

PhD position in speciation genomics of a non-model bird species

A 4-year PhD position in speciation genomics is available in the research group of Dr. Jochen Wolf at the Department of Evolutionary Biology in Uppsala, Sweden.

Background

The study of speciation mechanisms remains one of the major challenges in fundamental biological research. The hybrid zone in Europe between Carrion Crows (*Corvus [corone] corone*) and Hooded Crows (*Corvus [corone] cornix*) is a text book example of speciation that has been studied from ecological, behavioral, and morphological perspectives. In contrast, the genetic architecture of the hybrid zone is poorly understood. The crow system represents a case of a very early phase of species divergence that requires new molecular approaches for its comprehensive description.

The project

We use several approaches to understand the underlying genetic foundation of this hybrid zone and to identify the few decisive genetic differences between the two taxa. These include a candidate (pigmentation) gene approach, whole genome shotgun sequencing and digital expression analysis.

The successful applicant ideally has a strong background in bioinformatics and experience in handling large sequencing data sets. She/he will be highly involved in *de novo* assembly of paired end shotgun sequence reads using a combination of Illumina and Roche 454 technology to obtain a first draft of the crow genome. This draft sequence will then be used as a reference for re-sequencing several populations and to conduct population genomic analyses. Therefore, the project also requires a fundamental understanding of population genetic theory.

The candidate will also be involved in handling transcriptome data from crows that are currently being raised in a common garden setup. At a later stage in the project it will also be possible to analyze transcriptome data from a separate project on mallards (*Anas platyrhynchos*). Given the interest, the transcriptome work also offers the opportunity for the candidate to gain experience in the lab including the preparation of barcoded cDNA libraries for several sequencing platforms.

Environment

My group forms part of a recently launched Centre of Excellence, the Uppsala Centre for Evolution and Genomics (<http://www.uceg.uu.se>). It is situated in the Department of Evolutionary Biology, which excels in many aspects of genetics and evolution. The department offers an inspiring international atmosphere, with researchers from around the world. My group also closely interacts with other groups across departmental boundaries to exchange ideas about good solutions for handling next generation sequencing data (http://www.egs.uu.se/evbiol/Persons/Jochen/NGS_Club.html). We also collaborate on research projects with the *Max Planck Institute of Ornithology* in Radolfzell, Germany and the *Max Planck Institute of Evolutionary Biology* in Plön, Germany.

The Evolutionary Biology Centre is one of world's leading research institutions in evolutionary biology and encompasses a wide variety of disciplines in the biological sciences. It is situated in Uppsala in Sweden, a beautiful small city of that offers rich opportunities in cultural and outdoor activities. The culture and activities of the city are strongly influenced by the 40 000 students living there.

Application

To apply, please send a letter describing your research experience and interests, a CV, and two letters of recommendation to Dr. Jochen Wolf at jochen.wolf@ebc.uu.se. The position will be filled as soon as a suitable candidate has been found. For further information visit the group's website (<http://www.egs.uu.se/evbiol/Persons/Jochen.html>) or contact me directly. Informal inquiries are welcome.