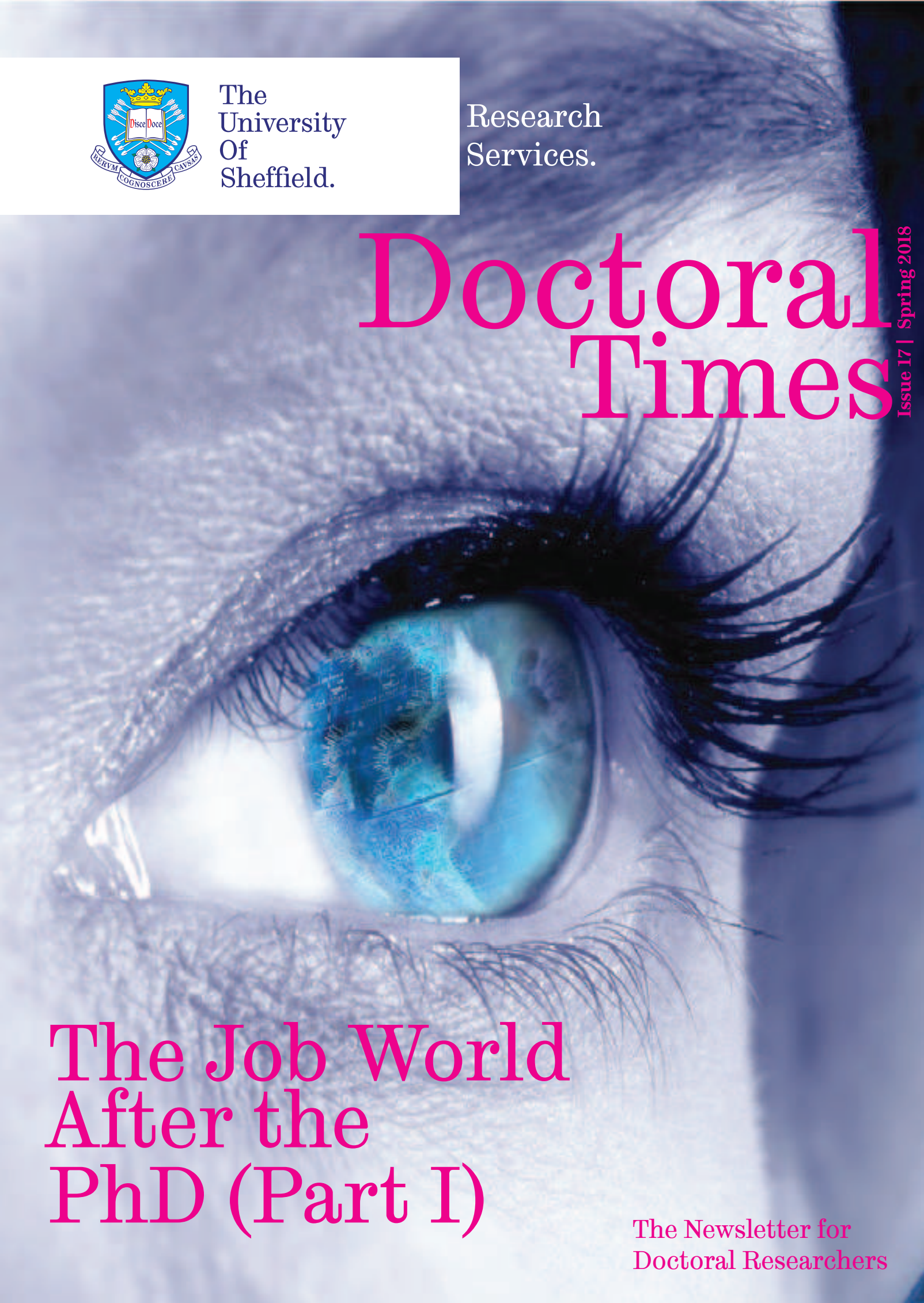

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Research Services.

Doctoral Times

Issue 17 | Spring 2018

The Job World After the PhD (Part I)

The Newsletter for Doctoral Researchers

Introduction

A note from the editor

Hello, and welcome to the latest edition of the Doctoral Times.

The theme for this two-part edition is 'The Job World After the PhD' and within these pages you will find articles from students, staff, alumni, support services and many more, offering first-hand accounts, personal views and advice regarding that fast-approaching, ever-looming decision- what am I going to do after my PhD? Ever wondered what different types of careers paths there are for doctorates? Do you have a career in mind but wonder how to achieve it? Well look no further! This edition aims to guide you through these difficult times and present various careers paths from both academia and the world beyond. This edition contains articles from current students who have taken on different work experiences, or created experiences for themselves, to improve their CV and gain relevant career experience. Our University has brilliant teams who are experts when it comes to helping you create your own opportunities, giving you the best chance to discover your ideal career and start the path towards success! They offer everything from targeted career advice to mentoring programmes (to name but a few!). So, expect to hear from the wonderful teams behind Think Ahead, Research and Innovation services, the Careers service, and the v i s t a schemes.

This is part one of the two-part series, and in this edition, you will read about personal experiences from PhD students and postgraduate researchers, how skills gained during a PhD are used in a broad range of careers, how current students have gained invaluable work experience and how you can get more involved during your time at university. In part two you can expect to read about the different ways to get involved in public engagement and how it can further your career development, further careers advice including careers outside of academia and start-up businesses, interviews and CV tips, and finally a research piece on the value of a PhD.

I hope this edition will be as useful to you as it has been to me.
Look out for part two coming soon...

Good luck in all your future career endeavours!

Miss Devon Smith

Guest Editor
and PhD Student

In this Issue

Editorial Team

Devon Smith, Zoe Spink and Fozia Yasmin

Skills Gained from a PhD: Time to think about YOU

Sara Pates - Head of Enterprise

It's easy to think that your time as a PhD student is all about your research, your publications, and your advancement of the knowledge base in your field. It's easy to be so consumed by your passion for your research and what you're doing now that you barely have time for a life during your PhD, let alone time to consider life after graduation.

When was the last time you gave more than a passing thought to how you are developing as an individual rather than just how your research is developing and progressing?

Really… honestly… when was the last time you had the head space to sit down and think about what you want from life after your PhD?

There's no doubt that whilst your head is buried in your research you are developing a whole set of skills specific to your discipline, whether that be mastering using advanced statistics for analysing large and complex data sets, or learning how to use ex vivo X-ray microCT.

When thinking about life beyond your PhD, these *discipline specific skills are what make you qualified to pursue a career in your field, but they aren't actually what will get you a job!*

Every newly qualified post-doctoral student in your field will have pretty much the same discipline specific skills as you, so what will set you apart? What makes YOU the ideal candidate for that job over and above everyone else applying?

Whilst you have been busy focussing on your research you will have been developing a whole range of other skills. You might hear these referred to as professional skills, employability skills, enterprise skills or even commercial awareness. Regardless of what this skill set is called; during your PhD, you *will* have been developing them. But what are they?

Whether you realise it or not, you will have been developing the ability to work collaboratively, to communicate effectively, to identify problems and think creatively about how to solve them, to manage your time and resources effectively, to make decisions and take action in the face of incomplete information and a whole host of other skills that employers value.

Applying these skills is what will help you to succeed and progress in your employment, but how can they actually help you to get that job in the first place? Employers value these skills highly; they recognise that it these skills, in conjunction with your discipline expertise, are essential for you to succeed in your career; so, when you apply for jobs they are looking for evidence that you have developed and applied them.

Even if you decide to stay in academia, it's tempting to think of post-doc posts as being an extension of your studentship, but a post-doc is a job and just like any other employer, universities are looking for employees with the ability to succeed. Academic staff don't just research and teach! They are the engines that drive our university and they get involved at all levels from leading research groups to leading the strategic direction of the university as a whole.

To get that dream job, whether in academia or in the private sector, you need to evidence what you're capable of and this is why time to think about YOU is important.

If you don't take time to think about how YOU are developing, how will you be able to provide potential employers evidenced examples of how you have applied your skills and to what effect?

How will you be able to set yourself apart from other candidates?

Without taking the time to think about YOU, how can you be sure that you have developed the full range of skills you want? The university has dedicated support to help you further develop and hone your professional skills. The 301 Student Skills and Development Centre has a great audit tool to help you start to think about what is important to you and your career; and can signpost you to the right opportunities for you to get the support you need, and to make sure that you make the best use of your time here and the resources available.
https://301skills.shef.ac.uk/skills_audits.

So stop! Take a break. Grab a coffee. And spend a little time thinking about YOU and join up your skills.
https://www.sheffield.ac.uk/skills

How my doctorate came to be
Dr Zoya Zuvcenko

Once upon a time, a little girl believed she was stupid. As a teenager, the little girl failed exams. She failed maths three times.

Years passed. As an adult, the little girl learnt that other girls - and boys - also failed subjects at school. Like her, they felt inadequate.

One day she thought: what if it was not her lack of ability that was the issue? She began to realise that there might be other factors that affected her. These included her lack of confidence and the way she learnt. The little girl questioned herself and she knew that self-pity had to go.

At 34, she trained to become a tutor. At 40, the little girl still needed to prove to herself that she was not stupid. She studied with the Open University from where she gained a Master's degree. She then realised she had skills she could use to enable adults develop their potential. This led to her Ed.D.

Within a few months of starting her doctorate, the little girl was invited to a job interview. She knew beforehand that she might be asked to sit a maths test and she prepared as best she could. The little girl, however, at aged 49, burst into tears in the interview. Surprisingly, the interviewers were not fazed, but insisted that, if she wanted the job, she had to endure this ordeal.

I passed and I was offered the position.....

Why had I passed? How had I passed? What could I have done earlier in my life to make this incident less traumatic? How could I help others deal with this kind of situation?

This story was written in my thesis, which is concerned with confidence, motivation and self-esteem in learning, especially for adults who struggle with maths and English. I used the adults I taught as a basis for my research and compared and contrasted their learning with mine. I also explored my relationship with them.

I graduated in 2016, aged 56, with an Ed.D. At 16, I had 2 'O' levels.

I currently work as a mentor at Bangor University and I support and teach adults and children in my home who lack confidence in learning.

My doctorate has enabled me to learn not to feel inadequate.

I now challenge the status quo and realise that everyone has a voice. This awareness has helped me to recognise vulnerability in others and to value people beyond the physical, emotional or mental impairments that may be initially observed.

Encountering a rigorous re-evaluation of who I am and how I have learnt through this doctorate has enabled me to consider how others might feel when confronted with learning situations that seem beyond their capability.

I have become more confident because I developed a depth of knowledge.

Knowing little brought me little confidence. Ignorance made me vulnerable. I am now able to back up my feelings and thoughts with the theories and experiences of others. Comparing and contrasting my knowledge to theirs

"The struggles I experienced, because I felt I could not achieve, slowly diminished. I love learning, in whatever form that may be, and it is this passion that

has made me a more rounded person.
It took me many years to become a Doctor. I continuously reconsider ideas about how both teaching and learning affect confidence.
I appreciate that learning is not a simple, straightforward or linear process, but rather an adventure to be relished. Understanding elements of my educational background and attitude to confidence helped me to appreciate contrasting ways of approaches to learning.

These experiences also gave me time to develop my professional life as a trainer and tutor, deepening my support of those I meet both on a professional and casual basis. The person I have become is mentally and emotionally different from the one I was when I began this doctorate. As Oscar Wilde apparently said, experience is one thing you can't get for nothing.

"As Oscar Wilde apparently said, 'experience is one thing you can't get for nothing.' "

Success is concerned with the completion of a course that is quantifiable in recognised academic terms, as completions bring in funding for organisations. Whereas I appreciate that a recognised qualification is valuable and commendable, my way of working and my mentality is not immediately concerned with academic and monetary issues. I view the Ed.D. as a kick-start to new opportunities.

