

Title: On the foundations of statistics

Abstract: I will discuss the foundations of statistics: the study of decision making under uncertainty. The talk will begin with the scope of statistics, and the early motivation in axiomatizing the field, from the works of Savage and Lindley. I will then talk about what these foundations entail, as a coherent framework of decision making and reasoning, including what priors are, what the Bayes theorem represents, and why the likelihood principle is important. I will then discuss how this foundation directs future research, including Bayesian methods to deal with multiple agents and model misspecification.