



28th Annual Morris Hansen Lecture

Small Area Estimation: Its Evolution in Five Decades

Speaker: Malay Ghosh

*Distinguished Professor
University of Florida*

Discussants:

J. N.K. Rao, *Distinguished Research Professor,
School of Mathematics and Statistics
Carleton University*

Julie Gershunskaya, *Mathematical Statistician
Bureau of Labor Statistics*

Abstract: A small area or a small domain often refers to a small geographic area such as a county, census tract or school district, but that need not always be the case. For instance, in a survey pertaining to a group, cross-classified by age, sex and ethnicity, even a relatively large geographical area may have very few samples. Thus a small area refers primarily to an area where the sample collected from a survey is not adequate to meet the desired precision. This unreliability of direct small area survey estimates is often due to the fact that the original survey was targeted to achieve accuracy at a higher level of aggregation. Due to limited resources, the same survey data needs to be used at a lower level, resulting in the said inadequacy of the sample size. This makes it imperative to borrow strength from similar other areas to increase the effective sample size and attain the prescribed accuracy. The resulting estimates, usually referred to as indirect estimates require explicit, or at least implicit use of models.

The need for small area estimates is felt in these days by both the public and private sectors. Such estimates are often mandated by the Legislature at the national and/or the state level. Small Area Income and Poverty Estimation (SAIPE) is one such example. Demand from the private sector has also increased rapidly, because business decisions, especially for small businesses, very often rely on local socio-economic conditions.

My talk will be an attempt to trace the evolution of small area estimation, with a modest beginning essentially in the seventies, but with a very rapid growth, especially from the nineties onwards. I will try to trace some of the salient small area estimation methods. I am, however, aware that my talk will fall short of a complete updated account as new and novel small area estimation methods are emerging everyday.

Wednesday, October 30, 2019
3:30 – 5:30 pm

Jefferson Auditorium, US
Department of Agriculture
Independence Avenue
(between 12th and 14th Streets)
At the Smithsonian Metro Station
(Blue/Orange/Silver lines)

A reception will follow at 5:30 pm
on the Whitten Building Patio

Please pre-register for this event to help
facilitate access to the building on line at
<http://www.nass.usda.gov/morrishansen/>



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