

## **ANNA MUNDAY**

### **In the family**

My Dad has quite an interest in all sorts of mathematics and sciences. He was an engineer and I've been encouraged towards the same areas of work. My brother has also become an engineer. We both focused on maths and science at school. I did calculus and applicable mathematics in Year 12, as well as chemistry and physics. To complement, I also took English literature and economics.

My favourite subject at school was maths and I did well, enjoying the work. When it came time to choose a course for uni, I wasn't sure what I wanted to do. So I enrolled in a Bachelor of Science and focussed on the maths and statistics units. In third year, I actually intended to go on and do Honours in applied maths, but then at the end of third year I decided to change my focus to statistics.

### **Australian Bureau of Statistics Cadetship**

While I was at uni, the Australian Bureau of Statistics (ABS) sent a representative to speak to the third and fourth year students. As well as a graduate program, they were offering a cadetship, which was intended to support people through their Honours year. I applied for it in third year and was successful. This gave me the chance to do four weeks work experience with them before starting Honours. Then when I was finished, I went back to the ABS. I was lucky and had a job at the end of my degree.

After working for a couple of years in Canberra for the ABS, I decided that I'd like to move back to Perth to be with my family and friends. I was thinking about job opportunities and remembered meeting the managing director of Data Analysis Australia at a prize ceremony the year before. So when I arrived back in Perth I gave him a call.

### **Never dull**

I've been working for Data Analysis Australia, a statistics and mathematics consultancy firm, ever since. We have many different clients and they range from federal and state to local government, as well as private industry. Our largest client group is the Western Australian State Government; however, we also service a range of federal departments despite the fact that we're in Perth. We don't find distance a major barrier to overcome. We have overseas clients as well.

Working on a wide range of problems makes my job interesting. We do survey work, modelling, community profiling, data analysis, database development, programming in different languages, and forecasting. At the moment we're involved in forecasting population numbers for the next 30 years. To aid infrastructure, we forecast activities such as crime, to help states plan for court buildings and court facilities necessary in the future. We do a lot of modelling for the utilities, such as water and electricity. I also get to work as both a team member and a project manager, so the range of work is huge. This

is partially because my colleagues and I don't really specialise in our areas of work. We feel that the same skills can be applied across a multitude of areas.

Most of my colleagues are mathematicians and statisticians – there are 14 of us. Many of them also have other qualifications or areas of interest such as IT, engineering, economics and commerce. I work with an IT team of three, a psychologist and administrative support staff.

### **Relationship building**

Most of our project work involves face-to-face, as well as telephone and email contact. Wherever possible, we start off projects with a face-to-face meeting. We find that this does a lot for our relationships throughout the course of a project. How many times we meet again in person depends on the client and the project. Some projects last one hour while others can span five years. Most typically range in length from six weeks to three months.

The final product of most of our projects is a report for the client. The report is quite important in our line of work because not only does the client that we've been directly working with see that, but they pass it through their organisations up to their CEOs and it gets publicised quite widely in some cases.

In other projects we might develop computer software for them or in terms of setting up computer packages that they can enter their own parameters and data in and get some model results out of.

### **Constantly on the go**

As a consultant at Data Analysis Australia, every day is quite different. I am generally concentrating on at least seven projects at a time. So depending on what is the priority for the day determines whether I work on all of them for a little bit or just on one project. I tend to spend half of the day on my own projects and the other half working with team members. Part of my role is helping other consultants. So if they have questions relating to their projects I help them as much as I can.

I'm certainly a bit of a workaholic and I think it is probably quite a typical characteristic of consultants. Work as a consultant, whilst very exciting and rewarding, can be very stressful, so sometimes I do find I need to take a conscientious effort to make sure that I balance the home life as well. But when I do find that balance, it is quite easy to maintain.

### **Fascinatingly complex**

The most interesting project I've worked on is a sampling design for a nationwide survey. We were to target households that have access to a particular service but weren't given a database of potential households. We had to take this into account when we were planning an efficient sampling design. By combining the sampling with our IT

department and running a search through internet databases to find where this service might be available, we were able to work out a way of providing the field workers with a random sample. We spent quite a lot of time coming up with an algorithm so we had a starting location for our field workers. From there, it was up to them to generate a sample of 30 households each.

Because it was quite a complex sampling design, and because it was for a legal case, we had to make sure all the field workers knew exactly what rules to follow. This meant I spent a lot of time travelling in order to clearly explain and emphasise the importance of following our sampling rules to people who didn't know much about it to begin with.

I've had a reasonable amount of opportunity to travel with this work. For one project I travelled all around Australia, pretty much to all the capital cities. I've also been lucky enough to go to three conferences since starting here, so I've been to Cairns and Sydney and also to New Zealand for conferences.

### **The importance of networking**

I've been a member of the Statistical Society of Australia for about five years now, [and for the last few years I've been quite heavily involved with the society]. My involvement began by helping to organise a workshop for young statisticians in Western Australia. We like to promote the profession to young statisticians and after my involvement in that workshop I was made the Western Australian young statisticians representative on the nation-wide committee, before becoming the national young statisticians representative. At the end of my tenure as a young statisticians representative, I spent some time as the Treasurer of the Western Australian branch before being promoted to Vice President.

Being a member of the Statistical Society has a number of advantages to it. The first one is just meeting other statisticians and networking. I find it's quite good and encouraging to see all these other statisticians out there who are excited and enthusiastic about their work as statisticians, and having that support of other people in a similar career is very important.

### **A sports fan**

[When I'm not at work] I have quite a variety of interests. I'm an active member of my tennis club [and spend quite a bit of time playing tennis.] I also like watching the West Coast Eagles and the Western Warriors. So you might call me a bit of a sports fan. I also really enjoy quiz nights, puzzles and do a bit of craft in my spare time. I like reading and I've always got a couple of books on the go. I watch movies sometimes but I'm not much of a movie buff.

My role models in the statistics and mathematics fields are my friends who are also statisticians and mathematicians. I think there's a misconception that only boring people pursue careers in mathematics and statistics. But my friends aren't boring and I take inspiration from that.

### **Enjoying my job too much**

I've often thought about doing further training but at the moment I'm still undecided. I've considered studying to do a PhD, which could help with my work. However, I also enjoy my job so much that I don't know that I want to take time off to study.

The best thing about my job is the people that I work with actually – they're a great bunch of people. And I really like being able to help clients as well. Being able to use my skills to help the clients come up with a better decision-making tool or give them a report that's useful for them is the best thing about my job. And just the variety of work that I work on. There's no time to get bored with a project because you're working on such a varied array of projects. The best and worst aspect of my job is that it does get stressful trying to work on multiple projects at one time.

### **Make it fun**

The way to encourage students to continue learning mathematics and statistics throughout their education is to make it fun. Through pursuing mathematics at university and as a career, I've learnt that there are a lot of real-life mathematical and statistical applications. I think students would find it more interesting if these real-life applications were heavily promoted at the earlier levels of mathematics.

I'd encourage anyone thinking about a career as a mathematician or statistician to study statistics and mathematics at university, but not necessarily just those subjects. I find that they go hand in hand with a lot of other disciplines. So if they are interested in other subjects as well, pursuing both, either as minors or a double degree, is quite advantageous.

I like being a statistician because I feel that I help other people by understanding the implications and interpretations of data, and as a result, aid them to make better decisions. My skills in statistics also helps when I read newspaper reports or watch the T.V. because I see the flaws in their statistical judgements and can choose to ignore them.