Statistics Seminar

Department of Mathematical Sciences

DATE:	Monday, July 11, 2016
TIME:	11:00am to noon
LOCATION:	WH 100E
SPEAKER:	David M. Steinberg, Tel Aviv University
TITLE:	Designing Experiments for GLM's

Abstract

Many experiments involve non-normal responses. Yet until recently not much was known about how to design efficient experiments. Standard plans appropriate for normal data continued to be used in practice. I will present the main ideas that guide modern ideas for design for GLM's. Sequential experimentation has great advantages in this setting. I will describe a format for sequential Bayesian learning and how to apply it in experimental design. I will discuss applications to two areas: sensitivity testing and active learning. In the former, the goal is to estimate a distribution when you are limited to asking binary questions. For example, you want to know an item's breaking strength but can only apply a known force and see if the item breaks. In active learning, the goal is to sample cases with known features but unknown classification in order to achieve a good classification rule.

The talk will cover joint work with Hovav Dror, Chris Gotwalt, Brad Jones, Lotem Kaplan and Amit Teller.