

Path of learning has taken Justin Vigar around the world

A love of all things outdoors — mountain biking, skiing and fly fishing — led Justin Vigar (BSc '12) to the town of Whistler, British Columbia after he graduated from Lethbridge Collegiate Institute.

There he found the good life, surrounded by a beautiful environment and happy, fit, excited people doing what they loved. The fly in the ointment? Most people in Whistler were under the age of 25 and couldn't afford to live there.

"I thought 'I'm going to be a dentist,' so I applied to U of A and U of L," he says. "As a dentist I could probably work four days a week and afford to live in Whistler."

He chose the U of L and found biology particularly enjoyable in his first year of studies. His enjoyment turned into an excitement for science and continued to build throughout his undergraduate studies. He found the sciences meshed with his own concerns. As a millennial, Vigar had heard a lot about problems facing the world, including global warming, climate change, food crises and pandemics.

"As I was learning about science and getting excited about discovery and this beautiful, natural world we live in, I was also seeing how innovations in science were directly solving some of these issues," he says. "If I was going to have a career that would be meaningful and help solve some of these problems, I thought science would be the way to go. I still wanted to be a dentist though. I volunteered a lot and you need lab experience for dentistry so I joined iGEM."

Participating in iGEM proved to be both a foundation and a launching pad. Vigar credits iGEM with giving him a solid work ethic and the opportunity to gain skills in lab work.

"We were not only working the lab; we were working with a lot of companies as well, trying to solve a problem of environmental degradation caused by oilsands development," he says. "In iGEM you get a lot of different experiences, like going to conferences, talking to companies, meeting with engineers. Most importantly, you have to think about the implications of your project."

"One thing iGEM really focuses on is that science is only part of the story. If you want to solve all these global problems, science isn't enough. You really need science and community involvement, bioethics — there's so much more that needs to come together to make these solutions precipitate into something that makes a tangible change in the world. iGEM really helped me understand that and it got me even more excited that science could be applied to some of these issues."

Searching for a different experience, Vigar left his studies to work with an NGO in Uganda. The project involved bringing together infrastructure for solar panels, batteries and electricity to

build computer labs in rural areas of Uganda and then train computer teachers so they could carry out computer lessons. When he returned to Canada and the U of L, he started working with Dr. Hans-Joachim (HJ) Wieden (chemistry & biochemistry). That got him involved in an international project so he moved to Germany to do most of the wet lab work there. He's also involved in a biophysics project that takes him to the Diamond Particle Accelerator in Oxford.

In addition, Vigar is a delegate to the United Nations Convention on Biodiversity (UNCBD) with After iGEM, a program for those who have participated in the iGEM competition and want to remain involved. He represents After iGEM at Conference of the Parties meetings, the last of which was in Egypt and the next to be held in China. He's also a Bio-Belt ambassador through Synbiobeta. As a representative of Alberta, he works to get economic development investment and more technology jobs in the bio-technology field.

Vigar plans to pursue doctoral studies and is considering a school in the United States. Until then, he'll be working on finishing the projects he's involved with now.

"My experience at the U of L has been very transformative," he says. "As a scientist, the liberal education philosophy has really helped my career by not just doing science but being a scientist. So much more goes into that than just lab work. I think the liberal education philosophy needs to be carried over to grad school, too. H-J really focuses on that and his lab is so well rounded. Most of us are involved in some other venture apart from our lab work."