

Applying for Research Electives

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Peer Editor

Undertaking a summer research elective is a great way to assess whether academic research is something you would be interested in incorporating into your future training or career. It can also add something different to your CV when applying for more academically oriented specialisation training programmes. Despite this, very few people take advantage of the opportunities available to them and many that are interested in summer research simply don't know where to start looking.

This article will give a brief overview of where to start when considering a research elective, followed by first-hand accounts from students who have previously completed research electives.

Further **student perspectives** and detailed information on the **major research funding programmes** can be found at our website: www.tsmj.ie/features/research-electives/.

Identifying Opportunities

Broadly speaking, when planning a research elective you should consider the research group, the location as well as funding. Where you start should be dictated by the relative importance of these factors to you.

If there's a really specific area you want to work in, you're effectively governed by where groups working in that area are located. If you aren't already aware of them, Google search will usually identify places pretty quickly, as will researching the principal investigators (PIs) of publications written in the field. It's important though, to look at the group's publication lists to see if it is actually in line with your interests. However, if you really want/need to be somewhere specific then look at the relevant university's research page and try to find groups you're interested in at that institution. Prioritising location above all else

is a dangerous approach though, as you're far more likely to end up with a topic that you aren't interested in. Then again it is still your summer, so whether you're happier in southern California doing work you hate or in northern Sweden doing something you love is a personal choice.

Funding is probably the single largest limiting factor in terms of organising a research elective. You probably shouldn't work for free - it's not very good for your bank account and knowing you're at least being paid makes it more bearable when an experiment goes on for way too long. There are a number of major undergraduate research programmes, and many of these have restrictions on where you can take the money - also an important consideration. If funding is a major concern for you, it may be worth limiting your search to groups you know you will be eligible for funding programmes with. Outside of these programmes, it is also important to investigate whether your university/department offers funding to students interested in research, or to simply ask a PI you have contacted about a project for assistance in securing funding.

Once you have identified research groups, the next major step is getting in contact with them. PIs in major institutions receive a large number of unsolicited emails every day and some simply can't take summer students regardless of how well worded your email is. So, if you want a response it is best to keep it short and to the point - briefly explain who you are and why you want to work with them and attach a more detailed CV and cover letter in case they are interested. This demonstrates respect for the PI's limited time and any principal investigators that can potentially accommodate you will respond to iron out the details.

Preparing Funding Applications

If you are planning to apply for funding from one of the scholarship programmes, it is important to make careful note of their deadlines. Outline this to all potential PIs as soon as you have confirmation that they can take on students - because you will need adequate time in advance of application deadlines, many of which are in early February, to develop a project proposal with your PI.

In addition, you will need letters of recommendation for many applications, and it is important to ensure that your referees have enough time to write and submit their letters in advance of any deadlines. Asking someone to write and submit a letter of recommendation by the end of the day is unlikely to result in a very favourable response. In terms of who to ask, this will depend on your previous experience - someone who has previously supervised you directly in an academic setting, such as a supervisor for a previous project, is ideal.

It's worth putting some serious time into your personal statements - many of the undergraduate funding programmes are very competitive, so it's important that you very clearly outline why you're applying and how this opportunity would benefit you - i.e. make it clear how this research elective fits into your overall career plan.

Given the time it takes to properly prepare an application and the early funding deadlines, it's necessary to start planning very early in the academic year if you want to be eligible for one of the funding opportunities. Generally speaking, it's never too early to register your interest with a potential research group.

Other Funding Sources

There are a numerous other funding sources for undergraduate research outside of the major programmes. In the event that there is a specific lab you want to work with which is not eligible for one of those sources, or if you were unsuccessful in getting funding from them, it is important to consider whether getting funding either from your university is possible or whether the PI of the lab can organise funding.

Many universities have specific funds for aiding students interested in research. For example, the Trinity College School of Medicine offer the Henry Cooke Drury Student Research Fellowship, which students organising a research project can apply for by submitting a project proposal and a rough breakdown of the amount required. Funds such as these offer flexibility in terms of where the project is carried out and many have significantly later application deadlines (the Henry Cooke Drury Student Research Fellowship applications close in mid to late April). This offers additional time to develop a project proposal for students deciding late in the year to carry out a research elective.

Finally, if it is not possible to acquire funding through any of the sources mentioned above, it is worth asking the PI you are planning to work with for assistance - they will likely be aware of where any previous students have acquired funding, and in some cases may even be able to acquire funding for your project through one of their own sources.

