

# JPSM/MPSM

## Survey Methodology Seminar Series

### "Multiple imputation of covariates by fully conditional specification: Accommodating the substantive/outcome model"

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**Presenter**

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**Monday, November 17, 2014**

**12:00-1:00pm**

Speaker will be at the University of Michigan  
Video Room 368 - ISR South Basement  
Room 1208 LeFrak Hall– Maryland

#### **Abstract**

Missing data in covariates is a common issue faced by researchers across a range of disciplines. Multiple imputation (MI) has become the most commonly used principled approach to handling missing data. A popular implementation of MI is the so called fully conditional specification (FCS MI) or sequential regression approach, in which imputation is performed variable by variable. A potential issue with this approach in the context of imputing missing covariates is that imputation models may be incompatible with the substantive/outcome model which is to be fitted, particularly when the latter includes interaction terms or non-linear covariate effects, leading to biased estimates. In this talk I will describe a modification to FCS MI which ensures that each covariate is imputed from a model which is compatible with an assumed substantive/outcome model. I will present simulation results and results from an analysis from a study of Alzheimer's disease illustrating the proposed approach, contrasting its performance with that of standard FCS MI approaches.

*The Survey Methodology Program hosts this series of brown bag seminars on survey methods. The purpose is to have informal presentation and discussion of topics in survey methodology. They are open to anyone interested. If you would like more information, or if you have suggestions for methodological topics you would like to see presented, please contact: Jodi Holbrook at 647-3592*