Western Faculty Profile: Dr. Kelly Summers

Andrew Wang

Faculty of Science, Western University

No conflicts of interest declared.

Background

I was born and raised in London, Ontario. I initially wanted to be a forester, but it was discouraged in those days as it was a male-dominated profession. Instead, I completed a Bachelor of Science at Western University, and then did my fourth year at Guelph University to get an Honors Bachelor of Science degree. I changed faculties several times during my undergrad at Western taking Science, Kinesiology, Engineering, then back to Science. Still uncertain of my career choice, I backpacked alone through many countries and eventually settled in Christchurch, New Zealand. There, I found work in a private histology lab but was bored of the routine work so I quit and backpacked around Australia. I then got a job in New Zealand as a research assistant in a hospital endocrinology research lab that

studied stress hormones in horses. This work ignited my interest into how the human body works and more importantly sparked my career interest as a scientist. I completed my Ph.D. at the University of Otago in an immunology research lab studying dendritic cells (DC) in human rheumatoid arthritis. DCs had only recently been discovered in humans; in fact, my supervisor had discovered interstitial DCs. It was an exciting research field since virtually every experiment led to novel findings—I had 5 publications in 2.5 years! After graduating, I took a job as scientist in Christchurch Hospital's immunology core lab where I repaired and improved diagnostic tests. I returned to London in 2001 to work at Robarts Research Institute as a Research Associate studying DC in type 1 diabetes,

then 4 years later started my own lab as a scientist at Lawson Health Research Institute at St. Joseph's Hospital. I founded the Screening Lab for Immune Disorders, which measures proteins in various diseases/conditions with the aim of discovering new diagnostic tests, therapeutic targets, mechanisms of treatment and etiology of disease. In 2010, I took a fulltime educator position in the Department of Microbiology & Immunology. It's important to "enjoy the ride!"

Hobbies and Interests:

I played on the New Zealand hockey team and was captain of the Canterbury (provincial) hockey team. I founded two women's hockey leagues in Christchurch, New Zealand and Budweiser Gardens, respectively. I have coached downhill skiing and waterskiing. I was an accomplished pianist. My interests include nature photography, outback canoeing and camping, waterskiing, hockey, golfing, travel and music.

What are some of your best and worst memories as a professor?

I would say this is mainly likes and dislikes!

The gradual rise in work expectations and resultant stress on faculty, staff and students is troubling. I am very concerned about the increasing incidence of mental illness at Western and society in general. The evolution of academia to a business model with emphasis on more online courses is also concerning as we will lose direct interaction between faculty and students, which is important to learn from each other.

I am fortunate to have had wonderful mentors during my academic and professional journey, and am fulfilled in my career as teacher and researcher. It gives me tremendous joy to inspire students and to help students decide on a program and reach their career goals. As for research, one

can never forget their first publication and research grant!

What influenced you to research about diabetes?

As an undergraduate student at Western, I volunteered in the labs of two professors so I learned what research involved and I became interested in it. My research interests have been dictated by the research opportunities encountered during my journey. My current interest in the immunology of various human diseases has really evolved from my passion for the immune system. The take home message is to try and open as many doors as possible.

What is your favourite part about doing research?

Discovery! The immune system is complex and many aspects are not well understood so it is a challenging and evolving field to teach and do research in. Every day there are new discoveries in this field and many more questions waiting to be answered. I like doing team-based research where individuals work together to create and advance knowledge. It has a huge personal reward through individual contribution to a large study that may improve our understanding of the etiology, diagnosis or treatment of human diseases/conditions.

What advice would you give to students looking to gain lab and research experience?

Don't be shy to approach a professor. Search department websites to find individuals who do research in a field that interests you. Become familiar with the professor's research prior to approaching them and either email them to request an appointment to meet or approach a professor in class. Apply for funding including the Summer Undergraduate Research Fellowship in the Department of Microbiology & Immunology, Dean's Undergraduate Research Opportunity's Fellowship or NSERC Undergraduate Student Research Awards.

Importantly, take lab courses to learn experimental techniques, plus consider doing an Honors degree that offers a research-based thesis course.

What advice would you give to aspiring immunologists?

Go for it! Immunology is an exciting field as it has a critical role in human health and disease. Almost daily there is a news report on an immunology-related issue such as a new disease outbreak or treatment. Do a Major or preferably one of our 3 Honors Microbiology and Immunology modules – M&I, M&I with Pathology or M&I with Biochemistry (Infection & Immunity). There is a great deal of research that needs to be done to better understand immune mechanisms, as well as the immunopathology of many diseases. Many biotechnology and pharmaceutical companies have active research programs aimed at developing new diagnostic tests, treatments, therapies and vaccines. Also, if you find that don't like research, immunology is a great field to combine with a course-based Master's degree in Biotechnology, Public Health, Business or other.