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Tips for a rock-solid geoscience post-doc



Post-doctoral research can be rewarding, but also short term and often involve moving locations. Melanie Leng and Joe Emmings advise those weighing up whether to sign up to a post-doc

CONGRATULATIONS, you just passed your PhD viva! So what's next? A post-doc is one route available to you, and is a good option if you'd like to pursue a career in research. A post-doc gives you the chance to enrich your expertise, boost your CV and experience new research environments, but it's not right for everyone. Post-docs can be great opportunities, but as with any job, take care to consider whether a post-doc is right for you, think carefully about the projects you apply for and the people you will be working with.

What is a post-doc?

A post-doc refers both to the researcher who is working on a research project, often following completion of their PhD (they are called a 'post-doctoral researcher'), and the project itself. Post-doc positions are almost always fixed-term (usually one to three years) and offer an opportunity for early career researchers to develop their research ideas, learn new skills and gain experience in an advanced research environment.

Most post-docs are positions in universities and research institutes, and occasionally in industry (or sponsored by industrial partners). There are two distinct styles of post-doctoral research position: 1) project-specific, where post-docs are typically funded as part of a larger, overarching research grant and are part of a team of researchers; and 2) thematic, where the post-doc research objectives are less constrained, in order to encourage new thinking and discovery. In reality most

TIPS WHEN APPLYING

If there is a formal application process, make sure you read the guidance carefully. Tailor your application and cover letter to the position and research in question. A generic application is usually easy to spot.

Do your homework on the principal investigator and their research team. Take questions to the interview about the department or company, and explore all of your questions (in case the position isn't for you). Once offered the role (and before accepting it), you will be in the best negotiation position to discuss expectations, roles and responsibilities.

post-docs are on the spectrum between these two end-members.

Post-docs generally have minimal supervision, and they are expected to gather and interpret their data, present their research at conferences and publish peer-reviewed papers in academic journals.

Why do a post-doc?

Post-docs are usually taken up after a PhD and offer a pathway to a career in academia or industry. Post-docs present an opportunity to help establish your independence, develop your critical thinking, leadership, mentoring, and project and people management skills, as well as expand your technical knowledge. Unlike a PhD, a post-doc is not 'defended' at the end of the position, but key research outputs are expected within a timeframe that is agreed with your supervisor and the wider research group.

A post-doc position is generally associated with less supervision and more responsibility, compared to being a PhD researcher. Post-docs are almost always expected to publish peer-review papers, but innovation, outreach and public engagement are becoming increasingly important.

At the start of your first post-doc after your PhD, many people face a dilemma: to double-down on your PhD research and expertise, for example by expanding the types of analysis for rocks you have already characterised, and fostering existing partnerships, or to strike out in a new direction, perhaps by embracing entirely new techniques, method development and building new collaborations. There is no right answer to this, and it will often depend on your post-doc objectives and long-term research aspirations.

“ You can also approach researchers directly to enquire about future opportunities ”

UPSIDES AND DOWNSIDES

Like any job, the merits of a post-doc are influenced by the role and environment. The post-doc might be a fantastic project, but it's important to consider who you will be working with.

Probably the main downside to post-docs is their fixed-term nature, it is not unusual for early career researchers to do multiple post-docs before attaining a permanent position. Perhaps as a result, a much lower percentage of women move from post-docs to academia; this might relate to family demands, self-confidence, and inability to travel due to

dependants or caring responsibilities and wanting to be more settled.

Post-doc salaries vary, some can be lower than those on offer for industry positions. Post-doc positions can also require you to be mobile (e.g., visiting other labs, fieldwork, conferences); for some the prospect of travel is appealing.

Post-docs are an opportunity for you to do your research and have fun; your abilities will be stretched, you will gain a mass of experience through exposure to different environments, and you will make new friends.

How to choose a post-doc

Post-docs are expected to largely know what they are doing (or to find out), so think about what a post-doc outside of your immediate specialism will involve. Post-docs are almost always required to deliver the outcomes as described in the job advert, the grant or by the funder – be assured you can deliver.

Think about your supervisor, the principal investigator. It may be a fantastic project, but it's important to know who you will be working with. After securing an interview or meeting, do some research. Look up the potential principal investigator(s) and their laboratory or research group via their websites and online presence. Do they appear interesting and are they doing research that genuinely interests you? Look at how many PhD students and other post-docs they have in their group, and take time to consider the diversity of the research group. Do they look like a dynamic and diverse research group that you would want to feel part of? You may also want to find out if any of your network is in the same field. If so, ask if they know anything about the research group you may be joining.

How to find a post-doc



Most PhD students start thinking about post-docs in their final year. There are many websites and information can be easily found through search engines. In the UK, one of the biggest websites for

academic jobs is jobs.ac.uk, which lists different types of academic jobs both in the UK and overseas. Many of our major geoscience publications advertise post-docs including *New Scientist* magazine and *Science* magazine, and there are jobs boards on the websites of the *Times Higher Educational Supplement* and the *Guardian*. University websites are also a good source for information.

You can also approach researchers directly to enquire about future opportunities. Make use of contacts made through networking. Fellowships are a useful source of funding for post-doctoral research and there are many, including the Research Councils, Royal Society, Marie Curie, Anne McLaren, and institutional fellowship programmes. 




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