

# 2017 PIMS-UBC Statistics Constance van Eeden Lecture

4:00pm

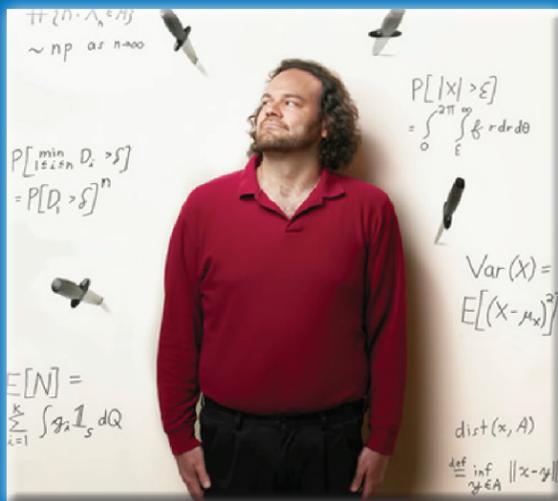
6 April, 2017

Michael Smith Labs, Room 102  
The University of British Columbia

## ADAPTIVE MCMC FOR EVERYONE

### Jeffrey Rosenthal (University of Toronto)

Markov chain Monte Carlo (MCMC) algorithms, such as the Metropolis Algorithm and the Gibbs Sampler, are an extremely useful and popular method of approximately sampling from complicated probability distributions. Adaptive MCMC attempts to automatically modify the algorithm while it runs, to improve its performance on the fly. However, such adaptation often destroys the ergodicity properties necessary for the algorithm to be valid. In this talk, we first illustrate MCMC algorithms using simple graphical Java applets. We then discuss adaptive MCMC, and present examples and theorems concerning its ergodicity and efficiency. We close with some recent ideas which make adaptive MCMC more widely applicable in broader contexts.



JEFFREY ROSENTHAL is a professor in the Department of Statistics at the University of Toronto. He received his BSc from the University of Toronto at the age of 20, his PhD in Mathematics from Harvard University at the age of 24, and tenure at the University of Toronto at the age of 29. He received the 2006 CRM-SSC Prize, the 2007 COPSS Presidents' Award, the 2013 SSC Gold Medal, and teaching awards at both Harvard and Toronto. He is a fellow of the Institute of Mathematical Statistics and of the Royal Society of Canada. Rosenthal's book for the general public, *Struck by Lightning: The Curious World of Probabilities*, was published in sixteen editions and ten languages, and was a bestseller in Canada, leading to numerous media and public appearances, and to his work exposing the Ontario lottery retailer scandal. He has also dabbled as a computer game programmer, musical performer, and improvisational comedy performer, and is fluent in French. His web site is [www.probability.ca](http://www.probability.ca).

There will be a pre-reception prior to the talk from 3:30pm - 4:00pm at the same venue. For more details, please visit: <http://www.pims.math.ca/scientific-event/170406-puscvelsjr>

