



SHRIYA DESHMUKH, Class of 2023

Education: BSc (Neuroscience), University of Toronto

Supervisor(s): Nada Jabado

Dpt: Experimental Medicine

Work location: Research Institute of the McGill University Health Centre

Project: Dysregulation of H3K36 methylation in cancer and developmental disorders

Research Description:

“Epi”-genetic mechanisms allow orchestration of a concerted gene expression program that then enables cells to carry out specific functions. During my PhD in Dr. Jabado's lab, I studied the ways that disruption to epigenetic processes promotes the development of cancers such as pediatric high-grade brain tumors and giant cell tumor of bone. Together with an amazing team of collaborators, I used CRISPR and various next-generation sequencing technologies to comprehensively characterize the epigenetic landscape of these cancers. We discovered that epigenetic aberrations promote changes to 3D genomic structure, oncogene expression, and the tumor microenvironment to promote survival of a population of neoplastic progenitor cells. Importantly, our work uncovered new treatment targets in these epigenetically-driven cancers.

Why did you decide to pursue both MDCM and PhD degrees? What are your career aspirations?

I realized during my undergraduate studies that I enjoy the intellectual challenge of piecing together scientific puzzles in the lab, but I also didn't want to give up the excitement and fulfillment that comes from caring for patients and practicing medicine. Thanks to extraordinary mentors, I learnt about and applied to the dual MD-PhD program. My career aspiration is to practice as a physician-scientist, taking unanswered questions from clinical practice to the lab, and vice versa, bringing scientific discoveries back to patients to improve their care.

Why did you choose to study at McGill University?

McGill University has a long, storied history of innovative scientific research and I was confident that I would have access here to incredible scientific mentors, a vibrant research community, cutting-edge technologies and ample resources to support my medical and graduate training.

What aspect of the MD-PhD program do you enjoy the most or are looking forward to?

The camaraderie of my colleagues! I am extraordinarily privileged to have the support and friendship of my brilliant MD-PhD colleagues, lab members, and medical student colleagues.

What advice do you have for incoming MDCM-PhD students?

Enjoy each day because time will zoom by, be kind to yourself and others, and don't hesitate to ask for help!

What do you like to do in your spare time?

Developing initiatives to support student participation in science and medicine. Also: smashing birds on the badminton court, reading (especially P.G. Wodehouse books), watching late-night political comedy.