

Chapter 2

Choosing a Project, Location, and Supervisor

See Table 2.1 for chapter summary.

The location of your research will be fundamental in determining its success. There are several aspects to selecting a location, and these will be considered in the next few pages.

In choosing where you decide to work, there are three main issues that you need to consider.

1. Subject – what area do you wish to research – you may not know precisely, but you should have a broad idea as to what your interest could be, or might develop into.
2. Supervisor – having thought about a sensible subject area, you will need to think about who you want to work for. Different labs will have different setups – and these vary over time. Some may be happy for you to join the lab and work on a project providing you have or can bring some funding. Others may have already allocated funding and be seeking applicants to fill a post.
3. Money – nobody likes to discuss money but you will need to. If you are just about to look into a project, you will need to know on what basis you and the project are going to be funded and can be sure that this will be sustained until your project can be completed.

Choosing Your Subject

The definition of an expert is someone who knows more and more about less and less! Anon.

The trend for taking up research has changed completely over the last decade or so, and with the development of MMC and other changes it may alter further – or revert to previous! Research used to be the realm of senior registrars who had already established an area of clinical practice that they were aspiring toward, and therefore the subject of their research would be more obvious. In an ever developing world of research, there may be a return to this.

In recent times, attempts to change the registrar's appointment process and selection criteria have often questioned the role of research as a means of differentiating applicants. Yet there is no question about the need for continued development of medical and scientific knowledge, and therefore good research will always be required and valued. It is also true that achievement in research is an excellent and well-established way to demonstrate both excellence and commitment to a specialty. The 2008 debacle that was ¹MTAS (Medical Training Application Service) was symptomatic of constant change – while many changes are for the better, some may cause massive distress and disruption. Despite change it is important to maintain a positive focus for success – the same rules will be applied to all, and if you are good, your chances of success remain high. It seems vital that anyone planning a long-term career in a specialty will need to be committed and a successful appointment process will have to take account of this. Similarly, entry to such programs should remain a privilege that can be attained on merit alone; hence, excellence must also be demonstrable. Why mention this? While changes

¹ MTAS – Medical Trainees Appointment System – was a centralized, electronic appointment process for junior doctors that was used in 2008. It was universally acknowledged as having a number of failures that lead to difficulties for junior doctors looking for appointments at the time. It was part of a process examined in the Tooke Report.

in the system have shown many weaknesses, they demonstrated the importance of essential and desirable criteria in an application process. Anybody applying for a job must, by definition, have all the essential criteria – therefore candidates can only be separated by additions to these – that is, including the desirable criteria. It is certainly true that making it desirable for candidates to have collected 50 coins from the Roman Empire in order to get a job will mean that the truly committed individual will turn up with 100 fine examples. This somewhat ridiculous example illustrates that in a competitive environment, people will always seek to separate themselves from the pack, and achieving more than your peers – for example, through better research – is one way of doing this.

Undertaking research earlier in a career may make it more difficult for an individual to know what to investigate. Many worry about pigeon-holing themselves too early – but if you are interested in committing to academia, you will have to take the plunge at some point. Research does not necessarily confine you to an area for life, but if you have relevant research behind you, it can only be an advantage. In some ways, the exact subject of your project is less important than your developing an understanding of the scientific method and research process. The grounding you will have obtained from your research will allow your future career to follow a different scientific direction if you do adjust your particular area of practice later in your training. Of course, it helps if you are already genuinely interested in the subject as this will maintain your motivation throughout the project. The caveat of changing direction such that your research does not relate to the rest of your career leaves the onus on you to demonstrate that your research training has allowed you to achieve the skills to maintain a research interest in your final area of practice. It is therefore much the better to select a subject area that you expect to maintain and develop an interest in throughout your career.

In order to approach this important decision, start by trying to break things up into major categories. For instance, do you want to do clinical or nonclinical research; do you want

to look at areas involving oncology or not? The more categories that you consider, the more this process will begin to narrow down your choices and help you to make up your mind. Nothing is irreversible at this stage – so if a deeper look leads you to change your plans, this will not matter – better now than later on... If you are completely stuck for direction, write down everything that interests you from stamp collecting to glacier abseiling – looking at your life in the broadest sense may help you to see which way to turn for this decision or it may put you off altogether!

The next step is to try to think about the advantages and disadvantages of everything you have on your list – for instance, with clinical research you may be just part of a huge project that is running for years – you have to ask what will you gain; will there be any papers for you to write and will you complete a credible thesis? However, you are likely to be able to maintain some of your clinical skills and may even learn new ones that will stand you in good stead for the future, and there may be additional papers for a number of years that will continue to have your name on them. If you sign up to work in a laboratory, you are more likely to benefit from an education in scientific method and the time to develop your research in new directions. These are aspects to your career that might be extremely difficult to acquire at any other time. However, you need to understand that this will be a period of sometimes frustrating work, learning new techniques, working among new colleagues (many of them non-medical), and sometimes isolated from the clinical world. Essentially, this remains a very individual decision. You are not usually bound by the same constraints of application for a clinical job. The majority of supervisors will understand and indeed encourage the need to look at other possibilities in order that you take on exactly the right research project for you. In selecting the subject, you should be prepared to do some leg work. This means visiting laboratories or departments, chatting to supervisors and, ideally, their current and even previous research fellows, and discovering what a project might involve. It is worth doing your own literature search

and finding out which names appear to be important. This will also help with familiarizing yourself with current important topics in your prospective subject area.

