Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Experimental Study of the Dynamics of Foraging Ants J. I. WALKER[1], R. P. FETZNER, G. W. BAXTER, Penn State Erie, The Behrend College — We study the search paths of foraging ants in order to describe their behavior mathematically. Ants have become popular as simple agents in models of artificial life. Here, the ant is presented the problem of finding food when no food cues are present. In this experiment, individual ants (Formicinae lasius flavus) are allowed to forage on a two-dimensional textured surface in the absence of a food source. The position of the ant as a function of time is determined with a high resolution digital camera. The scaling properties of the resulting foraging paths compare favorably with those of certain types of random walk.

[1]Supported by a Penn State Behrend Undergraduate Summer Research Grant

George Baxter
Penn State Erie, The Behrend College

Date submitted: 30 Nov 2005 Electronic form version 1.4