

**PhD position: The evolution of the supercolony and the role of parasites** Investigating the evolution of cooperation is essential to explaining the ecological dominance of many social species. The highly successful social insects are often thought of as colonies residing in single internally-cooperative nests. In reality, many ant species form nests that connect cooperatively with neighbouring nests, becoming 'unicolonial'. Explaining the evolution of unicolonial cooperation is challenging because although conspecifics in these extended colonies are behaving co-operatively, they also compete for resources. Resource competition means that a unicolonial strategy should be vulnerable to cheats who recognise closer kin and cooperate selectively, securing resources for their own near relatives, at the expense of the whole colony. In the light of this potential instability, how does unicoloniality arise and persist? One possibility is that parasitism drives co-occurrence of multiple queens for increased genetic diversity, allowing colonies to split between connected nests. This studentship addresses the current lack of theoretical models of the evolutionary of unicoloniality and the absence of empirical data on the effects of parasitism on unicoloniality. How to apply This project will be co-supervised by Elva Robinson (Biology, University of York) and James Marshall (Computer Science, University of Sheffield). The project will start Oct 2015 and is competitively funded. UK/EU students only. If you would like to apply, please send a CV and covering letter to:

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