



ISER Young Investigator Blog

How to build a rewarding postdoctoral career?



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Before further writing about this topic, I do want to clarify the definition of postdoctoral (postdoc) career in this article. Postdoctoral researchers have different definitions in different countries. For example, in Australia, postdoctoral researchers (postdocs) are not only trainees, but can apply for funding on their own. In this article, I refer to a postdoctoral career as the period before researchers form their own research and have their own funding.

Having only 3 first author publications when granted my PhD, none in journals that I believed would awe people, like Nature, Science or Cell, I quickly realised that I was perceptively “average” and not competitive for any national fellowships designed for postdocs. After 2 years of not successfully getting any major grant, my salary became a problem. I questioned myself, as a good employee and a hard-working researcher, “why am I about to lose my job”? It took me time to realise I was in an industry that rewarded highly significant and impactful research. The scientific industry values innovation and creativity - hardworking is simply the foundation. I made 4 key changes, and once changes were implemented, I enjoyed being a postdoc, and have attracted major competitive grants, co-founded a company and gained independence.

Following are the changes I instilled. Think of your supervisor as your first funding agent, not your employer. The difference of this mindset is that if you are an employee, you are working for someone. If you think your supervisor is your investor, you are working for yourself. When I changed into this mindset, I immediately had a sense of independence and ownership. I felt I needed to drive the project and be the expert, because investors are only expected to provide funding support, right? How to drive a project? My suggestion is asking yourself two questions: do you think the project you are assigned to is exciting and interesting, and can you see the project has any impact (providing solid and concrete new knowledge, changing society etc) in 3-5 years' time? If you answer no to either question, you should discuss this openly with your supervisors. Remember they are your investors; you need to make sure they are not wasting their money. You also need to talk to them with some answers. If the project is not exciting to you, decide whether you can develop a unique branch related to the project that incites greater excitement to yourself. If the project is not impactful, determine whether you can modify it to be more impactful. Present your thoughts to your supervisors and hear their perspectives. The outcome of this meeting will be critical to your future career, as it will set you into the project that both excites you and of which you have ownership. Disagreement occurs but I recommend you try best to understand the disagreement and to create a win-win situation. As your supervisor is your first funding agent and an expert in the field, if you cannot persuade them, how do you expect to find support from others in the community? Of course, if you have tried all you can and are still unable to reach any agreement with your supervisor, it is then perhaps time to seek a new position. If you don't need to change your mindset and be able to find your path at the early stage of your postdoc, that is great. In my case, when I thought of my supervisor as my employer, I was not able to initiate and challenge the existing project that I was assigned to.

The second change that elevated my career was to share ideas and work with people you are comfortable with. After going through the first change and developing my new project directions, I needed help outside the team. There was no required skill set in our team, and as a new staff member and an early career researcher, I did not know many researchers. I started conversing with colleagues in my institute. I shared my ideas, asked if they have the required skills, and if not, who may possess them? To my surprise, most people I chatted with were happy to help and through these chats I expanded my network within the institute and beyond. I found my journal article collaborators through this process. Additionally, I knew who I could work with and who I could not. By openly sharing my ideas, people were open to discuss with me about their ideas. This networking process laid the foundation for me to start multiple projects later.

The third change was to think outside paper publication. The current research environment recognises not just papers, but patents, databases, research tools and perhaps much more. My new directions offered opportunities to generate patents, which was completely different to paper publication. To generate patents, it requires submitting provisional patent applications when you have data to prove your idea works or generate a prototype; then you have one year to provide additional data. In brief, it is important to file a patent application to lodge it as early as possible, and the data cannot be published in a paper. When you generate findings, think whether it is only for papers? Can it be used to generate a patent, a research tool, or a policy? These diverse outputs can open your future career and funding options. Your patent can attract industry funding, your research tool can be a potential

revenue source and can provide you training or teaching opportunities. Together, they can help you attract funding to buy more time to generate high quality paper publications.

The final change is to allocate your time wisely between research and grant writing. Do you need to spend time to write a grant that you knew that you would not achieve? For a big grant application with multiple attempts, try one attempt early even if you are not ready. The reason is that you need to get early feedback and learn how to write large grants from the experience. However, do not continue trying in futility, your second attempt should be when you believe you have a chance. Do you try to write all the grants that you and your supervisor know about? I have tried and then concluded that I cannot do it. I do not have time to write so many grants while generating quality research. My strategy is to focus on research for 1 year to generate high quality data with value for grants, and then focus on writing grants for the next year.

When you begin your postdoc career, implement the four changes: rethink your role and project you are assigned, be open with your ideas during networking, think about your research output in diverse ways and be wise on spending time researching and grant writing. Through these four changes, I enjoy my research, meet amazing people through networking and making researcher friends who support me through my career. I also found that I now have many career options compared to when I started my postdoc. As all research is different, all postdocs are different. I hope through sharing my experiences and tips, I can help early researchers and subjectively “average” PhD graduates like myself to build a rewarding career as early, rapidly, and effectively with as much great joy as possible.