I see success as the change in individuals' self-perception and their ability to learn. If people gain confidence, find skills to manage their work and life, or develop abilities that they had not realised they had, then I think that an indefinable, incalculable qualification – potential being realised – is as important as any piece of paper.

"I have become more confident because I developed a depth of knowledge."

Same skills, new tools
Helen Moore: Library

So, you've spent years grafting at university and you're about to embark on a new adventure. You've developed lots of transferable skills in the course of your research - take care not to lose them, particularly if you're leaving the world of academia behind.

Here at Sheffield you're used to having the information you need at your fingertips. You're privileged to have access to a vast range of world-class research. As you move into employment, the resources you have won't be the same. Understand your company's investment in information and find out what you've got access to and how you go about finding it. Large companies may have their own library - get to know the staff and make use of the librarians. Although the information-seeking tools you'll have at work will be different, the skills you've developed still apply.

Your digital literacy will be highly valued by employers and they will assume that new recruits have advanced information-seeking skills, that you're better and quicker at searching for information because your skills are more current. When you're given your first real piece of research to do at work:

•make sure you have a clear brief before you begin and check your understanding by asking questions;

- remember to apply what you've learned at university and start with a plan;
- demonstrate that you know how to construct a search strategy and can search efficiently and comprehensively;
- ask for ideas about which sources to use, and whether they're online or housed physically in the organisation or beyond (such as in a large public library). You might be used to doing speedy searches for snippets of information but your employer may want you to dig more deeply. Sometimes you'll need to look further than Google and use formats such as company reports, photos, manuals and other knowledge that's contained within the organisation
- use the methods you've learned for evaluating information and show that you can locate reliable and appropriate sources
- don't be embarrassed to ask lots of questions and find the key people to consult who are good information sources.
- Check with other colleagues in your team for their opinion about what you've found before you present it to your new manager.

If you've used referencing software during your time at university, you can continue using Mendeley and EndNote Basic (the free, online version) when you leave. You can take your references with you and display good practice in terms of finding, annotating and storing documents you have read in a systematic way. This is a valuable skill in the workplace.

If all of this worries you and you're not convinced your skills are adequate, don't worry! We're here when you need us. Make use of the online tutorials on offer in the Information and Digital Literacy pages at www.sheffield.ac.uk/library/infoskills or talk to the librarian for your subject area (see www.sheffield.ac.uk/library/libstaff/sllist).

What new tools?!

If it soon becomes apparent that your new place of work has very little in terms of subscriptions to journals and databases, don't panic! Increasingly lots of high quality peer-reviewed information is being made freely available, legally, through Open Access and other initiatives. We outline some of them below:

Open Access button - enables you to search for articles which are otherwise hidden behind paywalls. Search from the web page or add the Chrome or Firefox extensions to your browser. The OA Button also offers the option of contacting the author for a copy if it's not yet available.

Unpaywall - similar to the OA button, you can add a free Chrome or Firefox browser extension from Unpaywall to get access to millions of research papers. Unpaywall harvests these from institutional repositories and pre-print servers providing you with free copies.

CORE - provides access to over 80 million open access papers, harvesting the full text from thousands of sources around the world.

Google Scholar - still good for searching for high quality information but you will frequently encounter paywalls where you will be asked to pay a fee to read articles. Use the tools described above to see if there's a free version available of any articles you want to read. Learned societies and professional bodies are a good source of information. Many of them have their own libraries and will welcome enquiries from you. You may already be familiar with them, particularly if your course at university was accredited by one, but if you're unsure what yours is ask your new colleagues.

"CORE - provides access to over 80 million open access papers, harvesting the full text from thousands of sources around

Many publishers have licences permitting members of the public to read their journals. Generally speaking, under the terms of the licence, you will be expected to go into a library and use a designated PC: Universities - if you're not far from a university library it's worth asking if they have a 'walk-in access to journals' facility. As an example, information about arrangements at Sheffield can be found here.

Public libraries - the 'Access to Research' initiative runs along similar lines. Participating libraries have a designated PC that library members can use, although it's often for private study only and not for commercial use so this scheme may not always be appropriate. From this page you can see the list of publishers taking part and browse a list of their journals.

Don't under-estimate what your local public library can do for you. If you're working in a large town or city many councils operate business information services through libraries. Librarians are experts in tracking down information so do seek their advice.

Finally, as a graduate of the University of Sheffield, you're eligible for free Library membership.

Read a description of services for alumni.

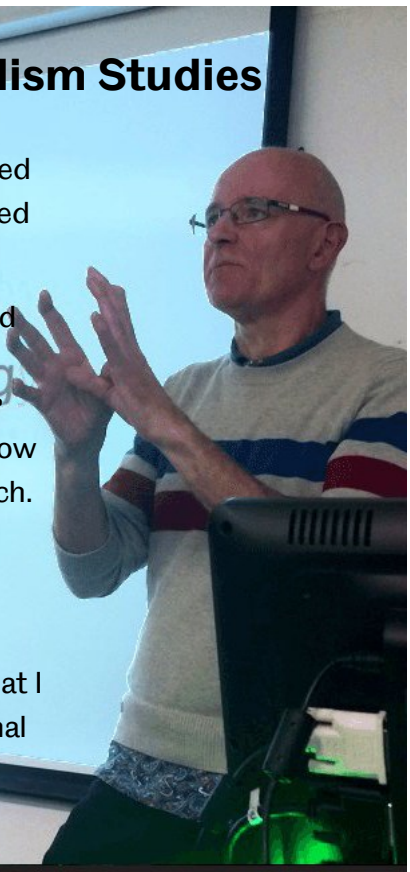
Don't forget to make use of the online tutorials on offer in the Information and Digital Literacy pages at:

www.sheffield.ac.uk/library/infoskills

or, talk to the librarian for your subject area

(see www.sheffield.ac.uk/library/libstaff/sllist).

Taking the PhD by Publication route: Journalism Studies



Journalism studies senior lecturer Tony Harcup has been awarded a PhD by Publication for more than a decade's worth of published research into alternative forms of journalism.

"I did the research in the first place just because I wanted to find things out," explains Tony, who previously worked as a journalist. "Our PhD by Publication route for staff allowed me to pull a lot of it together and, because I had to submit a commentary as well, it helped me see how the work had progressed – and also suggested future areas for research.

The viva was intense but fun, and it's a rare privilege to have a detailed discussion with people you admire who have actually read your work." Has becoming a 'Doctor' altered his status within the Department of Journalism Studies at the University of Sheffield? "Not really, except that I feel better informed as a PhD supervisor. And I'm now acting as external examiner for PhDs at other institutions, which is always interesting."

Communication, Media & Journalism research group

#CMJshef

Taking the PhD by Publication route
Clare Rishbeth - Department of Landscape.

Many people assumed I had a PhD. But actually I came into academia straight from practice as a landscape architect, having previously studied to Postgraduate Diploma level (common for a professional accredited route). Without even an MA dissertation under my belt I was fortunate enough to gain a lecturer position. It's important to note that almost twenty years ago this kind of career change was possible, even desirable, whereas now it is extremely rare.

I did a lot of studio teaching, and over the next ten years published a number of papers, gained funding for two ESRC research projects, and, as Principle Investigator on these, managed Research Assistants. I supervised dissertations and, yes, PhD students. Because I was successful in the doing of research, and in the writing of publications, a formal doctorate qualification seemed unnecessarily (especially in my discipline of Landscape Architecture). Also, it would have been impossible to carry out my job responsibilities alongside 3-4 years of full time study.

In 2013 I came back to work after a second period of maternity leave and was working part time. I had no research projects in the pipeline and having had almost 5 years of curtailed work and travel, my research networks had dried up. time, to clarify what I had already achieved, and through this refine new research questions and directions.

But one thing about my academic context had changed for the better, and that was that the University of Sheffield now supported a route of PhD by Publication for existing staff. It seemed like a reasonable way to spend my research.

PhDs by Publication vary in their requirements between different universities. In the University of Sheffield it is required to submit between four and eight publications in one bound volume (I submitted four journal papers and two book chapters), and a commentary of 15,000 words outlining the significance and coherence of your work. There was very little guidance beyond this, and I only had access to a couple of examples submitted from very different disciplines.

Candidates have a maximum of one year between registration and submission, though to avoid unnecessary stress and accommodate my part time working hours I started work on my commentary prior to formally registering.

I was glad for this slightly cheeky strategy when I won a medium size research grant during my period of commentary writing, so my non-teaching, non-admin time was largely filled with managing a new research team. Inevitably, finishing the commentary required some after work hours.

After binding and submitting the PhD in a very similar way to a normal PhD, I was examined by viva by two external examiners. It was difficult choosing these examiners, as I was already well known within the field with a range of collaborations and friendly contacts. But the viva was a good process, I enjoyed discussing a decade worth of research findings. I'm sure it was less stressful than a traditional viva, as the only part of the thesis that it is possible to be asked to rework is the commentary – the publications are already 'acceptable'.

The PhD by Publication was a great opportunity for me to gain formal credit for my research practice as being of doctoral level. It was genuinely interesting to be able to look back on work I had done quite a long time previously, and be able to identify what still has value to a broader discipline, and what has developed in the meantime.

Like all doctoral graduates, I hugely enjoyed the end point, a graduation day when I could stop and say to myself 'well done'... this has been a long period of research and I have done it well. It is rare to have occasion for this in a long career.

Of course, it was still a lot of work on top of my normal responsibilities, and the time I spent doing the PhD was time not spent writing REF-able papers or submitting grant applications. So, by some measures, I was perceived as less 'productive' during this period.

It hasn't really changed the way I think about my work, which continues through a range of funded research grants and papers much as before. I really don't care whether people call me Dr or not, I know that in my department a lot of excellent research work is carried out both by those with doctorates and those without.

I am full of admiration for all PhD students who undertake 'the traditional route' – sustaining concentrated effort and interest over a three to four year period is incredibly difficult.

I am grateful that I was able to take a different path: to learn research skills 'on the job' and build a portfolio of research piece by piece, and that this has been a means for someone from practice to become a recognised academic researcher. Sadly, I think the number of recruitments direct from professional practice to academia (without already having a PhD) has plummeted; prior evidence of research achievement now seems to be essential.

I believe that a more creative approach would be appoint to professionally orientated departments direct from practice, support these new academics in developing research skills and experience, and then allow them to submit PhDs by Publication. The route is achievable and has genuine value.

The Topsy Turvy Career Considerations of an EdD in Higher Education Student - Louisa Hill

As a part-time EdD* in Higher Education student, like all doctoral students, I am encouraged to consider my future career and take steps to develop my employability skills for a job after I graduate.

However, the very nature of doing what is classed as a professional doctorate means that I already have a job. I work full-time as a Senior Teaching Fellow at another prestigious university in the UK. In fact, part of my role involves supporting students to enhance their employability skills and learn the process of applying for jobs after they graduate.

This begs the question, what is the point in me wasting my time thinking about what job I want to do and how to develop myself when I graduate? Well the point is I wish to enhance my career. Inadvertently, I have already taken steps towards achieving this as part of my current job, as I have been approached to co-write a paper and lead a collaborative project with a partner university in China, as well as disseminate my findings at an Australian university.

Within my own institution, I have been asked to implement training to academics within the Faculty and use my knowledge to advance the Learning to Teach programme that supports PhD students to teach. Receiving my doctoral certificate (hopefully) means that I will no longer have to co-supervise doctoral students and instead solely supervise. It will enable me to extend my teaching beyond that of undergraduate and postgraduate students, to teach research methods on doctoral programmes.

I will be one of the few academics from the one percent of business faculties around the world with triple accreditation, to possess a doctorate in education, which may prove useful given future strategies of accrediting bodies and the Teaching Excellence Framework remit. It will also act as leverage to utilise my connections with multinational companies, to collaborate and extend my doctoral research and contribute to the Knowledge Excellence Framework. More excitingly, I can automatically apply for Associate Professor status.

