

## Graduate student profile:

### Annik Yalnizyan-Carson,

2nd Year PhD in Cell & Systems Biology (Richards Lab)

#### Previous degrees:

Hon. BSc (University of Toronto - Neuroscience & Mathematics), MSc (University of Toronto - Cell & Systems Biology)

#### Tell us about your research at UTSC:

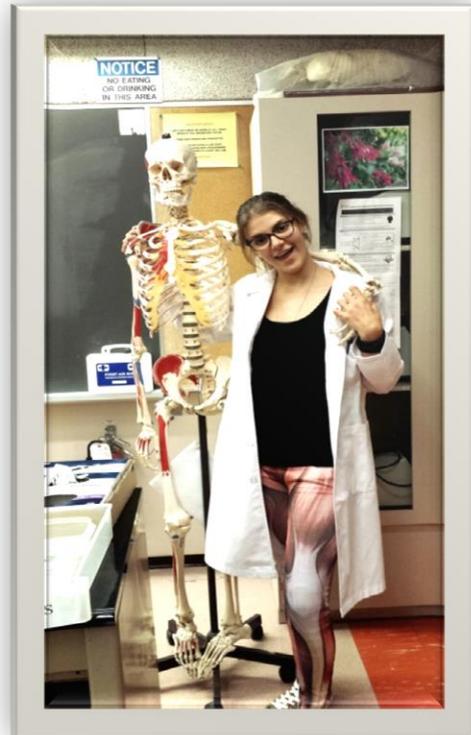
*I'm interested in how the brain engages different memory systems in decision making during reward learning tasks. Our brains receive a tremendous amount of information from the external world, and have to make sense of it somehow to make decisions just for basic survival. When the rules that control our environment stay relatively stable, we can effectively learn how to make good choices either by explicitly reasoning through available options (goal-directed behavioural control) or by establishing prescribed responses to specific stimuli (habitual control). But the real world isn't so tidy -- we're often presented with rapidly changing environments, yet we can effectively learn anyway. I focus on how memories of specific autobiographical events (episodic memories) can help to bootstrap goal-directed and habitual control systems so that we are still able to make choices effectively even in changing environments.*

#### Tell us about why you chose your graduate program or lab:

*The field of computational neuroscience covers everything from modelling transport of individual proteins to the coordinated activity of large populations of cells (both of which I had some experience with in prior projects). The LiNC lab is interested in questions at multiple levels of abstraction -- we study the neurophysiology of learning and memory, trying to understand how this allows neural circuits absorb and store information over time. I was also interested in a lab that wanted to pair computational studies with experimental data in order to better understand the brain.*

#### What are your future career goals and how has your graduate work set you up to achieve those goals?

*I have been interested in machine learning for several years and I'm excited to see how this rapidly growing field will change while I finish my graduate work. I would love to work in machine learning-related areas -- either in industry or in academia. My academic career has given me experience in several related fields (math, neuroscience, computational modelling).*



*Although the path through interdisciplinary work is not always straightforward, my supervisors have always been extremely supportive and encouraging of my desire to develop a breadth of skills. While sometimes I have felt like it would be easier to just stick to one path, I think my graduate experience has prepared me well for a variety of future career paths.*

**Complete the sentence:**

*In my free time I like .....*

*cycling, jigsaw puzzles, and throwing axes. Just kidding! I don't like jigsaw puzzles.*

**Do you have any advice for prospective students?**

*Don't rush! Get to know yourself well before coming to grad school and figure out what you are really excited about. Research is super fun but can also be demanding and if you're not sure that you love it, it can be a lot harder to remind yourself why you do it. Failure is a lot more common than you'd hope, but the high of success is totally worth all the trouble.*