1038-92-82 **David Chopp*** (chopp@northwestern.edu), ESAM, Tech Institute, Northwestern University, 2145 Sheridan Rd., Evanston, IL 60208. *Impact of fluid flow on modeling bacterial biofilms.*

Bacterial biofilms are one of the most ubiquitous forms of life on the planet. Biofilms can be terribly destructive, e.g. causing death in people with Cystic Fibrosis, Legionairre's disease, and nosocomial infections. They can also be beneficial, e.g. waste water reclamation, fertilizer uptake in agriculture, and production of many household products. For both reasons, it is important to understand the mechanisms that promote and inhibit growth. We present our work on growth of bacterial biofilms for two systems and how fluid flow affects the dynamics. The first system is Pseudomonas aeruginosa biofilms, which are the leading killer of people with cystic fibrosis. This system is interesting because of its ability to use cell-to-cell communications to change group behavior. The second system is a autotroph/heterotroph symbiotic system that is used in activated sludge reactors during water reclamation. (Received January 29, 2008)