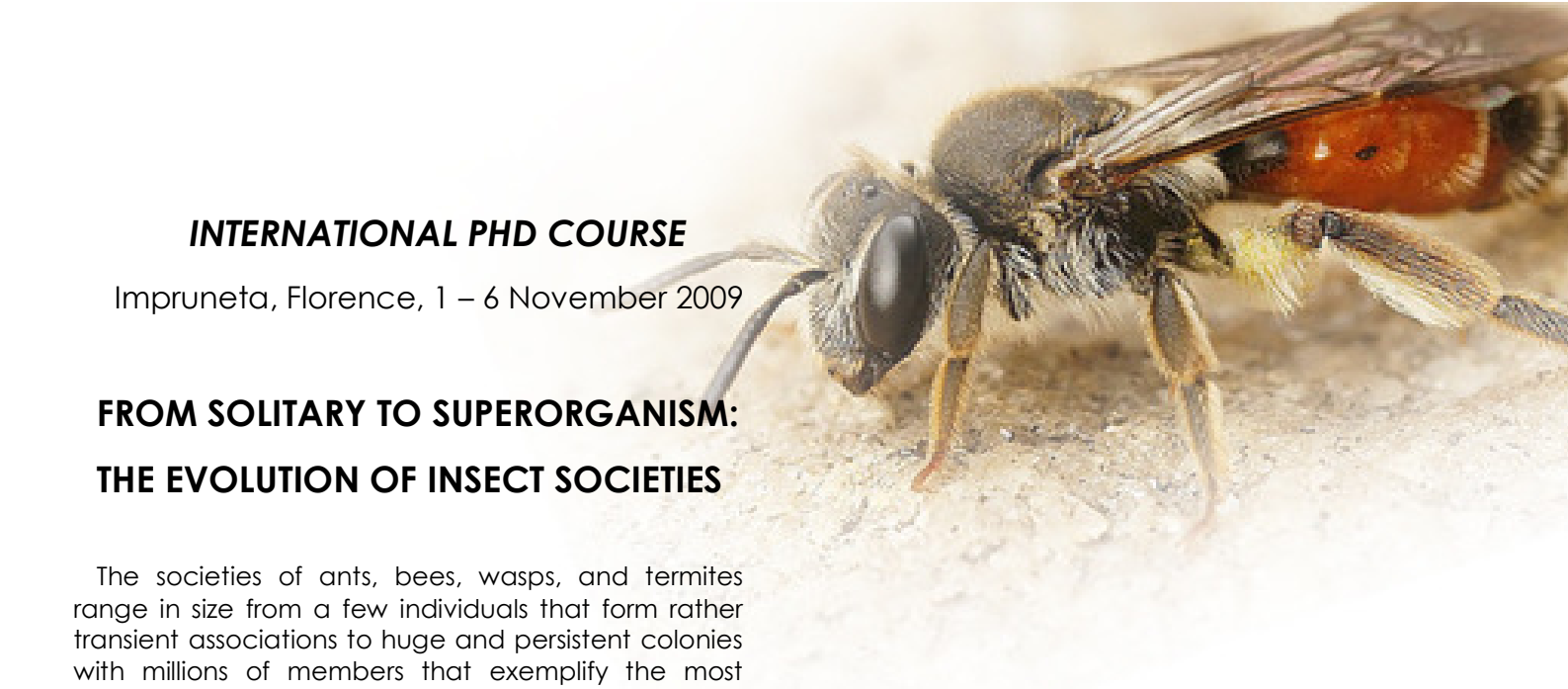


INTERNATIONAL PHD COURSE

Impruneta, Florence, 1 – 6 November 2009

FROM SOLITARY TO SUPERORGANISM: THE EVOLUTION OF INSECT SOCIETIES

The societies of ants, bees, wasps, and termites range in size from a few individuals that form rather transient associations to huge and persistent colonies with millions of members that exemplify the most advanced forms of social life. They are characterized by sophisticated communication and cooperation among nestmates and, most fundamentally, some colony members specialize on reproduction, while others become sterile altruistic helpers. In the more advanced social species these reproductive and worker castes are morphologically and physiologically distinct, and this strict division of labour has ultimately contributed to the ecological dominance of social insects in many terrestrial ecosystems. At the same time, insect societies are vulnerable to exploitation by a wide range of social parasites, and reproductive conflicts between colony members can jeopardize social cohesion.

In this course we will explore the evolution of insect societies, from solitary and primitively social forms to complex and highly integrated "superorganisms".

The course combines lectures by renowned scientists in the field of social insect research with student presentations, paper discussion, group work and hands-on sessions on chemical communication and recognition. It will be mainly relevant to students working on social insects, but also to anybody with an interest in social behaviour and evolution.

