

STATISTICS COLLOQUIUM

MONDAY, OCTOBER 16, 2006

TALK: 4:00 PM — SCIENCE CENTER B-10

RECEPTION: 5:15 PM — SCIENCE CENTER, 7TH FLOOR

“AN OVERVIEW OF META-ANALYSIS; HISTORY PLUS ISSUES”

Ingram Olkin
Department of Statistics
Stanford University

ABSTRACT

Meta-analysis enables researchers to synthesize the results of a multitude of overlapping studies designed to test a common hypothesis, so that the combined weight of evidence can be considered and applied. Although the origins in agriculture date to the 1930's, it was not until the 1970's that it became used in the social, behavioral and educational sciences. More recently it has become a standard method in the medical and health sciences. Recent concerns about the effectiveness of alternative treatments in health care has prompted the search for a method to amalgamate the results of independently conducted studies. This has been coupled with a movement called "evidence-based medicine" which the British Medical Journal has defined as "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients." The notion of EBM has been extended to other fields, and we now hear about evidence-based education.

In this talk I will review some of the history of meta-analysis and discuss some of the issues such as bias and heterogeneity that arise. If time permits I will review some of the statistical procedures currently in use.