

Biology Seminar



Western
UNIVERSITY · CANADA

12:30 - 1:30 pm
Friday, March 5, 2021
Seminar to be held via ZOOM



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Intracellular control and coordination of motile cilia

Living cells interact dynamically with a constantly changing world. Active motility such as swimming or crawling confers a significant survival advantage, allowing microbes to navigate freely towards regions or locations where nutrients or resources are more plentiful. Microorganisms have evolved diverse modes for self-propulsion, and can achieve complex navigation strategies such as chemotaxis and phototaxis by integrating sensory cues and motor responses. In this talk we will use a combination of theoretical models, live-cell experiments, and robotics, to understand the physical and evolutionary basis of motility control at the microscale. Many species differ markedly in terms of their size, shape, and arrangement of locomotor appendages, but are united in their use of cilia - the ultimate shape-shifting organelle - to achieve self-propulsion. We will discuss whether intracellular structures and basal coupling can promote ciliary coordination or even mediate swimming gait, in a number of distinguished organisms.

