1014-35-1548 **J. Angela Murdock*** (jmurdock@memphis.edu). *N-Bump Solutions of Amari-Type Equation.*

We explore a partial integro-differential equation (Amari, Troy et. al.) that models pattern formation in neuronal networks:

$$\frac{\partial u(x,t)}{\partial t} = -u(x,t) + \int_{-\infty}^{\infty} \omega(x-y) f(u(y,t)) dy + s(x,t) + h.$$

The main objective has been to establish the existence and stability of N-bump stationary solutions. Our focus has been to extend existing results for the equal bump case, establish stability of those solutions, and characterize a class of Mexican-hat type coupling functions that allow N-bump solutions. (Received September 28, 2005)