

CENTRAL MICHIGAN UNIVERSITY
Department of Mathematics
GRADUATE STUDENT
SEMINAR

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A MATHEMATICAL MODEL OF CELL FATE

Tuesday, January 15, 4:00 pm - 5:00 pm
Pearce Hall, Room 227

This talk presents how mathematical analysis is useful in analyzing the cell fate. In many developing biological tissues, an alternating salt-and-pepper pattern of cells is formed from an initially uniform cell type. Two proteins, Delta and Notch, plays a critical role in generating this structure by switching neighbor cells into opposite cell fates. A very simple model from Sprinzak et al, Nature 2010, was developed to study this mechanism. We will present steady state and sensitivity analysis of this model to investigate under what conditions the cell can develop a switch of cell fate. This is a joint work with Matt Moore (a CMU undergraduate student) and Yican Zhang (a high school student).