1023-Z1-1654 **Gretchen A. Koch*** (gretchen.koch@goucher.edu), Department of Mathematics and Computer Scienc, Goucher College, 1021 Dulaney Valley Road, Baltimore, MD 21204, and **Donald A. Drew** (drewd@rpi.edu), Department of Mathematical Sciences, AE 301, Rensselaer Polytechnic Institute, 110 Eighth Street, Troy, NY 21280. *Modeling Cell Division in* Escherichia coli. Preliminary report.

Successful cell division in *Escherichia coli* depends on the MinCDE system, where three proteins create oscillating polymer chains. A Monte Carlo model of the MinCDE system shows robust oscillations from one polar zone to the other. As with any mathematical model, simplifications of the biology were made in this model; one of these simplifications was the inclusion of a nucleation site for the initial MinD protein attachment to the membrane. This talk will compare the results of a two Monte Carlo models: the original with nucleation sites and a second designed to have random placement of the initial MinD protein in the membrane. (Received September 26, 2006)