

# Options with biomedical sciences

## Your skills

As a biomedical science graduate, you possess both subject-specific technical skills, as well as transferable core skills. You have a good understanding of the pathobiology of human disease and have skills which are at the forefront of advances in medical research.

The practical work you undertake equips you with the skills associated with good laboratory practice. You are able to:

- plan, conduct and evaluate experiments;
- comply with health and safety regulations;
- research and interpret scientific literature.

In addition to your subject-specific knowledge and skills, you have a range of transferable skills, developed during your studies, including:

- analytical and problem-solving skills;
- computing and statistical skills - you will probably have used spreadsheets, databases and presentation packages, which are found in most workplaces;
- data analysis, evaluation and interpretation skills;
- project management skills;
- numeracy skills;
- organisational skills - acquired, for example, through coping with your workload of lectures, practicals, study, part-time work and social activities;
- oral and written communication skills - an ability to identify, select, organise and communicate information concisely;
- teamworking skills - learned through your laboratory work, or perhaps from sport, a society or voluntary work.

The mix of skills that you acquire through studying biomedical sciences enables you to exercise professionalism and independence of thought, to make difficult decisions in fast-moving and pressurised environments and to take responsibility for your actions. Your ability to work methodically, efficiently and accurately is highly valued by employers.

Consider the skills developed on your course as well as through your other activities, such as paid work, volunteering, family responsibilities, sport, membership of societies, leadership roles, etc. Think about how these can be used as evidence of your skills and personal attributes. Then you can start to market and sell who you *really* are, identify what you may be lacking and consider how to improve your profile. Take a look at [applications, CVs and interviews](#) for some useful tips.

## Job options

### Jobs directly related to your degree

The majority of the roles listed here will require you to undertake further training following your first degree. A higher degree may also be a requirement in some cases.

- **Biomedical scientist** - carries out laboratory tests on human samples to help clinicians diagnose illness and evaluate the effectiveness of the necessary treatment. Specialism can be in one of the following main areas: medical microbiology; clinical chemistry; transfusion science; haematology; histology; cytology; immunology and virology.
- **Immunologist** - investigates the functions of the body's immune system and uses this knowledge to work towards treating and controlling a range of diseases and disorders. Immunologists work within clinical and academic settings, as well as in industrial research.
- **Microbiologist** - observes, identifies and monitors microbes

and develops new techniques, products and processes. Areas of specialism include: basic research; medicine; healthcare; food; industries such as pharmaceuticals, toiletries and biotechnology; agriculture; and the environment.

- **Clinical biochemist** - analyses and interprets data related to patient samples. Clinical biochemists detect changes in the complex biochemistry of blood and other bodily fluids and tissues. They advise clinicians and GPs on the use of tests, the diagnosis of disease, and the planning and progress of treatment.
- **Clinical cytogeneticist** - detects and analyses hereditary diseases and abnormalities through the study of human chromosomes obtained from samples of blood, bone marrow, body fluid, amniotic fluid or foetal tissue samples.
- **Clinical molecular geneticist** - uses biochemical and molecular biology techniques to identify genetic abnormalities associated with disease. Clinical molecular geneticists screen individuals both before and after the appearance of symptoms.
- **Haematologist** - specialises in the study and analysis of blood and blood-forming tissues and associated disorders. Haematologists are involved in investigating the number, size, structure and function of different types of blood cells.
- **Research scientist (medical)** - plans and conducts experiments to increase the body of scientific knowledge on topics related to medicine. Research scientists may also aim to develop new, or improve existing, drugs or other medically-related products.
- **Forensic scientist** - examines contact trace material associated with crimes. Forensic scientists provide impartial scientific evidence for use in courts of law to support the prosecution or defence in criminal and civil investigations.
- **Toxicologist** - plans and carries out laboratory and field studies to identify, monitor and evaluate the impact of toxic materials and radiation on human and animal health, and on the health and status of the environment.

### Jobs where your degree would be useful

- **Medical sales representative** - increases the awareness and usage of a company's pharmaceutical and medical products, through working on a one-to-one basis with contacts and making presentations in settings such as general practices, primary care trusts and hospitals.
- **Scientific journalist** - researches, writes and edits scientific news articles and features for business, trade and professional publications, specialist scientific and technical journals, and the general media.
- **Higher education lecturer** - facilitates learning and carries out research activities in universities and some colleges of further education (FE).

Although some of the jobs listed here might not be first jobs for many graduates, they are among the many realistic possibilities with your degree, provided you can demonstrate you have the attributes employers are looking for. Bear in mind that it's not just your degree discipline that determines your options. Remember that many graduate vacancies don't specify particular degree disciplines, so don't restrict your thinking to the jobs listed here. Look at [your degree... what next?](#) for informed advice on career planning and graduate employment, or take a look at [what jobs would suit me?](#), a helpful starting point for self-analysis.

[Explore types of jobs](#) to find out more about the above options and related jobs.

