

**OR309**

*Stress and aging in honeybee workers*

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The Western honeybee, *Apis mellifera*, is emerging as an important model in biogerontological research due to its social organization, high phenotypic plasticity, and experimental accessibility. Life expectancy of workers can be influenced by several experimental manipulations, such as restriction of foraging opportunity and changes to colony size and demography. These manipulations affect the workers' behavior, physiology, and life history. In most organisms, these variables are also influenced by different forms of stress but the connections of stress to social life history and life expectancy of honeybees have not been sufficiently studied. I will discuss a series of experiments to investigate survival of acute oxidative stress and its heritable consequences, the effects of early life stress on later life social behavior and life expectancy, and the influence of honeybee management practices on levels of oxidative stress and life expectancy. Characterizing the connections of different stressors to honeybee life history and mortality is of fundamental importance to understanding social life history evolution, but it also has significant implications for applied management practices to halt the honeybee health crisis.