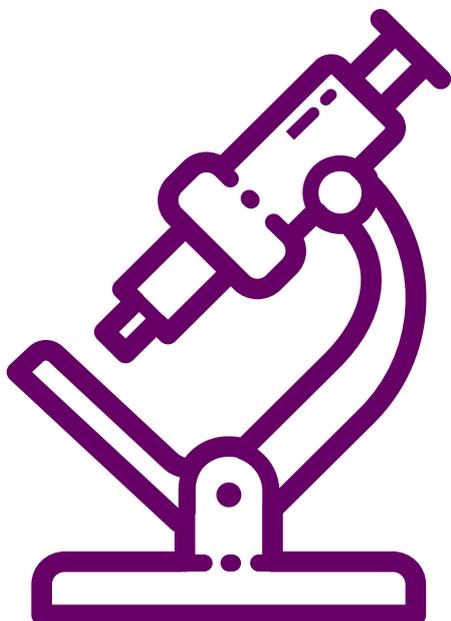


Getting into... **Bioscience and Pharmaceuticals**



The Bioscience industry is growing and evolving rapidly, with exciting new jobs and specialisms emerging as scientific and technological developments allow for new opportunities. Within healthcare, examples of this include working on faster drug development and delivery, and using technology to develop new treatment possibilities. The Covid-19 pandemic has also brought about a lot of growth in areas like drug discovery, research and compliance.

Outside of healthcare, those working in Bioscience might work on developing low pollution and non-plastic solutions, improving food production and efficiency, and developing new materials for consumer items etc.

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Exploring Your Options

In this section we will be talking about the types of role that exist within the Bioscience industry, and where you might expect to work. There will be many areas and employers that we don't cover here, but these are some popular examples that you can use as a starting point when exploring your options.

Typical areas

Research and Development (R&D)

The process of discovering new products and developing them all the way to market. Many of the people employed in this area have a Master's degree or Ph.D. **Examples job titles include:** Laboratory Technician, Assistant Biologist and Culture & Media Prep Technician.

Manufacturing and Technical Services

Once a product has been developed and is government approved, the full-scale manufacturing process can begin. This type of role is concerned with optimising production, quality and efficiency whilst maintaining safety regulations. **Example job titles include:** Production Scheduler, Manufacturing Research Associate and Process Development Associate.

Quality Assurance

This area includes scientists who monitor the manufacturing process to ensure equipment is working properly, measurements are accurate and processes are carried out to protocol. Tests will also be conducted on the final products to make sure they are suitable for sale. **Example job titles include:** Quality Control Analyst, Quality Assurance Auditor and Validation Technician.

Marketing, Sales and Technical Support

Every product has a marketing plan and sales representatives to promote and sell it. Preparations for a product launch can begin 3 or 4 years in advance, so work can involve marketing current and future products. A technical support team will respond to customer questions whereas sales representatives call on medical professionals to promote their products and develop relationships for future business. **Example job titles include:** Market Research Analyst, Sales Representative and Technical Services Representative.

Human Resources, Finance & Management

Some management and administrative positions may require a combination of scientific and business skills in order to support the running of the organisation.

Example job titles include: Technical Recruiter, Human Resources Representative and Finance Officer. Take a look at our Getting into Human Resources and Recruitment guide to learn more.

In addition to the above, the following departments are more likely to be found in pharmaceutical companies:

Clinical Research

Determining the safety and effectiveness of medications, devices, diagnostic products and treatment regimens intended for human use. **Example job titles include:** Clinical Trials Coordinator, Biostatistician and Technical Writer.

Patenting, Intellectual Property & Regulatory Affairs

Responsible for ensuring that all government regulations are followed, staff in this field work closely with the R&D, manufacturing, and quality assurance departments. Regulatory affairs can consist of teams of specialists, often with a scientific background. **Example job titles include:** Regulatory Affairs Specialist, Documentation Coordinator and Patent Administrator. Law firms are often looking to recruit graduates from science backgrounds to train them in patent law.

Research Scientist

Research scientists can find employment in commercial or government laboratories, hospitals and higher education institutions. They may specialise in:

- biotechnology
- genomics
- microbiology
- neurosciences
- oncology
- pharmacology
- physiology
- plant sciences
- stem cell research

You'll typically need a good honours degree, usually a 2:1 or above, in a related-science subject to get into life sciences research. Many employers also require you to have either a research-based MSc or a PhD, or to be working towards one, particularly for higher-level roles. It may be possible to enter with just an undergraduate honours degree and to study part time for a postgraduate qualification and then progress on to a more senior role.

