

PhD position: Genomic consequences of low relatedness in ant societies

University of Helsinki, Department of Biosciences

The differentiation into queen and worker castes is the foundation of advanced insect sociality, and is based on differences in gene expression between the castes. Caste specific expression also affects how natural selection works on the genes. Because workers do not reproduce themselves, selection on genes expressed in workers depends on the relatedness between workers and the queens they help. In ants, relatedness between queens and workers varies widely, but little is known about how this affects the evolution of gene expression across species.

In order to study these questions, the project "Genomic consequences of low relatedness in ant societies", funded by the Academy of Finland and carried out at the University of Helsinki, Finland, is looking for a highly motivated PhD student. The ideal candidate has an MSc in biological sciences, with experience of molecular genetics lab work (preferably gene expression analyses), ability and desire to acquire new skills, enthusiasm for research in genetics and evolution, and an ability to work independently as well as in a team.

The PhD student is expected to carry out gene expression analyses using real time qPCR on a number of genes, and analyse the results in a comparative framework. The main focus will be on comparing gene expression patterns in unicolonial ants (such as the Argentine ant and unicolonial *Formica* wood ants) that have extremely low relatedness societies with their non-unicolonial relatives. In addition to this main focus, the project can be expanded to include other directions, depending on the skills and interests of the student and the progress of the project.

The position is funded for four years, with a salary according to the University of Helsinki salary system (ca. 2000 € per month). The PhD project can be started in the beginning of 2011.

The PhD thesis will be supervised by Dr. Heikki Helanterä and Prof. Pekka Pamilo, and carried out in close collaboration with The Centre for Social Evolution at the University of Copenhagen (Prof. Jacobus J. (Koos) Boomsma, Dr. Jes S. Pedersen, Dr. Morten Schiøtt). The research group of Dr. Heikki Helanterä is part of the group studying social evolution in ants at the Department of Biosciences at the University of Helsinki (Prof. Lotta Sundström, Prof. Pekka Pamilo, Dr. Perttu Seppä and others).

Send your application to heikki.helantera@helsinki.fi. Attach a CV, publication record, contact details of two references, and a two page (max) description of your research interests and why you would be a suitable candidate for the project. Screening of the applications will start on 1st of October.

More info: heikki.helantera@helsinki.fi
<http://www.helsinki.fi/science/ants/Heikki.htm>
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