

STATISTICS COLLOQUIUM

MONDAY, OCTOBER 20, 2008

Talk: 4:00 PM – *Science Center 309*

Reception: 5:15 PM – *Science Center, 7th Floor*

“Inference for Quantitation Parameters of Polymerase
Chain Reactions and Branching Processes
with Random Effects”

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ABSTRACT

Real-time PCR is one of the most widely used methods for gene quantitation and has been applied extensively in several areas of science and engineering. Ideas from branching processes and their variants are commonly used in various algorithms for studying the quantitation phenomenon. However, most of the existing models and methods fail to take into account different sources of variability present in the PCR dynamics. In this talk, I will illustrate how branching processes with random effects can be used to address some aspects of the variability. Furthermore, I will describe new inferential procedures for the quantitation parameters and establish the superiority of the proposed methods as compared to the other existing methods in the literature. (Joint work with my Ph.D. student Bret Hanlon).