Abstract of Presentation

Presentation Title:

The Dot/Icm Type IV secretion system and effector proteins: essential players in *Legionella* infection.

Abstract:

Legionella pneumophila are Gram-negative bacteria found ubiquitously in soil and freshwater environments. Once inhaled by humans, *Legionella* infections can result in a severe form of pneumonia known as Legionnaires' disease. *Legionella* enter phagocytic host cells such as alveolar macrophages, and *Legionella* remodel the *Legionella*-containing vacuoles (LCVs) derived from phagosomes into ER-like organelle, in which *Legionella* replicate. The *Legionella* virulence as well as the LCV remodeling is mediated by 'effector proteins' that are translocated from *Legionella* to the host cytoplasm via the Dot/Icm type IV secretion system (T4SS). The T4SS is a transmembrane nanomachine that transports biological macromolecules such as proteins and DNAs across bacterial and host membranes, and is well established to play a critical role in infection by many important bacterial pathogens including *Legionella* and *Helicobacter*. I'd like to discuss recent findings on structure and function of the T4SS and effectors proteins.