

AGAINST THE GRAIN - CLINICAL RESEARCH AND THE BUSINESS OF SCIENCE

Perhaps the biggest decision facing a PhD student is whether or not to pursue a career in academia after finishing their studies. As we have previously touched on in SDS Page, there are a variety of exciting career options other than the traditional path towards becoming an independent researcher. However, if you have not had exposure to these positions it can be difficult to decide if they are for you. Here we have sought insights from two scientists who have chosen 'alternate' post PhD career paths and asked them to share how they achieved their job roles and current success.

Dr Donia Moujalled completed her PhD with Professor David Vaux at La Trobe University and the Walter and Eliza Hall Institute and is currently employed as a postdoctoral researcher with Dr Andrew Wei at the Australian Centre for Blood Diseases (ACBD) and Leukaemia Research Group, Department of Haematology, The Alfred hospital in Melbourne. In her current role, Donia works in a clinical setting at the forefront of novel therapeutics discovery and clinical trials for the treatment of acute myeloid leukaemia (AML).



What made you choose to do a PhD?

The decision to do a PhD came from a strong interest during my undergraduate studies in cancer biology, particularly related to signalling pathways and their deregulation in cancer development. There were several lectures given by Professor David Vaux, who is a world leader in apoptosis research, having made the discovery that the gene causing human follicular lymphoma acts by blocking the central apoptosis pathway. I approached Professor Vaux and was offered a PhD position in his lab examining the role of inhibitor of apoptosis proteins (IAPs) using novel IAP antagonist compounds.

What skills did you gain during your PhD and are these useful in your current position?

During my PhD, not only did I gain the knowledge and technical skills to do the research, but I also gained valuable skills such as critical thinking, problem solving, project management, organisational and communication skills, writing and leadership skills. These skills are all useful in my current position as a postdoctoral researcher in a clinical setting, where I also write grants and fellowship applications, give oral presentations at conferences and drive my own research project, working in an autonomous manner and as a team member.

What are the key differences between working in an academic and a clinical setting?

Working in a clinical setting has exposed me to the translational aspect of research. My project is primarily focused on developing a drug screen to identify novel therapeutics in order to develop targeted therapies for patients with AML and to find an alternative treatment to chemotherapy. As such, I have access to freshly purified bone marrow samples derived from patients with AML, which makes my research position very unique. I have opportunities to collaborate with clinicians, and rapidly translating new discoveries into improved therapeutic treatments for AML patients is a key focus. Having contact with clinicians has also allowed me to network with pharmaceutical companies that have innovative targeted therapeutics that I'm able to test preclinically on AML patient samples and also on preclinical mouse models of AML.

What is the most rewarding aspect of your job?

The opportunity to work on something novel and innovative with the potential to discover something new is rewarding. Also, having the opportunity to learn something new, and do something different and interesting almost every day.

What has been a highlight in your research career?

Besides being able to publish a number of first author manuscripts, my highlight would have to be receiving the Cure Cancer Australia Foundation Young Investigator Research Grant. Being able to secure funding for my project was a significant achievement for me as an early career researcher.

What advice could you give someone looking to follow a similar career?

My advice would be to choose a research field that excites you. Keep your options open by talking to your PhD supervisor and postdocs in the lab. It is important to network, whether it is at your institute or a conference. In short, be proactive!

Dr Michael Baker completed his PhD with Professor Michael Ryan at La Trobe University before accepting postdoctoral positions with Professor Thomas Langer at the Institute of Genetics at the University of Cologne, Germany, and then with Dr Diana Stojanovski at Bio21 in Melbourne. Additionally, Michael has worked as a research guest with Dr Jacqui Gulbis at the Walter and Eliza Hall Institute. Following commencement of his Master of Business Administration, Michael obtained his current position as the project manager for the human nail antifungal project at Hexima Ltd in Bundoora, Melbourne.



What made you decide to do a PhD in the first place?

I absolutely adored the year that I spent in the lab during my Honours year. Having the opportunity to work in the lab and be in control of driving a project really gave me a taste for bona fide research. I enjoyed the research so much that I would come in on weekends and work late. It was one of the most difficult, yet rewarding years of my life. Given how much fun I had, it felt only natural to continue with research.

What skills did you gain during your PhD and are these useful in your current position?

