Title: How and Why did Probability and Statistics Come About?

Date/Time: December 4, 2019, 11:00 to 12:00

Speakers: Nozer Singpurwalla, George Washington University and The City University of Hong Kong, School of Data Science

Chair: Wendy Martinez, Bureau of Labor Statistics

Sponsor: WSS Defense & National Security, ASA History of Statistics Interest Group

Abstract: I start with a top down perspective on several phases in the evolution of probability, from its prehistoric origins for imperial needs, to its current evolution as a branch of mathematics. The prehistoric impact came from census, commerce, renaissance, scientific observation, and philosophy. As a branch of mathematics, probability evolved in five stages, not counting a period of stagnation when doubts were cast on its relevance as a mathematical science. Inherent therein were also paradoxes in probability, spawned by the absence of a precise definition, leading to its last phase that embraced in data science and machine learning. Almost parallel to the above was the development of "statistics" (a meaningless term of German origin, introduced by Sinclair, which connotes political strength and happiness), as way to reason with numbers. Its precedents were the "Doomsday List" and the "London Bills of Mortality", precursors to Graunt's famous mortality table. This has now taken the banner of survival analysis, with its paraphernalia of p-values, significance levels, confidence bands, and an occasional sprinkling of posterior odds and Bayes' Factors. The historical journey of these subjects is fascinating, especially since they continue to be controversial. They have attracted illustrious minds like Hume, Kant, La Place, Bernstein, and Kolmogorov. The talk should be accessible to anyone who is curious about these subjects and wants to know the what and why of whatever it is that they do. In the speaker's case, besides inspiration, history has enabled a reconsideration and a sharpening of methodologies.

Location: Bureau of Labor Statistics Janet Norwood Conference Center, Room 10

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