

Interdisciplinary Center for the Study of Biocomplexity Colloquium

Paul M. Kulesa

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will give a lecture entitled:

Cell Migration During Development and Cancer: Theory and Experiment

Abstract

Long distance cell migration is a characteristic of embryonic development and cancer metastasis, yet the mechanisms that drive a subpopulation of cells to a target are poorly understood. Here, we analyze neural crest cell migration in both living chick embryos and a corresponding theoretical framework. Our combined theoretical and experimental results offer a mechanistic model in which leading cells create and respond to a **cell-induced chemotactic gradient**. Leading cells transmit guidance information to trailing cells that use short-range signals to move in a directional manner. I will discuss these results in the context of our recent experiments that compare human melanoma metastasis with the neural crest invasion program, studied in our in vivo chick embryo transplant model.

Keywords: neural crest, melanoma, cell migration, imaging, mathematical modeling, genomics



Tuesday, November 13 , 2012
4:00 p.m. to 5:00 p.m.
127 Hayes-Healy Center