

**OR311***The effect of colony size on lifespan in social insects***Boris Kramer**

Social insects become more and more recognized as important model organisms for aging research especially because different female aging phenotypes emerge from a similar genetic background as a result of division of labor. Several recent findings point to a weakness of the evolutionary theories of aging to explain the lifespan patterns in social insects either between or within different castes. A variety of factors such as caste, social environment, body size and task have significant influence on the lifespan of members of a colony, especially workers. Therefore disentangling the factors that affect worker and queen lifespan is a next step to understand the evolution of aging patterns in the social insects and especially which mechanisms regulate the found lifespan patterns. Colony size is an important variable in the life history and ontogeny of insect colonies and is also known to affect worker lifespan. Here I want to present the results of two studies on the effect of colony size on lifespan in social insects: 1) an interspecies comparison of queen and worker lifespan in relation to average colony size and 2) a case study on worker lifespan in differently sized *Lasius niger* colonies. Our comparative study (1) revealed no relationship between colony size and worker or queen lifespan, but we find a general trend that queen and worker lifespan diverge with increasing colony size across species. Throughout the ontogeny of *L. niger* colonies (2) we find a similar trend. Worker that hatch in small colonies live longer than worker that hatch in large colonies, even if they are kept in a similar social environment.