

# EFFECT OF A LEARNING RULE IN A MODEL FOR A CORTICAL NEURAL NETWORK

*Jamie L. Ridenhour, Charles E. Smith*

Dept. of Statistics, North Carolina State University

Campus Box 8203, Raleigh, NC 27695-8203, USA

[bmasmith@stat.ncsu.edu](mailto:bmasmith@stat.ncsu.edu) - [www.stat.ncsu.edu/~bmasmith/](http://www.stat.ncsu.edu/~bmasmith/)

## ABSTRACT

The model of Gutkin and Smith (2000; *Biological Cybernetics* 82: 469-475), a recurrent neural network with spatially structured activity patterns, was modified to include a learning rule. Following stimulation with a three tier spatial pattern, the neural units with sustained activity above a certain threshold had their self-excitation strength increased. The modified network was then given the same stimulus to examine the spatial pattern that resulted and the time to reach a level of enhanced activity.

## References

- [1] JGutkin , Smith (2000) *Biological Cybernetics* **82**: 469-475.