

## University of Canberra – Science Graduation Occasional Address

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The Director of Questacon, Graham Durant shared an interesting observation with me once – in response to me saying that I'd never really planned a career, but I was surprised to find I had one anyway. He said "*a career is what happens when you go around doing interesting things!*"

Looking back, I've found he was right. My work has taken me in a lot of interesting directions, and the career I've built over time has been a combination of my interests, hard earned knowledge, experience and taking new opportunities.

Undoubtedly the universities I have been to have played a huge role in this journey – as they have, for every one of you graduating today. That we are here at all means they succeeded in their job to stimulate, teach and enable us on a pathway towards real world skills and expertise. But this is really just the first part of our journey.

A professional life is ours to make. If we can liken it to a safari, which I do, having first studied as a vertebrate zoologist and spent some hours sitting in the bush tracking possums, wondering if this was *really* the right career for me – then we have to find our path amongst the many ahead. There are so many possible futures - it is really down to us which ones we choose. And I say which *ones*, because chances are there is not just one career ahead for you. There are many jobs you will do.

There is another piece of advice shared with me that I'd like to pass on to you too: When you're stuck not knowing what path to choose, then think about where you want to be in ten years' time. What do you imagine your future self to be doing?

Then make the choice that takes you closest to making that a reality.

This advice is what led me to quit my job in the public service 14 years ago and go off to do a PhD. It was because I had realised that I wanted to lead a cultural organisation. I knew I needed greater depth in my field to do that. And it was a big sacrifice. Huge. No income. No superannuation. Lonely. Endless weekends spent writing up, with the blinds down, while others went out and had fun. But I had to persevere. It was a step in the right direction. And from there, to being here today

Careers are a case of choose your own adventure. I wonder what kind of adventure will yours be?

Today you are graduating into a messy, unpredictable world, one that brings some of the biggest challenges that humanity has faced. I would love to be able to tell you it's all going to be OK and that other people can solve these problems for us. But the

truth is, it won't be OK unless we apply ourselves as individuals and as societies, to the fullest of our abilities, to the problems at hand.

The good news is that there are plenty of problems to go around! So I want to ask you, which of the many realities of our world today can you play a part in tackling? What is it that you can do, that will make a difference to someone, somewhere, somehow? Because none of us can afford to be indifferent. Not at a time of global pandemic, with a warming world, a time of great social inequity, of injustice, of devastation to species and to cultures.

I don't mean we each have to save the world. We are not all going to design the next generation vaccine. Or find a cure for cancer, or endometriosis. We are not all going to work in inspiring and educating the next generation or at protecting endangered species, in prosecuting corruption or breaking crucial stories in the public interest. We will not all be ethical hackers or astronauts or Fortune 500 company leaders. We can't all be the ones who lead the country or revolutionise the economy. But some of us might.

We all have a role to play and the first and most immediate challenge, of all those you face, is to find your own unique path towards playing that role.

I've been lucky to have many different roles and work around the world. I have been employed by festivals and campaigns, museums and zoos, art galleries and science centres, and by pubs and cafes. In my job now I am called on to do all kinds of things. They are often hard. They often mean working long hours. They are usually about solving problems, not all of which have any easy solution.

The one thing they have in common is that they always impact on other people. And ultimately the solution comes down to working with other people to make things better.

So one observation I would make is that **building relationships is crucial**

During my PhD studies I went around the world, interviewing living heroes of science – including inventors, mathematicians, teachers, physicists, TV personalities, politicians and many great science communicators. I sat down with David Attenborough at his house in London and I went to the pub in San Francisco with the Mythbusters. I met Frank Fenner in his home, and I visited some of the world's greatest research institutes, to speak with Nobel Laureates. There were many interesting things I discovered while doing this.

One of the first was that when you are dragging recording equipment halfway around the world, be sure to have backups!

Another is that other people's generosity and knowledge is crucial.

Whether we know it or not, if we are lucky then our journeys are scaffolded by people who care about what happens to us.

If you think back to how you arrived here today, there will be people who helped it all to happen. Perhaps your parents or grandparents encouraged you, or you had a great teacher or a business mentor. Perhaps there is an employer who had flexibility round your study? Or a circle of friends who helped each other to learn? Such relationships are the bedrock of where you've got to today. They are important, and the relationships you'll form during your working life will be vital too.

