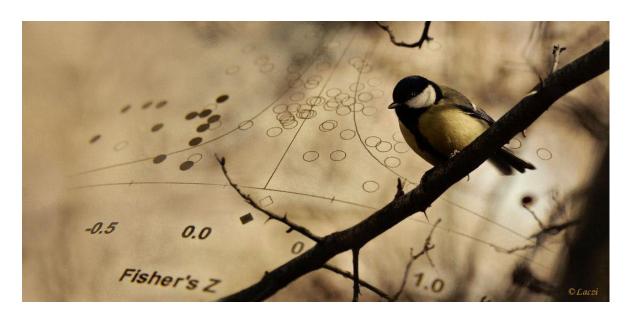**META-ANALYSIS**
Psychology 607, Spring 2015
Tues 12:00-1:50pm
483 Straub

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OVERVIEW

This course provides a conceptual and practical introduction to basic methods for conducting a systematic literature review using meta-analysis. Meta-analysis consists of a collection of techniques for analyzing and integrating findings across studies. We will touch on all parts of the research synthesis process, including: problem formulation, literature searches, effect size coding, fixed and random effects models, heterogeneity, sub group analyses and meta-regression, publication bias, and reporting of meta-analytic results.

By the end of the course, students will be able to: Conduct a systematic literature search to identify studies eligible for a meta-analysis; extract and code information from eligible studies based on clearly defined criteria; appropriately analyze data using meta-analytic software; prepare a written report describing and interpreting meta-analytic findings; critically assess the pros and cons of published meta-analytic literature.

RELEVANT TEXTS

There is no required text for the course. However, the following texts are useful resources:

Cumming, G. (2012). *Understanding The New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis*. New York: Routledge.

Borenstein, M., Hedges, L.V., Higgins, J.P.T. and Rothstein, H.R. (2009). *Introduction to Meta-Analysis*. Chichester, UK: Wiley.

Cooper, H. (2010). *Research Synthesis & Meta-Analysis: A Step-by-Step Approach.* New York: Sage.

Cooper, H., Hedges, L.V. & Valentine, J.C. (Eds.) (2009). *The Handbook of Research Synthesis and Meta-Analysis* (2nd Ed). New York: Russell Sage Foundation, 2009

Higgins, J.P.T. & Green, S. Cochrane Handbook for Systematic Reviews of Interventions. Version 5.1.0. http://handbook.cochrane.org/

REQUIREMENTS

Class Participation (30%). Class meetings will typically involve some combination of lecture and discussion. Your contributions to the discussion are key to establishing a lively intellectual climate for the course.

Meta-Analysis Critique (30%). A 15-20 minute PowerPoint presentation critiquing a published meta-analysis in an area of interest. The critique should include a summary of the central questions addressed in the meta-analysis, how the data were collected and analyzed, the main findings and conclusions, and a discussion of strengths and weaknesses. Please send me the article you plan to review for approval by **Tuesday, April 14**.

Meta-Analysis Project (40%). Conduct, present, and write-up your own original meta-analysis on a topic of interest. The meta-analysis might be the first on the topic or it might be an updating, refinement, or extension of a prior meta-analysis. Most projects will contain no more than 10-20 studies to keep them manageable within the time-frame of the course. You will need to find original sources, code relevant study characteristics, analyze the data with appropriate meta-analytic techniques, and write a paper in APA format. Papers should be 10-15 pages double-spaced, excluding tables and figures. Meta-analysis projects will be presented to the class in the last 3 weeks of term for feedback. Please feel free to seek me out to discuss your project ideas in advance. Meta-analytic papers are due **Wednesday, June 10 by 5 p.m.**

TENTATIVE SCHEDULE OF TOPICS

<u>Week1 (March 31)</u>:
Overview
History
Steps in a Meta-Analysis

<u>Week 2 (April 7)</u>:
Problem Formulation
Literature Search
Effect Sizes and Effect Size Coding

<u>Week 3 (April 14)</u>:
Basic Meta-Analysis
Fixed and Random Effects Models

<u>Week 4 (April 21)</u>:
Heterogeneity
Meta-Analysis Critiques

<u>Week 5 (April 28)</u>:
Moderators
Sub Group Analyses
Meta-Regression
Meta-Analysis Critiques

<u>Week 6 (May 5)</u>:
Publication Bias
Meta-Analysis Critiques

<u>Week 7 (May 12)</u>:
Special Topics
Meta-Analysis Critiques

<u>Week 8 (May 19)</u>:
Special Topics
Meta-Analysis Projects

<u>Week 9 (May 26)</u>:
Special Topics
Meta-Analysis Projects

<u>Week 10 (June 2)</u>:
Conclusions
Meta-Analysis Projects