Funding is given to research institutions via the Biotechnology and Biological Sciences Research Council (BBSRC). This is then passed on to students in the form of scholarships, bursaries and studentships. You should contact your preferred university, research institute or industrial partner to find out more about the funding options. More information is also available at BBSRC - Investing in doctoral training.

Students should try to gain practical laboratory experience and knowledge of the range of techniques used will improve their chances when applying for research jobs. Look for work-shadowing opportunities by utilising networking events and LinkedIn, and exploring your university network.

Typical employers

Opportunities in Bioscience are found throughout the UK and internationally. Small biotech organisations and companies are usually found in clusters near universities, such as London, Cambridge, and Oxford. A similar trend is found in countries such as the U.S.A, Singapore, Canada, Sweden and Denmark, who are leaders in biotech research. Bearing this in mind, you may need to relocate, especially if you want to work for larger biotech companies.

Start-up biotechnology companies

Start-ups are normally founded by 2-3 researchers using rented lab spaces. Many bio incubator centres have formed providing flexible office and lab spaces for new life science businesses to carry out their research e.g. [Queen Mary Bio Enterprises Innovation Centre](#) and [London Bioscience Innovation Centre](#). See their websites for details of their tenants, who you could contact directly to enquire about opportunities.

Small/medium-sized biotechnology companies (SMEs)

Lots of biotechnology growth is in small, innovative R&D focused biotechnology companies. Organisations like these are growing as larger companies like [Pfizer](#) or [GlaxoSmithKline](#) outsource research to be more cost effective. The typical European biotechnology SME has 28 employees and specialises in R&D and product development.

Large pharmaceutical/agricultural companies

Some major pharmaceutical and agricultural chemical companies like [Unilever](#), [GSK](#) and [Pfizer](#) have integrated biotechnology divisions into their R&D programmes.

Working in universities & research institutes

Some scientists in this field work in universities as part of spin-out enterprises. A spin-out is when an invention or discovery developed by academics doing research transforms their findings into a commercial product, creating a business. Scientists may be working for the university, a funding body or themselves, depending on who possesses the intellectual property rights on the research developed in their laboratories.

Government agencies

Working in this context involves providing evidence, analysis and professional advice to the government and international organisations on policies, education, healthcare, and biotech related industries. For example, scientists can work for [The Food and Environment Research Agency \(Fera\)](#) UK which supports and develops sustainable food chains, sustains the environment and protects humans from biological and chemical risks.

Biotech divisions in industry

Biotechnologists are employed by chemical industries to improve the manufacturing and production processes. Industries such as Food, Textiles, Fast Moving Consumer Goods (FMCG), Bioenergy, Pharmaceuticals and Agriculture apply biotechnology techniques and principles to improve the yield, production and quality of products.

Hospital laboratories

Scientists are needed here to carry out medical testing such as checking a patient's DNA sample for mutated sequences during diagnostic screening or genetic engineering for cancer therapeutics.

Waste water management

Currently biotechnology is the leading wastewater treatment option, particularly for pollution clean-up, as it is the most environmentally sound method. It also has great potential in tackling environmental problems and new applications include the treatment of solid wastes, bio-mining, agriculture, combating desertification, and even to form the basis for cleaner production.

Most jobs will be based in places like industrial plants, incubators, factories and research organisations, and may include evenings and weekends (as many of the processes in research and industry need continuous monitoring) or trips locally and internationally to meet with clients or attend conferences. Health and safety is a crucial part of the work code of conduct, as work may involve hazardous chemicals and high risk specimens.

Getting Industry Ready

In this section, we will talk about the kinds of skills and experiences employers might be looking for within this industry, and how you can go about gaining them yourself. What employers are looking for will vary depending on the role, but below is a general overview of key areas you might like to think about. It is important to always read the job description carefully to see what the job responsibilities are, and what skills and experiences are required.

What employers want

Qualifications

Postgraduate study, often to PhD level, is usually a requirement if you want to work in research and development. A postgraduate qualification in other areas is not usually essential for entry into a biotechnology role, but it can speed up progress to the next level. For certain roles it is mandatory for employees to obtain professional accreditation or qualifications. See the relevant professional body for information on qualifications required, and lists of accredited courses.

