

Date: April 8th, 2009

Speaker: Ben Ritchie, UNC Asheville

Title: *Game theory and the evolution of animal behavior*

Abstract: Game theory is a relatively new field of mathematics concerned with interactions between individuals and the possible solutions to the “game” being played. While this type of analysis was originally applied to economics, it has become an indispensable tool for understanding complex behavior patterns in animals. Complex animal behavior has not evolved in isolation, but in concert with other behavioral patterns within a given environment. This interaction between different behaviors is the crux of game theoretical analysis of animal behavior. Through analysis of what behaviors are present, we can deduce the constraints on the evolution of behavior, as well as how competing strategies give rise to an evolutionary stable solution. During this presentation I will describe the basis for game theoretical analysis of animal behavior, clearly define the notion of an evolutionary stable solution, and give representative examples how animal behavior may be understood through game theory.