This all seems fantastic, and I am lucky not to be concerned too much about my career, but key to all this is writing my thesis, but with working full-time whilst doing a part-time doctorate, it is no mean feat. As an impact of time constraints on the career development front, frustratingly, I have had to politely refuse numerous offers of external examiner work, promotional responsibilities and postpone writing papers for higher impact publications until after I complete my doctorate. I have reconciled this with the fact that the long-term benefits of completing my doctorate, outweigh shorter term career opportunities. This thinking is something that I often impart to anyone embarking on a journey of study, in that learning at university is a constant struggle between a study-career life balance.

***(The Sheffield EdD is a part-time, postgraduate research distance learning programme)**

Getting your first academic job
An interview with Dr Dmitry Chernobrov

Lecturer in Journalism, Politics & Public Communication
Department of Journalism Studies

What was your PhD?

My PhD is in International Relations, from the University of St Andrews. I research public perception of international crises and reach across several disciplines: politics/ international studies, psychology, and media studies. I also hold another PhD, in History, from Moscow State Institute of International Relations. I completed my PhD in St Andrews in 2015 and joined the University of Sheffield as Lecturer in journalism, politics and public communication later that year.

What is it really like to be a Lecturer?

I think the best aspect of an academic job is that you can research and teach what you are most passionate about. I like those moments when you can see curiosity building up in a lecture, or when future interests and careers can be inspired by an aspect of a module. When you just start, you may be teaching more general things, but then you develop your own, research led modules, and can be truly creative. A lecturer position offers a good balance of teaching/research, and you will normally have some admin too.

Do you have any advice to offer current PhD students looking to pursue an academic career after completion of their PhD?

My advice would mainly apply to academic careers in the social sciences and humanities, although I think most of what I say would be relevant to other disciplines too.

First, there are postdocs, which again can be diverse: you may be able to join an existing project which you fit well (for example, a postdoctoral position on a grant won at University X),

"It's important to remember that there are different types of academic jobs post-PhD, and the requirements, the emphasis in your cover letter and even the structure of your CV will depend on that. "

Apply for the few postdoc positions where you suggest your own programme of research, or 'create' your own postdoc by applying for grants (for example, Leverhulme early career fellowships).

The latter is a long process and normally requires you to secure support from a different university, so start on that well before your viva. The benefit of postdocs is that they are research-focused and without teaching, so you get the opportunity to further develop your research and publish, but they are all fixed-term (between 6 months and 2-3 years). Then, there are Lectureships (fixed-term or permanent), which combine research and teaching, but you'd already need publications to apply for those. In applications for both postdocs and lecturer positions I'd suggest you highlight your research, publications, funding/ grants in the application and speak about your teaching experience after that. There are also teaching-heavy or teaching-only positions (for example, Teaching Fellowships), and here the emphasis should be on your teaching experience.

My main advice for applying for academic jobs with a research component is – publish. Try to get at least one article out by the time you finish the PhD: without a single peer-reviewed publication you are unlikely to get an academic job. The best time to start writing the article is probably your second year of PhD (it can be part of your PhD, for example, a chapter, but better if it's slightly beyond the PhD boundaries because if you publish part of your PhD, it may later make it difficult to reuse this part in a book). It can take from several months to a year or even more to get your article published: 2-3 months for the first review round, some time for revisions, 1-3 months for the second round. If your paper is accepted then, it'll still be a few months before it appears online and in print. But once it's accepted, you can put it as 'forthcoming' on your CV and mention it in your job applications. If you have a strong conference record – good, but that will not substitute a publication.

Also, ***start applying before you complete your PhD*** (for example, after you submit, but before the viva). These applications are not very likely to be successful, but it takes some time and a few applications to find the best way to present yourself and your research and write a good cover letter. Make sure you cover all the 'essential' (and hopefully some of the 'desired') requirements listed in the job particulars.

Finally, get some teaching experience. PhD students normally have the opportunity to teach undergraduate (and even PG) seminars in their department. It is also worth
gaining Associate Fellowship at the Higher Education Academy (either through CILT training at TuOS or via personal pathway) as UK universities increasingly require some level of HEA fellowship as a desired or even an essential requirement.

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What is the application process normally like?

There are a number of ways to monitor academic vacancies: jobs.ac.uk, Times Higher Education website, professional associations relevant to your discipline (for example, ISA, ECPR for politics).

I'd say the main 'season' when positions are advertised is February to June for UK universities, and autumn for US universities. There are positions at other times too, but most of them are advertised in these periods. If you are an international PhD student on a visa and you are looking for an academic job in the UK, you could try (as far as it's at all possible) to be strategic with your PhD submission/viva dates.

"My main advice for applying for academic jobs with a research component is – publish."

You only get about 3 months on your visa after a successful viva (unless you apply for a post-study visa), so you may be in the strongest position if you get the PhD right before or when the job 'season' starts.

A standard application consists of a CV and a cover letter (normally 2 sides of A4). If you are shortlisted, some Universities will ask for samples of your work (for example, published articles or drafts), but this would normally be mentioned in the job particulars.

If you are invited for interview, in the UK that would usually include a presentation and an interview. The presentation takes 15-20min plus questions and is open to academic staff at the department (sometimes PhD students can attend too – try to attend one in your department if you can, to see what it's like!).

Typically, candidates are asked to speak about their research and how it fits within the departmental/university research and teaching agenda, but some universities ask you to present one of your published papers. The interview is with the appointment panel and you will be asked questions about your research, teaching, planned grant applications, etc.

"Be confident, do your homework, be passionate!"

Elevate.
The University of Sheffield Learning & Teaching Academy

Do your homework – know the research and teaching strengths of the department, and the research centres you could collaborate with. If you are successful, you'll normally hear within a few days from the interview.

Be confident, be passionate about what you do. Be yourself and – good luck!

Higher Education Academy

Becoming a 'lecturer of' – it's not all teaching!
Dr Julien Bergeron
Department of Molecular Biology & Biotechnology

I joined the department of Molecular Biology and Biotechnology in Sheffield last summer, coming from the US where I had been a post-doc for the past few years. I was recruited primarily because my research focuses on using high-resolution cryo-electron microscopy (cryo-EM) for studying potential new antibiotics targets. In the past two years, cryo-EM has revolutionized our capacity to look at biological molecules at the level of individual atoms. There is a lot of excitement around this technique, and in fact, last year's Nobel prize in Chemistry was awarded to Joachim Frank, Richard Henderson and Jacques Dubochet, the researchers that developed it. The University of heffield recently invested ~ £3M to acquire such a microscope, and my mission is to exploit it to its full potential, particularly to tackle bacterial infection and antibiotic resistance.

As a newly-appointed lecturer, the department offered me a teaching relief, so that I can focus on establishing my research program. As a result, I am currently only teaching first-year undergraduate tutorials. I will also give a couple of ad-hoc lectures in 2nd and 3rd year biochemistry courses, so that the students get to know me and familiarize with my research field. Students in the department choose a research project in their 3rd year, and therefore it's important that they know about my research, so that they have a chance to join my group if they're interested in learning cryo-EM.

In the few months since I joined the University of Sheffield, my main focus has been to establish my research group: setting-up the biochemistry lab for the experimental work, writing grant applications, and recruiting a PhD student. It took a while but the lab is now up and running, the cells are growing, and the microscope is imaging! I was also extremely lucky because my very first PhD student turned out to be a talented and hardworking scientist, and she has already obtained new (and very exciting!) results, having started only three months ago.

I was also very fortunate because my first major grant application was funded for four years. This means that I have the opportunity to expand my group, and recruit a post-doc. It also means that I will be able to forge ahead with my research for the next few years. I should mention here that research in basic sciences is very expensive, and it is extremely difficult to attract funding. However, because cryo-EM is such a powerful technique, both the University and research councils are currently very keen on investing in it.

One aspect that surprised me when I started here, is that I am constantly writing a lot of documents: grant applications and research papers of course, but also grant reviews, press releases, reference letters, abstracts of all kind, this article… Even though English is not my first language (I am French, as you might have guessed from my name), I really enjoy writing, but I tend to be quite repetitive. So, this is definitely a skill that I will try to strengthen in the next few years.

Overall, my experience as a lecturer has been much easier than I anticipated, and my worries about funding and students turned out to be largely unfounded. I hope that I am not jinxing it by saying this, but so far, it's mostly been a lot of fun…

An academic life story
Dr Emmanuel Akwasi Adu-Ampong

It was during my undergraduate days in Ghana that I developed the romantic idea of becoming an academic. At that time, I saw being academic as the career par excellence – you get to read and write at leisure, impact knowledge to impressionable undergraduates and weary postgraduates and have generally such great flexibility in terms of lifestyle. It was clear to me back then that completing a PhD was the most basic requirement so it was a dream come true when I was offered a University of Sheffield Faculty Scholarship to begin my PhD in September, 2013. Now when I look back on it, the PhD time was such a great and wonderful time of 'unfettered' freedom and flexibility. Sure there was the big thing about the thesis that wouldn't get out of your head. However, it was also a time when you could decide to put your feet up for a few days or weeks just to relax, go to a conference, write a book chapter or a journal article or just simply read anything you want. I know this does not always apply to all people especially if you a STEM or Arts student with experiments to tend and or lab equipment to queue for. But even then I think there is much more room for some flexibility if one takes the view of enjoying the journey (as well as the destination called thesis).

I am currently a Senior Lecturer in Tourism Management at Sheffield Hallam University and I still consider my PhD days to have been more flexible. As a PhD student, I could technically start my working day at 10am or 1pm but now if there is a class to be taught or a seminar to be led at 9am, I just can't postpone it.

My point is that enjoy life as a PhD student in all its variegated complexities because it could just be one of the best times of your life. If you consider academia as your place, then use the PhD period to build up experience in teaching, publishing, organising conference, working in administration, applying for little grants and funds, networking etc. If the PhD process already leaves you disillusioned about academia then still build up experience that can help you transition to a career outside academia. Increasingly there are a number of resources being made available within the university to cater for those interested in the alt-academic (alternative academic) career paths – seek for these resources. Check out the Think Ahead blog which features a weekly blog from someone who made this alt-academic career move after their PhD.

Now when I look back on it, the PhD time was such a great and wonderful time of 'unfettered' freedom and flexibility.

I must be honest here and add that landing that elusive first academic position does not always come easy or depend entirely on having the experiences I just listed above. In my very short-lived experience, I can say that it is a matter of timing and luck.

Certainly, your experience in teaching, publishing etc. does count but when that is combined with being in the right place at the right time with the right vacancy open then the stars align. It can be frustrating sometimes because you cannot always force the stars to align. One can only do what is possible with gaining the right experiences. In the end a great deal of determination, perseverance and grit is needed while waiting for luck and time to align.

Irrespective of which stage of the PhD you find yourself, I would recommend the following books for you. I found them incredibly useful for my journey and I hope you do to:

Phillips, E., & Pugh, D. (2010). How to get a PhD: A hand-book for students and their supervisors. McGraw-Hill Education (UK).
Petre, M., & Rugg, G. (2010). The unwritten rules of PhD research. McGraw-Hill Education (UK).
Dunleavy, P. (2003). Authoring a PhD: How to plan, draft, write and finish a doctoral thesis or dissertation. Palgrave Macmillan.
Kamler, B., & Thomson, P. (2014). Helping doctoral students write: Pedagogies for supervision. Routledge.

So is my romantic idea of an academic life holding up to scrutiny? Well, not quite yet – especially within the super time-pressed higher education sector in the UK. I am building up the reality bit by bit and so there is still hope of dreams coming true. These things do take time so I am not giving up on the dream.

