

Considering...Science careers outside the lab

Introduction

This information sheet is designed for students who would like to use the skills and/or knowledge that they have gained from studying science, but would prefer not to work in a lab setting.

Is this the right sector for me?

Spend some time thinking about yourself: what you have to offer - your skills, strengths and personal qualities; what motivates and inspires you; which aspects of science interest you; what sorts of activities you would like to do; how much involvement you want to maintain with science; the kind of work-life balance you want. To help you think about this, use some of the books and resources at Careers and Placements (*Getting Started* section) and our information sheets *Career planning* and *Explore your personality*, which are downloadable from www.york.ac.uk/careers/infosheets

Researching Alternatives

The following list is not exhaustive, but provides an introduction to some of the more popular areas of work where scientists can use their skills/knowledge. Use the resources listed to find out more about what these different areas of work involve and how to get into them.

- **Legal Services, Patents and Trademarks**
 - **Solicitors and Barristers** work in a wide range of specialisms in private practice, the public sector, and in-house for a range of organisations. There is particular demand for scientists in areas such as intellectual property (IP) and environmental law. See our *Legal Services* sector pages on the Careers and Placements website for information
 - **Patent Agents (or Attorneys)** assess new inventions and draft and carry through applications to obtain intellectual property rights for the individual or company that has developed it. They also act to enforce inventors' rights if patents are infringed. They work in private practice and in-house, for example in manufacturing and pharmaceutical organisations. The patentability of Computer-Implemented Inventions (CII) is a growth area
 - **Patent examiners** assess applications for patents, checking that the invention is new. They work in organisations such as the UK Intellectual Property Office www.ipo.gov.uk or the European Patent Office www.epo.org .
See www.cipa.org.uk/ and www.insidecareers.co.uk (click on *Intellectual Property* for more information)
 - **Trade Mark Attorneys** carry out similar work, but specialise in advising clients about protecting and enforcing their trade mark rights www.itma.org.uk/home

- **Regulatory affairs** specialists support or assess registration applications for products in areas such as chemicals, agrochemicals, biotechnology, and pharmaceuticals. They may work in-house for companies, in consultancies or in regulatory authorities and agencies, for example the Chemicals Regulatory Directorate. (see below for more information on pharmaceuticals)
- **Information management**
 - **Librarians and Information Managers** research, manage, organise, evaluate and disseminate information, in physical and online formats. They work in organisations such as academic libraries, research centres, the NHS, pharmaceuticals and specialist collections. The growth in electronic and digital libraries requires skills in managing and producing digital information. See www.cilip.org.uk for more information. The Pharmaceutical Information & Pharmacovigilance Association (PIPA) has information specifically about working in the pharmaceutical industry www.pipaonline.org/careers/careersguide.jsp.
 - **Bioinformatics and Health informatics** jobs involve the application of IT to manage and organise huge quantities of data generated by research, particularly by the increasing number of bioinformatics academic programmes such as the Human Genome Mapping Project. The following website provides an insight into the work www.biohealthmatics.com.
 - The NHS recruits into Health Informatics careers at a range of levels including their **Informatics Management programme** www.healthcareers.nhs.uk/explore-roles/health-informatics
 - The **Civil Service** Fast Stream runs an Analytical scheme which includes **statisticians** and **operational researchers** www.faststream.gov.uk/ but graduates can also be recruited into Assistant Statistician and Data Analyst roles through the general recruitment website www.civilservicejobs.service.gov.uk/csr/index.cgi A degree in Maths/Statistics isn't a requirement but you do need a degree in a subject that contains formal statistical training.
- **Pharmaceutical industry**

The Association of the British Pharmaceutical Industry's (ABPI) careers website is an excellent starting point for information about the wide range of opportunities in the industry <http://careers.abpi.org.uk> and www.pharmiweb.com is a useful website for industry news and job vacancies. Some key areas of work include:

 - **Clinical trials:** providing administrative support and management of the clinical trials process. Key roles include Clinical Trials Administrator (CTA) and Clinical Research Associate (CRA). The Institute of Clinical Research (ICR) is currently developing careers web pages at www.icr-global.org/
 - **Regulatory work:** includes roles such as **medical writing** and **regulatory affairs**, which involve recording and documenting details of new products and devices, preparing drug protocols and submission documents for licensing. The Organisation for Professionals in Regulatory Affairs (TOPRA) has some careers information on their website www.topra.org/careers
 - **Statisticians and Statistical Programmers** are involved in experimental design, statistical analysis, data manipulation and reporting of results – see www.psiweb.org for more information. Public Health

England recruits research assistants into epidemiology – vacancies are listed on the NHS Jobs and Civil Service recruitment websites

