

Science

There are many opportunities in this sector, including careers in research, creating new technologies, developing or refining manufacturing processes, or innovating medical solutions. So make sure you quiz Oxford scientists about the options while you're here, as many have connections outside academia.

Scientists are likely to be involved in research, development and analysis. Opportunities in industry range from the research divisions of global companies to niche technology firms. Other options include government- or charity-funded research institutes, hospitals, and university research.

Science and technology span diverse disciplines and so too does the range of opportunities in the science sector. Roles for hands-on scientists exist in manufacturing, energy, medicine, pharmaceuticals and biotechnology, environment, defence, aerospace, transport, electronics, space technology, fast-moving consumer goods (FMCG), and many more areas.

The sector also needs science literate graduates who can use their knowledge in other ways: for example, making scientific ideas a commercially viable reality, or communicating research to investors or the general public.

You may primarily be driven by your subject interest, but you should also consider the environment that would most suit you. For example, working in a small startup technology company is likely to give a very different experience from joining a large graduate scheme with an established employer.

Getting in and entry points

The first step for many scientists wanting to pursue a career in science is a PhD (DPhil in Oxford). Do not be put off if a



PhD is not for you at this stage; many organisations offer science roles that do not require a PhD.

In general, only major companies have graduate schemes. The earliest deadlines are in Michaelmas Term, but many recruit on a rolling basis. Gaining employment with well-known firms can be highly competitive (particularly in the pharmaceutical sector) and relevant industry experience is always useful.

Many large firms offer internships to penultimate year students. More opportunities exist with smaller, less well-known companies, which usually recruit for specific vacancies – either directly or through specialist recruitment agencies. Small scientific companies are often clustered on science parks. Check their websites for vacancies, register with relevant recruitment agencies, and also make speculative applications for jobs and for getting work experience.

The availability of work in government agencies and independent research institutes varies according to subject. DSTL (Defence Science and Technology Laboratory) runs

a graduate scheme across most scientific disciplines. DESG (Defence Engineering and Science Group) is focused mainly on physical scientists and engineers. Independently funded research institutes – such as those operated by Cancer Research UK and the Wellcome

Trust – are more common in life science disciplines. For some jobs it can be an advantage to have a relevant PhD, and some roles will require them.

Extra-curricular ideas

- Join subject-based student societies, and others such as the Scientific Society, OxWEST (for women) or the Energy Society.
- Volunteer to do outreach work, for example, with your department, Science Oxford or Oxford Hands-On Science (OxHOS).
- Seek a summer research assistant position at your department or through your tutors' contacts.
- Write for *The Oxford Scientist*, Oxford's science magazine.
- Become a student member of a relevant professional scientific society – many offer networking opportunities.

Next steps

www.careers.ox.ac.uk/pharmaceuticals-biotechnology

www.careers.ox.ac.uk/science-alternatives

www.careers.ox.ac.uk/science-rd



Make the most of expertise around you. Quiz Oxford researchers and lecturers about their career and collaborations – many have connections that reach far beyond academic research labs.

Dr Abby Evans, Careers Adviser, Oxford University Careers Service

Alumni profile

James Evry

What: Medical communications involves turning complex data into something understandable for decision-making in the healthcare sector. Medical writers work with clients and expert authors, like leading doctors, to communicate scientific and clinical data in various formats. These can include traditional publications for scientific journals, shorter abstracts, posters, presentations for international congresses, and innovative media like infographics, podcasts, and videos.

I joined Costello Medical in 2020. In April 2024 I became a publication manager, which means I lead internal project teams and external client communication. I partner with clients to decide on project strategies and share them with the team. I am also a line manager and lead business development efforts, adding even more variety to my role.

Why: When I left university, I didn't know what I wanted to do, but I knew I wanted to use my scientific background and skills. I must admit that I hadn't heard of medical writing before I found Costello Medical, but it quickly felt like an ideal fit. I particularly love the variety of work across different disease areas, clients, publication formats, and writing styles, and the direct impact my work has on patients. Knowing the pieces we write can improve patients' treatment options in the NHS and globally really motivates me. The work culture at Costello Medical was also important to me. I love working in collaborative teams with driven, ambitious people that I am always learning from.

Advice: If you know that medical writing is the career for you, you are already a step ahead of where I was during my time at university. Use that to your advantage: network with people in the field and learn as much as you can from them. LinkedIn is great for this.

Whilst you are still a student, get as much experience writing for different audiences as possible. Is there a student newspaper you could write for? Can you tailor your modules to include more written coursework?

**Position**

Publication Manager, Costello Medical.

Background

BA Biological Sciences, Wadham College, 2015; MSc Zoology, Wadham College, 2018.

