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Wednesday, March 20, 2019

11:30 am

Room 2/36

Strathcona Anatomy Building

3640 University Street

“Unravelling the Molecular Secrets of Bacterial Secretions Systems by Hybrid Approaches”

Bacterial secretion systems are essential protein machineries, enabling bacteria to obtain nutrients, communicate, protect against biological and chemical agents, as well as facilitate infection through the delivery of virulence factors. These secretion systems are typically comprising large complexes that assemble in and around the bacterial membrane(s) to form specialized channels through which selected proteins are actively delivered. Deciphering the architectures and mechanisms of action employed by these secretion systems have great implications for clinical and environmental research. In the first part of this seminar, I will present the bacterial sporulation hybrid-secretion system and recent advancements that emphasize a common evolutionary link shared by diverse bacterial secretion systems. In the second part, I will present a unique transporter directly associated with Methicillin-resistant *Staphylococcus aureus* pathogenicity. This work provided crucial mechanistic insights and sets the foundation for novel drug design. Finally, I will talk briefly about my future research plans for the Type-IX secretion system associated with marine aquaculture and human health.