

STATISTICS COLLOQUIUM

MONDAY, SEPTEMBER 12, 2011

TALK: 4:00 PM — SCIENCE CENTER RM. 309

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

“Causal inference from two-level factorial designs”

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ABSTRACT

A framework for causal inference from two-level factorial and fractional factorial designs with particular sensitivity to applications to social, behavioral and biomedical sciences is proposed. The framework utilizes the concept of potential outcomes that lies at the center stage of causal inference and extends Neyman's repeated sampling approach for estimation of causal effects and randomization tests based on Fisher's sharp null hypothesis to the case of 2-level factorial experiments. The framework allows for statistical inference from a finite population, permits definition and estimation of parameters other than "average factorial effects" and leads to more flexible inference procedures than those based on ordinary least squares estimation from a linear model.

(Joint work with Donald B. Rubin)