

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Tian Zheng, Columbia University, NY

Title: How many people do you know?: Efficiently estimating personal network size

Date: Wednesday April 22, 2009

Time: 3:20 PM

Place: 552 Hill Center

Abstract

In this talk, we will discuss a method to estimate both individual social network size (i.e., degree) and the distribution of network sizes in a population by asking respondents how many people they know in specific subpopulations (e.g., people named Michael). Building on the scale-up method of Killworth et al. and other previous attempts to estimate individual network size, we propose a latent non-random mixing model which resolves three known problems with previous approaches. As a byproduct, our method also provides estimates of the rate of social mixing between population groups. We demonstrate the model using a sample of 1,370 adults originally collected by McCarty et al. Based on insights developed during the statistical modeling, we conclude by offering practical guidelines for the design of future surveys to estimate social network size. Most importantly, we show that if the first names to be asked about are chosen properly, the simple scale-up degree estimates can enjoy the same bias-reduction as that from the our more complex latent non-random mixing model.

This is a joint work with Tyler McCormick and Matt Salganik.