

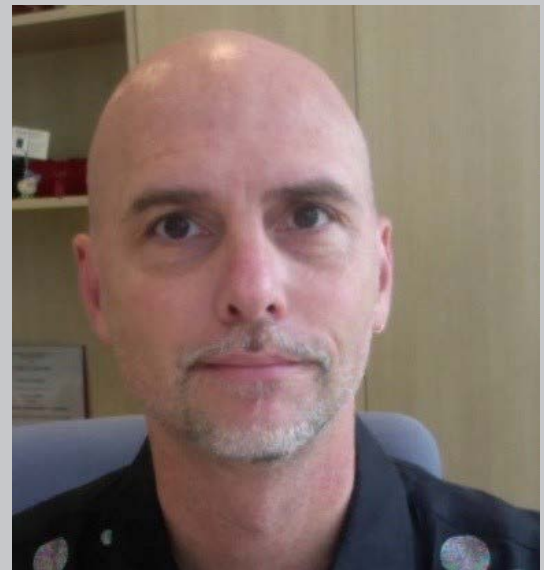


Seminar Announcement

Nitric oxide mediated control of microbial biofilms

Date: 14 February 2020
Time: 4 p.m.
Venue: Classroom 1, SBS

It is now reasonably well accepted that bacteria form biofilms in almost all habitats they colonise. The formation of these spatially organised and structured biofilms is evolutionarily successful as it results in a number of emergent properties not predicted based on studies of planktonic bacteria. As examples, biofilms are considerably more tolerant than planktonic cells to a range of stressors, including desiccation, nutrient limitation, UV exposure and biocides. Biofilms are important in range of industrial and medical contexts and while some biofilms are favourable, by and large most are considered at best a nuisance and at worst, life threatening. It is therefore no surprise that there is considerable interest in understanding how microorganisms form biofilms, with the ultimate view of using that information to develop control strategies. We have determined that some bacteria produce and respond to nitric oxide, whereby this naturally produced gas acts as a signal molecule to induce bacteria to disperse from the biofilm, to once more become planktonic bacteria. These dispersed cells also become sensitive to biocides that otherwise do not kill the same bacteria within the biofilm. The molecular pathway through which bacteria produce, sense and respond to NO is becoming increasingly clear and such knowledge helps to better design strategies to use NO in industrial and medical contexts to control biofilms.



Speaker:

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