Mean energy expenditure for ant foraging $(exp(.1/S) + distance^2)$ from noisy memory vector back to the nest at different noise levels S (n=1000) 10^{41} 10^{35} **Energy Expenditure** 10²⁹ 10²³ 10¹⁷ 10^{11} 10^{5} 10^{-3} 10^{-2} 10^{-1} 10⁰ 10^{1} 10^{2} 10^{3} Standard Deviation as Noise (mm)