

## Talking about the future: Your career and mine

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I am Hayley and I am currently working at the Institute for Environment Health Risk and Futures, so like to cram it all in there that we do everything. That's at Cranfield University and my role is split at the minute. The main part of my job is talking about science and the other part is helping people to prepare for the future. Currently, we are doing a lot of work with the UK government trying to help them to prepare for emerging risks. So, we have seen a lot of flooding that is happening at the moment and that is something that we are very involved with UK government.

When I was invited to do this talk I had a little think about what I really wanted to get across and the messages that I thought it would be good for you to know.

Number one is that your University of Leicester degree is awesome. It is great, it has given me so many skills that I have taken forward into my job now. Even though it doesn't seem like I am in the same sort of area, there are still lots of things that have been transferred across.

Know your skills and know what you love, I am going to talk about that and it will make more sense later. And, a very cheesy, believe in yourself.

Before we get into it I just wanted to do a quick shout out. I was going to make this a lot more interactive but we are being recorded so I will just do this one bit. I want you all to tell me when you were little what did you want to be when you grew up. If you could shout it out after three this would really help this presentation.

Wow, ok. There are loads of things that I heard; I will take entomologist, so someone is perhaps on the right lines. I've got a confession to make, when I was little I wanted to be a Lollipop lady. My career has changed a lot, and I now no longer strive to help small children cross the road. I wanted to talk to you

about how I have gone from Lollipop lady to what I am now, which is a Knowledge Exchange Manager at the Institute for Environment Health Risk and Futures.

When I started at school I was completely undecided and I did biology, design and business. I had no idea. At the time this is what I considered my career options to be, a Midwife, Alan Sugar's next Apprentice, a Biologist, a Professional Fighter – I was a black belt in karate and used to compete in England or, maybe, a Teacher, there was no logic to the options. At the time I thought surely it was going to be this, surely I will be rich, have my own company and I am going to be a CEO, but then I had a really inspiring biology teacher and I thought that's what I want to do. Basically, on his recommendation, I came here to do Physiology and Pharmacology which was a great experience.

As I was going through my degree I had all these things in my head. I loved the neuroscience elements of my degree, I thought maybe a Clinical Scientist, I thought maybe I will do something really bold, maybe I will find a cure for AIDS or cancer or something. You can see there is something and perhaps this side is the ambition side of my career tree and actually it didn't work out that way. When I was doing my dissertation I had a bit of a crisis of confidence I think. I thought maybe I'm not very detailed, I've dropped a lot of stuff, maybe I'm not a lab person, but also I like to talk, I love to talk about science and also I was sick of being poor and wanted to earn a lot of money and I thought sales that's the thing that I am going to do. I was pretty set on that but I didn't want to abandon my degree because it was hugely interesting for me, so I started investigating pharmaceutical sales. That was going well, but then I went into a graduate recruitment consultancy and explained my ambitions and said this is really what I want to do. They said well, actually, we want you we want you to come and be a graduate recruitment consultant. I thought that was really interesting so essentially instead of selling drugs I started selling graduates to companies.

In my time, I interviewed 300-400 people just like you who were interested in going into a scientific career. My job was to sit between a company and the graduate and try and figure out what they wanted and try and match people to the right jobs. On that note I would be more than happy to speak to anyone about my experiences there and give anyone advice that they would like at the end of this presentation. I loved this job, for a while. I think what I really liked was still using my scientific degree because I still had to query people about PCR and their research and what they were interested in. But, importantly, I was helping people and I was making a difference, and that was something brought up by the previous speaker as well. I think that was the thing that spurred me on really. Half way through that role the recession hit and there weren't a lot of people recruiting at the time so it became quite a difficult role and I started looking for other things. On the basis of some of the roles that I recruited for, I started looking to be a Knowledge

Transfer Partnership Manager. There are knowledge transfer partnership schemes and these are essentially jobs for graduates where you are employed by a company but you have an academic supervisor so they allow the graduate still to have the support of a university, still to be involved in a learning environment, but to be applying their skills in real-world roles. I had helped a few graduates get onto these schemes and they loved them, so if anyone wants to look at those I would really recommend them. People seem to get on really well and the benefit of that is that you get a Masters with these as well normally. Some of them last between 6 and 18 months, but they are really great and normally high profile roles within the organisation.

So as I was looking for jobs in this area. One came up as a Knowledge Exchange Manager at Cranfield University and I went for that. It is actually slightly different to what I thought, but in the interview I thought it actually gives me a lot more opportunity to use my scientific skills and a lot more opportunity to communicate about science as well. So, at the time, I was recruited into a centre called the Risk Centre. This was a brand new centre that was established at Cranfield and it was helping government to find ways to manage environmental risk better. So, the first big project that we had was with DEFRA, the Department for Environment, Food and Rural Affairs, who wanted to know what was most important and where they should be spending their money: Should it be on animal diseases? Should it be on flooding? Should it be on managing possible risks from nanotechnology? Should it be doing more work on genetically modified organisms? What was the big risk that they should be looking at? My role there was to help understand what that organisation wanted and how they were going to use the tools and information that we were going to give them so that the scientists could actually make sure that their research was being used at the end of the process. I will talk more about that in a moment.

The unit then evolved, we weren't just Environmental Risk but we became Environmental Risk and Futures. So, not only were we looking at the risks over the next six to twelve months, and what government should be spending their money on, but we then started to say what about in ten years' time? What is the future going to look like? What about fifty years' time? There are lots of elements of the environment that change very slowly and so we need to be able to manage the environment out into the future. And then my role got even bigger, and we started looking at even more area, so now I am not just in these two major projects, which is the risk area and the future area, but I now work across the university and across our department so I am helping on science projects in farming and in nutrient recover from waste and in ecosystem services. There are all sorts of things that are going on, but my job is to sit between the scientists who produce the research, the knowledge, and the end users who are going to use it.

