



Molecular Genetics

UNIVERSITY OF TORONTO

## DEPARTMENTAL SEMINAR

# TINA TOOTLE, PHD

Chair and Professor

University of Iowa

**Monday,  
March 10,  
2025**

**4:10 PM - 6PM**

**The where, what and how of  
prostaglandin signaling in  
driving cell migration**

**University  
College (UC)  
Room 161**

Prostaglandins (PGs), a class of lipid signaling molecules, promote cell migration to drive development, mediate wound healing, and contribute to cancer metastasis. However, which cells produce versus receive the PG signal, and how that signal or signals drive migration, remain poorly understood. Using the robust genetic system of *Drosophila* and the in vivo, collective and invasive migration of the border cells as a model, we find that two PGs from distinct cell types are required to promote migration, and do so, in part, by regulating cellular stiffness. We also find that PGs are critical regulators of the nucleoskeleton. Thus, PG signaling regulates the balance of forces between cell types and the transmission of forces to the nucleus to promote cell migration. These mechanisms of PG-action are likely conserved, and thereby, provide insight into the roles of PGs in other cell migrations, including wound healing and cancer.

**HOSTS**

Dr. Julie Brill, Dr. Julie Claycomb