The Department of Biological Sciences

Proudly presents the seminar

Using *Staphylococcus aureus* as a model for studying bacterial adaptation

Guest Speaker: **Dr. Davida S. Smyth**

Assistant Professor Biological Sciences

NYCCT- City Tech

When: Thursday, December 6th, 2012
Time: 12:45 pm- 2:00 pm
Place: Namm 402

Staphylococcus aureus is a bacterium that colonizes approximately 40% of individuals. It is an opportunistic pathogen, once it breaches the host defenses, it is capable of causing a range of infections, from skin and soft tissue infections, to more serious life threatening conditions such as pneumonia and endocarditis. The ability of *S. aureus* to elicit such deleterious effects on the host is a consequence of an adaptable genome with core virulence factors such as surface encoded adhesions and secreted toxins as well as plethora of horizontally acquired elements such as plasmids, transposons and pathogenicity islands. The transition of *S. aureus* from a colonizing state to an invasive, infectious state is an area of study that will permit a greater understanding of how *S. aureus* develops and adapts to life within the host.

My area of research relates to the genomic diversity of this pathogen and to date, I've studied strains from *S. aureus* from animals, such as cows, goats and sheep as well as humans and more recently antibiotic resistant strains. I am particularly interested in how the bacteria adapt to such as variety of hosts and elucidating the mechanisms it employs to do this, including the acquisition of mobile genetic elements (MGE) and mutation in the genetic material. The consequences of these events are clear, but the driving forces and mechanisms are not and I hope to show you how my past, current and future research will continue to enlighten us on this wonderfully adaptable pathogen.

Refreshments will be served.

For more information contact Prof. Montes-Matias (MMontes-Matias@citytech.cuny.edu)

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