Read job adverts and person specifications for the roles you may be interested in to identify exactly what level and type of qualification they require. Employers often encourage professional development, and some may cover tuition fees and grant study leave.

Skills

Here are some key skills many employers within Bioscience are looking for when hiring graduates. As was mentioned before, it is important to always read the job description carefully to see exactly what the job responsibilities are, and what skills and experiences are required for that particular role.

Curiosity and creativity

These are essential skills especially when performing research and devising and conducting experiments. Scientists have to innovate on the go, think of better ways to solve old problems and create time-saving and money-saving solutions. You need to be curious to identify problems worth solving, and then creative to come up with new solutions.

Data skills

The ability to use data to inform work. Working in R&D can involve working with commercially sensitive data and personal data (whether working with patients directly or indirectly) which is subject to compliance/regulation best practice.

Excellent verbal and written communication skills

All job roles will require you to communicate with a wide range of audiences - the scientific community, business clients, students, and non-specialists. Good communication skills are important whether you are publishing papers, making presentations, working in a multi-disciplinary team, writing research proposals and progress reports, or communicating through email in a concise and timely manner.

Planning, organisation and time management

Having the ability to successfully prioritise your workload and multitask is useful especially in SMEs, where staff tend to have a variety of responsibilities and tasks. As a researcher, your laboratory may be involved in five to ten projects simultaneously. It is essential to be proactive and show that you can use your initiative to plan in advance and carry out duties in a forward thinking manner.

Digital skills

Most biotech research roles require you to use specialist computer software and complex equipment to analyse data and present results. In science marketing and communications roles, a good level of competence is needed in Adobe Creative Suite and use of social media.

Problem solving and analytical skills

These skills allow you to analyse questions, results and data from a logical and systemic perspective, identifying possible solutions while being adaptable and taking on any challenges that arise. For instance, a procurement manager would need to analyse how to prepare product pricing based on raw materials and manufacturing costs to ensure profitable products.

Attention to detail

This skill is highly sought after in biotech as in most roles it is important to keep accurate record of work undertaken by writing detailed and thorough reports. Being meticulous is vital as mistakes can be expensive or even life-threatening. The equipment and specimens used can be costly or dangerous, so preparing specimens or handling machinery requires care.

Teamwork

Teamwork is a vital part of the Biotechnology industry, and it is unusual for employees to work alone. You will often collaborate with multidisciplinary teams, sharing ideas to reach common goals. While it is important to have a strong background in your own discipline, scientists must have the flexibility to pick up and incorporate other approaches, such as using business awareness to making commercial decisions.

Commercial awareness

Scientists need to keep abreast of latest research within the life sciences community, by reading relevant scientific literature and journals, as well as attending conferences. It is important to keep up to date with technical advances/developments in computing and machinery which could save time and improve the reliability of processes and quality of products.

It is also vital to understand your work in a business, economic, and political context. Even if you are working in R&D you will need to keep up with new regulations, emerging markets and competitors because these factors will affect your role and the entire organisation. Employers will look for this knowledge at the application stage.

How to gain relevant skills and experiences

Use your time at university to develop the skills mentioned above. Here are some suggestions of how you might like to do so...

Your course

You will have many opportunities to gain skills and experience as part of your course, which will be useful when applying for future opportunities. For example, if you want to go into research, your final degree project will be a great opportunity to gain and showcase skills.

Take on responsibility

Take on positions of responsibility, whether voluntary or paid. This could be a Team Leader at work, or a committee member for a Queen Mary society (e.g. Biological Sciences Society, Neuroscience Society or BL Forensic Sciences Society). Volunteering is a great way to gain experience within roles related to health, there being lots of social programmes that you can get involved with. Take a look at the QMSU Volunteering page to find out more.

Read job descriptions

Find out what skills recruiters are looking for by reading job adverts related to roles that you are interested in. You can then use this information to decide which skills and experiences you should work on developing. You can book an appointment with a careers consultant to talk through your next steps if you are unsure.

Follow organisations online

Use social media to see what organisations are doing and build commercial awareness and your network. You can also take a look at industry magazines and join professional associations to stay up to date.

