

## Destination PhD... via the Scenic Route

Ananthi Ramachandran, Dept of Infection, Immunity & Inflammation, University of Leicester.

Hi everyone. I've been asked to speak to you all today I'm currently a PhD student but, as I've put in my title, my route was rather a long way around. I've kept the science content of the presentation to a minimum. I want instead to focus on my feelings and thinking along the way, which some of you may relate to.

First of all about me. I'm Ananthi. I've got a 2:1 in Biological Sciences, which I did here at Leicester, and I'm currently a first year PhD student. My project is on the interactions between bacteriophages, epithelial cells and *Clostridium difficile*.

So, how did I get from doing my undergrad to doing my PhD? I actually graduated back in 2009. I'll be honest with you, studying wasn't my forte - I had to work really, really hard to get my 2:1. How I did so is still a mystery, I think I must have had some Freaky Friday moment and someone did my exams for me! When I graduated that was it - I wasn't coming back to Uni, I'd had enough. My eyes were set on the world of work, so I started applying. I actually got lucky, I put my CV into an online recruitment library and somebody called me straight away, so I started my first job in September 2009.

The company I was working for was MSD Animal Health. So unlike Aaron [Muringani, who spoke on the same day about [working for a small company in the pharmaceutical sector](#)] I ended up being in one of the biggest Pharmaceutical companies in the world. The human side is actually based in America, the animal side is based in the UK. They make veterinary vaccines for both farm animals and domesticated pets.

My first role was Scientific Officer. I was covering someone's maternity leave and I was based in the R&D Department. I had an interesting project as part of the *Campylobacter* team; our role was to reduce the amount of *Campylobacter* within chickens. People frequently fail to cook chickens properly, so our work was to help reduce the risk of food poisoning. This was a great job. I was able to consolidate a lot of the practical skills I'd learnt within lab classes at the Uni. I was part of a great team with good friends and, to top it off, it was in my home town, so I was living at home; own bed, mum cooking for me. Sorted.

Maternity cover only lasts one year and I was aware of this; I knew it was on a temporary contract. So, I started job hunting within about six months of being in that position. However, I was unsuccessful. On reflection I think that my written CV at that point wasn't great; I wasn't promoting the skills that I had particularly well. Luckily two more positions opened up in the same company where I was already working. One was in the same department, the other was in a new department called BTS (I'll explain a bit more about that in a moment).

I decided to go for the new role. If I had stayed in the same department I would have been doing the same job, so not really any progression. I thought with this new job it was more likely that I would be promoted, I'll get more skills under my belt and I'd be able to top up my CV. After a year,

December 2010, I did get a small promotion, although – I’m not going to lie – it was little more than a job title change, so I moved departments. It wasn’t maternity cover, but it was still a temporary contract although they said to me that the chances of my becoming permanent would be quite high and that’s what I was after at that point.

So, BTS stands for BioTechnology and Support; it was a production support and troubleshooting department. We were known as the firefighters of the company; when production had a problem, such as if vaccine yield had reduced for whatever reason, they’d ring us up and they’d be like “quick help, sort us out otherwise we’re going to lose our bonus!”. That’s an incentive you need, as soon as a bonus is mentioned you start running.

Obviously problems didn’t always happen so we had other projects linked with our department and other departments such as QC, R&D and production. My allocated project was the development of cell line tests to replace the use of mice in QC testing. I’m sure you are all aware animals are involved with science - it is how it is - but I did like this project because it was trying to replace the use of animals which was nice. This involved developing, optimising and validating cell line assays for Clostridial toxins, training and managing a cell culture team and then transferring the methods to the QC department. After a year I was made permanent, so I achieved my initial goal.

However, at home my family were challenging me to think about my long term plans; would I really get more opportunities for promotion within the same company? They were encouraging me to job hunt, change jobs, get further qualifications. Going back to Uni was mentioned again - no thank you, I don’t want further courses.

Obviously I had an answer for everything. I was happy doing lab work, I really enjoyed it and I was happy to carry on with that. As for being in the same company and getting any more opportunities, I did have to be realistic about that. Career progression was going to be unlikely unless others above me left. That didn’t look likely in the foreseeable future, so I started to thinking about my other options. At that point, I only considered doing a Masters and I couldn’t afford it. CV-wise a couple of years within the industry is probably the equivalent of a masters anyway, so I didn’t see much point.

As for additional courses, the ones I was looking at were distance learning or OU or things like that. I didn’t feel that I was motivated enough to do that, I’m more of a hands-on person. So, I decided to start job hunting and go down that route again. Overall I had applied for between 100 and 200 jobs. I received many rejections and the few interviews that I did have also led to rejections. Meanwhile at work I was being given more responsibility but without additional recognition, and I was starting to feel more demotivated. I was also seeing that the people who were coming into the company and my department had higher qualifications like a Masters or a PhD. They were getting the opportunities that didn’t seem open to me. That’s when I did start seriously thinking about what I should do.

I was at a crossroads at that point, I genuinely didn’t know what to do. Fortunately, an opportunity came by. My team leader and the boss above her at the company were great people. They suggested I should do a PhD. My first reaction was to laugh. I thought they’d lost the plot, me - a

PhD, really? I thought I wasn't smart enough; I'd struggled with my undergrad so what chance did I have of succeeding with a PhD? I didn't think I had the right way of thinking scientifically. The people that I worked with seemed amazing. When they were talking about work they just came up with ideas and I was like "whoa, how'd you think of that? Like, really, where did that come from?" I just didn't think that I had it in me. However, my bosses were very supportive and they listened to everything that I had to say. They simplified the PhD a lot. So, they literally broke it down and sat me down and said "Ananthi, what are you doing on a day to day basis? You're doing experiments, you're seeing the results, analysing the data. Then from the result you get, you're seeing what changes you can make, what can you do to make it better; you're optimising, you're developing. Well that's a PhD". So, that gave me an idea and they suggested that I could do it through work, which I thought would be a brilliant opportunity. However, doing it that way would be six years, part time. Six years is a long time but this was an opportunity they were prepared to give me, and they kept stressing that I can do it. So that was it, I was going to do a PhD, it's not beyond me. But did I really want to spend six years on a PhD at the same company that? That was what I was thinking of at that point.