Guest teachers

Prof. Jacobus J. Boomsma *(Univ. Copenhagen)*

Dr. Paul Eggleton *(Nat. His. Mus. London)*

Dr. Rita Cervo *(Univ. Florence)*

Prof. Laura Beani *(Univ. Florence*

Dr. Donato Grasso *(Univ. Parma)*

Dr. Francesca R. Dani *(CISM – Univ .Florence)*

Dr. Leonardo Dapporto *(Univ. Florence)*

Organizers

Prof. Stefano Turillazzi *(Univ.Florence, Acc. Naz. It. Ent)*

Dr. Patrizia d'Ettorre *(Univ.Copenhagen)*

Dr. Daniel Kronauer *(Harvard Univ.)*

Registration and fees

There will be a maximum of 20 participants.
Fees: € 500 (accommodation, coffee, tea, lunches, dinners and all course materials).
Credits: 5 ECTS

To register send an e-mail to:
alessandro.cini@unifi.it

Deadline: 15 August 2009

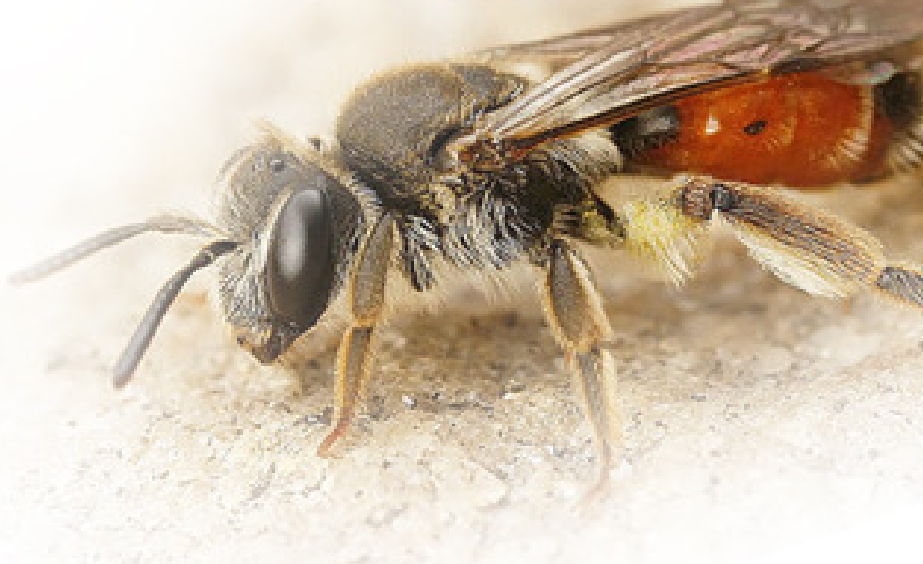
The location is a residential conference centre near Firenze, not far from the Centre for Mass Spectrometry where part of the practical work will be carried out http://www.villacesi.it.

Accademia Nazionale Italiana di Entomologia

Università di Firenze

Centro Spettrometria di Massa Univ. Firenze

Dept. of Biology Univ. Copenhagen



Preliminary program

In this course we will explore the evolution of insect societies, from solitary and primitively social forms to complex and highly integrated "superorganisms".

The course combines lectures by renowned scientists in the field of social insect research with student presentations, paper discussion, group work and hands-on sessions on chemical communication and recognition

Speakers

Jacobus J. Boomsma (Univ. Copenhagen) "The origins and elaborations of eusociality"; "Sociogenomics – from genes to social behaviour"
Daniel Kronauer (Harvard Univ.) "The evolution of colony pedigree structure"
Francesca R. Dani (Univ .Florence) "Social pheromones and communication mechanisms"
Stefano Turillazzi (Univ. Florence) "The evolution of sociality in wasps and bees"
Patrizia d'Ettorre (Univ. Copenhagen) "Chemical communication and recognition in solitary and social insects"; "Conflict in insect societies"
Paul Eggleton (Nat. His. Mus. London) "Sociobiology of Termites"; "Nest architecture: the extended superorganism"
Laura Beani (Univ. Florence) "Sex and the (insect) city"
Rita Cervo (Univ. Florence) "Social parasites: exploiting the superorganism"
Donato Grasso (Univ. Parma) "Social Insects Partners"
Leonardo Dapporto (Univ. Florence) "Phenotypic plasticity and division of labour"

Papers discussions and group works will support teachers' lectures. Each student will report two papers to be discussed in groups of 5-6 students chaired by one of the teachers.

In a half-day excursion to the Mass Spectrometry Centre (CISM) the principal analytical tecniques for the study of chemical ecology of social insects will be presented.

More information about the detailed program and application procedure will be provide soon.
For any enquire: ***alessandro.cini@unifi.it*** and ***pdettorre@bio.ku.dk***

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