Originally from Winnipeg, Manitoba, I’ve always enjoyed science, be it physics, chemistry or biology. After participating in the Shad Valley program at Carleton University during the summer before my Grade 12 year, I became extremely interested in biotechnology and how business and science intermingle.

Pursuing this interest, I completed a BSc. (Honours) at the University of Waterloo in the Science and Business program. While I enjoyed all aspects of the degree, 16 months of co-op work at the National Microbiology Lab in Winnipeg, sparked my interest in pursuing research.

I joined the Department of Medical Microbiology and Immunology in September 2009 in the Master program, where I did rotations in the labs of Dr. Hanne Ostergaard and Dr. Troy Baldwin. Ultimately, I chose to continue my studies in Dr. Baldwin’s lab and elevated to the PhD program.

Our lab is interested in T cells and how they develop in the immune system. T cells protect the body from infections and cancers. They mature in the thymus where they learn to distinguish self-molecules from foreign molecules. Self-reactive T cells are eliminated while useful ones survive and leave the thymus.

The paper in PNAS addresses the role of the pro-apoptotic protein Bim in eliminating self-reactive T cells depending on what self-molecule they recognize. The absence of Bim removes the ability to eliminate T cells that are specific for tissue-restricted molecules such as insulin in the pancreas but not those that are specific for more ubiquitous molecules. Interestingly, the self-reactive T cells that are not eliminated seem to be prevented from causing autoimmune disease by other mechanisms, the exact nature of which are unknown. Understanding what these mechanisms are and how they work, will help provide insight into how autoimmunity develops.

I am fortunate to be in a great lab, with engaging and supportive colleagues. I would like to acknowledge our technician Bing Zhang for his help in generating the bone chimeras required for this study as well as the support from my supervisor Dr. Troy Baldwin. I am fortunate to be supported by an NSERC PGS-D and AIHS studentship.