1023-92-216   **Nick G Cogan*** (`cogan@math.fsu.edu`), 208 Love Bld #002-E, Department of Mathematics, Tallahassee, FL 32306. *Modeling Biofilm Disinfection: How much is enough?*

Bacterial biofilm formation is prevalent in environmental, medical and industrial settings. There are varied protective mechanisms that hinder the control of increased risk of infection, contamination and corrosion due to biofilm formation by the application of biocidal agents. These mechanisms include: physiological tolerance, where slowly growing bacteria are less susceptible to disinfection; phenotypic tolerance, where highly tolerant phenotypes are expressed by a small fraction of the bacterial population; other physical barriers, including reduced diffusion and fluid/structure interactions.

The purpose of this talk is to describe the incremental inclusion of several of these mechanisms in a mathematical model. Typical results from each stage are contrasted to determine some of the effects of including increased complexity. Some discussion of the mathematical difficulties inherent in each increase will be included to address the question: How much is enough? (Received August 25, 2006)