Division of labor in the clonal raider ant: from molecules to behavior

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Reproductive and behavioral division of labor is a defining feature of insect societies. Common models of division of labor postulate variation in behavioral response thresholds across individuals in a colony, which in turn translates into emergent division of labor among individuals in response to social cues. Important parameters that are thought to correlate with behavioral response thresholds include the genotype, age, and reproductive physiology of individuals, and these parameters are therefore of substantial interest. The clonal raider ant *Ooceraea biroi* is a powerful model system in this context because, unlike in many other species, all three parameters can be experimentally controlled. In this talk I will present some of our efforts to use *O. biroi* to better understand how these parameters affect behavioral response thresholds, and how behavioral response thresholds are encoded in the ant brain. These efforts include behavioral studies of individuals in well-controlled social environments, combined with studies of the neuromodulatory and epigenetic basis of division of labour.