

## Department of Systems Engineering and Engineering Management

### Seminar Series

## **An enriched approach to predictive modeling combining high-dimensional and low-dimensional predictors**

### **Prof. Javier Cabrera**

Professor

Department of Statistics and Biostatistics

Rutgers University, USA

Date	5 January 2018 (Friday)
Time	11:00am - 12:00noon
Venue	P7303, 7/F, Yeung Kin Man Academic Building

### **Abstract**

I will present a strategy for combining and analyzing high dimensional genomic and low dimensional phenotypic data. Although the data example involves genomic data this approach is very general and could be used in many applications, for example with networks data.

The new methodology involves a scheme of weights applied to the variables instead of to the observations and, hence, permits incorporation of the information provided by the low dimensional data source. This approach can be incorporated into commonly used downstream techniques, such as EIGENSTRAT, random forest or penalized regression.

It will be illustrated by a clinical study that incorporated GWAS genotype data with the standard clinical trial data from lupus subjects. The objective of the study is to predict the occurrence of lupus flares.

### **About the Speaker**

**Professor Javier Cabrera** holds the academic title of Professor of Statistics and Biostatistics at Rutgers University, Chief Biostatistician of the Cardiovascular Institute of New Jersey, and member of the Rutgers Institute for Data Sciences and its applications. Professor Cabrera was chief co-editor of Computational Statistics and

Data Analysis and Director, Institute of Biostatistics at Rutgers University. He has many publication and books in Biostatistics, Big Data for medical sciences, Functional Genomics, data mining Genomics data, Statistical computing and graphics, and computer vision. He is Fulbright fellow, Henry Rutgers fellow, and supported by grants from NSF, NIH, the RWJ Foundation, and the Qatar Foundation. He received his Ph.D. from Princeton University, Dept of Statistics.

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***All are Welcome!***

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