

The Department of Statistics and Applied Probability

*Presents*

# Dr. Scott Zeger

Frank Hurley and Catharine Dorrier Professor  
In Biostatistics and Chair  
Johns Hopkins Bloomberg School of Health

May 23, 2007 – 3:15 PM –South Hall 5607F  
(Sobel Seminar)  
Refreshments at 3:00 PM

## *Micronutrient Supplementation, Birth Weight and Infant Mortality; On Estimation of Percentile-Specific, Mediated Intervention Effects*



**Abstract:** In developing countries, higher infant mortality is partially caused by poor maternal and fetal nutrition. Randomized community trials of micronutrient supplementation are aimed at reducing the risk of infant mortality by increasing birth weight. Because infant mortality is greatest among the low birth weight infants (LBW) (<2500 grams), an effective intervention must increase the birth weight among the smallest babies.

Although it has been demonstrated that supplementation increases the birth weight in a trial conducted in Nepal, there is inconclusive evidence that the supplementation improves survival. It has been hypothesized that a potential benefit of the treatment on survival among the LBW is partly compensated by a null or even harmful effects among the largest infants.

Thus, two key scientific questions are whether the effect of the treatment on survival varies across the birth weight distribution and whether the effect of the treatment on survival is mediated wholly or in part by increases in birthweight.

This talk will define and estimate population- and subject-specific parameters that describe the treatment effects on birth weight and on survival as functions of the percentiles of the birth weight distribution. Sensitivity of some subject-specific inferences to unverifiable assumptions will be demonstrated.