Research Electives: Personal Perspectives

Ralph Hurley O'Dwyer

- Henry Cooke Drury Student Research Fellowship

In summer 2014, I spent three months undertaking research in the field of neurogastroenterology at the Mayo Clinic in Rochester, Minnesota. As I am very interested in the links between the gut and the nervous system - particularly considering the high prevalence of disorders such as IBS and their poor management clinically - in October of 3rd year, I decided to try organise a research elective in the area. Having read about the neurogastroenterology research centre at the Mayo Clinic, I chanced my arm and sent an email to Dr. Michael Camilleri, head of the department and current President of the American Gastroenterological Association, expressing my interest in his research. To my surprise, Dr. Camilleri replied and arranged for me to go and spend the summer working for him.

Undertaking research at the Mayo Clinic was an incredible opportunity. I was immensely lucky to receive outstanding support and encouragement from Dr. Camilleri, Dr. Acosta, my other supervisor, as well as the other staff. Working there gave me an insight into clinical research and its direct impact for the benefit of patients when I was given the opportunity to attend Dr. Camilleri's consultations. It was amazing to see Dr. Camilleri implement his own research and discoveries to better treat his patients,

many of whom had suffered for decades from their symptoms. I also saw what is involved in clinical trials and I witnessed the development of ideas - once exchanged at lunchtime - into studies and journal articles.

I was well supported throughout my stay in Rochester and even managed to publish a paper on adult megacolon with my supervisors shortly afterwards. I managed to present the research at Digestive Disease Week in Washington DC in May 2015.

It is important to state that I never would have been able to undertake this elective without financial support from Trinity College Dublin in the form of the Henry Cooke Drury Research Fellowship. I'm very grateful for the chance this fund gave me and would highly encourage anybody interested in research to apply.

Undertaking this elective has been of huge benefit and has opened up many doors, most of which I never knew even existed. My advice to those interested in research would be to chance your arm and to write to people whose research you are truly fascinated by. Quite often, you will be unlucky. But if you persist and show your interest, you never know where it might lead to!

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Conor Keogh - Amgen Scholars, Europe

I spent a significant portion of my summer working in the Institute for Biomedical Engineering, ETH Zurich, Switzerland. I decided early in third year that I wanted to do a research elective, largely because I have an interest in research and wanted to get some experience to evaluate whether or not the realities of academic work were something I was actually willing to deal with long-term.

I started out by wasting time with unfocused searching for opportunities I might be interested in; eventually, however, I became efficient at finding labs in my field of interest, and from there I started sending unsolicited emails to principal investigators, which included a short statement outlining who I was (medical student interested in research), what I hoped for (to work with their group) and why, along with a CV and more detailed cover letter attached in case they didn't just instantly delete my email. I was actually met with a surprising amount of positivity, with most of the initial people I contacted replying to me - generally with positive responses. That said, I'm still pretty convinced no one ever actually looked at my CV and cover letter.

The next step was trying to secure funding so I could actually afford to leave Dublin. I had initially limited my search to the UK and Ireland, intending to apply for a Wellcome Trust summer scholarship, but through a search for other options I came across the Amgen Scholars programme, which I ended up applying to after some "logistical restructuring" (budget cuts) resulted in the project team I had initially committed to no longer being able to

supervise students. After quickly going through all the labs in the host institutions, I pretty rapidly found one that was very well aligned with my interests, and applied directly to that lab. I was fortunate enough to be accepted, and ended up spending quite a bit of time there.

Going over, I very much expected the experience to be grim, spending most of the day working in a lab with little to no social contact. This was not the case. I got on very well with my lab, and since the Amgen Scholars programme is cohort-based (i.e. there was a group of us working in Zurich at the same time), I consistently had people to be a tourist with. The Amgen Foundation puts a strong emphasis on the social side of the programme, as it is good for their public image, so we had funding to go on numerous trips on the weekends, etc. and to see more of Switzerland than the inside of its technical institutes.

In the end, I was very glad I went ahead with a research elective. I got everything I had hoped to get out of it academically, as I experienced hands-on research in a world-leading institution in an area I'm interested in, while also living in a great city and actually having the time and money to enjoy myself. I'll openly admit that going in I was hesitant to give over my summer to research when I could have been on a beach in Thailand, but, I definitely don't regret it.

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