We all need other people; their experience, their ideas, their energy, their knowledge, their connections. Embrace the new communities of practice you will be joining and the networks you have a chance to be a part of, including the alumni network of the university. You'll know when you find the networks that are right for you.

Individually you can each achieve good things - but it's working with others that will truly make you great.

Next, **stay interested.**

A sense of curiosity, motivation, purpose and meaning is a great foundation on which to build future success. If you are truly interested, you can't help but learn something new.

It's hard to describe how you know when you've found something that fascinates you. I have heard it described, particularly by mathematicians, as being like something that 'just tickles your brain'

I think it was best expressed to me by the former Chief Scientist of Scotland, Anne Glover, who once told me about how she knew studying science was going to be in her future. As a child, her brother had received a chemistry kit for his birthday. As he stood at the kitchen bench mixing things together, an experimental explosion occurred. He wasn't particularly interested but she said to herself "*wow, I don't know what that was – but I know that it's for me!*"

So what are you interested in, what kind of things give you that sense of *this might be interesting?*

If you've already found it, keep going. If you haven't, keep exploring until you do. It is interest that will keep you going professionally, even when times get tough. And they will.

This leads me to my next point, which is be **ready to fail.**

It's no mistake that Thomas Edison used the phrase 'stickuitiveness' to describe the difference between success and failure. It's a requirement in relationships and in work.

We have a saying at Questacon, that *failure is feedback*. We even have a trophy that we give to the person who shares their best failure of the week. The point is, that just as in the rest of your life, you can't and won't be perfect in the world of work.

You're going to encounter issues and make mistakes and need to learn from them. And then pick yourself up, and keep going. Over the years I have accumulated many, many small failures. I'll probably make at least one other mistake today. The point is, I've come to learn from them. My mistakes help me improve and each one is usually a new one!

There is a great bit of advice I heard, from a cosmochemist in the USA. His name is Jerry Wasserberg and he told me he made a huge mistake in his doctoral thesis. Right after he had submitted it, passed it, and was about to start a postdoc on it, he discovered that his thesis was completely wrong and his whole project was in fact a failure. He agonised over what to do, and he finally went to his supervisor, and this was the advice he received:

*"Well Jerry, looks like you've got on the wrong train. And if you find yourself on the wrong train, you need to get off and get back on to the right one".* I'm paraphrasing here.

Jerry did get back on the right track, persevered and became a great research leader who has helped develop some of the brightest minds in planetary science today. And in fact if you ask any leader, you'll find they have all made mistakes too. The thing is to learn from them, to pick yourself up, and to get on the right track.

It's just as true for your career as it is for your thesis topic.

Finally, **respect diversity**

I have had various jobs but it was in my very first year at Questacon that I learned some of the most important lessons for my future career. I learned about how different most other people are from me.

I joined a team of graduate students who travel across Australia with a program called the Science Circus – taking science experiences on the road. This program is still running and every year this group of graduates travel thousands of kilometres across the continent to take the science centre out to regional centres and to remote places.

And there's really not too much that's like Canberra out there. It's a diverse country that differs wherever you go, from the colours of its dirt to the number of its seasons, the culture of its communities and the languages of its people. And they are not like me. According to the Australian Bureau of Statistics, most Australians will not go to university. Many haven't experienced higher education of any kind or have stopped formal education before the end of high school. Literacy and numeracy rates are lower in regional and remote Australia than anywhere else. There is a digital divide, and the pandemic has made it worse.

Education is just one measure of difference, but there are many more.

So when you go on to your careers and work in areas that deal with people, or make things for people to use – like public policy or research, health or education, hospitality or industry – remember that most people are not like you.

In professional life it is vital to understand and respect the diversity of people in our community; to be ready to work with others and to value their differences.

Employers will need this from you – the ability to work with respect for others. And none of your workplaces will be run by just one sort of person – they will rely on a diverse workforce to succeed. From the accountant to the technical expert, the customer service person to the building services team, from the most junior employee to the CEO, all are vital to making a successful enterprise.

So as you go on from today's great celebrations, I encourage you to remember these things. Build relationships, learn from failure, find wonder and follow your interest, and respect the diversity around you.

They are all key to a successful career.