A route to research independence - the luck+ model of fellowship success

Dr Kay Guccione -ThinkAhead

An important route into a permanent academic post is via a funded research fellowship. Many research funders offer Fellowship Awards: a grant focused on developing the researcher as well as the research and fellowship funding affords you time to focus on producing the papers and establishing a research niche, essential for sustained academic success. Applicants must demonstrate their existing publishing track record, present a good project idea, and map out their route to 'research independence' demonstrating potential to become a 'research leader'.

This article draws on my research data and shares the experiences of those who have won fellowship funding (13 female and 12 male). Achieving independent researcher status within the academic environment is an aspiration for many academia-orientated PhD students. Yet, many rule themselves out before they start...

Fellowship mythology

The stories that surround fellowships are fascinating, and myths about who will succeed, and how they will succeed, pervade all research communities and create barriers to fellowship aspirations. You are not alone if you think:

- that being 'independent' means you need to be able to do everything yourself without
- asking for help;
- that the ability to generate your own ideas, and write them as a project proposal is an innate ability;
- that someone else will let you know when you're ready or 'good enough';
- that you need to be lucky to get a fellowship.

Fellowship success is often written off as luck, both by award holders who'll regularly say 'I was really lucky to get the funding' and also by aspiring fellows, from whom I hear 'I'm just not that lucky'.

While there is a luck component to gaining funding it is unlikely that it is luck alone that lead to success. Our capacity to take action and to make our own free choices – is a greater predictor of academic career success than luck is.

Agents of career success

I collected fellowship stories through in-depth interviews that encouraged reflective discussion of the enablers and disablers of success. I wanted to know what fellows did to increase their chances, and who helped them to do it. The quotes woven through this article are direct, from the fellows themselves.

Anxiousness around being 'good enough' to get the fellowship is normal.

It's important to recognise at this point, that I'm not advocating that positive thinking, or a 'can do' attitude, can overcome systemic structural barriers, career bottlenecks, and well documented gender, and ethnicity inequalities. I recognise that your success is also is dependent on your supervisor giving you the permission and the encouragement to take up career enhancing opportunities. This article explicitly does not seek to place full responsibility for gaining independence on you as the individual researcher.

Developing confidence

Anxiousness around being 'good enough' to get the fellowship is normal. Build your confidence by getting feedback, through taking opportunities to: present, discuss and shape your research, to become a 'known face' and to lead and manage others. Seek a career champion, a person who reminds you that you *can* do it, avoid downers and bullies. Find a writing buddy, or a fellow in your department who'll share their experience with you over coffee. Confidence can be cultivated so look for opportunities to grow yours.

"I had quite a lot of encouragement from people to apply but personally I felt quite anxious about it. I felt quite wasn't really sure that it was what I wanted to do, and partly because I suppose it felt like quite a big step in terms of being responsible for something myself... actually I was scared of what might happen if I have to do it, I might not be able to do it, and I thought well actually, I will just do it." ***Female, Social Sciences.***

Developing and negotiating ownership of research ideas

Whether your ideas come to you via a 'Eureka!' moment (hardly anybody) or whether you spend time working to develop a germ of an idea (most of us), there are steps you can take to cultivate ideas. Simply making time to sit down and record your ideas is a good start. Always having a notebook, or voice recorder handy means good insights aren't easily lost. Date and time stamp your ideas by taking photos and emailing them to yourself – protect your ownership. Assemble a small group of critical friends to hear you talk your ideas through and give you their input? Take steps to negotiate ownership of research ideas with your current supervisor.

"*I took quite a lot of pains to make sure that it was separate from PI at the time... very much separate to what his interests are. So he's not going to want to trample on what I'm doing."* **Female, Science**

Developing applications

The best way to start writing your application is simply to download the forms, and get on with a draft. Then get input and feedback from everyone you can muster to read it. Expect there to be many drafts before it's ready. The administrative processes surrounding funding applications can be bewildering. Arm yourself with knowledge of the online systems you'll need and the signatures required from partners, collaborators, and the sponsoring Head of Department. Ask every fellow you meet, and every grant panel member, what questions to expect at interview. Write answers to the questions and practice them. Organise mock interviews and video or audio record them so you can remember what happened. "You have to deal with the admin, you have to be phoning them up you have to make sure you understand, because it could make the difference between you getting it and not. You do quite a lot of chasing admin and phoning making it happen." **Male, Science**

"Accepting and learning from rejection is a normal constraint of the academic system."

They gave me four mock interviews before I went, I mean horrible mock interviews with just out to destroy me deliberately, which is exactly what you want really. So when it came to the real interview it was a cake-walk. Get people to really rip... your motivations apart. That was the toughest question I had in the mock interviews – why are you doing this... Look at your research and ask silly basic questions like, what is the point in all this?" **Male, Engineering.**

"Make time to celebrate small gains, and remember to be kind to yourself."

Developing resilience

Digging deep into your self-discipline to make time to write, managing your disappointment, and keeping going through pressure and critique is always tough. Accepting and learning from rejection is a normal constraint of the academic system. Make time to celebrate small gains, and remember to be kind to yourself.

"I think you have just got to think about what your ambitions are because it's research is always going to involve rejection and success and you have to balance the two against each other I think." **Female, Science**

Fitting a diverse mould

Often people don't apply because they feel their 'face doesn't fit', yet I found diversity in the profiles of research fellows. Their confidence, career mobility, number of applications, support systems, and motivation for applying, all varied.

For the 25 fellows I interviewed, the mean time from PhD to fellowship award was 4.4 years, and the median number of applications a fellow had made was 3, though up to 8 applications had been made before succeeding – so perseverance matters!

Eight of the fellows had taken at least one parental leave career break. More than half the fellows did not move institutions for their fellowship award, in fact, 10 had been working within the same department since beginning their PhD. The need to 'demonstrate independence' by moving institution is often cited, but we should challenge the necessity of relocation, and the gender disadvantage this creates.

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I hope that highlighting this diversity reassures you, and encourages more diverse recognition of 'research leadership attributes' among senior staff.

The path to fellowship success?

I identified five ways research fellows took control of their own development. These are interrelated, and iterative, but importantly they are all things you can influence:

- **Developing awareness of career opportunities and constraints;**
- **Developing the confidence to apply and to do the project;**
- **Developing and negotiating ownership of research ideas;**
- **Developing application skills (writing & interviews);**
- **Developing resilience and maintaining momentum.**

I identified five ways research fellows took control of their own development. These are interrelated, and iterative, but importantly they are all things you can influence

Development of awareness of opportunities and constraints:

You may be reading this because you've always been committed to pursuing an academic career, or because you're seeking a way to maintain research interests, or simply because no other career option seems viable. Whatever your motivation, first and most importantly, go and look at what you're aiming for. Find out who funds fellowships, when the deadlines are, whether you're eligible and, what/who they previously funded. Take time to understand the priority areas for funders, and what they are looking for in the application. Ask everyone you can about the pitfalls in writing fellowship projects.

In short, do your research, and declare your intentions. People can't help you if they don't know what you're trying to achieve.

"I shared a lab with somebody...and she came in and sort of said, oh somebody has just talked to me about fellowships, and I hadn't heard about them then. So I just started sort of kind of looking around I after that. I started talking about it with the PI that I was working under at the time. I think probably talked about it in my appraisal. I think soon as I started saying I was interested they were quite up for trying to support me."
Female, Engineering

"The Quest for a Fellowship"

Dr Philip Elks,
Wellcome Trust/Royal Society Sir Henry Dale Fellow
Dept of Infection, Immunity and Cardiovascular Disease

First off, what is a Research Fellow? I guess it can mean subtly different things at different career stages, but my interpretation would be that a research fellow is someone who has obtained their own research fellowship award to fund and pursue their own research interests, and is generally sheltered from other academic commitments, such as teaching.

How is it different to a PDRA?
As a PDRA you are generally working on a project that is core to the research interests of your PI. As a research fellow, either a post-doc or as an independent PI, you are following your own research interests, which may be linked to the lab that you're in, but is an independent research avenue.

Do you have to have published lots of first author, high impact papers to even think of applying? It's a common misconception that you need lots of first author papers, but at the same time you need to be realistic about your publication position if you don't have many, and be aware how competitive fellowships are to get. The number of first author papers is much less important than the quality and subject of the papers. For example, if I had three papers on particle physics published in the Journal Cell (which I don't!), then I wouldn't necessarily expect to be successful for a fellowship on cancer biology, for which one first author cancer paper in a good journal might serve me better. With changing times in funding, the goalposts are changing all the time. I got my first post-doctoral fellowship with one decent first author paper, and then my independent fellowship with two good first author papers. So, don't think numbers, think quality and relevance. In my experience timing is also key. Applying for a fellowship after the publication of a high-quality paper and 'striking while the iron is hot' might help if you are able to plan it that way.

What made you decide to apply for your first fellowship? I was just coming to the end of my first post-doc in Sheffield and I was really enjoying the subject I was doing, and I wanted to continue that research avenue. I was very lucky that my post-doc PI allowed me to take the work with me and make it my own- he was extremely supportive of me developing the idea in a post-doctoral fellowship.

This first fellowship (that I did in Leiden, The Netherlands) was successful, and I published a couple of good papers and found myself in the fortunate position to be able to apply for independent fellowship positions. These are very attractive, as they give you money to develop your independent research group for 5 years.

What was the application process like?
Applications for fellowships are almost always long and laborious! I think they have to be, because often they involve a lot of money and are highly competitive. They require lots of time and effort to go into the specifics of what you plan to do over the course of the fellowship. Preliminary data is key, and this can often be challenging, as these are data you sometimes need to get "on the side" as you're coming to the end of your previous position, unless you're lucky and are able to carry on your current project. The key thing about any application is that it has to make sense to both experts in the field and a broader scientific audience. Make sure plenty (and a range) of people read any application, get advice, and redraft accordingly until you are sure it's the best possible application that you can put in. These applications are super competitive, but hard work at the application phase can make all the difference.

How did you select an appropriate fellowship and subject area? This can be difficult and I would recommend getting advice from your peers/PIs/heads of departments. At the career stage that I'm at there are only a few fellowships to develop an independent research group, from big funders such as Wellcome/ Royal Society/MRC/BBSRC, so the choice is limited. However, at the post-doc stage there are many more opportunities, so ask and look around. My first post-doctoral fellowship, for example, was a travelling fellowship with which I had to move to another EU country other than the UK, which made it an exciting prospect and maybe slightly less competitive. With changing political climates, I hope that these will still continue as they are great opportunities. Subject area can be a trickier choice. This will depend on two main things; how willing your PI is to allow you to take part of his/her ideas away with you to develop as your own, and which lab/department you chose to go to for the fellowship.

What did you study during your PhD?
My PhD subject was quite different from what I do now. I did my PhD on bone biology in zebrafish. Now, I still use the in vivo zebrafish techniques I learned during my PhD, but my topic of interest is infection biology. In my experience switching either topics or model after your PhD is a great time to have a change, and the breadth of experience may help you later in fellowship applications.

Were you involved in grant writing and devising new research projects during your PhD?
No, not at all. I went into my PhD straight out of undergrad, and I was young and pretty naïve about research science as a career. It was only really nearing the end of my first 3-year post-doc that I started getting involved with writing. I'd advise to get into writing as soon as possible, even if it's small things to start off with, but it's also ok to be a late bloomer!

What was your first job post-PhD and how did you get it? At the end of my PhD I went to the USA for interviews for post-docs in the best labs in my field and got offered two positions. But, for a variety of reasons, I turned them down even though they were great opportunities. I have no regrets about that, and, as often seems to happen, things just fell into place. After having given a few presentations around the department in Sheffield I was approached by my future PI about an open post-doc position he had. This turned out to be a great move for me. There are many advantages of staying in the same department after your PhD, as it allows you to get your PhD papers published and you can get your post-doc off to a running start, as there's no adjusting to be done.

