7ᴛʜ ANNUAL PROBABILITY AND STATISTICS DAY AT UMBC

FUNDED BY NATIONAL SECURITY AGENCY

Workshop on
Multiple Imputation – Theory and Applications
presented by
Professor Jerry Reiter
Duke University

Friday, April 26, 2013 ♦ 2:00pm – 5:45pm ♦ Room 105, Public Policy Building
Registration is <u>FREE</u> but required! ♦ Registration Deadline: Friday, April 12, 2013
Registration Website: **www.umbc.edu/circ/hosting/ProbStatDay2013**

Speaker
Professor Reiter, a 1999 Harvard PhD in statistics and a Fellow of the American Statistical Association, is currently an Associate Professor of Statistical Science at Duke University. Professor Reiter is a **rising superstar** in our discipline, and a **leading international expert** on the theory and applications of multiple imputation methods.

Abstract
Multiple imputation offers a general purpose framework for handling missing data, protecting confidential public use data, and adjusting for measurement errors. These issues are frequently encountered by federal statistical agencies like the Census Bureau, as well as by individual researchers. Participants in this workshop will learn how multiple imputation can solve problems in these areas, and they will gain a conceptual and practical basis for applying multiple imputation in their statistical work.

Outline
Lecture 1: Overview of Multiple Imputation
      1.1 Problems caused by missing data
      1.2 Various solutions and their limitations
      1.3 Multiple imputation idea, including inference and data generation
      1.4 Other adaptations of multiple imputation, including data confidentiality and
          measurement error
Lecture 2: Implementing Multiple Imputation
      2.1 Approaches to implementation, including multivariate modeling, conditional
          modeling, and machine learning based approaches
      2.2 Checking adequacy of imputations via graphical display and posterior predictive
          checks
      2.3 Demonstration on genuine examples
Lecture 3: Advances in Multiple Imputation Methodology
      3.1 Multiple imputation when records used for imputation are not used for analysis
      3.2 Dealing with panel attrition using multiple imputation and refreshment samples
      3.3 Multiple imputation for editing faulty data