Lab Spotlight: Chan Lab

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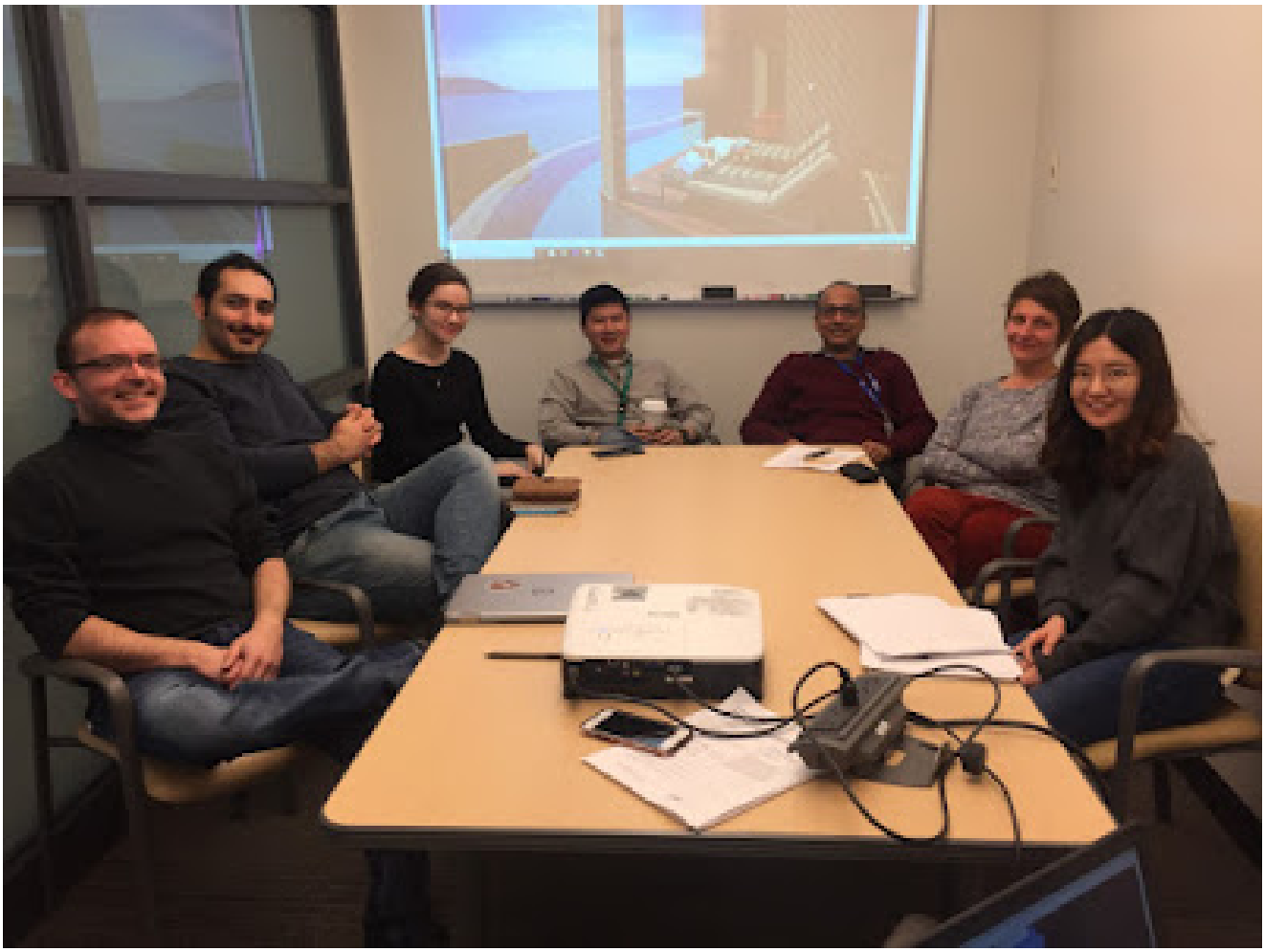

How long have you had your lab?
I started my lab in November 2015 and it has been quite a learning experience and exciting journey so far!

How many members make up your lab? Students/postdocs?
My lab currently has 1 technician, 1 clinical fellow, 3 postdocs, 1 graduate student and 1 undergraduate student.

What is the major research theme of your lab?
We study acute myeloid leukemia (AML) and are interested in elucidating its functional dependencies on certain metabolic and mitochondrial pathways to identify novel therapeutic targets for this disease. We also have an interest in determining whether it is possible to

intervene earlier during stages of pre-leukemia and/or clonal hematopoiesis, which could potentially have a huge positive impact on many affected individuals even before the onset of the disease.

What is the most exciting project in your lab right now?
We know that venetoclax, a BCL-2 specific inhibitor, has limited efficacy as a monotherapy against AML. However, the potential for synergy with this type of targeted therapy remains to be fully determined. Using CRISPR/Cas9 screening approaches, we have found that our highest scoring synthetic lethal genes in venetoclax-resistant AML cell lines closely relate with mitochondrial translation. This finding has been particularly exciting for us as we have been able to demonstrate that these gene hits are pharmacologically targetable with antibiotics. When combined with venetoclax, these antibiotics have been able to significantly decrease AML burden in several model systems and may further extend benefit when combined with azacitidine chemotherapy. I'd say that this project has been my lab's biggest accomplishment to date!

