Measuring micronutrients in milk—a dream job for chemistry alumnus

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Dr Brendon Gill knows he has his dream job as an analytical chemist for Fonterra

While he embarked on undergraduate study with uncertainty about where it would take him, he knew that he wanted to work in the science field. “I had no idea I would go on to complete a PhD or that the dairy industry would be the focus of my career,” says Brendon. “I wanted to do something that was intellectually challenging; I was fascinated by chemistry and knew that was something I would enjoy exploring further.”

His work includes developing new test methods for analysing micronutrients and vitamins and provides expertise on these topics to Fonterra and its global teams. “Milk is an amazingly complex biological fluid containing thousands and thousands of compounds. It’s a challenging matrix to analyse with micronutrients found at trace levels, but that’s what makes the work appealing.”

Brendon says it's an area of research that has no end in sight. It’s a dynamic, ever-changing environment—as analytical tools become more advanced, the need to test more analytes increases. “As we advance our understanding in human nutrition and milk composition, more advanced nutritional products are developed. We need new test methods that are accurate and precise both for product development and for compliance testing.”

Simply put, the focus of his work is to ensure the quality and safety of Fonterra’s nutritional products to meet customer expectations and comply with strict regulatory requirements.

Launching his study

Brendon joined the workforce after high school but after a few years realised that he needed something more Brendon says the decision to leave the workforce to study wasn’t easy. “At the time, an undergraduate degree loomed in front of me and three years seemed like an exceedingly long time. Once I enrolled and became busy with my studies, the time passed quickly.” By his second year, Brendon knew that he would continue his study beyond his bachelor’s degree. The BSc was quickly followed by a MSc, with fond memories of coffee and discussions with staff and other graduate students.

“Treat your study like full-time work,” is the advice Brendon would give any student starting tertiary study, and it’s how he approached his study when he started as a 25-year-old. Already accustomed to work hours, he decided to apply the same commitment to his university day, meaning weekends were free and he had time to complete assessments without pressure.

After graduating with his master’s degree Brendon secured a laboratory position at Fonterra. He was very quickly able to transition from the routine lab into research. Still keen to further his learning, and with support from Fonterra, Brendon completed a PhD part-time over six years while continuing to work full-time. Since graduating he has maintained contact with the University and recently returned as the industrial supervisor for a PhD student, working alongside his former supervisor Professor Merilyn Manley-Harris.

Brendon now shares his knowledge and expertise in vitamin analysis in various leadership roles in the international analytical community and regularly collaborates on projects with other scientists from around the world.

“I’m proud that my work has had a positive impact on the health and nutrition of millions of people around the world.”

It’s no surprise Brendon says the decision to study was one of the best he’s ever made.