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| Profiles | Analytical research and development |
| Name | Jack Williams |
| Age | 26 |
| Job | Associate scientist (analytical chemist) |

As an analytical chemist I use a range of different skills as well as my chemistry and analytical knowledge. I need to pay particular attention to detail and be able to multitask and work well by myself as well as in a team.

Career path and qualifications so far

While studying for A Levels in Physics, Chemistry and Maths I spent summers working in the paint industry. I then went on to complete my BSc (Hons) in Chemical and Pharmaceutical Science at the University of Sunderland in 1999. As part of my degree I spent a year out at a pharmaceutical company where I also worked on my final year project. After graduation I joined my current company, a major pharmaceutical company, as a research assistant in analytical R&D (research and development). I received my first promotion in 2001 to my current role as associate scientist. My plans for the future are to continue my role in analytical research and development, increasing my responsibility to project management and to a supervisor position.

Has anything you've done been especially useful in your career?

My university course gave me a lot of good background to the pharmaceutical industry and environment. In addition to my specific job role I have taken on the responsibility of raising the profile of my department, division and company to schools and universities – this has given me a greater insight into the 'nuts and bolts' of the company. I also work with our academic liaison department, which has helped me to understand better the needs of teachers and students.

What is an analytical chemist?

In the pharmaceutical industry, analytical chemists are responsible for ensuring the safety of patients and volunteers and the quality and effectiveness of pharmaceutical products. Analytical chemists are involved in all stages of the drug discovery and development process, using a range of analytical methods and technologies.

Day to day activities

My day to day activities include developing new analytical techniques and checking that current ones give valid results, in particular using HPLC (High Performance Liquid Chromatography). I also provide analytical support for formulation development - eg checking the constituents of tablets and how they are made, and for process development - eg checking the synthetic organic chemistry for the production of the active material. I have to write a number of reports and documents including work protocols and regulatory documents. I manage my own time and the day to day activities of some other members of my team, ensuring sufficient resources are available to do each task.

Further qualifications

There are no additional formal qualifications that are necessary, but there are plenty that are of interest. Knowledge of all areas of general chemistry is helpful, as is a background knowledge of pharmaceutical formulation, regulations and regulatory guidelines, medicines and medical ethics. However, there is no substitute for on-the-job training and experience and most of these areas can be developed as I progress in my career. Throughout my career I have developed my communication skills, mentorship and problem solving skills, as well as my knowledge of regulations and regulatory guidance.

Why analytical chemistry?

Pharmaceutical analytical chemistry allows me to use my analytical and investigative skills while maintaining a background in other areas of chemistry – eg organic medicinal chemistry and pharmaceutical formulation.

What do you most enjoy about your job?

I particularly enjoy the interaction I have with a range of different people. The science itself is challenging and very interesting. I also enjoy the day to day problem solving aspect of my job.

What other skills do you need?

I use a range of different skills as well as my chemistry and analytical knowledge. I need to pay particular attention to detail and be able to multitask and work well by myself as well as in a team. The work I am involved in is demanding and a high level of achievement is expected, however the rewards can be high. Flexibility and perseverance are required, as the majority of projects may never reach fruition.

Why is it useful to study a science subject at school or university?

Science at primary school encouraged me to question and investigate. At secondary level I gained scientific knowledge that allowed me to form balanced views and a greater understanding of everyday processes. This has been essential to me as a scientist.

Further information/contacts

The Chemical Industries Association (CIA), Kings Buildings, Smith Square, London SW1P 3JJ
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Society of Chemical Industry, 14/15 Belgrave Square, London SW1X 8PS
Tel: 020 7598 1500 Fax: 020 7598 1545 www.soci.org

The Association of the British Pharmaceutical Industry (ABPI), 12 Whitehall, London SW1A 2DY
Tel: 020 7930 3477 Fax: 020 7747 1414 www.abpi.org.uk

For further information on careers in the chemical sciences contact:

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