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David Terman* (terman.1@osu.edu), 231 W. 18th Ave, Columbus, OH 43210, and **Alla Borisyuk, Brian Smith, Sungwoo Ahn, Xueying Wang** and **Jeong-sook Im**. *Dynamic Clustering in a Model for an Insect's Antennal Lobe*.

Experiments have demonstrated that projection neurons (PN) within a mammal's olfactory bulb or insect's antennal lobe (AL) produce complex firing patterns in response to an odor. The firing patterns may consist of epochs in which a subset of PNs fire synchronously. At each subsequent epoch, PNs join in and drop out of the ensemble, giving rise to "dynamic clustering". I will present a biologically motivated model of the AL that produces dynamic clustering, as well as other complex features of AL activity patterns. Using singular perturbation methods, we reduce the analysis of the model to an algorithm based on a directed graph. The algorithm allows us to systematically study how properties of the attractors depend on parameters including the network architecture. (Received September 22, 2005)