perfectly.

What's your typical day?

I work as part of a small team of dedicated scientists and within this team my role is primarily focused on the physical stability of the active pharmaceutical ingredient (API) within the drug product and how it interacts with excipients particularly when exposed to elevated temperature and humidity.

To gain this understanding, a great deal of my work is preparing binary mixtures for storage in a variety of controlled elevated temperature and humidity environments. I remove samples from storage at pre-determined time points and analyse them using spectroscopic techniques: FT Raman, Fourier-transform infrared and Near-infrared. With a variety of studies ongoing at any one time, good time management is essential. I make use of online calendar tools to ensure all my work activities are scheduled ahead of time.

Alongside my drug product work I also assist with investigations, in support of the onsite manufacturing

activities. These are high priority and time critical.

Essentially, manufacturing time is being lost the whole duration that my investigation is on-going; it is important to deliver rapid and accurate results. To ensure this turnaround I must remain on alert with my emails to ensure that if a forensic request comes through I am able to make that my top priority and get it done quickly and accurately.

What the most interesting project you worked on?

A lot of projects are different and it comes down to the individual as to which is the most interesting. My current project within the Inflammation and Immunology portfolio has been a bit of a whirlwind for me as it was my first taste of project work and has been a puzzle of information throughout. As a team we have been trying to piece together data that does not necessarily arrive chronologically, into a conveyable story. I thrive on a challenge and so being involved in contributing to the answers of all the questions for this fast paced project has been an incredible experience.

What do most people not realize about apprenticeships?

I think in the past apprenticeships were more or less seen as the route for those who did not achieve the grades required for university and I am so pleased to see the apprenticeship scheme going from strength to strength. Apprenticeships require a lot of dedication, hard work and time management and it is difficult initially to juggle full time work with studies and a social life. Finally, and with particular reference to apprenticeships in scientific disciplines, I have been pleasantly surprised and very encouraged by the high numbers of women involved in the scheme.

As part of a global organization, our apprentices collaborate with colleagues locally and abroad, as well as participating in local and national events to promote STEM careers and apprenticeships. We are also planning a lab-based inclusive apprenticeship for people with learning difficulties and are hoping to implement this in 2017.

GSK is a founder member of the Life Science Trailblazer. We have supported the development of standards including Laboratory Technician and Laboratory Scientist and there are several more in development at the moment. Using the standards has enabled us to create apprenticeships which address the key skills and capabilities we need in GSK and enables us to create an apprentice pathway through to honours degree level.

Our scheme is having a real impact both within the company and more broadly in the UK. Last year 40% of our STEM recruits were female against a national average that is widely reported as 16%. In our Chemistry and Biology areas this figure is even higher. The diversity apprenticeships attract is good for our business, as it brings a range of employees with different backgrounds and therefore different ideas, contributing to our success. By growing this diverse talent internally, we will start to see more diverse candidates in management and leadership roles in the future.

Apprentices will gain a broad range of experiences, working with industry experts in their respective fields. They often have rotation placements to broaden the experiences and skill-sets and help them to determine career choices.

Each apprentice is assigned a buddy and a mentor to ensure they have strong developmental relationships and to help them grow their networks. They all participate in annual development events for the whole cohort, to build their personal, interpersonal and business skills. In their final year the development event involves working on a project with one of our charitable partners. This brings the apprentice closer to the patient or customer, enhancing their understanding of the GSK business.

Introducing a new early talent programme requires a culture change and we have invested a lot of time educating our employees about the benefits of introducing apprentices. Our apprentices and alumni support the next intake to ensure continuity and to address or dispel any concerns, which is crucial to embedding the youth-friendly culture of our company. Our existing staff have also benefitted. The passion and enthusiasm our apprentices show is infectious and we are often oversubscribed with people wanting to manage or mentor and pass their skills on.

Our apprentices and our overall scheme have been recognized internally and externally and we are incredibly proud of those who have now moved into the business and are starting to help people do more, feel better and live longer. ■

More information on apprenticeships

- www.rsb.org.uk/careers-and-cpd/careers/employment/apprenticeships
- www.gov.uk/apprenticeships-guide
- www.cogentskills.com/media/1432/4830fd_apprenticeship-guide_a7-concertina_v6-sp.pdf
- www.gov.uk/government/publications/apprenticeships-guide-for-employers?utm_source=Intermediary%20web%20page&utm_campaign=Intermediary

