

DEPARTMENT OF MATHEMATICS AND STATISTICS

MISSISSIPPI STATE UNIVERSITY

# COLLOQUIUM

## Analyzing Quantitative Responses from Animal Bioassay Studies

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**Friday, November 14 at 4:00 pm**

**Allen 14**

**Abstract.** Animal bioassay experiments are frequently conducted to estimate the risk for humans from exposure to a toxic substance. Risk is defined as the probability of a deleterious effect and risk assessment is the process of evaluating the probability of an adverse effect. This process has formally been defined as having four stages consisting of hazard identification, exposure assessment, dose-response assessment and risk characterization. In this presentation we first provide a brief description of the process of risk assessment and concentrate on the latter two stages of this process. Our discussion will focus on experiments in which the measure of the outcome variable is quantitative. Some models that have been suggested in the literature and used in practice will be introduced. A new model based on an extension of the normal distribution will be proposed and its properties will be demonstrated. An example from a toxicological experiment will be utilized to provide further illustration.

There will be a reception for Dr. Razzaghi in Allen 467 at 3:30 pm.

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