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**Gaurav Mendiratta\*** (gmendiratta@salk.edu), CA. *Modeling cell-cell interaction based pattern generation by Notch pathway.* Preliminary report.

Notch pathway plays a crucial role in cell fate decisions in developmental processes in all animals. Members of Notch pathway have been shown to be commonly dis-regulated in a large number of cancers. The mechanism of interaction of notch and its ligands is primitive and at least in some cases follows simple rules of cis-inhibition and trans-activation. We define a model of interacting nearest neighbors representing the cell-cell interaction mediated by notch pathway. We use this model to explore the implications to pattern formation and response to perturbations. We computationally simulate the model to study the effects of different modifications of the signaling pathway which are used in biological systems to achieve different, sometimes opposing phenotypes. (Received September 24, 2018)