



Molecular Genetics
UNIVERSITY OF TORONTO

DEPARTMENTAL SEMINAR

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Long non-coding RNAs in pluripotency, development and disease

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3PM

PGCRL
Event Room 1

Well-regulated gene expression networks are responsible for establishing and maintaining cellular states during development. Of the early cell states present in development, pluripotency is the cellular state that has the potential to derive all cell lineages of the embryo. Mutations in genes associated with pluripotency often lead to abnormal development and embryo lethality, but much of the focus relating to these genes has been on protein-coding genes. However, the last decade has seen the rise of long non-coding RNAs (lncRNAs) as novel players in the control of pluripotency, development, and several diseases including cancer and neurological disorders. As such, our major goal is to understand the molecular mechanisms and functional interactions of lncRNAs in modulating cellular states. In this talk, I will focus on a novel lncRNA, that we named Tapir. It is expressed very early during development, in the 2-cell and 4-cell stages, in the inner cell mass, and in stem cells of the neuroepithelium. I will discuss how this lncRNA interacts with mRNAs to influence splicing, gene expression, and ultimately cell fate by regulating stem cell maintenance.

HOST Dr. Philipp Maass