Follow [The Association of the British Pharmaceutical Industry](#) to get a good idea of the range of roles available in pharma. Students should work out which area interests them. There are roles in research, data analysis, clinical trials, chemistry, health economics and many more. Free student membership of the British Pharmacological Society is available to anyone studying a degree that has a pharmacology element.

Attend events

Attend [Careers and Enterprise events](#), as well as external events to hear from recruiters, develop your understanding of the industry and make new contacts. You can ask these contacts for advice, or even for an opportunity to shadow them in their role.

Get application ready

Update your CV and have a speculative letter ready to adapt should you need to apply for an opportunity at short notice. [Book an appointment](#) to get it checked by Careers and Enterprise.

Practice Interviews

You may not have a lot of notice before being invited to an interview, so it is important to develop your interview skills in advance. You can use platforms such as [Interview Stream](#) to practice online, and when invited to an interview can [book a practice interview](#) slot with a careers consultant.

Graduate Training Schemes

Graduate training schemes are available in industry with pharmaceutical companies, for example, and also with biomedical research organisations. These are usually open to students with any life sciences degree. Students should begin applying for graduate schemes in the first term of their final year as these schemes are advertised in the winter and begin in the summer after graduation.

www.gradcracker.com is a good place to find these advertised, as well as the employers own website and www.brightnetwork.co.uk. These same employers often offer internships for penultimate year students (usually 2nd year undergrads). Again, these should be applied for in the winter term for the summer ahead.

[The NHS Scientist Training Programme \(STP\)](#) may be for you if you are a science or engineering graduate. Once you have completed the STP, you will be eligible to apply for suitable healthcare science posts as a clinical scientist.

The three year programme involves:

- Approved and accredited workplace-based training (you'll usually spend the first year in a range of settings and then specialise in the last two years)
- Gaining a master's degree in your chosen area of work
- There are a range of specialities offered through the programme, but not all are available every year.
- Entry into the STP is competitive, so applicants should gain work experience related to the subject they wish to apply for through work shadowing or volunteering. Experience in a lab may be essential.
- Applications open for around 2 weeks January. Around this time, there are a number of webinars offered by the STP for prospective candidates. These will give you more information about the specialities available and the application process.

Make the most of work experience opportunities

- Discuss your expectations with the employer at the start, so you have the same understanding of what the experience will involve.
- Always be polite, motivated and interested. Work experience can involve boring tasks, but being flexible, helpful and willing to get involved will make a good impression.
- Be inquisitive and learn everything you can about the way the organisation works. How do they hire? What key skills are they looking for? What are the main issues affecting the organisation at the moment?
- Talk to people who work at the organisation and find out what they do and how they got there. You might uncover job roles and employers that are new to you as well as pick up some helpful tips. Keeping in touch with people you meet can be a great way of finding out about future opportunities.
- Ask for feedback at the end of the placement to identify your strengths and the skills you need to develop further.

For more information on where you can develop your skills and experiences, see the Resources section.

Finding Opportunities

For most roles, work experience is highly valued, if not essential. It builds your skills and convinces future employers of your abilities and commitment to the job. You will gain a better understanding of the industry and of different job roles, develop your commercial awareness and build a contacts network, which is valuable when looking for further work experience or graduate jobs. If you want to work in industry, also consider business work experience such as a first year insight week.

Plan from your first year

Most large companies advertise placements a year in advance. It is important to plan ahead to find the area(s) and companies that interest you, so that you don't miss deadlines.

How can Careers and Enterprise help you?

There are a number of ways Careers and Enterprise can help you build skills and prepare for applying to opportunities.

Appointments

We run one-to-one appointments with expert career consultants who can talk to you about a variety of topics including your CV and applications, as well as give you career guidance and advice surrounding making career decisions. You can also book [Practice Interview appointments](#) to test your skills, for when you have an upcoming interview

Events

We hold a range of [careers events](#) throughout the year where you can learn more about an industry, network with employers and find out what people look for in a graduate.

Programmes

If you are looking to develop your skills, Careers & Enterprise is home to the [Aspire Programme](#): Queen Mary's Student Career Development Programme. These programmes take place alongside your degree, allowing you to gain vital employability skills to add to your CV, as well as raise your commercial awareness. Please note: Eligibility requirements apply

Online Resources

Our bank of [online resources](#) is a great place to go for careers support. We have guides (such as this one), templates for things like CVs and applications, as well as tools that you can use to build or improve a CV ([QM CareerSet](#)), practice for a psychometric test ([Graduates First](#)) or practice for a video interview ([ShortlistMe](#)).

