



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Genevieve Y. Williams	Project Number S1922
Project Title Foraging Behavior and Food Preferences of Argentine Ants	
Abstract Objectives/Goals Linepithema humile is a widespread invasive species. To understand the relationship between this species' success exploiting food sources and devastating indigenous species, this study documents the Argentine ant's food preferences and foraging behavior. Methods/Materials Baits from 7 food groups tested food preferences, different size baits tested the ant's ability to communicate size, and observations of their recruitment process were recorded. Results During the spring, Argentine ants prefer baits from the meat group. The ants also recruited in higher numbers faster to larger baits, suggesting that recruitment begins with size recognition. Perhaps the ant's circling explorations around baits are linked to size estimation. Additionally, recruitment seems to follow percent of the bait covered, so recruitment slows when the bait is covered 80-100%. Conclusions/Discussion L. humile's preference for protein which is available in the form of dead insects and animals in most ecosystems might explain its dominance over competitors tied to one food source. L. humile's ability to recruit relatively faster and more numbers to baits of larger weight and volume, in other words its ability to recognize more attractive baits, demonstrates how it successfully exploits food sources by preventing access to baits by competing species. Observations of three stages of L. humile's foraging behavior suggests that the Argentine uses a simple stimulus-response mechanism, possibly in conjunction with communication by pheromones, to recruit to and withdraw from a food source. Such a system of communication demonstrates L. humile's efficient use of the colony's manpower, furthermore contributing to its dominance in a given ecosystem.	
Summary Statement My study details the foraging behavior and food preferences of the invasive and environmentally destructive Argentine ant.	
Help Received Dr. Andrew V. Suarez was available for consultation on methods/materials as well as conclusions via email. Mom helped edit my report and was available for advice.	