

# Special PHYSICAL MATHEMATICS SEMINAR

## NUCLEATION KINETICS --- THREE ERAS OF SOLUTION

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### ABSTRACT:

The classical models of nucleation kinetics were formulated several decades ago. The two main models (Becker-Döring aggregation and diffusion limited coarsening) give inconsistent predictions.

I will present a new model that is consistent with Becker-Döring for sufficiently small clusters and with diffusion limited coarsening for large clusters, resolving the conflict between the two classic models. The analysis of the new model, based on singular perturbation and numerical methods, reveals three distinguished limits, with widely separated scales of time and cluster size, that correspond to three interlinked "eras" of nucleation kinetics.

**TUESDAY, FEBRUARY 14, 2006**  
**2:30 PM**  
**Building 3, Room 270**

*Refreshments at 3:30 PM outside Room 3-270.*



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