

MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

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Modeling Frame Deficiencies for Improved Calibration

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10:20 a.m. - 11:10 am
Refreshments 10:00 am
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Abstract:

One of the important reasons advanced for calibrating household surveys to population totals is the imperfect coverage of target frame populations by operational frame lists. Calibration is an implicitly model-based operation, the theoretical justification for which depends on relatively simple assumptions about the correctness of the frame list. (It is analogous to fixing a population parameter to an externally “known” value.)

Essentially, one assumes that the frame list is nearly perfect except possibly for random omissions similar to (and independent of) those in the pseudo-randomization model for unit-level nonresponse. When the frame list has perceptible differences from the target population, the calibrated weight-adjustment model is misspecified, but models of the frame may still allow design-consistent modified calibration estimates. In this talk, we describe frame models combining elements of biased sampling and propensity under which consistent estimates are available. Although the motivating terminology is initially that of survey sampling. I will argue that the same issues arise in biostatistical inference.

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