

**Meeting:** 999, Nashville, Tennessee, SS 12A, Special Session on Biomathematics

999-35-54            **Wenzhang Huang\*** (huang@math.uah.edu), Department of Mathematical Sciences, University of Alabama in Huntsville, Huntsville, AL 35899. *Traveling waves for a biological reaction-diffusion system*. Preliminary report.

We investigate the existence of traveling wave solutions for a system of reaction-diffusion equations that has been used as a model for the microbial growth and competition in a flow reactor and for the diffusive epidemic population. The existence of traveling waves was conjectured early but only has been proved recently for sufficiently small diffusion coefficient by the singular perturbation technique. In this talk we show the existence of traveling waves for an arbitrary diffusion coefficient. Our approach is a shooting method with the aid of an appropriately constructed Liapunov function. (Received July 30, 2004)