When you are close to making a decision, talk to friends and possibly your current clinical or educational supervisor (or another who you feel will give you honest advice). It is easy to get carried away with an idea and not see the pitfalls. In the end, nobody can make the decision for you, but you may hear things that you had not thought of before which will help to clarify your decision making.

Supervision

There are many stories of people who started research and were buried in a basement on a back street with no money, no teaching, and no support. There are also stories of those who have been well supported throughout their research. In both groups, there are successes and failures. In the first, success comes down to a degree of luck and a lot of hard work on the part of the individual. In the second group, your hard work is still essential, but your need for luck is greatly reduced. For a project to be a success, you need a combination of support, hard work, and luck. It is obviously better to build your foundations on the basis of good support and hard work, rather than hoping for good luck, although a bit of this definitely helps! Clearly, the key element to your success is your supervisor. With his or her leadership, the rest of the essential elements will fall into place.

In the University of London, approximately 50 % of theses (from clinicians) enrolled for are never submitted. This is close to theft: in effect, you have signed up to produce a piece of work – you may even have been paid to do so – and if you fail to show any meaningful output, you will have defaulted on your side of the bargain. In other walks of life, this would be termed “a breach of contract.” This has a huge impact on research in general – grant-giving bodies will look less favorably on you and your supervisor in the future. There is a lot

of time, effort, and money that is wasted, and it may well have a detrimental effect on your career progression.

Universities also view different types of research degree differently. PhD students will find a strong tendency for universities to adhere closely to a fairly rigid set of rules. This can be a major advantage as it offers a structure to your time and will usually require you to complete a logbook and to achieve various milestones. The approach to an MD can be less rigid and will depend on both the university and your supervisor. In either case universities will often have courses available to graduate students such as statistics, presentation, management, teaching, etc.; these may be very useful in both content and adding weight to your CV. Discuss these aspects with your supervisor and any fellows; it may help you to gauge the environment within a prospective institution.

Choosing the Right Supervisor

The following sections cover five areas in making this choice. You can find out many of these by asking around, especially current and previous research fellows. Ask them how they got on, what happened when they hit a problem, and how were they taught about the department and relevant techniques during their project. Also ask about the support available while writing up – how long did it take for the supervisor to return their thesis and how quickly did they correct drafts of papers or theses?

Presence

It is fantastic and exciting to work for internationally renowned figures. However, you need to be realistic if you get such an opportunity, and close questioning in the unit is vital. Often units like this run on two levels; the great woman (or man!) contributes with energy, ideas, some funding, and an overall

vision for the unit and will provide detailed input when possible. Often the day-to-day running of such a unit is provided by a right-hand man (or woman!). If you are lucky enough to have an opportunity to work in such an environment, you need to understand how it operates. It would be pointless to work in circumstances where everything you do day to day is according to the right-hand man, but when the boss arrives, they change everything to their own way – you will simply end up caught between the two and achieve nothing. The same is true if you have both a scientific and clinical supervisor who do not agree on the overall direction of the project. You can only find out these details by asking current fellows – so do ask as many as you can.

If you look likely to spend large periods of time without any supervision, then consider looking elsewhere. Research is hard work – you will definitely encounter problems, and if your supervisor is constantly away presenting or teaching you risk suffering constant delays to your progress.

In summary, it does not matter how good or famous your supervisor is (or was); if they are not there, they cannot supervise you. In some units, you have to have two supervisors, and this may help to solve this problem, but you must check with others how this works, in practice, before you take it on.

Approachable

This is too fundamental to dwell on. As clinicians, we have all worked for consultants who were utterly unapproachable – for various reasons. This is tolerable for 6 months when doing a clinical job, and direct exposure can be fairly dilute.

In a research setting, you need to be able to approach your supervisor and ask them the most simple (and sometimes even stupid!) questions. You will have times when you simply do not understand very basic things, especially at the beginning of your project, when making a positive start is extremely important to get you heading in the right direction. This is a

vital element as it will help you to build momentum and motivation for the rest of your time in research. If you cannot clarify a fundamental issue, the rest will remain much more difficult. When you are sizing up a position, you need consider your potential personal relationship with your supervisor as one of the most important factors in your decision making.

Grant Applications

In our view there are four types of supervisor when it comes to grant applications, and it is, arguably, one factor that distinguishes the wheat from the chaff.

Type 1 – “Most members of the team do some casualty locums, or RMO work on the side, which seems to cover costs. Just let me know your details so we know who to invoice for the bench fees”

Type 2 – “As the clinical fellow we expect you to provide cover for clinics on Wednesday, Thursday and Friday. Monday and Tuesday are you own, unless you are on call or one of the others is on leave.”

