



**Title:** Statistical Methods for Merged Data from Multiple Sources

**Date/Time:** November 6, 2019, 1:00 to 2:30 PM

**Speakers:** Takumi Saegusa, University of Maryland

**Chair:** Michael Sverchkov, Bureau of Labor Statistics

**Sponsor:** WSS Methodology

**Abstract:** Various data sets collected from numerous sources have a great potential to enhance the quality of inference and accelerate scientific discovery. Inference for merged data is, however, quite challenging because such data may contain unidentified duplication from overlapping inhomogeneous sources and each data set often opportunistically collected induces complex dependence. In public health research, for example, epidemiological studies have different inclusion and exclusion criteria in contrast to hospital records without a well-defined target population, and when combined with a disease registry, patients appear in multiple data sets. In this talk, we present several examples in public health research which potentially enjoy merits of data integration. We overview existing research such as random effects model approach and multiple frame surveys and discuss their limitations in view of inferential goals, privacy protection, and large sample theory. We then propose our estimation method in the context of the Cox proportional hazards model. We illustrate our theory in simulation and read data example. If time permitted we discuss extensions of our proposed method in several directions.

**Location:** Bureau of Labor Statistics Janet Norwood Conference Center, Room 10

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