**Audit, research and other projects**

**Why bother?**

For most people, electives are about clinical and extra-curricular experiences. A small minority of embryonic professors choose to invest the whole of their elective in honing their academic skills. If you’re not of this persuasion, don’t worry – a project isn’t compulsory, or even recommended, but don’t write it off without thinking about the advantages of doing one.

Roughly, these are:

* another way of making a difference – especially if the results lead to changes in clinical understanding or practice
* a good opportunity to learn and practice academic skills while planning and carrying out the project
* more funding options
* something to write about on your CV

Projects can focus on audit, research or teaching. They can be lab-based, library-based or clinical.

**Where to start?**

Where you do your project will probably be dictated by your general feelings about an elective destination. It’s worth noting that many research groups in the developed world have schemes that allow elective students to join them for part or all of an elective. The advantages of these are that you will generally have good access to resources, you can learn laboratory or clinical skills that will be useful in the future and it may be fairly straightforward to organise, especially as you are likely to be contributing to a larger, on-going project. On the other hand, in the developing world, you may well have significant input into all the stages from design to write-up, and you may see your findings used to dramatically change practice.

The two things needed to start planning a project are 1) a topic and 2) a supervisor. Like chicken and egg, to some extent, these go hand in hand. Unless you have a vague idea what you want to do a project on, it is difficult to start finding a supervisor. Conversely, someone willing to supervise you should be able to guide your choice of topic and plan.

Ideally, your supervisor should be someone who has experience of supervising research and is genuinely interested in helping you. It might be difficult to judge this without having met the person, and you may not have the luxury of choice. The most important things are to pin your supervisor down (in writing / e-mail, if possible) to exactly what will be available to you and to ensure they sign any relevant forms taking responsibility for overseeing you. Imperial has pulled together a list of contacts in different area who may be able to help you so worth contacting one of them for some advice.

Choose a topic that interests you – not only will this make it easier to enthuse about it in funding applications, but it will help keep up the motivation while you are doing it. You also need to make sure your idea will be feasible to carry out in the environment you are in. It might involve a literature review, or involve looking at clinical records or carrying out laboratory experiments.

***<Task: write down 3 topics that could form a basis for a project in your chosen destination>***

There is a temptation to design your project so it is all things to all people. There is some truth to this in terms of maximising funding options, but the danger is that once a project gets too broad, it starts to lack focus, and the chances of successfully completing it start to fall. Keeping it relatively simple means fewer things to go wrong, and keeps the project contained so it doesn’t start encroaching on your clinical time. As a rule of thumb, expect that anything you aim to do will take ~30% longer to complete than you initially expect.

**Audit or research:**

*Audit:*

* *compares what is done with a standard of what should be done. This could be an official policy or guideline, or a level suggested by the evidence base. Good audits don’t just describe what is happening; they try to explain why this is the case and identify changes that could improve performance. The ultimate aim is to make the relevant changes and re-audit after a period of time to see if the standard is now met (known as ‘closing the audit cycle’).*

*Research:*

* *Tries to answer a question. The questions can be nebulous: ‘how can we make the world a better place?’ or precise ‘is cleaning pin-track sites with methylated spirit associated with fewer infections than cleaning them with saline?’ For the purposes of elective projects, we recommend the latter.*

*Both audits and research can be done retrospectively or prospectively, in real time. In practice, retrospective work is probably more feasible for an elective project, because of the limited time and getting adequate sample sizes.*

**Ethics:**

Most countries require ethical approval for research involving human subjects, although in some places ethics committees are only concerned with clinical trials or invasive procedures. Ethics can take months, so unless you plan to join an on-going project with ethical approval you need to be organised well in advance. Evidence that ethics has been granted, or at least applied for, is often needed at the funding stage and journals will not accept articles without demonstration of appropriate ethical approval. Audits may not need formal ethics approval, but you should check with the local and national guidelines in the country you’ll be in.

**Funding:**

Various grants and bursaries are available to fund students doing a project on their elective. These include the Wellcome Trust, as well as those available through the various Royal Colleges and other organisations. To maximise your chances of success when applying for these awards, see the document on funding, but also:

* Be specific about your method, and use correct terminology. ‘A retrospective case-note review’ sounds much more convincing that ‘looking back at people’s records’.
* Having said that, don’t make your language impenetrable in a bid to impress. The people reading your report may not be experts in the relevant field, and you will probably not endear yourself to them by confusing them.

**While you’re there:**

* Try to set aside specific time to work on data collection or analysis; it’s easy to procrastinate, or just forget about it in all the other excitements of elective, and no-one really wants to spend the last week shut in a dark cupboard with a spreadsheet.
* Be mindful of data protection issues, and the need to anonymise, especially if you are working on potentially sensitive subjects like HIV or obstetric outcomes.
* Most people you will meet on elective will be interested and supportive, and this applies to projects as much as anything else. Occasionally, however, people may not be as enthused as you are. Sometimes people don’t see a benefit to doing anything over and above the routine demands of their job, especially if they are worked hard and poorly paid. Equally, people may be suspicious that your work will highlight weaknesses of their service, and worried about the implications of this. Bear these things in mind when you talk to people about your project, and be prepared to explain what you are trying to do without being patronising.

The reality of academic medicine is that very few undertakings go completely smoothly. This applies whether you’ve killed your cells at Harvard or your African clinic has inexplicably lost all the records you were hoping to audit.

If this happens, it’s important not to panic, or lapse into despondency. Projects rarely go without a hitch. (As someone cheerfully e-mailed me, “Welcome to the real world!”)

* Try to have a contact back home – for example, an interested consultant or research fellow - who might be prepared to give you even small pieces of advice via e-mail if needed
* Collect as much data as you can. You may not be able to meet your original objectives, but it’s often possible to do something useful with an incomplete dataset, and you may be able to sort this out more easily back at home.
* Back it up!!! We can’t emphasise this enough. If possible, back things up electronically –uploading to gmail or a similar site is useful, as is a USB stick. If you won’t have computer access, consider photocopies, or taking carbon paper and posting the copies to yourself.

**Writing up:**

Try to keep brief notes or journal entries during your time away. If you can store these electronically, cutting and pasting later can save you a lot of time at the end. If possible, get written permission from patients and colleagues when you take photos that you might want to use in reports or publications.

If you need to provide several reports in different formats, it can be useful to start by creating one long “master” report that you can then edit and save into the appropriate layout and style for each audience.

Bad statistics can ruin a good piece of work – if necessary, get help from an expert. You might be able to get support on this through your university and if they don’t have a formal system, you could approach the Maths department to see if they have students who might be willing to collaborate with you.

If people have helped you with organising your project, or given you funding include an acknowledgement in your write-ups. Make sure the appropriate people get their names on any papers published, including those from your host placement. Not only is this polite (and required for some funding bodies) but it might help the next person to approach them for help.

Some awards are available for elective reports (e.g. from the London School of Tropical Hygiene).