

**McMASTER UNIVERSITY**  
**GRADUATE PROGRAM IN STATISTICS**

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**STATISTICS SEMINAR**

- Speaker:** Zilin Wang  
Department of Mathematics  
Wilfrid Laurier University
- Title:** A Resampling Approach to Estimate Variance Components of Multilevel Models  
**Day:** Tuesday, February 12, 2008
- Time:** 3:30 - 4:30 PM
- Place:** HH/217 - Deloitte Colloquium Room  
(refreshments in HH/216 at 3:00 PM)

**SUMMARY**

With the presence of unequal probability sampling in a multilevel model, the weight inflated estimators for variance components can be biased even though the use of survey weights results in design consistent estimators of the parameters. In this talk, we propose a resampling method, and with this resampling method, we derive bias correction terms to improve the accuracy of the underlying estimators of the variance components. The small sample properties of the estimators of parameters for a multilevel model from this resampling method are studied through simulations using populations generated from a simple random model.

This is joint work with Mary Thompson from University of Waterloo.

## REFERENCES

TBA

## ABOUT THE SPEAKER



Zilin Wang obtained her PhD from the University of Western Ontario in 2004. Her doctoral supervisor was David Bellhouse with whom she worked on problems in the analysis of complex survey data. In July 2004, Zilin started a tenure track position in the Department of Mathematics at Wilfrid Laurier University where she is an assistant professor. She is also an adjunct research professor in the Department of Statistics and Actuarial Science at the University of Western Ontario.

Zilin's research interests are primarily in survey sampling, correlated data and analysis of data arising from complex systems. She is a team member of two projects sponsored by the National Program on Complex Data Structures: "Statistical Methods for Complex Survey Data" and "Forest Fires and Stochastic Modelling". Zilin has also served as treasurer of the Southern Ontario Regional Association of the Statistical Society of Canada since 2004.

## MORE SEMINAR INFORMATION

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