

Things I wish I knew at the start of my PhD



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Stepping out of clinical work to undertake a PhD can be a daunting challenge. At this stage of their career, few clinicians have sufficient experience of research to know what to expect, how to maximise the opportunity and to recognise, let alone avoid, the potential pitfalls that present themselves during a research degree. In mitigating this inexperience, I think it is crucial to choose all of the elements of your project – the project content, your supervisor and the research environment – very carefully.

These are very personal choices but it is worth bearing a few salient points in mind. PhD projects vary enormously in their detail and it can be overwhelming when trying to decide what to do. A few simple questions can help to narrow these choices down. Firstly, would you like to explore the basic science, possibly using molecular or genetic techniques; or would you rather do a more translational project, such as a clinical trial? This decision may be swayed by previous experience; if you learnt a technique during your undergraduate degree you may feel more comfortable continuing along the same path. Secondly, is there an area you are particularly interested in? Undertaking research in a particular specialty will automatically guide your future career in that direction, although this is by no means a strict rule with plenty of people taking a different path after research. Finally, projects can differ in the degree to which they have been pre-organised. Some are fully planned and 'ready to go', whilst others have no pre-determined structure and are hence more explorative. Pre-planned projects have several benefits; their scope and deliverability are evident from the outset, some of the practical organisation may be in place already and it is likely that the underlying hypothesis has been deliberated carefully and deemed timely and relevant. However, this prescriptive nature may not appeal to those wanting greater autonomy over the direction of their research and some can find it restrictive.

Supervisor and environment selection are also important. Again, these are a matter of individual choice but I would suggest a few factors to consider. First, think carefully about the type of supervisor you want. Do you want a supervisor who is very involved and monitors everything you are doing on a weekly, or even daily, basis? This is good in terms of support but may prove too constricting for some. You should explore these questions: ask previous PhD students about their experiences as well as interviewing members of the existing research group and the supervisor themselves – after all, it is in no-one's best interest to have a poor relationship between student and supervisor! Secondly, ensure that your supervisor in particular and the group in general are productive. This can be checked easily through literature searches for the group's recent publications as well as discussion with previous PhD students to ensure that they completed their degree.

Finally, don't ignore the rest of the research group. Helpful post docs are worth their weight in gold and will often be the person or persons to whom you will direct most of your day-to-day questions.

Having selected your project and supervisor and with funding in place, the enjoyable part begins! However, be prepared for considerable change: for me, leaving the wards and regimented clinical work to enter the research world was a slight shock to the system. Having spent years as a slave to a pager, rosters and rigid clinical duties, sudden autonomy and freedom may feel very strange. But, be warned, a different kind of discipline is essential. Do not get carried away with your new-found independence and freedom from rigid timetables because three years in the research world flies by. Most PhD students will describe their final year as a hectic rush to the finish post and the more you can achieve early on the better. First, set targets with clear time constraints. This will assist you in remaining on track to complete everything you want before the end of your research project. Secondly, the best single piece of advice I received was to write a review paper in my first year. This is helpful in several ways; not only does it guarantee that you understand the literature for your project but, if done well, it will also provide an early publication (a huge morale boost) as well as being used to form the basis of your PhD introduction. Year one may seem very early to be considering starting to write your thesis but I assure you that at the end of year three, you will be very pleased to have this ready-made introduction to your final thesis.

As the PhD progresses it can become disheartening if things are not progressing as quickly as you'd hoped. Ethical and local approval processes can take a year to cement in place – emphasising the benefit of a project that has already been approved and is ready to start. If bureaucracy is moving slowly, make the most of this 'down-time': explore other data from your group that can be analysed in order to get your publications up and running, ensure the skills you will need once the project starts are up to speed (e.g. brush up on your statistics or learn any new essential practical techniques), and finish that review paper over which you continue to procrastinate! Regular meetings with your supervisor and disciplined target-setting are also valuable during this time to keep you on track to complete. Most importantly, try not to get demoralised – delays are almost inevitable and, invariably, things do not all fall into place until the final year.

If you ask most PhD students when they were busiest, most will report the final year is a mad rush of data analysis, paper publication and thesis writing and early preparation of your thesis introduction as well as proactive and opportunistic analysis of other data can alleviate the stresses of the 'last-minute rush'. Ideally, you should finish your thesis prior to returning to clinical work. This does not always

happen but writing a thesis while holding down a full-time clinical job is a difficult task and you will be thankful if the bulk is written before you step back on the wards. Publications, posters and presentations will inevitably linger on after the PhD. Be prepared for this and see it as a positive feature rather than an irritation; apart from anything else it will keep you in touch with the research world.

