1106-92-2622 **Jennifer Miller*** (jennifer.miller@trincoll.edu), Trinity College, Department of Mathematics, 300 Summit St, Hartford, CT 06106, and **Hwayeon Ryu**, **Zeynep Teymuroglu**, **Xueying Wang**, **Victoria Booth** and **Sue Ann Campbell**. *Clustering in inhibitory neural networks with nearest neighbor coupling.*

We consider networks of neurons that fire in synchronized clusters. We expect the clustering dynamics of a neural network to change if we vary the connections in use or the strength of these connections. Using phase model analysis, we examine the clustering dynamics of a network of neurons that are each connected to a small set of neighbors. We will focus on the conditions for stability of solutions when each neuron is coupled to its nearest or two nearest neighbors on each side. In some cases, the stability is independent of both the size of the network and the connection strengths, while others depend on the relative strengths of the different connections. (Received September 16, 2014)