- **Communications:** key areas include **Healthcare Communications/PR/Marketing** and **Medical Sales Reps** who visit health professionals in hospitals, GP surgeries and pharmacies to promote and sell pharmaceutical products and medical equipment. Useful resources include www.prospects.ac.uk/job-profiles/medical-sales-representative and the Healthcare Communications Association www.hca-uk.org whose website includes a directory of member companies.
 - **Medical Communications:** typically roles within specialist consultancies relating to producing regulatory documentation, communications and publicity for pharmaceutical companies. Read 'From Academic to Medical Writer' for more information <http://medcommsnetworking.com/careersguide.pdf>
- **Science Education and Communication** covers a range of jobs that have the communication of scientific information and knowledge as their major function. Our [Job sector pages](#) and many of our *Considering...* series of information sheets provide resources for these career areas and are available to download from our website www.york.ac.uk/careers/infosheets:
- **Teaching** in schools, colleges and universities. Generous bursaries are available for graduates training to teach some STEM subjects.
 - **Working in museums and science centres** - see *Considering Science Communication* and *Considering Arts and Heritage* on the Careers and Placements website.
 - **Scientific and technical writing** – see Medical Communications (above) and *Considering Science Communication*
 - **Scientific publishing** – see Job sectors on the Careers and Placements website: *Journalism and Publishing* and details of the Royal Society of Chemistry's graduate opportunities in publishing www.rsc.org/AboutUs/rscwork/Graduates
 - **Journalism** – See Job sectors: *Journalism and Publishing*.
 - **Communications** – many organisations, including research centres, charities, science centres and learned organisations employ staff in communications related roles. This can include public engagement/outreach work and marketing and communications – see Job sectors: *Advertising, Marketing and PR*.
- **Manufacturing and Production:** Work in this area can involve working in hi-tech environments with responsibility for areas such as:
 - **Production management** – planning, co-ordinating and controlling the manufacturing process www.kent.ac.uk/careers/workin/production.htm
 - **Health and Safety Management**- monitoring, managing and controlling health and safety in the workplace www.iosh.co.uk. Some environmental consultancies and companies in sectors such as manufacturing and oil & gas recruit graduates into areas such as Health, Safety & Environment (HSE)

Work experience and developing skills

Work experience can be crucial for gaining entry to many of the above career areas, but the kind of experience that is relevant will vary from job to job. Use the resources listed to identify the skills, knowledge and experience required to enter the different areas and assess where and how you need to build up experience.

For some sectors you may be able to apply for vacation internships or work experience placements, but for others it may be about requesting work shadowing, looking for volunteering opportunities or getting involved in university outreach work. You may also be able to develop relevant skills and experience through extra-curricular activities such as volunteering projects, student media or campaigning.

Note: some internships offered in this sector may be unpaid. Before starting an internship you should be clear about the length of the internship, pay and conditions, what you will be expected to do, and what you will gain from the experience.

What can you do at York?

Activities available through the University can help you to develop relevant skills or gain an insight into specific career areas:

- **York Students in Communities** www.york.ac.uk/careers/volunteering
Volunteering opportunities with organisations such as St Nicholas Fields, Yorkshire Museum of Farming, Trail Conservation and The Conservation Volunteers. Volunteering projects include Children's University modules such as 'Transport Yourself' and the 'Science of Food'
- **York Students in Schools** www.york.ac.uk/careers/volunteering
Placements in local schools can be useful to develop skills such as communication, creativity, leadership, planning and organisation, even if you don't plan on a career in teaching
- **Enterprise** www.york.ac.uk/careers/enterprise
Develop your entrepreneurial and creative skills through courses, workshops and competitions or bid for funding to develop your own business ideas.
- **Competitions** Look out for opportunities to take part in challenges and competitions run by external organisations. Examples include the International Genetically Engineered Machine (iGEM) competition and the Wellcome Trust Science Writing Prize
- **Attend our networking events and recruitment fairs.** These are open to all students and are an excellent way of finding out more about the sector you are interested in by talking to people already working in it – see www.york.ac.uk/careers/events for details of forthcoming events. Our recruitment fairs include Technology, Law and Graduate Recruitment & Internships
- **Update your profile** within Careers Gateway www.york.ac.uk/careers/gateway and we will send you email alerts when opportunities matching your criteria are available
- Contact a York graduate through our York profiles at www.york.ac.uk/careers/profiles and get advice and information direct from York alumni working in the profession you are interested in

Whatever you do:

- Keep a record of what you have done and observed through work experience as you will need to include this in applications for employment and further study

- Think about the skills you have developed. Keep in touch with people you meet as they may be able to help you directly or indirectly in the future.

Routes into the sector

Research the entry requirements, training routes and funding carefully. Some professions offer funded support to obtain relevant professional qualifications, others will require postgraduate qualifications before you apply. In some cases employers may offer graduate entry programmes, but in others you will need to apply to advertised job vacancies or use recruitment agencies. Becoming a student member of a relevant professional body can aid access to specialist advice, jobs and networking opportunities.

Useful resources

Reference books and journals in Careers and Placements

- Biomedical Engineer – Bradley Steffens
- STEM Careers – Paul Greer
- Physics World Careers 2018
- Working in Science – Dr Tracy Johnson

Careers websites

- Job sectors (including Education; Health Care; Social Care; Legal Services; Journalism and Publishing; Environment; and Digital and IT) - www.york.ac.uk/careers/sectors

Please note: The websites listed here are not intended to represent a comprehensive list. Careers and Placements cannot be held responsible for the content of external websites.

york.ac.uk/careers
 UoYCareers  facebook.com/yorkcareers

york.ac.uk/careers
 UoYCareers  facebook.com/yorkcareers