However, sticking around in Sheffield for PhD and post-doc meant I had to do a bit of moving around later in my career, as mobility is important in science and for fellowship applications.

Is being a fellow any different to being a PDRA day to day? I would say that being a post-doctoral fellow is not overly different from being a PDRA, however post-doc fellowships tend to be short, and so I was always thinking about my next move. During my one and a half years as a post-doc fellow in Holland I wrote 8 fellowship applications for independent PI fellowships (and the eventually successful one was application number 8!). Being an independent PI fellow is very different from being a PDRA day to day and is full of new, but exciting, challenges. I have 6 people in my lab currently and there's a lot more management and less bench science (which I do try to continue when I get chance!). An interesting new challenge for both post-doc fellows and PI fellows is budget management. You go from being a poor scientist with no money, to having a research budget of hundreds of thousands of pounds to manage, and I found this a particular challenge for which you get very little training!

Have you come across any training since?
Sheffield is a great place to be for training during your PhD and post-doc. The Think Ahead Programme is really great and well worth interacting with during your PhD, with lots of opportunities for useful training whether you are interested in staying in science or not.

Do you plan on becoming a Professor?
I plan on being a fellow for as long as possible and producing the best science I can. This, I hope, will lead on to becoming a Professor. But, career progression in science depends on many factors, such as funding and lots of politics (at the departmental/faculty/university level), and so predicting how and when to become a Professor is difficult. The main thing at any stage of a science career is to focus on the best research you can possibly do, and to ensure you can evidence this with publications and other outputs (eg presentations at conferences).

What other outputs have you done?
During your PhD, probably the most important "other" outputs other than your thesis and publications is presenting at a big international conference. This is best done at the end of your PhD when you have your best story to present, and when you can meet potential future post-doc PIs. I did a bit of public engagement during my PhD, but not a huge amount. It's much more important for grant/fellowship applications now than it was, but luckily there are many more opportunities to get involved. These can be great fun, but can be time consuming, especially if you're involved in the organisation. So, at the PhD level try to get involved with organised events such as Discovery Night or Life Festival.

Do you have any advice to offer PhD students wishing to apply for a fellowship post-PhD? There's lots of advice open to you from lots of sources. Make sure to speak to the right people in your department who have been there and done that as they have had the experience you're going through. But (a big but), don't necessarily take all their advice as read. Things may have changed since they applied for fellowships, so be prepared to get conflicting (and sometimes wrong!) advice. My advice would be to be ambitious and plan ahead. If you want to go for a fellowship at the end of your PhD, then start thinking about it early, pick a good lab to go to and contact them, months before the end of your PhD if possible. Don't be afraid to "cold-email" them out of the blue, this shows initiative and the worst that can happen is that they say they're not interested in which case you move on. The end of a PhD is a stressful time, with pressures on finishing experiments/papers/thesis, so an early start on the next job prospect really helps.

Any other comments?
Fellowship success rates are low across the board, so these are tough things to get. Keep persevering even if the first, second, third time you're not successful. But, don't think it's all over if you're not successful with

fellowships straight out of your PhD. After having a PDRA position/industry position/time out of science/or maybe time out to have a family, there are still opportunities at later career stages to get fellowship funding. So, be realistic with your chances, but don't give up!

The Two Body Problem
Darcey Gillie, Careers Consultant for Researchers

The 'two body problem' is what arises when two people, in a relationship, want academic careers. This 'problem' also exists outside of higher education where it's referred to as 'dual career families' – if one partner is an academic and one is not.

Entire books exist on managing dual careers so this will be a very brief introduction to a few ideas for coping strategies – if you're in a dual career couple, you will no doubt want to do further research and/or talk to someone you trust about your dual career challenges.

- Solutions to the two body problem are most effective when the two people in the relationship work collaboratively to solve the problems of having two careers to manage. Investing time in developing your communication and negotiation skills will help.
- Acknowledge and work with the emotions. Trying to solve this problem may cause excitement, anger, happiness, frustration, hope, anxiety, sadness, or even jealousy. We evolved with emotions because they help protect us and create social bonds – ensure you and your partner acknowledge, understand emotional responses (start with the basics: what is anger? what is hope? Don't assume you know – do some research) and value each other's emotional responses.

- **These are important:** Traditional career management approaches of understanding the feasibility of different career options; knowing your priorities in terms of values, interests and lifestyle choices; defining the geography of your labour market (e.g., knowing accurately what's in commuting distance).
- Find role models to give you ideas and potential options – how have other people managed the two body problem in and outside of Higher Education?
- Make an appointment with Careers Consultants Rachael Roberts or Darcey Gillie, (look for 30 minute appointments for PGRs and CRS): https://www.sheffield.ac.uk/careers/staff/careerconnect

What has my PhD ever done for me..?
Dr Candice Majewski

There's a common perception that if you undertook a second PhD you could probably complete it in under half the time, and I'm inclined to agree with that perspective! Sure, if you were moving into a new field you'd need time to get up to speed on the subject area, literature, and relevant techniques, but the other skills you learn along the way would already be ingrained into the way you approach things.

I'm talking about all those things that were so obvious to your supervisor but were a complete mystery to you when you started out... The writing style that took so long to get to grips with will have started to become more natural. If, like me, your PhD was experimental you'll have a much clearer grasp of how to achieve the appropriate level of scientific rigour without overdoing it. You'll also have a better idea of the simple yet crucial things that will make your life so much easier later on – comprehensive and accurate note-taking, a clear structure to storing and analysing relevant literature, or simply making sure your samples are labelled clearly enough for you to quickly identify them a year later on. Whatever your discipline you'll have developed a much better awareness of how long things actually take (as opposed to your early attempts at overly-optimistic timescales) and the need to have a back-up for when something doesn't go according to plan.

There's also a confidence that comes with having achieved your PhD. To an extent this relates to your expertise in your topic of choice, but it's also about recognising that yes, you do have the intelligence, motivation and resilience to get through something that's ultimately rewarding but that is challenging (and sometimes demoralising) along the way.

From a career development perspective my PhD has been essential. I chose to pursue a career as an academic (for me it's the perfect mix of research and teaching, with the ability to steer your work in a direction you're passionate about), but these skills stand you in good stead regardless of where your future career takes you. It's hard to think of a job where the ability to plan and conduct work independently, quickly learn new skills, and to communicate effectively in all forms would be unwelcome.

The relationship you have with your supervisor will almost certainly flavour your approach to leadership as you move forward in your career.

What did he or she do that made the PhD experience easier or more rewarding, and how can you incorporate similar things into your own career?

For me a key thing was the fact that I never left my supervisor's office feeling like he'd not listened to my opinion; sometimes we'd disagree on the way forward, sometimes we'd end up going with his approach, but I always felt like I'd had the chance to get my side across.

I'm not always perfect at achieving that with my research team, but it's certainly something I'm always working towards. On the other hand, what were the (hopefully small!) things your supervisor did that drove you to distraction some days? Sometimes these things become just as significant, as you constantly strive to stop yourself from doing the same!

In all honesty after a while many of these things become so natural that you tend to forget the specific part your PhD played in developing them (although every now and again I do still hear my supervisor's voice in my head telling me 'that's a potential banana-skin' or other little nuggets of wisdom). Nowadays I find I'm most reminded of it in my own role as supervisor to a team of PhD students.

I specifically remember my supervisor telling me that to start with he would be the one who knew more, but that as time went on I'd become the expert in my PhD area. I always feel a lot of joy when I spot the moment that changeover has occurred in each of my own students. I also find it useful to remember that a PhD is never without its struggles.

I openly tell my students there may well be times when they hit a brick wall, lose sight of the overall story of their PhD, or suddenly panic that they're not actually capable of doing this. Crucially, I also make it clear that we've all had moments like these and that they should always feel able to come and talk it through with me. The last thing I want is one of my students trying to avoid me for three months while they struggle on their own, especially when the majority of the time a chat in my office will help clear things up!

Of course one of the greatest pleasures is when you've done all you can to help steer your students through to completion, and then you get to see them walk across the stage on Graduation day... For me, that's one of the biggest rewards of all!

'With one of my most recent PhD graduates, Dr Charis Bronze'

PhD on a swing: the highs and lows of academic life - Aneta Piekut

https://twitter.com/AnetaPiekut
Sheffield Methods Institute, University of Sheffield

I have been an academic for about 12 years: 4 years of PhD studies, 4 years of being a postdoctoral research assistant and another 4 years of lectureship. Each of these experiences was distinctively different, with the first period trigered by picking up a random book in the National Library of Poland - ***"People on a swing – migrations between Polish peripheries and the West"***. I was hooked on the topic and started picking up other books.

I did my PhD at the University of Warsaw almost a decade ago, from 2005-2009. A PhD in Poland take more time than in the UK. They are usually 4-years long and you do them after completing a 2-year MA (Masters of Art), on the top of 3-year BA/BSc degree. So to become a PhD you do a minimum of 9 years of a university, while in the UK you can squeeze it into 7 years of your life (3 years of BA/BSc and 4 years of combined MA+PhD programme). Not all studies are sponsored and some are offered without scholarship. As it was in my case. I completed an interdisciplinary programme at the Institute of Social Sciences, University of Warsaw, and then I could defend my thesis in one of the Faculty of Social Science departments - I chose Sociology. Without a scholarship, but driven by a passion to study international migration and its consequences, I undertook a job as a researcher for Centre of Migration Research, University of Warsaw, where I could master mixed- methods skills in analysing human mobility across national borders.

So this time for me meant working two (main) jobs – doing a PhD research and other pieces of research to put the ends together. I survived also thanks to taking a part-time teaching at a private university, living with my earning partner (then a radio presenter in Warsaw) and both financial and in-kind support from my family (e.g. bringing food in jars from mummy over the weekends). Financial insecurity is a common theme among PhD students irrespective of a country.

But PhD studies are times of insecurity not only because your scholarship might be low or non-existent. You contribute most of your day into reading, searching for literature, analysis and writing without knowing how it will be received by an academic community, and whether you will become accepted by them. It's also because you are trying to find boundaries of the madness – how much reading is enough? How much data analysis makes it good? How many revisions of my writing will do? This is a time when no-one, even your supervisors, can give you these answers. You have to learn to manage this insecurity and find the courage to make these decisions yourself.

Stories of the imposter syndrome among PhD students are common, as you are indeed asked to do a lot of things – not only write your PhD, but write it with distinction, and at the same time, publish some papers in quality journals within your discipline. Otherwise, obtaining a research or teaching post in a higher education institution might be difficult. In Poland, I was encouraged to write book chapters alongside writing my PhD, as they are more highly regarded as academic outputs there than in the UK. I also contributed to many (unpublished) research reports as a part of my other job. So I finished my studies publishing only one journal article before finishing my PhD, which was based on a different piece of research I got interested in, this time in spatial segregation of immigrants in Warsaw.

Despite some lows, there were plenty of good aspects in being a PhD student. If conceptual work and social inquiry is something that turns your brain on – definitely do it. It's a time when you are allowed to get lost in abstract thinking and generating conversations with the greats in your field – even if they are only in your head (sic!). Not that later in the academic career you cannot do it, but you will never have this comfort time again. So the transition from PhD life into, hopefully, a permanent job, is another aspect of a PhD that you might not be prepared for. Deadlines will be shorter, a full calendar with many meetings, when instead you would rather spend time writing papers. My PhD experience, juggling various roles and jobs at the same time, was good training for the realities of academic life now. It still feels like being on a swing sometimes, but you know how not to fall off.

Nonetheless, being an academic is something which goes well with my personality and working style. To some extent, you are your own boss, deciding on research deadlines and career priorities. Despite having much more on your plate than when you were a PhD student, you can still unleash your creativity in both research and the teaching side of the academic work. Another enjoyable part of being an academic is that it feels like having multiple jobs at the same time: you do research, teaching, you are involved in student support activities (in my case organising placements for students) or editorial work (e.g. you can become a member of editorial committees).

