SIGMA XI McGill Montréal

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Bonding with Bugs: Bioadhesion in Environmental and Biomedical Processes

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PUBLIC LECTURE

When:

Monday

30th March 2009

6 P.M.

Where:

McGill University

Otto Maass Chemistry Building

Room 10

Microorganisms have a strong tendency to stick to surfaces or interfaces. The bioadhesion process has important implications in a wide range of biomedical and environmental applications. Adhesion of pathogenic microorganisms to mammalian cell surfaces or biomedical devices is the etiology of a broad spectrum of pathologies including endocarditis and urinary tract infection. For this reason, medical and dental research in this area is focused on preventing and controlling the formation of infectious biofilms – structured communities of microorganisms enclosed within a self-developed matrix of polymeric substances and adherent to a living or inert surface. I will discuss our work aimed at preventing binding of infectious organisms to medical devices and to mammalian cell surfaces using an active component of Vaccinium macrocarpon – the North American cranberry.

Bioadhesion and subsequent biofilm formation is also of importance in a wide range of environmental and industrial scenarios. Biofouling is a widespread problem that affects the performance of bioaugmentation systems for in-situ bioremediation, water distribution pipes, and water treatment membranes. Some environmental processes, such as bioreactors and riverbank filtration systems, rely on bioadhesion and biofilm formation for proper functioning.In my lecture, I will discuss recent advances in the characterization of the complex microbial adhesion process from the nanoscale to the macroscale.

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Council Meeting **4:30 P.M.**

Member Reception **5:30 P.M.** **Ruttan Room**