Abstract: The world is full of unpredictability, uncertainty, randomness. Statistics is concerned with making inferences about the way the world is, based upon things we observe. Statistics involved the collection and interpretation of data. We need to know how to understand, display and summarize large amounts of quantitative information, before undertaking a more sophisticated analysis.

This seminar will introduce basic concepts of statistics and demonstrate how to illustrate data with MATLAB. It focuses on concepts and problem solving rather than on theory. Topics include basic terms, data presentation, and statistical inference. This lecture emphasizes active learning, board problems, and computation using MATLAB. No prior MATLAB knowledge is required. The primary goal of the seminar is to motivate students to become more sophisticated consumers of statistics, and to be able to critique experimental setups and analyze data.

Bio: Bingxin Shen received her Ph.D. in Electrical Engineering from Stony Brook University in 2011. Currently, she is an Associate Scientist at the Howard Hughes Medical Institute at Columbia University Medical Center. Her interdisciplinary interests generally lie in Structure Biology, Statistics and Probability Theory, Biomedical Image Processing, Signal Processing, Modeling and Simulation, Error Correction Codes and Wireless Sensor Networks.