Job boards and employer sites

Biotechnology jobs are usually advertised through jobs boards online, and by professional associations, scientific journals and specialist publications. Once you have found vacancy websites you like, add them to your favourites and check them regularly for updates. Be aware when searching online that the same job titles can be used for very different roles (e.g. Research Assistant), so read the job description and person specification for more information.

Professional bodies, trade associations & directories

Every branch of science has its own professional body or learned society. Many advertise work experience placements and jobs, and have directories of their members which you can contact directly for work opportunities. Some resources are only available to members, but often reduced student rates are available. Examples include: [Biochemical Society](#), [British Pharmacological Society](#), [Society of Biology](#), [Society for Endocrinology](#), [Society for Experimental Biology](#), [The British Ecological Society](#) and [The Physiological Society](#).

Recruitment agencies

Temping (a series of temporary jobs in various organisations through an agency) can be an excellent way of building your skills and experience. It is also a way to try different roles and organisations to help you decide which area you want to follow. Many agencies will require previous related work experience.

Speculative Applications

As well as searching for jobs online, improve your chances by making speculative applications. This is where you contact companies you are interested in directly to ask whether they have any placements or work shadowing opportunities. For example you could ask to shadow someone in an area of the organisation that interests you for a couple of days, or volunteer to help with administration or laboratory cleaning and stocktaking for example. This is a common method of finding opportunities and can be very effective, as many of these roles will not be advertised.

Networking

[Networking](#) at employer and [careers events](#) is another way to find out about companies and get advice from recruiters and their employees. Build your network by attending talks, insight days, conferences and by being a member of a relevant university student society. Consider becoming a member of a professional body or science society to take advantage of their networking opportunities.

Social media can also be a valuable tool for keeping up-to-date with careers information, events, news and jobs.

Resources

Getting Industry Ready

Here are some resources that you can use to learn more about the industry, and begin searching for organisations to which you could send speculative applications. This list is by no means extensive, but you can use it as a starting point.

[Society of Biology](#)

News and resources including 'Next Steps: options after a bioscience degree' careers guide.

[The Association of the British Pharmaceutical Industry \(ABPI\)](#)

Website featuring industry news, and careers information, plus provides a [list of recruiters](#).

[Royal Society of Chemistry \(RSC\)](#)

Industry information plus excellent [employer directory](#).

[European Federation of Biotechnology](#)

Trade association for the aerospace, defence and security industries, with company directories for each category.

[The Biotechnology and Biological Sciences Research Council \(BBSRC\)](#)

Information and jobs in Biotechnology, with details of placement opportunities

[Bioindustry Association](#)

List of UK Biotechnology firms plus profiles – connecting individuals to organisations and companies.

[Biotechnology Industry Organisation](#)

International association representing Biotechnology firms, academic institutions and related organisations.

[UK Science Park Association](#)

Directory of science parks and bio incubators. Local examples include QM Bio Innovation Centre, Oxford Science Park, Cambridge Science Park, Stevenage Biocatalyst and Discovery Park.

[ABPI Research and Development](#)

More than 65% of all medical research and development in the UK is carried out by the pharmaceutical industry. Students with an interest in research should look for ways to boost their research skills. Some of the roles are listed above.

[The Royal Society of Biology](#).

[The British Psychological Society](#).

[The British Neuroscience Association](#)

[The British Ecological Society](#).

[The Institute of Biomedical Science](#)

[The Biochemical Society](#).

[The Royal Pharmaceutical Society](#).

[The British Society for Genetic Medicine](#)

[The Experimental Psychology Society](#).

[The Association for the Study of Animal Behaviour](#)

Finding Opportunities

Jobs Boards

Here are some jobs boards for you to take a look at when searching for opportunities. Remember many organisations will post their jobs directly to their own website or social media platforms, so make sure that you are also looking there.

[Target Jobs](#)

[EMed Careers](#)

[Enternships](#)

[Jobs.ac.uk](#)

[Fiercebiotech](#)

[NHS Careers](#)

[Lab support](#)

[New Scientist Jobs Board](#)

[Gradcracker.com](#)

[brightnetwork](#)