Biology Seminar

12:30 - 1:30 pm
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BGS 0165

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Ceteris Paribus Parables

Changing multiple variables at the same time interferes with understanding. This observation guides how we design experiments and generate new ideas to test. In some cases, though, relying on the idea that "all else is equal" can lead us astray. More accurately, we run into trouble when we fail to recognize all else is not, in fact, equal. This can be particularly problematic in evolutionary ecology because one complicated set of processes (ecological ones) interacts with another equally complicated set of processes (evolutionary ones) to create the patterns we observe in nature. I will argue that mathematical modelling helps us avoid problems in evolutionary ecology by forcing us to clarify our thinking. My evidence will come from two pieces of work (let's call them case studies) by my Western teammates. The first case study examines the evolutionary consequences of kin competition, with particular emphasis on cooperative breeding (as exhibited by, say, the Florida Scrub Jay). The second case study examines the implications of parent-to-offspring pathogen transmission (as exhibited by, say, HTLV) for the evolution of infectious disease outcomes. Overall, I want to convince you that modelling helps us see mutatis mutandis when we might otherwise be inclined to think ceteris paribus.

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