



Molecular Genetics  
UNIVERSITY OF TORONTO

# DEPARTMENTAL SEMINAR

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**Alternative Cleavage and  
Polyadenylation: Regulation  
and Function**

**HOST** Dr. Craig Smibert

**December 5,  
2025**

**11:00 AM**

**MaRS  
Room 1622**

Alternative polyadenylation (APA) is a critical co/post-transcriptional process that enhances RNA isoform diversity, regulating mRNA stability, localization and translation in a spatiotemporal manner. Most human genes are subjected to APA regulation, which usually changes the content of the 3' Untranslated Region (UTR). This regulation is most apparent across different tissues and in response to cell proliferation status. Neurons tend to preferentially express longer 3'UTR variants as a result of selecting distal polyA sites. I will discuss how this is regulated, and describe a new method that accurately quantifies alternative 3'UTR isoforms transcriptome-wide. In addition to regulation, our lab studies the functional roles of specific 3'UTR mRNA isoforms. We have previously uncovered functional roles for long 3'UTRs in the neuronal development of *Drosophila* and mice. I will describe new work that investigates phenotypes resulting from long 3'UTR manipulation in cultured human neurons.