

# Careers options after a science or engineering doctorate

## Hints and tips

Vitae resources: developing the  
skills and careers of researchers

Vitae is supported by Research Councils UK (RCUK),  
managed by CRAC: The Career Development Organisation  
and delivered in partnership with regional Hub host universities

Career options after a science or engineering doctorate *published by The Careers Research and Advisory Centre (CRAC) [www.crac.org.uk](http://www.crac.org.uk)*

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## Career options after a science or engineering doctorate

The broad range of skills and highly specialised knowledge developed through doing a research doctorate appeal to employers in a fantastic array of sectors and occupations. Although a doctorate is traditionally viewed as the first step on the academic career ladder, in fact many more doctoral graduates in science and engineering develop careers outside academia, so your options are truly open.

This sheet aims to present you with a brief overview of popular career sectors and to point to the best resources for finding out more about them. It is not a substitute for talking to a Careers Adviser or someone working in a field that interests you. For advice on networking, getting the most from your University Careers Service and other relevant information, see the Vitae website: [www.vitae.ac.uk](http://www.vitae.ac.uk). Science's Next Wave (now found at <http://sciencecareers.sciencemag.org/>) includes advice, articles and profiles of technical and alternative careers.

### What are your options with a science and engineering doctorate?

This information sheet splits the wide range of careers available into four areas:

- Postdoctoral research
- Research in industry and specialist institutes
- Commercial and management
- Something completely different!

### Postdoctoral research

**What is it?** Postdoctoral research is the first step to an academic career, but it also boosts prospects in other research environments, particularly the pharmaceutical industry and research institutes. Postdoctoral researchers are employed on fixed-term research contracts, usually funded by external bodies (ie the Research Councils or charitable trusts) to work on specific projects. You can either continue research in the same field or choose to move into a new area. Interdisciplinary research is being promoted by the Research Councils, so this may be a way to broaden your appeal to future employers. However, learning a new field will take time and may slow down your publication rate in the short term.

**Where is the work based?** Postdoctoral researchers are most commonly found in universities and research institutes, and fixed-term contracts are common across the world. An overseas postdoctoral research posts is likely to boost your career in the future, particularly if you secure a **fellowship** (a grant which enables you to pursue your own research in a location of your choice – see [www.hero.ac.uk/uk/research/](http://www.hero.ac.uk/uk/research/) for examples).

**Industrial** postdoctoral research posts in commercial companies (both large and small) with significant research activities may offer a good first step to an industrial research career, but your publication rates may suffer because less work is disseminated. Clarify this before accepting a position if you aim to remain in academia in the long term. These posts are usually advertised in the same way as academic ones.

**Vacancies** are advertised in subject-specific publications (such as New Scientist, Science, Nature, Chemistry World and Physics World) and on university websites or sites such as [www.jobs.ac.uk](http://www.jobs.ac.uk). Vacancies are also often posted on conference notice boards.

**To find out more**, talk to postdoctoral researchers in your own research group or department about their experiences and planned career progression. If you are planning an academic career, ask lecturers and readers for advice on choosing a postdoctoral position, recruitment practices and funding sources.

## Research in industry and specialist institutes

**What is it?** Industrial research depends on much of the same knowledge and skills as academic research, but the focus is on projects with saleable results. This means that research that does not show commercial potential is terminated, but when successful, you have the satisfaction of seeing your work applied. Scientific and engineering research is also conducted by charities, the Civil Service and in a huge range of research institutes. Research in these is also focused towards the aim of the organisation, whether that be developing cures for diseases, improving safety of vehicles or designing and building spacecraft!

**Where is the work based?** Opportunities in industry are available worldwide, but there are geographical concentrations which you will need to research (the occupational profiles on [www.prospects.ac.uk](http://www.prospects.ac.uk) refer to these). Research institutes are located across the country and internationally, but many focus on specialised fields which will determine your location (such as CERN near Geneva or The European Bioinformatics Institute in Cambridge).

**Vacancies** are advertised in specialist publications (see the suggestions for postdoctoral researchers), at University Careers Services and directly on company websites. Many companies also use recruitment agencies (careers services and professional bodies can advise you on agencies for your subject area).

**To find out more**, visit your Careers Service, attend employer presentations or specialist scientific and technical recruitment fairs ([www.prospects.ac.uk](http://www.prospects.ac.uk) advertises many of these), and talk to industrial research scientists and engineers about their work at conferences. The Vitae website links to many websites which will help you to identify employers interested in researchers in your field.

## Commercial and management

**What is it?** This covers any non-research role including financial, managerial, IT, sales and production. All researchers are skilled at analysing and understanding complex data, understanding problems and drawing conclusions, and can apply these skills in commercial roles. For more information, look at the occupational profiles on [www.prospects.ac.uk](http://www.prospects.ac.uk).

**Where is the work based?** If you are flexible about the size and nature of the employer, you can find these roles in virtually every location.

**Vacancies** are unlikely to be aimed at doctoral graduates (unless your research is relevant) so you will go through usual graduate recruitment channels.

**To find out more**, visit your Careers Service and look at the general careers links on the Vitae website.

## Something completely different!

A background in scientific or engineering research does not have to mean a future in it! At the end of your doctorate it is not unusual to recognise that a career in academia or research will not suit you. Many other doctoral graduates feel the same way and every year they find interesting careers to pursue. Your career options are diverse, so whatever you are considering (counselling, conservation or chartered accountancy!) you will be able to find out more about it by visiting your Careers Service.

If the freedom of academic life appeals, but you have other interests, then consider self-employment. You will find a lot of advice is available and in certain regions grants and awards can help you to set up your new business. Talk to your Careers Service as they will be aware of local agencies and support.

Whatever your career interests, you will find information about the career destinations of recent science and engineering doctoral graduates at <http://www.vitae.ac.uk/CMS/files/upload/Vitae-WDRD-by-subject-Jun-09.pdf> including links to other relevant reports and information.