Analysis and Differential Geometry Seminar

Collective migration model on a viscoelastic collagen network

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Abstract: We explore a model of self-generated directional cell migration on viscoelastic substrates in the absence of apparent intrinsic polarity. Mathematically, this takes the form of a reaction-diffusion equation for the network deformation, along with a moving cell-cluster source term which itself moves according to the local network deformation. This creates a strange form of nonlinear interaction. We show global well-posedness, conditional existence/absence of traveling waves, and address the stability of traveling waves.

Wednesday, March 27, 2024, 10:00 am
White Hall 110

Mathematics
Emory University