Type 3 – “Well done very pleased to have you on board. Here are the details of some groups who sometimes give grants. Let me see your applications when you’ve done them so I can check the grammar and put my name on it.”

Type 4 – “Thank you for showing an interest. We need between 6 months and one year to help you get some money together. Let me have the details of your current salary and together we can set about finalizing the details of the project and applying for grant money.”

Clearly these are exaggerated examples, once again, to make a point. In the case of type 1, you will spend your time doing night shifts and weekend work which, even with your best efforts, will detract from your time in research and make it harder to focus on your project. It may be acceptable to

start your project in this situation when you know that there is a grant that is due to start funding in a short time. There are no guarantees that you will get a grant (the hit rate is about 1 in 5), so if you do not have anything definite, you may end up doing this for some time.

Type 2 is perhaps the most dangerous situation. You will be pulled in both directions and feel guilty when you do not fulfill your obligations. These may become increasingly clinical and when you come to discuss how your research is going – who do you think will take the blame for not getting the project further off the ground?

Type 3 is enthusiastic, but probably with unrealistic expectations, either for the project itself or the chance of getting it funded. Gaining a grant is very difficult: you will need help, support, and a huge amount of guidance to get your first grant. If you do not have this, you will struggle (of course there are stories of success, and while huge personal endeavor will have been important, luck will have played a big part too). You may wish to have a go at drafting the grant yourself, but be prepared to use all the help you can get to refine it. This means that you will need to plan long in advance of the submission date.

Type 4 is ideal. Your prospective supervisor should be advising you with realistic time frames so that you can compete for and set up a grant prior to your arrival. If you are very fortunate, all this will have been done before you get there (but regrettably this is very rare). You need about a year to set things up this way, but there is a great deal of satisfaction in having been involved right from the start.

Knowledge

Getting grants and writing publications require a tremendous insight into an area if they are to be successful. Your supervisor may well have a number of Medline publications to their name to attest to their knowledge. It is reasonable and indeed sensible to look these up. This will help you on two levels:

- You will prove to yourself that your prospective supervisor does have relevant expertise in your field of inquiry field.
- You will have discovered a ready-made source of background reading.

It is very useful to know what the current fellows say – are they helped with answering questions and given guidance, or are they left to their own devices?

Track Record

This is implicit in the previous point. In addition to checking your supervisor's own publication record, what is their record on getting fellows to complete a thesis and how many of the fellows got a grant while working in their department?

There is probably not a dream supervisor who scores perfectly by this guide (although there are some who come close!). Analyzing each facet separately will allow you to identify the strengths and weaknesses of a situation. It may be that you are confident in some of your personal strengths that might allow you to accept and cover certain other deficits by yourself.

Money

There are very few grant-maintained posts that are ready-made for you to step into. This means you need to allow time before you start to apply for and get a grant. You will have done very well if you are successful with your first application – do not be disheartened by initial failures – as we have said above the success rate is about one in five.

You will maximize your chances of success by involving yourself early on with a good supervisor. A good unit has probably become so by attracting lots of grant money so they may have slightly better hit rate on the basis of previous experience.

Before you apply for a research post, you should have details of your current salary available and ensure that you can continue your pension scheme contributions if you wish to.

In reality, many people are already coming to the end of a job when they start to think of research. The ideal situation is to give yourself another 6–9 months grace by getting an interim clinical post (which will provide useful added experience to your CV and may even adjust the focus of your research ideas) rather than rush to start a project with no money. This is better because you will not have to scratch around for locum work and can get straight into your project when the time comes. It also means that you have time to formulate a plan before you start which is a much more sensible basis on which to begin than arriving on day one with a blank sheet of paper. It is not always possible to do this; hence, some people do start with grant applications in progress, relying on interim funding on a more ad hoc basis, either by arranging their own locums or by providing clinical support for the unit attached to the research institute. The obvious drawback to this is that if your grant application fails, you are committed to funding yourself until the next round of grant applications – or facing a delay until the money eventually comes through. During that period you are losing valuable time that you could be using to concentrate on your project. In addition, you will be astonished by the cost of consumables. Even if you can find your own salary with locums, you will need the support of your supervisor and research unit to cover the cost of consumables until you have your own funding to pay for these. This must be discussed and agreed before you arrive.

Finally, even though a 2- or 3-year period spent on a project sounds like a long time, you want to leave your time in research with your data complete and your thesis written up; otherwise, you will struggle to finish it from a clinical job. If you have to spend days away doing locum work, you are less likely to achieve this.

In summary (see Table 2.1), set everything up to be as favorable as it can be, choosing the location that offers you the subject you prefer. Do the leg work first and spend time

Table 2.1 Supervisors key attributes

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|---|
| Presence – they must be there and available |
| Approachable – you must be able to ask them stupid questions – you will need to |
| Grant applications – you need help with writing grants |
| Knowledge – they must know the subject area you are involved in |
| Track record – setting out with a complete newcomer is a risky strategy |

talking to prospective supervisors. The responsibility to check and choose the correct post is yours. Aim to set up finances before you start – time is precious and you cannot afford to waste it. Investing this amount of effort before you actually start your project gives you the best chance of success.



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