Abstract:

This talk introduces a new probability distribution with statistical properties. The model is named *Sinusoidal probability distribution* (SPD). The model is useful to analyze cornea angles’ curvature as it happened among the 23 patients in a glaucoma clinic. New statistical expressions are derived for survival and odds functions, their tipping points, its convexity, Q-Q plotting positions, variance-mean relation, heterogeneity among cornea patients, vitality function, total value at risk, past life function, entropy, hazard, inverse, and mean functions. The minimum and maximum sample values are shown to be the maximum likelihood estimators of the parameters of SPD. The joint probability density function for the lower and upper record values of a sample from SPD with their correlation function is derived and utilized to better understand the implications of the measured cornea angles. A few comments will be made in the end to further advance the research in cornea illness.

Bio: Ramalingam Shanmugam received Ph.D. degree in statistics from the Business School at Temple University. Since 2016, he is honored as an honorary professor of international studies in the School of Health Administration at Texas State University. He is passionate about motivating and teaching students on how to critically think and efficiently function. For his innovative and exciting teaching, his undergraduate students nominated Ram Shanmugam to the Honor Society of Phi Kappa Phi. Ram Shanmugam has published research articles in frontline national and international journals. In 1984, Ram was elected to be a fellow of the International Statistical Institute. His research and teaching interests include data envelopment analysis, multivariate data collection and analysis, decision making in healthcare, probability modeling of emerging diseases, refining diagnostic methodologies, and modeling cyber security issues among others. He serves as Book Review Editor for the Journal of Statistical Computation and Simulation. In 2015 he published (Wiley) a comprehensive introductory textbook in statistics. He served on the Advisory Committee of the Austin ASA Chapter during 2003-2005. He provided consulting service to researchers in other disciplines to succeed.