

Invitation to a Guest Lecture
at the joint colloquium of the Institute of Biology and Environmental Sciences and the
Department of Neuroscience

Module bio890: Current topics in biology

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MPI für Biologische Intelligenz

Ecological and evolutionary drivers of behavioural diversity

Intraspecific variation is an important part of biodiversity and plays a key role for the adaptive responses to environmental change. A substantial part of intraspecific variation relates to reproduction and is manifested by the phenotypic differences between the sexes. Sex differences in behaviour are captured by the sex role concept. Conventional sex roles imply that males compete and females care. Dominant males are popular with females and enjoy high mating success, whilst many subdominant males are an evolutionary dead end as they are unable to reproduce. Under this paradigm, females are expected to choose their partner carefully and then diligently look after the offspring. However, in many species, the observed sex roles do not conform with such conventionality, or show unexpected diversity and flexibility. In my talk, I will present empirical examples from our studies on shorebirds that further our understanding on the evolution of different reproductive tactics. Shorebirds (plovers, sandpipers & allies) show an unusual diversity in mating and care behaviours that are thought to have evolved as a response to differences in sexual selection. In the first part, I will show how social and ecological conditions in plovers drive female polyandry and male parental care. In the second part, I will show how an autosomal supergene has led to the evolution of three distinct male reproductive morphs that employ different mating tactics in ruffs. Our studies demonstrated that this unusual diversity in ruffs is maintained by genetic conflicts and frequency dependent selection. Finally, I will show how a detailed transcriptomic and hormonal characterization of the ruff morphs has helped to pinpoint mechanistic differences in the molecular regulation of steroid hormones, which are key factors underlying the behavioural diversity of reproductive tactics



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Host: Prof. Dr. Miriam Liedvogel (Director Institute of Avian Research), IfV

Members of all institutes are cordially invited to join the lecture.