Academic work is never monotonous.

Careers After A PhD:

The work-experience and value gained through my PhD

Dr. Christen Rose-Anderssen

My path into a PhD was my previous work as a researcher at a 3-year project in the project 'Managing New Product Development as a Complex System of Decisions' at the Complex Systems Research Centre, The Management School at Cranfield University. My outcome: the paper 'Innovation in Manufacturing as an Evolutionary Complex System', Technovation, 2003, 25. This was followed by my research in the 3-year project 'Modelling the Evolution of the Aerospace Supply Chain' at AMRC, University of Sheffield. I worked very independently and managed to get eight papers published and presented 6 papers at international conferences. This lead to a PhD scholarship in the project 'Cooperation Environment for Rapid Design, Prototyping and New Integration Concepts for the Factory of the Future' at AMRC.

The research employed a novel re-iterative methodology for both theory building, using observational data, producing the conceptual classification, and through theory testing developing the final classification that formed the basis for a practical web-based expert system and diagnostic tool. The web-based system developed by other project members could be applied by manufacturing companies for identification, diagnosis and improvement of their manufacturing systems. This became the practical contribution of the project as such. During the research within this large European project, I was a co-author of 20 papers. In that sense, my PhD scholarship became an expansion of my previous research knowledge, and by that, contribute more fully to both theoretically and practically applications to the manufacturing and organizational societies, hopefully.

"As a work experience, I think, the PhD became a larger contribution to my personal knowledge, because the entire work had to be presented in a thesis. This assisted me in becoming more analytical, and at the same time I learnt to be more critical to what I was doing as a researcher. "

My individual benefit was the PhD experience. The collective benefit was my contribution towards the web-based expert system that could, in practise, benefit manufacturing companies.

I was 68 years old when I was awarded my PhD in May 2014. I am therefore retired, although I recently have been trying to publish papers.

Careers After A PhD
Dr Ridvan Ata , PhD in Education and Digital Technologies

I studied at the University of Sheffield between 2009 and 2014 to pursue my PhD degree in Education and Digital Technologies. I worked under the supervision of Dr Julia Davies from the School of Education, and Sheila Webber from the Information School. During my PhD study, I received fruitful advice, support and guidance from my supervisors as well as high quality tutorials, seminars and courses from various disciplines in the School of Education.

Doing my PhD also gave me an opportunity to communicate with people who come from diverse backgrounds and study in different areas in my department. I also had an opportunity to do part-time teaching in the Information School. I taught the Information Literacy module for 1st year undergraduate students, which allowed me to improve my practical skills.

My research, which explored teaching experiences of educators within the virtual world of Second Life and pedagogical practices adopted in higher education, helped me understand better rapid developments in Information Communication Technologies and think wider and deeper about current technologies in which educators use in their teaching.

I now work as an Assistant Professor in the Computer Education and Instructional Technology Department at Mu la Sıtkı Koçman University established in 1992 in Turkey. I teach courses such as Social Media, Computer I-II and Dynamic Web Programming. Currently, the university services over 45,000 students in approximately 700 different programs, and employs over 1,400 full time academic staff. Besides, the city of Mu la is a major centre of Turkish and world tourism. Its legendary gulfs, bays, and beaches, magnificent landscapes, and forests, and impressive cultural heritage of past Anatolian civilisations have led to the region's prestige.

Careers After A PhD
Dr Manar Al-Saffar

It was few months before finishing my PhD in August 2016 when I started applying for jobs. I did applications to jobs in academia and industry at the same time. I was keen to find a job in academia, as I had a good idea what working in academia looks like, and that was from my 5 years of lecturing at a university back in my home country before coming to do a PhD in the UK. However, I was looking for a job that secures the living expenses for me and my family, as I knew it will not be easy for someone with no right to work in the UK, before getting sponsorship from an employer to get a work visa that costs lots of money for the employer and more than that for the employee.

"I did applications to jobs in academia and industry at the same time."

I have been to a couple of academia job interviews then one interview for a job in industry, which was successful. In my current job interview, I didn't say anything about the salary which was not very good at the beginning. Also, I felt lucky to find my first job in the same city where I studied, so no moving home, and most important, no children having to change their school and find new friends.

It was December 2016 when I started my first full time job in England. The thing that I liked about working in industry is, when I only needed to work during the working hours, no after-hours work, while in academia even when finish the work in the office, there is still work to do at home, for example preparing lectures, marking exam papers, thinking about research and so on.

Also, gaining experience from working in industry is a very important point that opens the door for more jobs within the same company or with other companies, as they appreciate work experience very much. Now, I am happy with my current job and not looking to change it in the near future.

"The thing that I liked about working in industry is, when I only needed to work during the working hours, no after-hours work."

Life during and after a Ph.D.
Sir Richard J. Roberts

I began my PhD in the Chemistry Department at the University of Sheffield in 1965. I was fortunate to be in Professor Ollis' group, but more fortunate to be in the lab of a very good postdoc, Kazu Kurosawa. Under his brilliant mentoring I learned how to do research, how to plan experiments and execute them to the full and in the process how to become a scientific detective which had been a lifelong ambition, at least as a regular detective since very early childhood. The single most important thing I learned from Kazu was why I was doing the experiments he suggested. I was lucky that by the end of my first year of my Ph.D., I had essentially all the results I needed for my thesis. But in England a PhD occupies 3 years and so I had 2 years to explore science outside the immediate realm of chemistry. During that time, I read a book "The Thread of Life" by John Kendrew that described the early days of molecular biology. By the time I finished that book, I knew that I wanted to become a molecular biologist. That meant an additional round of training as a postdoctoral fellow.

'At New England Biolabs'

I was fortunate to be taken on by Dr. Jack Strominger at Harvard. I was given the problem of determining the sequence of a transfer RNA, an RNA that carries amino acids into proteins. During that time, I learned several valuable lessons. The first, is ***just because someone had suggested you tackle a problem one way, doesn't necessarily mean that is the right way.***

So I began by following instructions from another postdoc, but I kept reading about an alternative way of tackling the problem, one that had been invented by Fred Sanger at the MRC Lab in Cambridge.

Once the postdoc left, I immediately started exploring this new way of determining RNA sequence. It involved many techniques that I was not previously familiar with such as working with large quantities of radioactivity, but undaunted I proceeded with this project, wrote to Fred Sanger in Cambridge and asked if I could come to his lab to learn the details of the technique, and was delighted when he accepted me. I spent 6 weeks in Cambridge and came back with several notebooks full of all of the details of the experiments that were necessary to sequence RNA, which also required buying some specialized equipment which Dr. Strominger agreed to do, and so I set up a "mini-Fred Sanger sequencing facility" in the Biological Labs at Harvard. It turned out I was the first person to do so in the Boston area and many people came to me asking if I would teach them how to do it themselves. As a result, I made a lot of friends and later in life discovered the power that networking can bring in part because of these many friends that I made while I was at Harvard.

"Just because someone had suggested you tackle a problem one way, doesn't necessarily mean that is the right way."

Looking around at other postdocs at Harvard, while many were seeking academic careers, others were exploring industrial opportunities.

However, the freedom to explore new areas that is offered by an academic career appealed to me much more than a venture into the commercial world.

I was offered and took a job at Cold Spring Harbor Laboratory under Jim Watson and there established my own laboratory, ostensibly to sequence SV40 DNA. At the time, this was only possible by first copying the DNA into RNA and then sequencing the RNA using the techniques in Fred Sanger's lab. However, I discovered there were two other groups doing the same thing and it seemed foolish to me to be the third. Just before leaving Harvard I heard a lecture by Dan Nathans in which he described a new enzyme, a restriction enzyme, that was able to cut DNA into small pieces. This seemed fascinating and perhaps might offer a way to sequence DNA directly. As a result, when I got to Cold Spring Harbor, instead of focusing on sequencing SV40, I focused on restriction enzymes. That paid off handsomely and these systems, which are really a microcosm of biological processes, have served me well. I still work on them today.

The restriction enzymes also introduced me to the commercial world. Because my lab kept discovering new ones that all recognized different DNA sequences, there was much interest among molecular biologists in using them to analyze their favourite DNAs.

It was clear that there was a business to be made here by manufacturing and selling these enzymes. I tried to persuade Jim Watson to do that at Cold Spring Harbor, but he had no interest. As a result, I looked further afield, met Don Comb who had founded New England Biolabs, and became his Chief Scientific Advisor. As a result, New England Biolabs became the first company to start selling restriction enzymes and we continue to sell them today.

Since I was just an advisor to the company, I had an opportunity to look into the commercial world from the outside.

I now work in an environment where I am free to pursue research of my own design and rose to become Chief Scientific Officer setting the vision for the research within the company. I would hasten to add that the NEB model is not the normal model for a scientific company, since usually the emphasis is completely on making money and research is only pursued when there are clear economic goals at the end of it.

However, I would recommend the NEB model to anyone who dreams of starting their own company since this can make for a very happy workplace and can provide the surroundings and pleasant work atmosphere that can appeal to both those interested in research as well as those interested in developing commercial products.

"The freedom to explore new areas that is offered by an academic career appealed to me much more than a venture into the commercial world."

I will be forever grateful to the University of Sheffield and for allowing me to pursue a Ph.D. in Chemistry. It afforded me the opportunity to learn how to do research, to witness the benefits of an academic life, but because most chemists move into industry, it also paved the way for thinking commercially.

Since I moved from chemistry into biology, the rigorous thinking that I learned as a chemist also paid dividends in my further life. Whereas biologists were often satisfied with what I consider "fuzzy" answers, I was always looking for the precise answer to the questions that I asked. It was this rigorous approach to science that I learned as a chemist, which paid dividends both in the restriction enzyme field and also during our discovery of split genes that led to the Nobel Prize in 1993.

Why every researcher needs more work experience
Dr Rachael Roberts, Careers Service

Let's get one thing clear - I'm not saying everyone needs to do a placement or an internship. In fact I'm writing this to stress that there is more to work experience than a 3 month placement - a placement may not be what you need at all. For researchers, whether PhD student or research staff, a placement may not be practical, possible or preferable.

So what am I saying? Well, work experience can offer a range of benefits and take a variety of forms that provides learning, insight and awareness in ways that suit you, your needs and your availability.

At any stage of your career whether you are planning a change, a move, or just developing yourself, you could benefit. Consider this list of possible gains;

- Build professional experience and exposure
- Develop specific 'commercial awareness' or sector knowledge Enhance your self-awareness, self-confidence and self-esteem
- Experience fresh perspectives
- Apply your skills in a different setting and learn new ones
- Expose your research to a wider audience
- Meet new people and develop professional networks
- Learn about your preferences and the options and opportunities available to you
- Understand your value in a different environment

This isn't a comprehensive list - I'm sure you could add more!

Talking to people about their role can be a great way of finding out more and creating openings that lead to opportunities.

If you are concerned that people are busy or too important to talk to you, I would stress this; people tend to like talking about themselves or what they do. I can't guarantee they will always respond positively but they are often flattered to be asked to give advice or share their expertise and knowledge with you. Most people aren't in a position to offer you a job, so ask for something they can offer. Be enthusiastic, interested and ask intelligent questions of them and who knows where it could lead!

