Statistical Sciences
UNIVERSITY OF TORONTO

SEMINAR SERIES

When:	**Thursday, November 16, 2017**
Time:	**3:30 – 4:30 pm**
	Refreshments at 3:15 pm
Where:	**Sidney Smith Hall Rm 1069**
Speaker:	**PIERRE JACOB, Harvard University**
Host:	**Radu Craiu**

Unbiased Markov chain Monte Carlo with Couplings

Markov chain Monte Carlo methods provide consistent approximations of integrals as the number of iterations goes to infinity. However, these estimators are generally biased after any fixed number of iterations, which complicates parallel computation.

In this talk I will explain how to remove this burn-in bias by using couplings of Markov chains and a telescopic sum argument from Glynn & Rhee (2014). The resulting unbiased estimators can be computed independently in parallel, and averaged. I will present coupling constructions for Metropolis-Hastings, Gibbs and Hamiltonian Monte Carlo.

The proposed methodology will be illustrated on various examples. If time permits, I will describe how the proposed estimators can approximate the "cut" distribution that arises in Bayesian inference for misspecified models.

This is joint work with John O'Leary, Yves F. Atchade and Jeremy Heng, available at arxiv.org/abs/1708.03625 and arxiv.org/abs/1709.00404.