So, my mind was now set - I was going to do a PhD, but not at MSD. I felt that they didn't have a close link with any university. As a result they might not have the support structure and experience to see me through the process, and what incentive did they have for me to succeed given that I was already working for them? I made the decision that I was going to do a PhD, but not at MSD, I was going to do it elsewhere. I'd made that decision, but before I'd even said it out loud to anyone at work, my main boss - the guy who'd been really supportive - was made redundant. For me that was just a sign that I'd made the right decision. So, I stopped the job hunting and the PhD hunting began. I applied for a few in London because they were commutable from home, and also Leicester.

PhD applications are tough, they're as hard or harder than applying for a job, it's quite competitive. Because I did my undergrad degree in Leicester, I emailed a few people here, exploiting the contacts that I had. I didn't do a fantastic amount of background reading, it wasn't much more sophisticated than "Hi you used to teach me, do you remember me? I was one of the 300 hundred people that sat in front of you every day". But I got a lucky break and I came back to Leicester in October 2013 to study the pathogenesis of *Acanthamoeba* keratitis.

Now for those of you who are paying attention you may have noticed a couple of things there. I joined the Dept in October 2013, so why at the beginning did I say that I'm a first year student working on *Clostridium difficile*, not *Acanthamoeba*. What happened?

Well, it turned out after joining that I was the first PhD student in that particular lab and I was literally thrown in the deep end; I was expected to learn everything myself. Luckily my work experience helped. My supervisor was around, but he wasn't very proactive in helping. More students joined after a few months and in the end there were eight in total, with me being the most senior student and I use the word "senior" student loosely! The blind leading the blind is probably more accurate. I did my best, and I could see that the other students were relying on me, but there's only so much a student can teach within their first year when they're still learning themselves.

The projects we had been assigned in the lab overlapped a lot and there were no distinctive aims and objectives. So, at the end of last year the decision was made by the department to give all of us new projects and supervisors. This meant starting from scratch.

This might put you off doing a PhD but I really want to stress at this point, this is rare. This is unusual circumstances and the University went all out to help me get a new project. This time around "I thought supervisors aren't going to have the opportunity to work with me, I'm going to pick them. I'm going to see what everyone's working on and I'm going to speak to them individually." I put my preferences forward and I got the project I picked. I think that's a really important thing with choosing a PhD, which I didn't do carefully enough first time around. You've got to like what you're working on and you can't *truly* like something unless you pick it yourself.

So, what else have I've learnt from my experience? Firstly, it's never too late to do a PhD. I can't stress this enough. You can study at any age; my dad was 48 when he graduated, so there's no deadline.

Secondly, if you're going to do a PhD through work I think it's very important to ensure that there is a support network there and pick a subject that you're going to enjoy working on because there's a hell of a lot of reading and you're going to be doing the same thing day in day out 24/7 for three to four years, so you're going to have to like it.

Thirdly, find out what techniques you will learn throughout your PhD. Are they transferable skills? Are they new? Are they up and coming? That will also help your figure out what job you may want to go into in the future.

Fourthly, and I don't think anyone's mentioned this so far today, but if you are going to go for a PhD don't only speak to your potential supervisor, you should also find out who's in your lab, who will be in your lab if you choose to go there. So, currently in my new lab I've got two Postdocs and a huge array of PhD students that are ranging from writing up to having been in the lab for about four months and they're all there to help you. My current supervisor, she's brilliant, but she's often away, so you can't always rely on your supervisor directly to help you, you need other people. I think that is definitely a key thing.

Any questions?

*Q: You said your first job was offered to you, you didn't have to apply for it. What was the CV library?*

A: CV library is literally, you put your CV online and then recruitment agencies will look at it. It's like a huge database of CVs. They type in key words.

Christopher Willmott: It's firms like Monster.com. They have online stores of CVs, so you can put your details there. If you came to any of the talks last year, one of the guys ended up working in the food industry after he put his CV into one of these databases and people were ringing him up. So it is possible even now for that to happen.

Chris Willmott: You've stressed the importance; well in fact both you and Dan have talked about the importance of the supervisor relationships. I wanted to just reiterate that point you were

making about getting to chat with other people in the team. Dan [Rogerson] was talking about finding out what the external reputation of that group is, but going hand in hand if you get a chance to talk to people who are actually working within a particular research group that is important, because you can have someone who is a research superstar, but they're just not a very good people person. I've known students who have gone on to do a PhD, I can think immediately of one who went to a prestigious lab in London, and they got literally two hours of personal contact with their supervisor in the first year that they were there. That's no way to run a relationship, so they left there and went somewhere else.

*Q: In terms of the applying for a PhD, what time of year should you be looking into that?*

A: I started looking in January and I got my offer in March.

Dr Christopher Willmott: As Dan was saying it does vary from place to place and in fact some places come on stream later on, so if you think you've missed an opportunity don't necessarily worry about it. If someone's interested in doing research and they think well actually I'm not sure I can commit to three years, that's one the motivations for some people to do a Masters. You don't currently need a Masters to get into a PhD in the UK if you've got a 2:1 or higher, but sometimes it's an opportunity to just test the waters to see if I would like to do a six month research project, because if you do six months and you don't like that, then doing three years probably isn't going to be any better.