Meeting: 1002, Pittsburgh, Pennsylvania, SS 13A, Special Session on Mathematical Biology

1002-92-218 **Pranay Goel*** (pranay@mbi.osu.edu), 231 W. 18th Avenue, Ohio State University, Columbus, OH 43210, and **Alan Gelperin**. *A Neuronal Circuit Implementing the Logic of Learning Behavior in Limax.* Preliminary report.

Experimental studies on the Limax have provided data (Gelperin, 1980's) on association conditioned in response to various (combinations of) stimuli. Gelperin et al (1985) have tabulated many of these responses into a truth-table, indicating the absence or presence of conditioning in relation to the presentation of the various combinations of stimuli.

We describe here a simple neuronal network that implements this logic upto second-order conditioning. In particular, we show how "blocking" - which has previously been described in phenomenolgical models - emerges as a property of the dynamics of the network. (Received September 14, 2004)