Department of Anatomy & Cell Biology Seminar Series

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The cell biology and evolution of bacterial cell elongation and morphology

The diversity of shapes of organisms is one of the most fascinating aspects in the field of biology. While bacteria display a myriad of morphologies, the mechanisms that control morphogenesis and the evolution of bacterial morphology are not well understood. One mechanism that drives morphogenesis is the synthesis of the peptidoglycan (PG) cell wall at specific subcellular sites, or zones. I will describe methods of peptidoglycan labeling that allow the detection of sites of peptidoglycan synthesis and their use to study the mechanisms of peptidoglycan synthesis. I will describe how the evolution and co-option of a regulator of cell differentiation drove an evolutionary transition in morphology in species related to Caulobacter crescentus. In addition, I will show how evolutionary consideration of the above mechanism of morphogenesis in close relatives of Caulobacter led to the identification of a new mode of cell elongation.

Wednesday, Feb. 21, 2024
11:30am - 12:30pm

Room 1/12 - Strathcona Anatomy and Dentistry Building

Hosted by: Shuaiqi Guo, PhD

McGill