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**Kathryn J Montovan\*** (kjs237@cornell.edu), NY, and **Laura E Jones, Saskya van Nouhuys** and **Hudson Kern Reeve**. *Evolutionary pressures maintain consistently low parasitism rates in the parasitoid wasp *Hyposoter horticola**. Preliminary report.

We present five evolutionary hypotheses for the benefit of low parasitism rates for *Hyposoter horticola* using game theory models, field data, and spatial simulation models to determine the validity of each hypotheses and the implications of spatial structure on the evolution of optimal parasitism rates. We study this question in the context of a well-characterized interaction between a parasitoid wasp and host butterfly on a fragmented landscape. We show the extent to which landscape features (patch quality, density, and connectedness) and host attributes (dispersal ability, reproductive success, mortality) affect the optimal parasitism rate; thus unveiling the role of spatial processes in the interaction. (Received September 25, 2012)