PDE seminar
University of Minnesota
Wednesday, October 10, 2012

Speaker: **Hans Weinberger, University of Minnesota**
Title: **The retreat of the less fit allele in a population-controlled model
for population genetics.**

Abstract: We consider a system of 3 parabolic equations in 3 unknowns, which is a model with population control for the spatial and temporal interactions of the population densities $\left(\rho_{aa},\ \rho_{aA},\ \rho_{AA}\right)$ of the three genotypes of a single-locus diploid model. It is shown that, under some conditions on the death rates, all solutions with initial data in a very large class approach a constant-density equilibrium in which only the more fit allele is present. Moreover, the speed at which this phenomenon spreads is at least as great as that of the linearization of the corresponding Fisher-KPP equation. A larger upper bound for this speed is also obtained.