
Woods Hole Oceanographic Institution
Biology Department Seminar



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Redfield Auditorium – 12:00 Noon

Social behaviour: linking the individual to group function

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A central problem in sociobiology is how group behaviour is generated from behaviour of individuals. Division of labour is a key feature of eusociality that has facilitated the ecological success of eusocial organisms, yet how division of labour is actually generated and how individual behaviour connects to group function is poorly understood. We used the ant species *Pheidole dentata* as a model to address this question. By combining behavioural and molecular tools, we discovered a surprising degree of inter-individual variation in task performance between same-age individuals. This variation is not correlated to differences in behavioural capacities or neuromodulation by biogenic amines, suggesting that social environment and colony need influence the generation of this variation. Finally, we show that a novel pattern of division of labour emerges when averaging all this inter-individual variation. Our findings suggest that inter-individual variation is a fundamental feature of social insect colonies that generates of division of labour.