1046-92-273 **Nessy Tania*** (tania@math.utah.edu), Department of Mathematics, University of Utah, 155 S. 1400 E. Rm.233, Salt Lake City, UT 84112-0090, and **James P Keener**. *The Effect of Diffusion on Calcium Oscillations.* Preliminary report.

Ordinary differential equation models are widely used to study IP3-mediated calcium oscillations. There, a cell is taken as a well-mixed compartment, but experiments often show spatial inhomogeneity in intracellular [Ca]. Using a spatially extended model, we study how diffusion affects calcium release. It lowers the [Ca] at a particular release site while increasing the concentration at neighboring sites. Varying the diffusion coefficient can significantly change the bifurcation point for oscillation onset. (Received August 25, 2008)