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MIRIAM LIEDVOGEL, PhD UNDERSTANDING THE GENOMIC ARCHITECTURE SHAPING MIGRATORY BEHAVIOUR IN THE EUROPEAN BLACKCAP

Monday, 27.01.2020, 11:15 at Seminar Room 3, UZA I



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Understanding the genetic architecture of migratory behaviour is a longstanding goal in avian biology. Blackcaps are ideal for this work as populations within this species exhibit dramatic differences in migratory behaviour and little else. Accordingly, any genetic difference we find between these populations is likely related to migration. There is also a tremendous body of research on the genetic basis of migration in this system. The key objectives of our work are to (i) characterize phenotype, population structure, evolutionary and demographic history of our study species the blackcap, and (ii) identify sequence variants and signaling pathways that are associated with variation of the migratory phenotype in this species.

For accurate phenotype characterisation in the wild we use light-level geolocators to track birds on migration. Our current work focuses along the central European migratory divide/hybrid zone where we aim to directly evaluated hypotheses relevant to evolution, ecology and conservation. We interpret this insight within a solid framework of bird migration to ultimately integrate both phenotypic and genomic data to answer important questions in evolutionary ecology and genetics.

In my talk I will give an overview on state of the art knowledge of migration genetics in the blackcap, covering insight from classical studies on selection and cross-breeding experiments, via quantitative genetics approaches, to finally introducing novel insight from recent work using a *de novo* assembled genome for the blackcap as reference in a comparative population genomics study with different phenotypes across their breeding range.

Miriam Liedvogel's research is motivated by her major interest in avian biology, particularly the phenomenon of bird migration. With her approaches she links fascinating behaviour to their underlying molecular machinery. She studied Biology in Heidelberg, Berlin and graduated with a MSc in Integrative Biosciences from Oxford University, UK. Then returned to Germany to do her PhD research on the magnetic compass in night-migratory songbirds at Oldenburg University in collaboration with Duke University, NC, US. Her postdoc work focussed on understanding the genetics of the timing of breeding and consecutively the genetics of willow warbler migration across the central Scandinavian migratory divide. Since 2015 she was lucky enough to win a Max Planck Research Group Grant and is now heading her own lab working on understanding the genetics of migration using the European blackcap as focal study system.

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