1011-35-390   **Erik S Van Vleck*** (`erikvv@ku.edu`), Department of Mathematics, 405 Snow Hall, Lawrence, KS 66045. *Bistable Waves in Discrete Media.*

We consider reaction-diffusion equations with a bistable reaction term. The equations considered include Nagumo equations, FitzHugh-Nagumo equations and a class of coupled Nagumo equations. Models that are discrete in space are often appropriate when there is an inherent length scale such as the distance between nodes of Ranvier in myelinated nerve fibers or the interatomic distance in materials. We focus on traveling wave solutions for some "simple" models. Phenomena considered include propagation failure due to the inherent length scale, lattice induced anisotropy in higher space dimensions, synchronization of waves in coupled systems, wave speedup due to temporal discretization, existence of pulse and front solutions and attractors for some FitzHugh-Nagumo equations, and time permitting some recent work on waves in inhomogeneous discrete media. (Received August 31, 2005)