Useful resources and information

Find Vacancies
http://www.shef.ac.uk/careers/students/jobs
Creative job searching
http://www.shef.ac.uk/careers/students/jobs/creative
Develop your skills
http://www.shef.ac.uk/careers/students/advice
Student Jobshop
http://www.shef.ac.uk/careers/students/jobs/jobshop
Volunteering
http://su.sheffield.ac.uk/sheffield-volunteering and www.sheffield.ac.uk/experience/volunteer
Placements
www.careers.dept.shef.ac.uk/infotree/WorkExperience.php
Self-employment
http://enterprise.shef.ac.uk/entrepreneurship-support and
http://www.careers.dept.shef.ac.uk/infotree/SelfEmployment.php
Café Scientifique
www.sciencecafesheffield.org/
Pint of Science
https://www.sheffield.ac.uk/rep/public-engagement/festivals-opportunities/pint-of-science
PubhD Sheffield
http://pubhdsheffield.strikingly.com/
Think Ahead: SURE
www.sheffield.ac.uk/ris/ecr/tasure
Sheffield Teaching Assistant professional development programme
www.sheffield.ac.uk/lets/cpd/sta

Career Discussions with specialist Careers Advisers for Researchers
Dr Rachael Roberts, Careers Service

All researchers have access to two specialist Careers Advisers who have extensive experience of working with PhD students and research staff. Whether you intend to stay in an academic environment, pursue research elsewhere, consider a new sector or develop a career in an unrelated field, they can work with you to make progress in your career thinking and development. It doesn't matter what stage you are at in your thinking or decision making, if it relates to your career development in any way at all, it is likely to be worthwhile booking a one to one discussion.

Your time with a Careers Adviser will be an opportunity to work in partnership. They will not tell you what to do with your life and they will encourage you to do most of the talking – and the thinking. They will be impartial and non-judgemental, enabling you to understand your priorities, preferences, values, motivations as well as the challenges and obstacles you may face. It's possible they will help you see your situation from different perspectives and perhaps help you gain clarity on your current situation and how to move forward. They may offer advice or possible solutions but these are likely to be generated by you working together. They can offer practical feedback and coaching and draw on their experience to add to your understanding of the work environment, recruitment processes, decision making and perhaps most important of all, what's going to make you content in your career choices.

Learning to code as humanities researcher
Celine Frohn (PhD English Literature)

Interdisciplinary research is highly championed in academia. It is not uncommon for scholars within the humanities to work together, and there have been some very fruitful collaborations extending outside of the humanities as well. As computing technologies become more advanced, many new exciting avenues have opened up for data scientists to work with historians, literary scholars, and others.

I have (peripherally) been part of one such project: "Reassembling the Republic of Letters", funded by the European Cooperation in Science and Technology (COST). This project brings together scholars, designers, and data experts to provide a digital framework to collect early modern correspondences and investigate opportunities to create visualizations and research tools. The workshops I have attended have been fascinating because, by using technology, we can analyse well-known sources in ways that were impossible or highly impractical before.

However, it has also struck me how few humanists have the technical skills to understand what computers actually do when we run an analysis. From a methodological perspective, it is incredibly important not only to be able to use technology, but also to know exactly how it works if it is used to create dependable research. This becomes more attainable if scholars have at least a basic understanding of data science and analysis.

Apart from these general issues, I made the decision to learn how to code based on a more practical reason as well. Post-grad jobs in the humanities at universities and research institutes are incredibly competitive, and having at least some experience with coding or statistical analysis is an advantage. In particular coding in R or Python, using SPSS software, and text mining seem to be in demand. Digital humanities allow you to extract information from large quantities of text or meta-data, which are often too unwieldy for an individual researcher to interpret.

It might seem rather overwhelming to dip one's toes into the broad and diverse sea of programming languages and software, but there are plenty of resources to help you get started. It helps to have goal in mind beforehand. What would you want to do with these skills? I personally want to able to do some simple text mining and sentiment analysis on the sources I work with in my PhD – digitized literary texts. This means I need to be able to read code and manipulate it to a certain extent, and have some understanding of statistical concepts. My sources, nineteenth-century popular serialized fiction, often span over a thousand pages – and there are hundreds of them! Text mining allows me to test hypotheses that are simply impossible for me to do otherwise, because I could never manually read all of these texts.

You might consider whether you simply want to be able to use certain programs, or want to create new ones yourself. You might want to learn how to set up and manipulate databases if you are working with historical data, for example, or familiarize yourself with the linguistic analytical tools out there.

Photo taken at the Como Design sprint this summer, which brought together humanities researchers and graphic designers. Photo by Stefan Trausan-Matu.

There are many ways of getting started, and there are tons of good resources both within the University (such as courses at the Computer Science Department, DDP classes, the Code First: Women Workshops), as well as free quality courses online. Many of these start with the absolute basics. It's fine if you don't know anything about coding beforehand!
Whether you are computer-savvy or just interested, it is worth looking into some digital training.

The journey towards a PhD award: a hectic academic apprenticeship

Audrey Dugué-Nevers, PhD candidate
Politics and International Studies, Faculty of Social Sciences

Embarking on a PhD can come across as a daunting task. Why think of life after a PhD, whilst hardly having started one? Initially, all the requirements and skills needed to grow professionally and build a decent academic CV can be overwhelming. Besides the expected traditional workload, which involves doing research and writing a thesis, an academic journey encompasses many other pressures. Indeed, the current competitive job market requires further demanding skill sets, such as disseminating one's work at conferences, getting journal articles published, and obtaining teaching experience.

Considering time is limited to three-four years, how to benefit from time spent away from the actual thesis? What is relevant for a researcher? Most of the essential and transferable skills are fortunately listed in a chart provided by the Vitae Researcher Development Framework (RDF). This article will, however, only focus on one aspect of professional development: gaining paid work experience during the PhD as a university Graduate Teaching Assistant (GTA).

The RDF is a major approach to researcher development, which aims to enhance our capacity to build the UK workforce, develop world-class researchers and build the UK higher education research base.
(Vitae, 2013)

An academic apprenticeship

How easy is it to find a GTA position? It varies depending on departments and availabilities. The University of Sheffield usually provides opportunities at faculty level, and within most departments. What does a GTA do? In the Faculty of Social Sciences, it implies small group teaching, i.e. tutoring seminars, either in your field of research, or as part of an interdisciplinary module.

From a personal perspective, I have tutored undergraduate students for a faculty challenge, which was an interdisciplinary module providing them with an insight into research in social sciences. My role was to advise them on how to divide tasks within their teams and on how to communicate their work to a target audience. I have also assisted my supervisor by leading seminars to teach topics from the lectures in depth: it entailed leading discussions to help students reflect on their readings, as well as assessing students' presentations. Furthermore, when delivering workshops designed to give PhD students expertise in qualitative research methods and ethics, I guided conversations and monitored their engagement with the material, helping them to link methodology with their research.

I ensured all students had a chance to participate by making them work in pairs, and then share their analysis with the group. Additionally, when writing feedback on students' papers, I focused on evidence, and gave clear examples to encourage them in a positive way and show them where to improve. I followed the guidelines to measure whether learning outcome

targets were met, and to mark objectively and consistently.

This experience illustrates how being a doctoral researcher makes the transition between two worlds, from students to lecturers. The work focuses on passing on knowledge to students, but equally is an opportunity to build a working relationship with peers and mentors.

Strengthening relationships with peers and mentors

Working as a GTA has been an invaluable opportunity to assist my head of department and my supervisor, and thus a unique chance to develop a working relationship different from the formal student-supervisor one. Away from the students' perspective, it is an insight into what happens behind the scenes in terms of admin tasks and academic input from our professors and lecturers. Departments also benefit from the help of GTAs, as doctoral students provide support

"Being a guest lecturer and joining an academic team both highlight how career development fits naturally into the PhD process."

with respect to academic staff's commitments, heavy workload, and responsibilities, therefore becoming part of a team. Building on my nascent tutoring experience, I had the chance to give a one-off lecture as a guest speaker during my fieldwork trip in China last year, thanks to a colleague I have met previously at a conference. Being a guest lecturer and joining an academic team both highlight how career development fits naturally into the PhD process.

The road to professional recognition

In terms of professional development and benchmark of achievement, how to make the most of such learning experiences?

"The work focuses on passing on knowledge to students, but equally is an opportunity to build a working relationship with peers and mentors."

Interestingly, our University has developed a scheme giving an incentive to academic and support staff to obtain a professional recognition of the Higher Education Academy (HEA). A doctoral candidate can usually achieve Associate Fellow, and sometimes Fellow. Through workshops, reflective writing, teaching observations, and the development of a teaching philosophy, it is possible to work towards becoming an accomplished professional.

Finally, would I recommend graduate teaching experience? A doctoral researcher's journey is intense and unique, and yet isolating. Each person has a different set of needs and transferable skills, while sharing a similar level of expertise in their field. Work experience contributes to make a balance with other commitments, and enables researchers to grow professionally to be ready for their future career.

Spearheading a student team: One PhD student's adventure in creating your own work experience

By Wai Ching Lin

In 2016, postgraduate researchers, including then second-year PhD student Kyle Buchan, led a team of Sheffield students to achieve a Gold medal and nomination for Best Diagnostics Project at the iGEM (International Genetically Engineered Machine) competition. Having taken part in iGEM during his undergraduate days, and recalling how it had set him on the path to academia, Kyle wanted to bring this experience to the students at Sheffield. iGEM is an annual, global competition where teams of undergraduates compete to harness synthetic biology into a viable and potentially commercial product. Teams work on their projects during the summer and present their prototype at the Giant Jamboree in November in Boston, USA. Taking part in iGEM gives undergraduates a taste of research, not unlike a 3-month PhD project. For the postgraduate researchers who act as advisors to the team, it is a glimpse of research supervision and project management. At the start of 2016, Kyle, together with 7 other advisors, set out to create the 2016 Sheffield iGEM team.

The first order of business was to procure funding. Although there were previous iGEM teams representing Sheffield in the past, the advisors soon realised that there was no organisational structure in place for the continuation of iGEM or other similar competitions. To give the iGEM project some credibility, they first wrote up a budget, aptly dubbing it the "game plan". Registration and travel to the competition, as well as lab consumables were the main expenditures. They searched for sponsors by first approaching the finance team within the departments of Molecular Biology and Biotechnology (MBB) and Biomedical Science (BMS), before branching out and up, speaking to Heads of Departments and Vice Chancellors in other departments such as Chemistry, Automatic Control and Systems Engineering, and Economics. Departments were asked to pledge money for the project in exchange for the recruitment of students from their department and the subsequent publicity. Their first departmental sponsor was MBB, which agreed to contribute 10% of the total predicted costs. This initial pledge lent further legitimacy to the Sheffield iGEM project and prompted other departments to match it. On hindsight, Kyle reflected, they could have also reached out to industrial sponsors, especially those that manufactured their lab consumables. Within 3 months, they had raised around £50,000.

The next steps were advertising iGEM to the undergraduate students and inviting applications. Email bulletins to final- and penultimate- year students recruited a total of 35 applicants, of which 20 applicants were shortlisted and interviewed around March. Based on previous iGEM experience and the expertise of the advisors, they decided on a 10-student team. In addition to the quality of the applicants, the choice of students was also based on funding commitments from the various departments.

Kyle recalls that there were fewer applicants from the Faculty of Engineering and in retrospect, they could have established contacts from within the faculty and enlisted their aid in the promotion of iGEM amongst the engineering students. After finding a suitable laboratory space, preparations were finally complete and it was time for the experimental work to begin!

Unlike his PhD project, which was conceptualised by his supervisor, Kyle had to come up with a suitable research topic for iGEM, which meant reading the literature, evaluating the limitations of the available lab equipment and designing experiments. Another main task was the day-to-day supervision of the lab, as the undergraduates were not allowed to conduct experiments unsupervised. The advisors guided the undergraduates on experimental technique and preparing for their poster and presentation. By holding regular meetings with the students and amongst themselves, the advisors could agree on the next steps of the project, mediate conflicts and manage their students' welfare.

Balancing his PhD and his commitment as an iGEM advisor, Kyle remembers, was done "diplomatically". His supervisor had encouraged him to take on this experience but voiced his concern regarding the time and effort required.

Distributing the time for lab supervision evenly meant that the time commitment for each advisor was minimised. Kyle made sure to stick to the schedule agreed upon with the other advisors and ensured that no major experiments for his PhD were planned on those days.