What's your best approach to mentoring students in the lab?
I think my mentoring approach relates to what I found helpful going through as a trainee earlier on, in that I like to pair projects with trainees that feel excited about the research idea and to also give trainees certain degrees of freedom to explore and to help guide them along their path. Of course, I try to find a good balance between both approaches with each trainee's personality. I also try to pair each trainee with at least two projects to buffer out best possible outcomes for everyone.

What facilities or equipment does your lab absolutely depend on?
We definitely heavily rely on our flow cytometer and seahorse analyzer. Moving forward, we will likely use more of our live cell imaging platforms to look at various biomarkers and/or reporters in future assays.

What is the key to running a successful lab?
I'd say that the number one priority is finding good people. Most new PIs aren't trained to manage conflicts and people, so selecting and having lab members genuinely invested in the lab team's success, who can anchor the group, optimize and establish protocols and help each other accelerate projects makes a huge difference in the lab dynamic and progress.

What advice do you have for new investigators just opening their lab?
Focus on finding and recruiting good people to your lab! Resist working in silos. Get to know your neighbours and reach out to others at your institution to start collaborations that will inevitably help your research to move forward. It's incredibly important to find good mentors early on to help you along.

Does your lab have any fun traditions?
Yes, our lab has a BBQ every summer and my father performs a magic show for everyone then. We also did an escape room last summer, and although we didn't succeed there, I'm sure we will next time!

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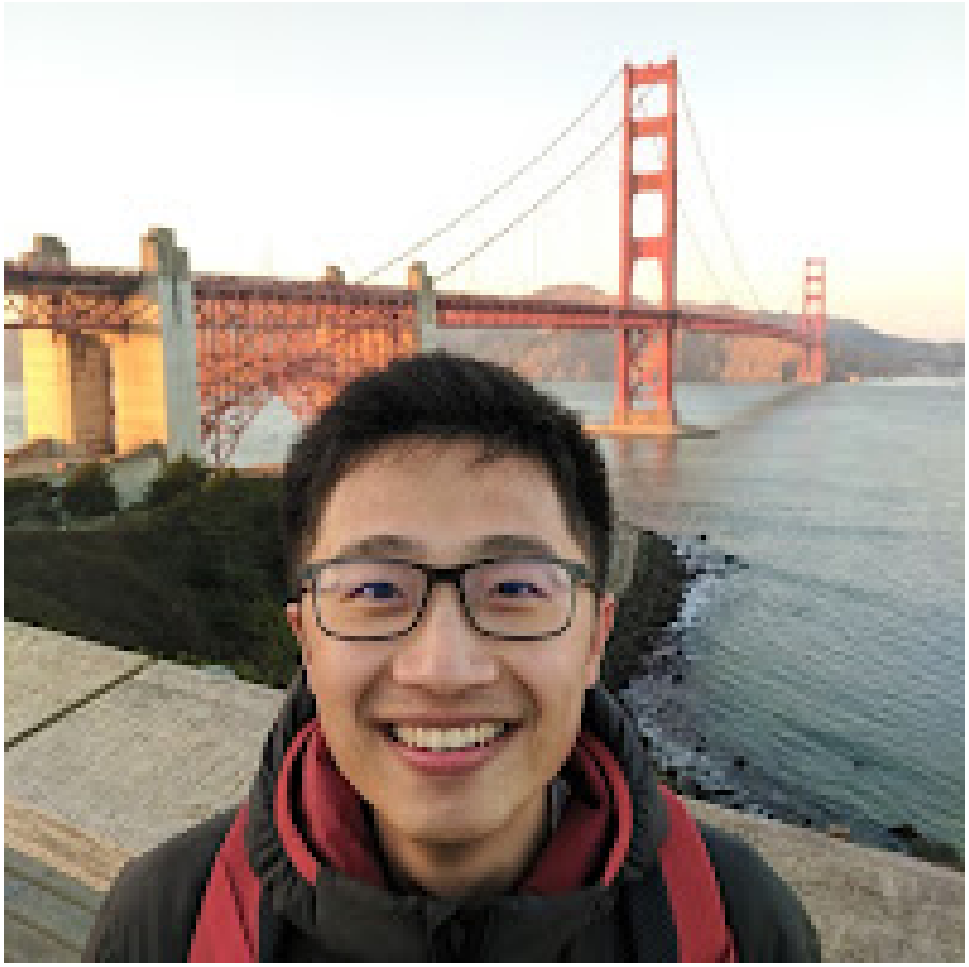

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Each month, Simply Blood spotlights a lab focused on the research of basic hematology, immunology, stem cell research, cell and gene therapy, and other related aspects. Get to know these different labs around the world! This month, we are featuring the Chan lab at the University of Toronto (Canada).