Alumni profile

Andy Attfield

What: In short, a patent attorney is a kind of 'science lawyer'. Patent attorneys act as the bridge between engineers and inventors and the legal system, and help clients protect their inventions. To do this, a patent attorney needs to understand both the technology and the law to a high degree. The scientific understanding comes from a science degree. Unfortunately, learning the legal side involves a few more exams!

Patent attorneys come in two breeds – private practice and in-house, though people often move from one side of the profession to the other during their career. The roles are similar but with different aspects of the job emphasised: in-house is typically more strategic and focused on a few technologies, whereas private practice is often more varied in terms of clients and technology.

Why: The patent profession attracted me for several reasons, not least because it paid a lot better than a PhD! Particularly as a private practice attorney, my role requires me to argue technical details about a wide range of technologies, often brand new to me, which keeps the job engaging and variable.

Additionally, the profession is small, with only a few thousand patent attorneys in the UK (compared to over 100,000 solicitors!) and, for a bunch of science graduates, surprisingly social. Many firms send trainees on courses which is a great way to meet people at other firms. There are also social and professional events organised by the Chartered Institute for Patent Attorneys throughout the year.

Advice: If you have an interest in a career as a patent attorney, many firms offer taster days or summer internships which are a good way to gain an insight into the profession before committing to a bunch more exams after uni. You can also look for college or course alumni who have gone on to become patent attorneys and get in contact via LinkedIn – most would be happy to offer their advice.

**Position**

Patent Attorney, Reddie & Grose LLP.

Background

MPhys Physics, St Hilda's College, 2017.

Alumni profile

Adam O'Connell

What: I develop ideas for brands across the Reckitt portfolio, anywhere there is a need for polymer, surfactant, and colloidal formulation expertise. This takes creativity and flexibility, and my daily work varies to suit the project needs: I may read scientific literature and patents to build understanding of a new area, create and characterise trial formulations in our research labs, or collaborate with partners such as universities and private labs where specialised experiments or more open-ended work is needed. I work closely with our other Research and Development specialists to deliver technically superior solutions; our regulatory and safety teams to ensure compliance; our legal and intellectual property teams to secure ownership of our inventions; and our brand teams to maintain alignment with business needs.

Why: After the narrow focus of a PhD, it's refreshing to develop a range of personal expertise and work with such interdisciplinary teams. Being quick to learn and able to adapt is key, which suits me well. Scientific challenges pop up every day, and I find the problem-solving required to tackle these highly stimulating. I also enjoy keeping an eye on the academic world, through university collaborations, participating in conferences, and publishing our own work. Finally, it's rewarding to improve products which people use every day; the results of our work are tangible, and it's great to work in an area of science which everyone can relate to.

Top tips:

- Be open minded with your options after university. Your first step won't define you for the rest of your life. A wide range of experiences develops flexibility and adaptability – essential skills to succeed in the fast pace of the world today.
- If you want to pursue a PhD, consider Doctoral Training Centres: these provide additional training and experiences on top of your research itself, as well as exposure to a network of academic and industry contacts.

**Position**

Polymer Scientist, Reckitt.

Background

MPhys Physics, St Hugh's College, 2017.

Alumni profile

Helen Jones

What: The phase of drug discovery I work on is turning a hit molecule into a marketable drug through successive cycles of multiparameter optimisation. This involves designing new compounds to address specific issues, then synthesising them in the lab, and finally analysing the data that comes back to see if your hypothesis was correct.

Why: I chose to work in the pharmaceutical industry to use the skills I had honed and developed during my MChem and PhD to have a direct impact on people's lives. The possibility that my work may one day lead to a new drug which is used to treat cancer patients and improve their quality of life is a massive driver for me.

Career path: As part of the final year of my MChem, I completed a Part II project in an academic Organic Chemistry research group which I thoroughly enjoyed. From this I knew I want to stay in Chemistry but I was not completely sure on which pathway to choose; academia or industry, so I decided to continue learning by completing PhD in Organic Synthesis. I knew that this would give me the experience of academia first hand but also the opportunity to develop my lab-based research skills, which could be applied in either an industrial or academic setting. Upon completing my PhD I came to the conclusion that the academic track was not for me, and instead went on to pursue a career in the pharmaceutical industry where I could apply the skills I had acquired to help improve people's lives.

Advice: Since moving to an industrial career path I have had no regrets! It can be a hard decision to turn your back on academia after spending so long in a university setting. Looking back, I wish I had found out more about industry earlier in my career by applying for summer placements or utilising my network and speaking to people working in the field. This may have led me to apply for a more industry focused PhD and make the jump to industry earlier!

**Position**

Senior Research Scientist, Medicinal Chemistry, AstraZeneca.

Background

MChem Chemistry, Pembroke College, 2017.



The Micro-Internship Programme

www.careers.ox.ac.uk/micro

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