## Career areas

A degree in biomedical science is useful for a wide range of careers, in both the public and private sectors. These include roles in health care; scientific research and development; medical sales; financial professions such as accountancy; technical support; teaching; and scientific writing and journalism.

Of students who graduated in 2007 with a degree in a biomedical subject, 74% had entered full or part-time paid employment, including a combination of work and further study, six months after graduating. Of this number, over half were working as health professionals and associate professionals, suggesting that many graduates are successful in securing work directly related to their field of study. Others found work in professional roles in a variety of sectors from scientific research to social welfare, demonstrating that biomedical sciences graduates are highly sought after by a wide range of graduate recruiters.

### Where are the jobs?

Biomedical scientists have a well-defined career in the health service. To work as a state-registered biomedical scientist in the National Health Service (NHS), you will first need to obtain the Institute of Biomedical Science (IBMS) (<http://www.ibms.org>) Certificate of Competence. This can be achieved through undertaking accredited work experience either after graduation or during a sandwich placement year.

Other common employers of biomedical science graduates include academic departments; the National Blood Service (NBS) (<http://www.blood.co.uk>); the Health Protection Agency (HPA) (<http://www.hpa.org.uk>); forensic, charity or government funded laboratories and private pathology laboratories. The food and drink, biotechnology and pharmaceutical industries employ graduates in areas such as research and development and quality assurance and sales.

Look at these employment areas for further information:

- [Education](#);
- [Health](#);
- [Science](#).

See [industry insights](#) for further information on possibilities in other employment areas.

Statistics are collected every year by the Higher Education Statistics Agency (HESA) (<http://www.hesa.ac.uk>) to show what HE students do immediately after graduation. These can be a useful guide but, in reality, with the data being collected within just six months of graduation, many graduates are travelling, waiting to start a course, paying off debts, getting work experience or still deciding what they want to do. For further information about some of the areas of employment commonly entered by graduates of any degree discipline, check out [what do graduates do?](#) and [your degree...what next?](#)

## Further study

Of students who graduated in 2007 with a degree in a biomedical subject, 15% went on to undertake further study, with an additional 9% combining further study with work. Most took postgraduate qualifications in science subjects such as biomedical science, biochemistry, biotechnology, haematology, immunology and microbiology.

Further study is undertaken by many biomedical science graduates because an increasing number of careers in the science sector require entrants to have a specific postgraduate qualification. By studying at postgraduate level, you will further develop your specialist knowledge, research skills and communication skills. This will enhance your employability by enabling you to apply for a wider variety of jobs and in some cases may also enable you to enter a profession at a higher level.

It is possible for a graduate with a good degree in biomedical sciences to obtain a place on a four-year fast-track graduate entry course to study medicine.

These trends show only what previous graduates in your subject did immediately upon graduating. Over the course of their career - the first few years in particular - many others will opt for some form of further study, either part time or full time. If further study interests you, start by thinking [about postgrad study](#). [Find courses and research](#) of interest to you; you can also [apply for courses online](#).

Look at [funding my further study](#) for details relating to finance and the application process.

## What next?

Entry into relevant employment is competitive. Gaining good academic results and relevant work experience is helpful. Before applying for jobs and professional training courses, a period of relevant work experience can be extremely useful and in some cases is essential.

Structured work experience schemes are rare, but are available in some larger organisations. Schemes vary from short-term two-week supervised placements and Easter and summer vacation schemes to year-long industrial placements. Information on these schemes is usually available on company websites.

Many work experience options go unadvertised: often organisations are happy to take on volunteers, allow individuals to work-shadow or even just speak to members of staff working within the profession. See Volunteering England (<http://www.volunteering.org.uk>) for further information.

This should have started you thinking about your future. Whether you are in the early stages of career planning, or you have definite ideas about what you want to do, you will find further information to help you in the following sections:

- Analyse your skills, interests and motivations to find out [what jobs would suit me?](#)
- [Explore types of jobs](#) to find out about entry requirements, salaries and working conditions.
- See [industry insights](#) for hints on breaking into various industries.
- [Find graduate employers](#) and see what they have to offer.
- You may want to investigate [self-employment](#) or [flexible working](#).
- Look at the advice on [applications, CVs and interviews](#).
- Get [work experience](#) through vacation work or a work placement.
- [Find courses and research](#) and investigate postgraduate study opportunities.
- If you are thinking about taking time out, volunteering or travelling consider a [gap year](#) or explore [working and studying abroad](#).
- If you have already graduated, get online [interactive advice](#).
- Visit [your university careers service](#) for a wealth of advice and resources to help with your career planning.

(c) Content copyright of or licensed to AGCAS ([www.agcas.org.uk](http://www.agcas.org.uk))

Written by Nicola Abbott, Durham University, October 2008.  
Edited by Carol Rowe, AGCAS, October 2008.

The work of writers and editors is gratefully acknowledged.  
To view the terms and conditions for the material provided in this publication, please see <http://www.prospects.ac.uk/links/disclaimer>.