THE UNIVERSITY OF BRITISH COLUMBIA

Cellular and Physiological Sciences Seminar Series

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Thursday, September 26, 2019
12:45 - 1:45 (LSC 3)
Host: Drs. Rideout/Kopp

"Studies of the bacterial cell envelope using cryo electron tomography"

The bacterial cell envelope is a complex multilayered structure. Two main types of cell wall architecture have been identified in bacteria depending on the number of membranes surrounding the cell and the thickness of a polymer called peptidoglycan (PG). The ‘monoderm’ cells have a single membrane surrounded by a thick layer of PG, whereas ‘diderm’ cells possess two membranes with a thin layer of PG between them. A major unanswered question in microbiology is how the outer membrane evolved in Gram-negative bacteria. Our cryo-electron tomography studies of sporulating monoderm and diderm cells provide insights into possible mechanisms of outer membrane biogenesis. Our biochemical and phylogenetic analyses further suggest that the last universal ancestor of all bacteria was likely a diderm and that the modern monoderm phyla must have gone through a diderm intermediate.

Join us for coffee and cookies at 12:15 in LSC 1410

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