

APPLIED MATHEMATICS COLLOQUIUM

**Philip Maini
(University of Oxford)**

Modelling Invasive Processes in Biology

Abstract:

The collective movement of cells in tissue is vital for normal development but also occurs in abnormal development, such as in cancer. We will review three different models: (i) A vertex-based model to describe cell motion in the early mouse embryo; (ii) A individual-based model for neural crest cell invasion; (iii) A model for acid-mediated tumour invasion.

In each case we shall use the model to answer important issues concerning biology. For example, in (i) we shall propose a role for rosette formation, in (ii) we propose that two cell types are necessary for successful invasion, and in (iii) we shall show how the model suggests possible therapeutic strategies for tumour control.

**Monday February 11, 2013
4:30PM
Building 4, Room 145**

Applied Math Colloquium: <http://www-math.mit.edu/amc/spring13/>
Mathematics Department: <http://www-math.mit.edu>



Massachusetts Institute of Technology
Department of Mathematics
Cambridge, MA 02139