

Statistics Seminar
Department of Mathematical Sciences

DATE:	Thursday, March 15, 2018
TIME:	10:10am - 11:10am (special time)
LOCATION:	UU 209 (special location)
SPEAKER:	J. S. Marron, University of North Carolina at Chapel Hill
TITLE:	Joint and Individual Variation Explained

Abstract

A major challenge in the age of Big Data is the integration of disparate data types into a data analysis. That is tackled here in the context of data blocks measured on a common set of experimental subjects. This data structure motivates the simultaneous exploration of the joint and individual variation within each data block. This is done here in a way that scales well to large data sets (with blocks of wildly disparate size), using principal angle analysis, careful formulation of the underlying linear algebra, and differing outputs depending on the analytical goals. Ideas are illustrated using mortality, cancer and neuroimaging data sets.

About the speaker: Prof. James Stephen Marron is the Amos Hawley Distinguished Professor in UNC's Department of Statistics and Operations Research as well as a professor in the Department of Biostatistics at the UNC Gillings School of Global Public Health. Dr. Marron is widely recognized as a world research leader in the statistical disciplines of high dimensional, functional and object oriented data analysis, as well as data visualization. He has made broad major contributions ranging from the invention of innovative new statistical methods, through software development and on to statistical and mathematical theory. His research continues with a number of ongoing deep, interdisciplinary research collaborations with colleagues in Computer Science, Genetics, Medicine, Mathematics and Biology. A special strength is his strong record of mentoring graduate students, postdocs and junior faculty, in both statistics and also related disciplinary fields.

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