**WSS Short Course: Introduction to Small Area Estimation**

**Date:** Tuesday, May 5, 2015

**Time:** 9:00 am – 4:30 pm

**Place:** Mathematica Policy Research

1100 1st Street, NE, Washington, DC 20002

**Course Content:**

This short course will be based on the book “*Small Area Estimation*, by J.N.K. Rao, 2003,

Wiley”, and a number of research papers written by researchers on the topic. Often lectures will be drawn from research conducted by Dr. Datta and other researchers in the field. Topics include introduction to small area estimation, direct and indirect estimators in domain estimation, model-based approaches to small area estimation, area-level and unit-level models, empirical best linear unbiased prediction for point estimation and mean squared error estimation, small area estimation applications by R, hierarchical Bayes and empirical Bayes methods in small area estimation, and more applications of R.

**Some useful references:**

* Datta, G.S. (2009). Model-based approach to small area estimation. In: *Handbook of Statistics: Sample Surveys: Inference and Analysis*, Volume 29B, Edited by D. Pfeffermann and C.R. Rao, pp. 251-288.
* Datta, G.S. and Ghosh, M. (2012). Small area shrinkage estimation. *Statistical Science*, 27, 95-114.
* Rao, J.N.K. (2003). *Small Area Estimation*, Wiley.

**About the Instructors:** Dr. Gauri S. Datta, Department of Statistics, University of Georgia, and U.S. Census Bureau, email: gaurisdatta@gmail.com; and Dr. Adrijo Chakraborty, NORC, email: [chakraborty-adrijo@norc.org](mailto:chakraborty-adrijo@norc.org). Dr. Datta is a professor at the University of Georgia and a Mathematical Statistician at the US Census Bureau. An elected fellow of the American Statistical Association and the Institute of Mathematical Statistics, Dr. Datta has published extensively his methodological and applied research on small area estimation in leading journals of statistics. Adrijo Chakraborty joined NORC as a Statistician after receiving PhD in Statistics from University of Georgia in 2014. His primary research interests are in small area estimation, survey sampling, Bayesian statistics, and statistical computing. Adrijo’s responsibility in NORC includes application of model-based survey sampling methodologies, development and implementation of Bayesian methodologies for small area estimation, analyzing complex survey data.

**Course Schedule:**

8:15 - 9:00 Coffee, Breakfast, Check in  
 9:00 - 10:30 Introduction to small area estimation

Direct and Indirect estimators in domain estimation

 10:30 - 10:45 Break   
 10:45 - 12:15 Model-based approaches to small area estimation

Area-level and unit-level models

12:15 - 1:15 Lunch (provided)   
  1:15 - 2:45 Empirical best linear unbiased prediction: point estimation and mean

squared error estimation

Small Area Estimation applications by R

2:45 - 3:00 Break   
  3:00 - 4:30 Hierarchical Bayes and empirical Bayes methods in small area estimation

More applications of R

**Advance registration:** In addition to your RSVP here, please go to <https://www.123signup.com/register?id=yrgyg> to register and pay for the class. Online registration will close on May 1, 2015; earlier if the course fills up.   
  
**Registration Fee:**   
  Full-time students (at most 8): $50 advance, $70 at the door   
  WSS members: $160 advance, $180 at the door   
  All others: $210 advance, $240 at the door   
  
**Contact person:** Yang Cheng, 301-763-3287, yang.cheng@census.gov