Meeting: 1005, Newark, Delaware, SS 8A, Special Session on Mathematical Biology

1005-92-77 **Jonathan Bell*** (jbell@math.umbc.edu), Department of Mathematics & Statistics, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250. *Stationary states and traveling waves of excitation in neural field theory models.*

The cortex of mammalian brains is very structured, with distinct layers of densely packed nerve cells. With the increasing use of multiple electrode measurements, large-scale traveling waves of activity have become more important to consider in neuroscience. I will discuss the existence, uniqueness, shape, and stability of traveling wave solutions to a model that considers a continuum layer of cells with non-local connections (nonlinear integral-differential equations). I will also raise some issues about the existence of stationary solutions in the presence and absence of external stimuli. (Received January 28, 2005)