Introduction to meta-analysis in ecology

Organized by:
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Instructors:
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Duration:
5 full days

Dates:
May 19-23 2014

Location:
DiSTAV
Corso Rainusso 14
Santa Margherita Ligure (Ge) - Italy

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 summarizing 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, using R for meta-analysis. // 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 coming from the mini-projects they would have prepared for the course, with emphasis on issues related to data extraction, data summaries, effect size, and analysis. // Application: Using the mini projects, students will define and answer questions they develop using this dataset. // Putting it all together: Using the mini-projects, 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. Instructors will also provide datasets if necessary.

Course plan:
A detailed course plan will be circulated later on.
Participants must attend all sessions of the five-day course, which will be limited to 25 applicants (PhD students, post-doctorals and researchers) and use their personal laptops.

Course fee:
The course fee is 400 euros for PhD students and 550 for post-doctorals and researchers. The fee includes all course materials, complete set of literature, free internet access, lunch and coffee.
Participants are responsible for dinner and accommodations (we will provide with addresses and special rates at different hotels).

Applications:
Applications must arrive (by e-mail) no later than **March 31st 2014** to Mariachiara Chiantore and Valentina Asnaghi (chiantor@dipteris.unige.it and valentina.asnaghi@unige.it). All applications should include the application form, a short CV and a brief outline of the mini-project. Applicants will be notified of admission decisions no later than April 7th 2014. Successful applicants will receive additional information concerning the course, a detailed programme, and information about accommodation, local transportation and payment.

How to reach Santa Margherita Ligure (SML):

- By plane and train: closer airport is Genoa Cristoforo Colombo, but you can also land in Pisa or Milan and take a train from there. Wherever you land you can reach SML by train (refer to train table at http://www.trenitalia.com/trenitalia21.html) and get off in the station named Santa Margherita Ligure.

The course will take place in a building of the Department for Earth, Environment and Life Sciences (DiSTAV), University of Genoa, located in Corso Elia Rainusso 14, Santa Margherita Ligure (SML), located at walkable distance form the train station.

Additional details will be provided after the selection of attendees.