

Careers in Primary Industries – transcript

Steven Leahy, Chemist

Hi I'm Steven Leahy, I am the chemist here at the Wollongbar DPI laboratories.

What is the purpose of your role?

First and foremost, accurate results, I am an analytical chemist so I need to make sure that the results that I produce for customers are accurate.

How does it fit into the role of DPI?

We work with the community; we have a lot of stakeholders especially with the farming community being in the Department of Primary Industries. So we get a lot of samples from farmers, they need to know what is happening with their soil and water. So I play an integral role in quantifying the unknown concentrations of many elements in the environment.

What is a typical day like in your role?

It can vary, I run a lot of different instrumentation. I also do a lot of other tasks that are asked of me. More recently we've had field days, we've done presentations, we work with school groups, going out to career workshop days but my main role is in the laboratory running instrumentation and reporting results out to our clients.

What do you love about your job?

I am just fascinated by chemistry, recently my catch phrase is 'It's like magic, but it's better it's chemistry'. It's just the way my brain works, chemistry is one part of my personality.

What could you do without?

Cleaning up! I hate washing up and we have to be really tidy in what we do so when you are really busy it's hard to stay on top of it. I do all of my own cleaning up and I can have samples stacked up to the roof, and I know they're there and it's always gnawing in the back of my mind. I get a little uncomfortable when the lab's not clean, I know it's there and I try my best to stay on top of it.

Does creativity play a part in your role?

It can yeah, method development and trying to solve the unknown, trying to solve problems. I have done research before; I took a year off work early in my career to do an Honours degree. That was my own self-created research project. I was looking at toxicants in my local area so it was very relevant to where I grew up so I had a vested interest, I developed a new method and took that and applied to my local area. So, I am very research orientated in my thinking, very analytical. But I also get the job done so it's bouncing between these two ways of operating I guess, it's good to have both sides, you don't want to be stuck in one. I think that is one of my key strengths is know when to knuckle down and do the work and when to think about things and think about the big picture, I guess.

What personal attributes are beneficial in this role?

Well the first thing that comes to mind as an analytical chemist is attention to detail. We deal with a lot of numbers. We are really hard on getting precise and accurate results. So you really need to focus on whether they numbers are actually what they mean. We need accuracy and precision; we have a rigorous QC - which is quality control - system in place. And anything that is outside of this – sometimes it's not quite obvious when you are dealing with a large amount of data but you have to

really train yourself to notice things that don't look quite right and then question that. So I think that attention to detail is one of the best attributes in this role.

What qualifications do you need for this role?

Well a Uni degree definitely helps. I was very fortunate I did a Bachelor degree in Science sub-majoring in chemistry. I was fortunate enough to get a traineeship with CSIRO so I learnt a lot about the instrumentation in this role. It's a very important part of this role the hands-on part, you can only learn so much at Uni and as soon as you go into the workplace you get exposed to the instruments it's really great. So the degree is great, it's pretty much a standard entry into the role of a chemist but the at work part, the hands on part, on the job training is really important as well. I have been so fortunate in my careers to be involved in a lot of different labs with some really good equipment with some really good operators, it's akin to winning the lotto I have been very fortunate in my career so far.

Where did you study?

I studied at UTS (University of Technology Sydney). I guess a side note – this is important to mention – when I first finished high school and went and did a business degree at Southern Cross University in Coffs Harbour. I barely scraped though just got passes and then went and worked in hotels as a concierge for many years and travelled to Japan and other countries. Eventually in my late 20s I decided to study chemistry as a career change and went to UTS. One of the best decisions in my life, went and studied chemistry, which I was always strong in at school but I just needed a lot more time to grow up and find out what I wanted to do. So I studied at UTS and then I went back and did an Honours degree later in my career as well. That was also through UTS in conjunction with CSIRO it spawned through my traineeship and kind of that's attached to my research brain. I always have interests in doing new and different varied things and one thing lead to another, long story short people saw what I was doing and said you should do an Honours degree to actually get something out of what I was doing, because I was doing it for my own amusement pretty much.

Where did you grow up?

I grew up in Urunga, on the mid-north coast, so that's just south of Coffs Harbour, a small town of about 2000 people. I spent a lot of time in Bellingen, at Bellingen High School. It's just down the road but it will be closer when the roadworks finish.

What impact do you see technology having on this work in the next 20+ years?

That's a really good question, a lot of the work we do here is automated already, and very repetitive, some of the preparation steps are very repetitive. So I see in the future probably in 20 years I think robots will take a lot of the mundane preparation work. You will still need people to interpret the data and trouble shoot and fix problems. But it is not going to be so easy to ... I guess it will, it's hard to say but I guess it will rule out a lot of the entry level positions which will be a shame but it will also be good in the respect that you will have more time to dwell on the data and fixing problems and thinking about the bigger picture. So I guess to answer the question automation is probably the biggest thing that we will see coming in in this industry.

I would say to anyone watching this they probably want to get up to speed on their coding and they also want to think about what the data means it's really important to think about interpreting and presentation of data so those skills will be more important than say the fundamental skills of pipetting and those basics, I think they will get lost in the future, they are still relevant at the moment.

What advice do you have for young people who are interested in this sort of work?

It's a good question, as I said before, it took me a long time to work out what I want to do and I think that's a common thing for most people, you never know quite what you want to do. I started off in business, it wasn't for me but it did develop a different side of my personality that I wasn't so strong in. The best advice I give anyone is 'do something' just do something when you finish school and do it well, it is not going to define you for the rest of your life. But if you do one thing well that can lead into another opportunity, people notice when people are really having a go and really trying their best. So it's about whatever you do, doing it well and then as time goes on I have proven that you can change careers and have success in a number of fields.