

Encadrement :

Nom : D'ETTORRE Prénom : Patrizia Qualité : PR Tel : 0665163200
Laboratoire /Entreprise : Laboratoire d'Ethologie Expérimentale et Comparée, Université Paris 13
Adresse : 99 av JB Clément, 93430
Courriel : dettorre@leec.univ-paris13.fr

Titre du stage :

Pheromones and modulation of behavior in social insects

Mots clés :

Pheromone, learning and memory, ants, honey bees

Résumé (150 mots maximum) :

Pheromones are crucially important in regulating social interactions in animals. In addition to their well-documented function as communication signals in specific contexts (mate finding, aggregation, alarm...), some pheromones have been recently shown to play a role as "modulators" of cognitive phenomena, facilitating or inhibiting associative learning and memory both in vertebrates and invertebrates. This kind of modulation consists in a novel and more general effect of pheromones on functions that are different from the specific behaviour typically controlled by a given pheromone.

The student will participate to an integrated research programme investigating the general modulator effect of pheromones in several insects. We aim at understanding how pheromones influence learning performances and perception of social and environmental stimuli. The student will work in with carpenter ants and honey bees.

The stage will be carried out at the Research Center on Animal Cognition, CNRS, University of Toulouse, under the co-direction of Prof. Martin Giurfa.

Deux références bibliographiques:

Urlacher E, Frances B, Giurfa M, Devaud JM (2010) An alarm pheromone modulates appetitive olfactory learning in the honey bee (*Apis mellifera*). *Front Behav Neurosci* 4: 157.

Perez M, Rolland U, Giurfa M, d'Ettoire P (2013). Sucrose responsiveness, learning success, and task specialization in ants. *Learning & Memory* 20: 417-420.

Techniques mises en œuvre:

Controlled behavioural experiments; associative learning paradigms (PER and SER in honeybees ; MaLER in ants); possible use of a pharmacological approach to specifically block/activate different aminergic systems.

Compétences particulières exigées:

Familiarity with manipulation of insects, rigourosity, autonomy, high motivation and creativity