

Master thesis announcement – rodent movement behavior

Consistent intra-individual variation in behavior (i.e. animal personalities) has gained much attention in ecology and is increasingly being recognized to affect key aspects of animals' lives and species persistence^{1,2}. This project aims to investigate intraspecific trait variation (ITV) in movement, specifically dispersal and the settlement in a new habitat, under various social contexts. ITV has been found among a wide range of animal behaviors ranging from movement and space use to parasite load, survival, and species coexistence^{3,4,5,6}. As animals with different behavioral types move around the landscape they experience different situations and react to environmental contexts in different ways. Dispersal decisions are thus influenced not only by the behavioral type of the individual but also by the environmental and social context, ranging from population density and resource availability to predation and parasite risk. The individual behavior and reactions, i.e. movement decisions, further affect the individual status regarding food and mating opportunities and subsequently affect fitness. Therefore, to answer our question we, additionally, aim to investigate how personality affects space use, microhabitat choice, parasite load and infection status, and reproductive output.



Here we will conduct field experiments with wild bank voles (*Myodes glareolus*) in forest habitat patches in an agricultural landscape. First, we will capture mark and recapture voles, assess personality using standardized tests in field, quantify parasite load (and PUUV status), and track a subset of individuals in their native habitat. Second, we will translocate individuals to a new forest habitat and track their movements as well as monitor their survival and reproductive output through parentage analysis. We would therefore like three master's students to join our fieldwork near Münster or Uckermark this summer (~July-October 2022) to each work on one of the projects listed below.

1st project would focus on personality and infection, investigating if PUUV infection/parasite load vary with personality(-dependent movements) in bank voles (*Myodes glareolus*).

2nd project would focus on personality and space use, investigating if consistent inter-individual differences in behavior affect (space use and) microhabitat choice in bank voles (*Myodes glareolus*)?

3rd project would focus on personality and reproductive output, investigating if personality affects the reproductive output of bank voles (*Myodes glareolus*) and how does this vary under different social contexts?

For more information, please contact:

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References

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² Sih et al. 2004 *Quarterly Review of Biology*, 79:241

³ Schirmer et al. 2019 *Oecologia*, 189:647

⁴ Milles et al. 2020 *Oikos*, 129:1441

⁵ Boyer et al. 2010 *Journal of Animal ecology*,

⁶ Duckworth & Badayaev 2007 *PNAS*, 104:1501