

TITLE:

“Deciphering the Transcriptional Mechanisms Orchestrating Cellular Metabolism in the Brain”.

ABSTRACT:

Mitochondria, or the “powerhouses of the cell”, are organelles that produce cellular energy through a series of heteromeric enzyme complexes embedded within the inner mitochondrial membrane (‘the respiratory chain’) via oxidative phosphorylation. Clinically, perturbations within any of these complexes, or pathways associated with the efficiency of the respiratory chain are referred to as “mitochondrial disorders”. Mitochondrial disorders commonly affect organ(s) exhibiting the greatest demand for aerobic energy, including the brain. Considering the large energy demands and limited regenerative capacity of neurons, mitochondrial dysfunction can be particularly devastating for neuronal survival and has been implicated in the etiology of an array of neurodegenerative conditions. Given this, it seems intuitive that necessary global regulatory mechanisms exist at multiple levels to orchestrate the expression and activity of mitochondrial proteins to adapt to the varying metabolic demands of the cell. In this presentation, we highlight a role for epigenetics in orchestrating cellular metabolism within the brain.

BIO:

Chris completed his Honours BSc in the Behaviour, Genetics and Neurobiology specialist program at the University of Toronto Mississauga. During his degree, he found himself intrigued by the cellular mechanisms underlying animal behaviour and development, particularly in the context of disease. He pursued his undergraduate thesis under the supervision of Professor Ashley Monks investigating the development of sex differences within the Rat spinal cord. As a PhD student in the Cheng lab, Chris investigates the interplay between epigenetics and the coordination of cellular metabolism in the brain and the consequences which arise when these systems are perturbed. Outside of the lab, Chris enjoys going to the gym and spending time with his two exotic shorthair cats, Minou and Pree.

LINK:

<https://utmchenglab.wordpress.com/>

PICTURE: (please use the photo from the link above)