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Public Lecture

Co-sponsored by Department of Statistics and Actuarial Science under the Kin Lam Development Fund for Data Analytics and the School of Business

National Statistics in the Era of Big Data

by Professor Lawrence D. Brown

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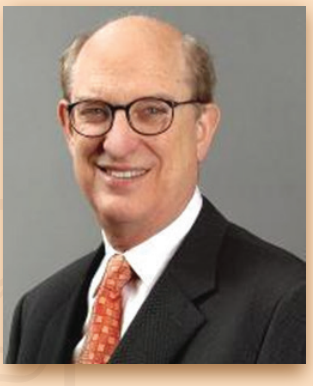

June 30, 2016 (Thursday)
6:00 p.m. - 7:00 p.m.
Rayson Huang Theatre, HKU
Tea Reception 5:30 p.m. to 6:00 p.m.

About the talk

Modern nations require a multiplicity of statistical measures. In the United States these are gathered by agencies within the Federal Statistical System as well as a variety of independent profit and non-profit entities. The fundamental statistical methods currently being used were developed decades ago. In general, they provide satisfactorily accurate estimates of the desired quantities and can yield additional measures of reliability. But they are relatively slow to gather and process compared to what is currently desired, and expensive to produce relative to political norms and expectations. The traditional methods also suffer from decreasing response rates that seem destined to continue to decrease because of various societal factors.

The modern world is awash with data. It is gathered in manifold ways and stored on a multitude of sites. Large segments can be manageably stored and processed relatively inexpensively. Can such massive data provide an alternative path to the reliable information needed by modern governments? If it cannot be used by itself, can it be integrated as part of current methodologies to improve accuracy, coverage and promptness and reduce costs and the burdens on survey respondents – without sacrificing the interpretability and reliability that is currently provided?

This talk will survey what is sometimes described as the U. S. Federal Statistical System. (In reality this is a patchwork of overlapping, cooperating agencies, rather than a "System".) I will also mention several of its statistical activities and the products it produces. A few non-governmental resources will also be mentioned. Then I will turn to description of a few of the contemporary efforts to integrate new "big data" resources and techniques into traditional methods for producing federally necessary statistical information.

About the speaker

Lawrence D. Brown is Miers Busch professor in the Department of Statistics at the Wharton School in the University of Pennsylvania. He is a member of the U. S. National Academy of Sciences (NAS) and is also a member of the American Academy of Arts and Sciences and a fellow of both the Institute of Mathematical Statistics and the American Statistical Association. His research spans a broad range of statistical theory including statistical foundations, conditional inference, sequential methods, exponential families, improved parametric and non-parametric estimators and empirical Bayes theory and methods. He has also published research on a number of applied topics including census methodology, house-price indices, and empirical service engineering. He has served on many NAS committees. He is currently Chair of the NAS Committee on National Statistics (CNSTAT). Prior activities within the NAS include membership on the Board on Mathematical Sciences; the Committee on Applied and Theoretical Statistics; the Commission on Physical Sciences, Mathematics, and Applications and the NAS Report Review Committee. He was committee chair and co-editor for the CNSTAT reports Measuring Research and Development Expenditures in the U.S. Economy (2004) and Envisioning the 2020 Census (2010). He has a B.S. in mathematics from the California Institute of Technology and a Ph.D. in statistics from Cornell University.

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