How did my Leicester Biosciences degree get me here? I think it gave me a number of things, It really built my confidence in presenting, it's funny that is one of the greatest things that really stuck with me, but at school we really didn't do a lot of that and then I came here and we had the opportunity to talk about science and have debates and communicate our results in different ways and in papers. It also gave me lots of analytical skills that have been really important moving forward, so even though I am not actually doing much of the science myself now it is very important that I understand the science. I thought I would never use SPSS again, I was convinced of that, but actually I have and it has been really important.

So, just to give you a bit more background, what does a Knowledge Exchange Manager do? My friends are still convinced that this is a made up job title but I do have a job, it is a real one! My job is to plug into the research that is happening around the University, get to know the what the scientists are doing and then help to facilitate this exchange. So I help people to share scientific knowledge with people who need it. Over on one side it could be patients, or it could be members of the public, it could be government, it could be industry or organisations. I then also to do something that, an awful lot of the time we don't do in science, and that is to pull information back from the other side, so to gather knowledge from those stakeholders and feed it back into the research. I will just give you an example, we are working on a project at the moment on the River Lee in Luton. There are some concerns about the quality of the river, and the scientists are looking at a way to improve water quality, so maybe to improve the ecosystem services that are provided by this river. We then also needed to engage with the public to ask if they know of any reasons why there might be a reason and if they could give us any idea about where the pollution might be coming from, how we might be able to resolve it, who are the stakeholders in the area that we might want to engage with to make sure that we can actually make sure that we can make a difference in this project? So, we were taking that really important local knowledge and feeding it back into the science. Quite often, which is even better, you design the research so that it meets the user's needs. Quite often we do science because we are interested in it and we are exploring with it but, if you have a user that knows that they are going to use it, then that's even better.

This is where I sit, in the middle. There are lots of different things that I do. A lot of it is to do with organising events, workshops where we can facilitate that dialogue between researchers and end users, developing websites, creating videos, new media, social media, blogging, press releases and training as well. I have designed some training on horizon scanning and futures for government and industry. It is a really really varied role. For me, the benefits of this kind of career is that you get to stay close to the science, you get to still understand it and learn it every day, but you then get to have that kind of people interaction which is what I really wanted from my career. If you are similarly motivated, this might be the kind of career that you might be interested in.

It's no longer about just communicating what we know and expecting us to listen in science. Things like crowd sourcing and citizen science initiatives have shown us that people know more than we think, and that actually the public are a huge resource that we can bring into science. I think this is one of the really interesting and developing areas on how to use collective knowledge that is out there in the public domain and pull it into what we do as scientists.

So what does a Futurist do? I haven't got as many slides on this, but I just wanted to give you an idea of how we help people to plan for the future. If you are interested we have a blog that is helping people, its [cranfieldfutures.com](http://cranfieldfutures.com), and one of the key pieces of work that we do is horizon scanning, which sounds really interesting and it is. It's essentially looking for signals of change, things that might happen in the future, things that could be real game changes or could just change things slightly. I am sure many of you will have seen the 3D printing and 3D printed burgers even which are now on the market and sound fantastic. 3D printing is what a lot of people are thinking about across government, not just from a biological perspective, but also a security perspective and the School of Policing are quite interested in that. New crowd sourcing technology, new issues about pollution, we are just picking up these signals of change and feeding those into government to help them to think about if these things come to fruition, then they are going to be interesting risks that they are going to want to manage as a result.

The other thing that we do is scenario building. You will see from my previous slides that there is no real one future. I thought I knew the future of my career and I was set on being a lollipop lady, no qualifications needed, but things change and things are changing all the time and this is one of the messages that we give to government departments. So we say perhaps preparing for one probable future isn't so helpful because these things change all the time, so we help them to prepare for multiple possible futures and that is what scenario building is. It is developing different pictures of the future that will help people prepare better.

So coming back to what I wanted to get across. Your University of Leicester degree is brilliant, there are so many skills that you get while you are here, so make the most of it and make the most of the experiences. Know your skills and know what you love. There are so many different things that I have picked up throughout my career that have got me to where I am today, and it is based on the understanding that I love to communicate about science. And that is the thing that I have taken through and will continue to take through. There are points along that journey where I thought I don't know where on earth I am going but, actually, I have ended up in a job that really is great and I love. Having dealt with so many graduates

looking for jobs I thought that is probably the one thing that I wanted to tell everyone along with that you do find things, even if they are not in the places that you originally expected them to be.

## Questions

***Q: You mentioned that you became aware of knowledge transfer potential jobs whilst you were helping other people find their jobs. If somebody now thought “yes, knowledge transfer is something that I would be interested in”, how do they get into that themselves?***

A: There are lots of things that you can do. A lot of it is about demonstrating your capacity to communicate complex ideas in a really simple way. So if you are able to get involved in anything like developing your own blog, get involved with perhaps events that the University is running, start scientific discussions. A lot of people that I know have started off with things like organising Science Cafés at their local coffee shops and just getting people to talk about different new concepts. But also there are lots of different journalism type degrees and things that you can go and do as a Masters. Whether or not you really need that to get into the job that I do I don't really know. I got in based on being able to communicate a concept and wanting to learn new things. I really don't think I had anything more than that that qualified me for the role. It is an interesting career path. Actually I didn't include any salaries, but people starting off on this can get £18,000-£20,000 maybe but people at the top end of this are probably, once you start to get into knowledge exchange and impact management, £50,000 upwards. So it is a promising career stream communicating science in this sort of way.