After iGEM, Kyle has focussed on public engagement and outreach events, and has even organised conferences such as the Florey Institute Postgraduate Symposium. He sees himself progressing onto a postdoctoral position after his PhD, but is yet undecided on becoming a PI (Principal Investigator). Regardless, he is confident that his experience as an iGEM advisor has equipped him with the skills to do so, and highly recommends other postgraduates to find or create similar experiences for themselves.

Kyle Buchan (first from left) along with his fellow advisors and the undergraduates of the 2016 Sheffield iGEM team during their trip to Boston, USA.

Getting Experience: A Balancing Act
Molly Matthewman

When I found out the topic of this issue, I knew I had to write something. I have been working alongside my studies since I was 14, out of necessity rather than choice. The only way I could go to university was a combination of grants, bursaries and hard work. The only way I could do a PhD was to work even harder. I was the first in my family to go to university. Little did we know that, seven years later, I would still be going to university.

I'm not going to say how many hours I work a week, but it's more than it probably should be. However, it's still less than I would like it to be. I love my job. I work in retail, and I have the best colleagues in the world. At work, I forget about my PhD – and that's a good thing. The job is more physically demanding, but it gives my mind a break. It is completely unrelated to my field of study, and yet it has offered me more skills and personal development than my seven years of university. Yes, I said it. I am now part of the Management Team and I have learned so much about business and I have also developed my confidence and communication skills. ***Ironically, my job has made me a better student.***

"But my retail job is not my end goal. Unfortunately, I felt that my career in retail was unlikely to impress my potential future employers. Not on its own anyway. My CV was lacking in more relevant' experience and I also felt that I hadn't done enough volunteer work. No, we shouldn't think of our CVs as a 'box-ticking' exercise, but let's be honest – we all do it."

I decided to volunteer for a well-known advice charity. It was a bigger commitment than I realised, with a lot of training to begin with. It was also emotionally demanding; sometimes it was hard not to worry about my clients outside of work. On top of my full-time PhD and part-time job, the volunteer work was potentially the straw to break the camel's back. As I was a first year PhD, I was also going to mandatory workshops and modules. I would be lying if I said that it was an easy and enjoyable experience.

And then the second semester came around, along with the opportunity to work as a Graduate Teaching Assistant. I was thrilled for the opportunity to work in my department, particularly as it was paid work and would provide a great insight into a possible future career. I accepted without hesitation, completely forgetting the gazillion other responsibilities I already had. Could I really work part-time, volunteer and teach undergrads all whilst working towards a PhD? Along with the teaching also came the training workshops that, although optional, were important for me as a complete novice. I didn't know how to design and deliver a 2-hour seminar. Or mark exam papers. Or even take a computer register. My workload was piling higher and higher, and starting to sway. Somehow, I managed it. It's amazing what you can accomplish when you feel like success is the only option.

"Could I really work part-time, volunteer and teach undergrads all whilst working towards a PhD?"

However, looking back now I realise I was tired, stressed and working at less than my 100%. I wouldn't recommend balancing that many demanding commitments all at once. Not only did I sacrifice my personal life, but I made myself miserable. Getting the experience wasn't worth my mental and physical health. Still, gaining relevant experience is important, and next time there's still several other things I'd like to try before completing my PhD. But next time, I won't try to do it all at once.

PhD Work Experience - Kate Walker

In the summer of 2017, my daily walk to work ended at the Hofburg Imperial Palace, the former seat of power of the Habsburg dynasty and current home to the President of Austria. Situated at the heart of Vienna's inner boulevard (Ringstrasse), the palace complex is the site of various residences as well as the imperial library (Hofbibliothek), treasury (Schatzkammer) and the renowned Spanish Riding School (Hofreitschule). It also houses the Weltmuseum Wien, Austria's largest anthropological museum. I had come to Vienna to support the development of 'Japan Comes to Europe', one of fourteen exhibitions which would comprise the permanent collection when the museum re-opened after three years of renovation in October 2017.

The exhibition had long been planned by the East Asia curator, a Sinologist and graduate of a PhD programme. It would focus in part on the 1873 World Fair in Vienna when Japan presented itself as a modern state following the Meiji Restoration (and the abolition of feudalism). The second part examined cultural exchange between Japan and Europe during the Meiji period (1868-1912). We had agreed that I would support the Nō theatre component of the exhibition. My PhD research focuses on kumi-daiko (Japanese ensemble drumming) and its relationship to the UK. I therefore hoped to be well placed to contribute to exhibition material focused upon an often esoteric form of Japanese musical theatre.

Ultimately, and somewhat surprisingly, I did not work with the collection of musical instruments for the *Nō* theatre display. Instead, I was given a multitude of opportunities to work with experts and contextualise an unfamiliar art form for the museum-going public. First, I wrote an animated film that serves to introduce the *Nō* theatre and its component parts. I then went on to compose, perform, record and edit an original soundtrack for the exhibition and produced accompanying notes which visitors access using an app.

My major piece of work, however, was researching one of the costumes from the *Nō* theatre collection. Various experts from Japan had examined the material and its construction. The costume had not, however, been otherwise examined, despite containing seventeen unique motifs referring to Japanese flora, fauna, folklore and religion layered over a brocade featuring clouds. Drawing upon museum resources as well as material from the University of Vienna's East Asian Studies library, I was able to identify the costume's provenance. I subsequently wrote an article for the museum's peer-reviewed journal which is pending publication.

I also presented a video explaining the symbolism of the costume which is currently shown on loop in the exhibition's cinema.

I benefitted tremendously from undertaking this placement. As a WRoCAH-funded student, my time at the Weltmuseum served as my Researcher Employability Project, a one-month internship with an external partner designed to expose students to a range of employment contexts. This came with a range of benefits: first, my travel and accommodation were funded and I continued to receive my stipend; second, it served as an authorised break from my doctoral research and allowed me to return with renewed vigour; third, I was supported throughout by the WRoCAH team; and fourth, I was required to submit various reflective reports which helped synthesise the experience.

Beyond the purely practical, the REP had a profound personal and professional impact on me. By focusing on a costume, I realised that my research skills are adaptable and transferrable. I thoroughly enjoyed the act of storytelling for an audience through film, music and text, and intend to carry out more public engagement work as my doctoral programme progresses.

I took the opportunity to investigate another higher education system, by using the library and attending seminars at the University of Vienna. As a result, I would strongly consider pursuing an academic career overseas.

The REP and accompanying funding enabled me to explore a new city, HE system and employment setting. As PhD students, our research projects are inherently focused and niche. ***My placement means I feel better equipped to enter the employment market post-PhD.***

Perhaps more importantly, I have far greater awareness of how I might apply the skills gained during the course of my doctoral degree and the settings in which I might like to work. It is for this reason that I wholly endorse undertaking work experience during the PhD. As I found out, it reinvigorated (rather than detracted from) my studies.

Kate Walker on the balcony of the Grand Hall, Hofburg Imperial Palace.

PhD Student Profile - Dr Billy Bryan

Positions:

Co-chair and representative of Medical School PG Society (MPGS)
PG Society representative for the Student's Union

What is it like to be a PGR representative?

It can be very empowering, PGR students' skills and knowledge can bring about real change (and has). It is so much more than reporting issues to faculty, although that is important. It's chiefly about you and like-minded student colleagues thinking creatively about what you can do to make your academic and personal experience better, then making it happen.

How did you get into it?

I simply wanted to make new friends as I was new to the university. Many more opportunities beckoned to represent students at the university level after I became a rep on the medical school PGR committee. Before I knew it, I was on the Students' Union council and university senate before becoming a trustee at the union. Those next steps came about because I wanted to make a real change in how PGR education was run at the highest level.

What did you get out of it?

I met some of my best friends on those committees, that reward was the most valuable. I gained excellent practical knowledge and skills from committee work, for example: multi-million £ budget oversight at the union, negotiating with faculty for changes in training, presenting projects to the Pro-Vice Chancellor. It's ideal for networking too. I hosted an event for science policy awareness where I made a contact who got me the interview at my current job.

Why do you think other doctoral students should get involved?

It is a great way to be productive whilst taking a break from PhD work, I actually found that it helped me to use my PhD time more effectively. Not least for the reasons alluded to above, I would encourage all doctoral students to take that first step. Just sit in at a meeting or attend an event and see what you think. We need more people fighting the corner of PGRs!

PhD Student Profile - Emily Fisk
Final Year PhD student in the Medical School

Positions:

Co-chair and representative of Medical School PG Society (MPGS)
Co-founder of Postgraduate Student representative Committee (PGComm)
PGR representative for UoS PGT Group

What is it like to be a PGR representative?

Being a representative can be really rewarding, and it's a totally different experience to being an undergraduate rep. PGR students can be really isolated in their research and experiences, so making sure the problems we face are known and voiced can sometimes be quite tricky. It's really important to look out for each other, and make sure you get the best and most out of the PGR experience. I think this is really important both for current and future students, so being a student representative can really have its impact and leave a legacy!

How did you get into it?

Luckily for me, the Medical School has a PGR society, which is run by the students and for students. I had a couple of friends in their second year who had joined and it felt like a great way to meet new people, find out what was going on in my local environment and to make sure students were being heard.

What did you get out of it?

I have made some brilliant friends, had some great opportunities and been given insight into the inner workings of the university. I have represented postgrads at some really important meetings, including PGR support by the Doctoral Academy and widening participation in PGT courses. I have also learnt and applied new managerial and communication skills - which I would only have learnt the theory of by attending workshops! I have also greatly extended by network, both academically and socially.

Why do you think other doctoral students should get involved?

Being a student representative isn't just 'something to add to the CV', it can provide you with so many new opportunities and connections - you just need to give yourself the time and chance to do it! You will need to put a bit of effort in to get anything out, but it is definitely worth it. Make the role your own.

And if you're still a bit apprehensive, just drag a friend into it with you!

PhD Student Profile
Dr Tareq Omairi - PhD in Astrobiology & Molecular Biology

Former PGR Rep roles:
Doctoral Academy Intern – Research & Innovation Services
Staff/Casual workers' representative
Sheffield Students' Union Post Graduate Students Committee
Inclusions officer, Molecular Biology and Biotechnology PhD Society

What is it like to be a PGR representative?

Being a PGR representative entails having a sense of belonging to a large and active community of researchers, which extends beyond your small lab research group. It also means having an awareness to observe and listen to issues and concerns relevant to fellow researchers, and be able to influence positive change by making their voices heard, to impact decisions made on their behalf.

How did you get into it?

Having a passion for helping fellow researchers, for me, was the key ingredient for working in the PGR Rep role! Initially, I tried to get involved with as many activities as possible, to get familiar with how everything in the University works. As I gained more experience, I felt ready to join the Molecular Biology and Biotechnology PhD Society as an inclusion officer. Then, as Staff/Casual workers' representative in the Postgraduate Student representative Committee. During my final year, I worked as a Doctoral Academy Intern with Research and Innovation Services. Tasks involved organising professional development workshops and social events for students, in response to their learning needs.

What did you get out of it?

Having a "can-do" attitude and a positive outlook was a valuable trait learnt from being a PGR Rep. The role demanded being always on the lookout for ways to solve problems or develop training opportunities that doctoral students wanted the University to provide for them. As I am aspiring for a career in Researcher Development & Support, working as a PGR Rep has introduced me to many professionals working in the field of researcher support, whom later became valuable colleagues, friends, and mentors for me.

Why do you think other doctoral students should get involved?

This role carries the valuable opportunity of being able to understand the organisational structure within one's academic environment, working with different groups of students, academics, and professional staff, and the ability to challenge the status quo to inspire change. Such skills are of tremendous value for any future work opportunity, and can really make you stand out from others when applying for jobs, whether it was in academia or outside of it.

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