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# Student Seminar

Speaker: **Elynn Chen**
**Rutgers University**

Title: **Sequential Monte Carlo Methods: Basic Framework and Designing Issues**

Time: **2:30– 2:42pm, *Tuesday*, September 23, 2014**

Place: **552 Hill Center**

## Abstract

Many real-world data analysis tasks involve estimating unknown quantities from some given observations. In most of these applications, prior knowledge about the phenomenon being modeled is available and all inference on the unknown quantities is based on the posterior distribution obtained from Bayes' theorem. Often, the observations arrive sequentially in time and one is interested inperforming inference on-line.

Sequential Monte Carlo (SMC) methods are a set of simulation-based methods which provide a convenient and attractive approach to computing the posterior distribution. Unlike grid-based methods, SMC methods are very flexible, easy to implement, parallelisable and applicable in very general setting. The advent of cheap and formidable computational power, in conjunction with some recent developments in applied statistics, engineering and probability, have stimulated many advancements in this filed.

In this talk, I will first introduce a basic framework of SMC and then talk about several important designing issues which are concentrates of the latest algorithmic and theoretical development in the field.

** Refreshments will be served at @2:45pm in Room 502 Hill Center **