**\*\*\* COCONET SUMMER COURSE \*\*\***

**Introduction to meta-analysis in ecology**

**Organized by**:

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Laboratoire d'Excellence CORAIL

National Center for Scientific Reseacrh

USR 3278 CNRS-EPHE

Centre de Biologie et d'Ecologie Tropicale et Méditerranéenne

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**Instructors**:

Fiorenza Micheli (http://micheli.stanford.edu)

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Joachim Claudet (http://joachim.claudet.free.fr)

**Duration:**

One week

**Dates:**

June 25th - July 1st 2012

**Location:**

University of Perpignan, France http://maps.google.fr/maps?q=42.681248,2.902369&hl=fr&num=1&t=m&z=18

**Course aims and objectives:**

Meta-analysis is the quantitative synthesis and analysis of a collection of independent studies. It provides a more objective and powerful way of summarising evidence across studies than descriptive reviews. The importance and utility of this quantitative method for answering new questions and synthesizing existing results in different fields of scientific research is demonstrated by the dramatic increase in the number of studies using meta-analysis in the last ten years.

The course will provide the basics of meta-analysis. The emphasis of the course is both on the conceptual understanding and practical use of this method, as applied to ecological questions. It will consist of lectures, discussions, and practical exercises.

**Course outline:**

The one-week course will consist in lectures in the morning and practical in the afternoon.

Lectures -- Introduction: Definition of meta-analysis, qualitative review vs. quantitative synthesis, history, approaches. // Performing a meta-analysis: Defining the question(s), effect sizes, data extraction, research and publication bias, data analysis (e.g., fixed and mixed models), non-independence. // Presentation and interpretation of meta-analysis results. // Applications: Overview and discussion of different case studies utilizing meta-analysis.

Practical -- The process: Students will walk through all the steps and calculations for one practical example, with emphasis on issues related to data extraction, data summaries, effect size, and analysis. // Application: Using a dataset provided by the instructors, students will define and answer questions they develop using this dataset. // Putting it all together: Using a set of studies provided by the instructors, students will extract data and perform analyses of this data. We will compare results and interpretations among different student groups to evaluate the process and challenges in doing meta-analyses.

**Who the course is intended for:**

This is a practical course with no explicit pre-requisites, but familiarity with ecological concepts, experimental design, and statistics is highly encouraged. Participants must attend all sessions of the one-week course, which will be limited to 30 applicants (PhD students, post-doctorals and researchers). Participants will have to bring their own laptops.

**Accommodation**:

Students will have access to the University restaurant for lunch. If booked soon enough some rooms might be available on the student halls of residence of the University Campus (whole week and WiFi access: 95.16 euros with shared bathroom; 105.51 euros with private bathroom). Hotels can also be found close to the university or in the center of Perpignan.

**Applications:** Applications must arrive (by e-mail) no later than May 10th 2012. All applications should include the application form and a short CV. Applicants will be notified of admission decisions no later than May 31th 2012. Successful applicants will receive additional information concerning the course, including a packet of readings, a detailed programme, and information about accommodation, local transportation and payment.