



**FIELDS INSTITUTE** Research in Mathematical Science

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# GRADUATE SCHOOL INFORMATION DAY

## SATURDAY, NOVEMBER 17, 2007

### FIELDS INSTITUTE 222 COLLEGE STREET, TORONTO

The Fields Institute will host an information session for universities to display information on their graduate programs in mathematics, statistics and computer science. Please join us for this opportunity to talk to representatives from the various university graduate programs.

**All are welcome.**

Universities may be arranging student travel to the Fields Institute. Please contact your local graduate student advisor for details.

### SCHEDULE FOR THE DAY

**12:00-1:10 p.m. Graduate School Information Sessions**

Confirmed Participating Universities include:



**1:10 p.m.** Speaker: **JEFFREY S. ROSENTHAL**, Dept. Statistics, Toronto

#### *What is MCMC?*

Why does the house always win at the casino? And, how do modern researchers compute high-dimensional integrals for Bayesian inference? These two questions are related. Markov chain Monte Carlo (MCMC) algorithms are very widely used in statistics, computer science, physics, and chemistry (800,000 Google hits!). They use repeated randomness to sample from complicated probability distributions and converge to the right answer, similar to how casinos' profits converge to infinity. I will explain the connections using simple graphical simulations, and will also explain how mathematical analysis can sometimes provide insights into the workings of these algorithms.

**2:00-3:30 p.m. Reception & Graduate School Information Sessions**

[www.fields.utoronto.ca/programs/scientific/07-08/grad\\_school\\_day/](http://www.fields.utoronto.ca/programs/scientific/07-08/grad_school_day/)

FIELDS INSTITUTE  
Research in Mathematical Sciences  
222 COLLEGE STREET • TORONTO • ONTARIO • M5T 3J1 • CANADA

Phone: (416) 348-9710  
Fax: (416) 348-9759  
[www.fields.utoronto.ca](http://www.fields.utoronto.ca)



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