These are personal thoughts and other PhD graduates will undoubtedly have different experiences. Personally, I found my research time immensely rewarding and would encourage anyone interested to explore the opportunity. There will always be unforeseen obstacles, but by being organised and writing early you will be better equipped to deal with these hurdles as they arise.

Table of useful resources:		
Topic	Useful websites/resources	Description
Literature appraisal	www.ucl.ac.uk/ich/support-services/library/training-material/critical-appraisal	There are many websites, books and journal articles discussing this topic, which is undoubtedly a key PhD skill. I have provided a simple introductory article that has links to more extensive reviews on this topic.
Thesis writing	LaTeX – (www.latex-project.org)	Some people swear by using LaTeX for writing a thesis. It is a typesetting program that involves a steep learning curve, but once mastered affords more flexibility than the more common word processing programmes.
Statistics	R – (www.r-project.org)	R is an open source statistics and graphics programme. There is a great online community answering questions about how to use it including www.r-bloggers.com . If you prefer textbooks <i>Discovering Statistics Using R</i> by Andy Field is a good option. It can also be used to make excellent plots.
Referencing	Reference managing software (numerous options including EndNote, Bibdesk, Mendeley)	Managing and referencing the huge number of papers that you will read is vital. There are numerous reference managers around and I have listed a few. Bibdesk in particular can be linked to LaTeX and is open source. They all provide a similar service but whichever one you choose, make sure you spend some time learning how to maximise its functions as this will save you a great deal of time.
Illustrations and figures	Adobe Illustrator	Adobe Illustrator is not free but is fantastic for creating amazing figures and illustrations. There are numerous online tutorials, including from Adobe themselves https://helpx.adobe.com/uk/illustrator/tutorials.html

REGULARS – EVENTS DIARY

To list your event in this diary email Rachael@acnr.co.uk by 6th January, 2018

NOVEMBER

Specialist Multiple Sclerosis Masterclass – MS Academy
22-24 November, 2017; Sheffield, UK
info@neurologyacademy.org
T. 0845 338 1726 – Module 2: 15 June 2018

Palliative Care MasterClass
27 November, 2017; Manchester, UK
www.neurologyacademy.org

DECEMBER

Encephalitis Conference 2017
4 December, 2017; London, UK
E.conferences@encephalitis.info

2018 – JANUARY

Non-Motor Symptoms Roadshow – Parkinson's Academy
Thursday 18 January, 2018; Halifax Hall, Sheffield, UK

<http://parkinsonsacademy.co/courses/nms-roadshow/>

16th Annual King's Neuromuscular Symposium
26th January 2018; London, UK
E.knmsymp@gmail.com or ow.ly/OLOC30fF24S to register.

FEBRUARY

Society for Research in Rehabilitation Winter Meeting and 40th Anniversary
6 February 2018, The Watershed, Harbourside, Bristol BS1 5TX
E.patricia.dziunka@srr.org.uk
www.srr.org.uk

10th World Congress for NeuroRehabilitation – WCNR2018
7-10 February 2018; Mumbai, India
E.traceymole@wfnr.co.uk
www.wcnr2018.com

2018 ILAE British Chapter Clinical Epilepsy Course for Junior Doctors

15 February, 2018; Queen Square, London, UK
<https://ilae-2018course-clinical-epilepsy-junior-doctor.eventbrite.co.uk>
E.members@ilaebritish.org.uk

JUNE

Parkinson's Advanced MasterClass – Parkinson's Academy
12-14 June, 2018; Halifax Hall, Sheffield
<http://parkinsonsacademy.co/courses/advanced-masterclass-course/>

MS Non-specialist MasterClass – MS Academy
26-28 June, 2018; Halifax Hall, Sheffield, UK
<http://multiplesclerosisacademy.org/courses/general-ms-masterclass/>

SEPTEMBER

Parkinson's Foundation MasterClass – Parkinson's Academy
4&5 September, 2018; Halifax Hall, Sheffield, UK
<http://parkinsonsacademy.co/courses/foundation-masterclass-course/>

NOVEMBER


MS Specialist MasterClass – MS Academy
21-23 November, 2018; Halifax Hall, Sheffield, UK
<http://multiplesclerosisacademy.org/courses/specialist-ms-masterclass/>

2019 – APRIL

Festival of Neuroscience
14-17 April, 2019; Dublin, Ireland
<https://www.bna.org.uk>

JUNE

World Parkinson Congress
4-7 June, 2019; Kyoto, Japan – www.wpc2019.org



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Dr Phil Hammond, NHS doctor, writer, broadcaster & comedian

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