The most important part was that I gained self-belief. As time went by, I developed more and more confidence. The first time I stood up to give a talk in front of the Biochemistry Department at La Trobe University, I felt so nervous that I almost did not know how to contain it. By the time I had finished my PhD, I could calmly (somewhat) get up in front of more than 100 people and discuss the latest findings from the world of mitochondria. In my opinion, the most important skills obtained from a PhD are problem solving, critical thinking, public speaking, written communication and collaboration. Next time you look up a job on Seek, I almost guarantee that all of these skills are required for the job being advertised. I used to think that what I had learned during my PhD was very specific and not transferrable, now I realise that as PhD candidates, we are trained to excel in any position that we choose to work in.

What factors contributed to your career choice and how did you achieve your current job?

During my postdoc in Germany, I noticed the booming biotechnology sector and this got me thinking about what drives a business to success or failure. I recall an outstanding seminar series that I attended where scientists discussed their transition out of academia, and I began to gain momentum about how to pursue such options. When I returned from Germany, I sought advice from Professor Marilyn Anderson (La Trobe University and Executive Director of Hexima Ltd) on how to initiate the transition into business. The outcome of the discussion was pretty clear, embark upon a Master of Business Administration (MBA). During the MBA, I maintained contact with Marilyn and Nicole van der Weerden and at the end of 2014, I was offered a position as Project Manager of the Human Antifungal Project at Hexima Ltd.

In business, what are the advantages of having a PhD? Has an MBA complemented the skills you learnt during your PhD?

In business, just like science, there are hypotheses about what will work and what will not. The mind of a PhD graduate is already geared to analytical problem solving, which is incredibly useful in the business world. The skills that I have obtained during my MBA are very different from what I learned as a research scientist and I have thoroughly enjoyed the new quest thus far. I have found that applying the frameworks learned during a PhD to new domains of knowledge acquired during an MBA provides a really valuable and often unique way to solving business problems.

What were the challenges you faced when transitioning to business?

The major challenges so far have been acquiring the skills necessary to kickstart the process. Naturally, the MBA has been paramount for this to happen. My wife, Dr Diana Stojanovski, has her own research group at Bio21 and we recently had our first child. Balancing full time work, part time study and a family has been hard and sacrifices have been made. Without the support of Diana, however, this would have been infinitely more difficult.

What is the most rewarding aspect of your job?

The most rewarding aspect of my job is definitely being part of a unified team. As a research scientist I found that that even though we were all part of one group, people were often competing for their own personal success rather than contributing to a common goal. At Hexima Ltd, it is great to be a part of a team where everyone appreciates that if we succeed as a unit, we all succeed. Sharing success with those around you is far more rewarding than succeeding in isolation.

What advice could you give someone looking to follow a similar career?

The advice that I would give to people looking to follow in a similar career path is probably the same that I would advise someone staying in research.

Decide what you like doing and go for it. It is the age-old cliché, if you love your job, you will never work a day in your life. Now I would not go that far but I genuinely believe that if you enjoy what you are doing, your motivation to get up and attack the day will be a lot higher. Remember that if you have a PhD, you probably have a lot of options and certainly a lot to offer so do not sell yourself short.

Network! I believe networking is about creating your own brand image, what you stand for. This means that whatever you are doing, people should be very clear about your talents and what *you* have to offer. You will then stand out and be the one that is called upon. That means that networking is hard and it is something that you should be doing day to day, not just when you want something.

Work hard, believe in your abilities and never fear failure. The first part almost goes without saying. If you are not 100% committed to what you are doing, you almost guarantee you will not get what you want. The second aspect is really important. I often did not apply for an opportunity because I lacked confidence. This is a surefire way to ensure you do not achieve your goals. Instead, you must believe in what you have learned and your abilities. To paraphrase former CEO of Westpac, Gail Kelly, "Be prepared to back yourself, be prepared to have a go."

Would you have done anything differently knowing what you know now?

It is difficult to say if I would have done anything different. I am an optimist and I feel really happy with where I currently am. That being the case, it is easy to say that everything that I have gone through, good or bad, has led me to this point. The first three years of my postdoc were gruelling and a lot of things did not work. Nevertheless, I persisted and it was during this phase that I became resilient and really developed as a person. This phase also allowed me to understand how to manage personalities, a skill that is incredibly useful at any stage of a career. No matter how dire it may seem, there are always lessons to be learned and positives to carry forward.

This is the last issue of SDS Page to be coordinated by Aaron McGrath and Catherine Palmer. Many thanks to Aaron and Catherine for their outstanding work.

