MYLENE BEDARD, Ph.D.

CONTACT INFORMATION

Département de mathématiques et de statistique
Université de Montréal
C.P. 6128, succ. Centre-ville
Montréal, Québec, Canada
H3C 3J7

Telephone: 1 (514) 343-6111 ext. 2727
Facsimile: 1 (514) 343-5700
Email: bedard@dms.umontreal.ca
Website: www.dms.umontreal.ca/∼bedard

EDUCATION

Ph.D. in Statistics **07/2002 - 09/2006**
University of Toronto
Supervisor: Jeffrey S. Rosenthal

M.Sc. in Statistics, option Actuarial Science **09/2001 - 06/2002**
University of Toronto

B.Sc. in Actuarial Science **08/1998 - 06/2001**
Université Laval

EMPLOYMENT

07/2007 -	Assistant Professor, Département de mathématiques et de statistique, Université de Montréal
10/2006 - 06/2007	Research Fellow, CRiSM, University of Warwick
09/2001 - 08/2006	Teaching Assistant, Statistics and Actuarial Science, University of Toronto
09/2003 - 08/2006	Research Assistant, Professors Jeffrey S. Rosenthal and Donald A.S. Fraser, University of Toronto
05/2001 - 09/2001	Actuarial Assistant, Retirement Practice, Morneau Sobeco (Toronto)
05/2000 - 09/2000	Actuarial Assistant, Retirement Practice, Morneau Sobeco (Montréal)

PUBLICATIONS IN REFEREED JOURNALS

- Bédard, M. (2007). Weak Convergence of Metropolis Algorithms for Non-*iid* Target Distributions. *Ann. Appl. Probab.* **17**, 1222-44.
- Bédard, M., Fraser, D.A.S., and Wong, A. (2007). Higher Accuracy for Bayesian and Frequentist Inference: Large Sample Theory for Small Sample Likelihood. *Statist. Sci.* **22**, 301-21.
- Bédard, M. (2008). Efficient Sampling using Metropolis Algorithms: Applications of Optimal Scaling Results. *J. Comput. Graph. Statist.* **17**, 312-32.
- Bédard, M. (2008). Optimal Acceptance Rates for Metropolis Algorithms: Moving Beyond 0.234. *Stochastic Process. Appl.* **118**, 2198-222.
- Bédard, M. and Rosenthal, J.S. (2008). Optimal Scaling of Metropolis Algorithms: Heading Toward General Target Distributions. *Canad. J. Statist.* **36**, 483-503.
- Bédard, M. and Fraser, D.A.S. (2008). On a Directionally Adjusted Metropolis-Hastings Algorithm. *IJSS.* **9** *(Special Issue)*, 33-57.

ARTICLES SUBMITTED TO REFEREED JOURNALS

- Bédard, M. (2009). On the optimal scaling problem of Metropolis algorithms for hierarchical target distributions.

OTHER PUBLICATIONS

- Bédard, M. (2006). On the Robustness of Optimal Scaling for Random Walk Metropolis Algorithms. *Ph.D. Thesis. http://www.dms.umontreal.ca/∼bedard/these6c.pdf*
- Bédard, M. (2005). On the Robustness of Optimal Scaling for Random Walk Metropolis Algorithms. *Proceedings, SOSGSSD Conference. www.math.yorku.ca/sosgssd/*
- Bédard, M. (2002). Dependence Structures in Risk Theory. *M.Sc. research project supervised by Thierry Duchesne. www.mat.ulaval.ca/pages/duchesne/*

ARTICLES IN PREPARATION

- Bédard, M. Scaling of Metropolis-within-Gibbs algorithms in high dimensions.
- Bédard, M., Douc, R., Fort, G., and E. Moulines. Scaling analysis of multiple-try and other local optimization methods.
- Bédard, M. and Kendall, W.S. Weak Convergence of RWM Algorithms using Dirichlet Forms.

CONFERENCE PRESENTATIONS

- Theoretical Aspect of MCMC Methods. *CRM Workshop - MCMC: Theory and Applications*, Sherbrooke, Canada, October 2008. (Invited)
- On a Directionally Adjusted Metropolis-Hastings Algorithm for Evaluating Tail Probabilities. *Ninth World Conference of the International Society for Bayesian Analysis*, Hamilton Island, Australia, July 2008. (Contributed)
- On the Optimal Scaling Problem for Hierarchical Target Distributions. *Eight International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing*, Montréal, Canada, July 2008. (Invited)
- On a Directionally Adjusted Metropolis-Hastings Algorithm. *Statistical Society of Canada Meeting*, Ottawa, Canada, May 2008. (Invited)
- Adaptive MCMC Using Stratified Proposals for Bayesian and Frequentist Inference. *Joint Statistical Meetings*, Salt Lake City, U.S., July 2007. (Invited)
- Optimal Scaling of Metropolis Algorithm: Is 0.234 as Robust as it is Believed? *Pierre-Robillard Award Address, Statistical Society of Canada Meeting*, St. Johns, Canada, June 2007. (Invited)
- Optimal Acceptance Rates for Metropolis Algorithms: Moving Beyond 0.234. *New Developments in MCMC*, Coventry, U.K., August 2006. (Contributed)
- On the Robustness of Optimal Scaling for Random Walk Metropolis Algorithms. *Southern Ontario Statistics Graduate Student Seminar Days*, Toronto, Canada, May 2005. (Contributed)
- On the Robustness of Optimal Scaling for Metropolis-Hastings Algorithms. *Statistical Society of Canada Meeting*, Montréal, Canada, May 2004. (Poster)

INVITED PRESENTATIONS

- Un algorithme de type Metropolis-Hastings avec ajustement directionnel. Université de Sherbrooke, Sherbrooke, Canada, October 2008.
- On a Directionally Adjusted Metropolis-Hastings Algorithm. University of Minnesota, Minneapolis, U.S., September 2008.
- Adaptive MCMC Using Stratified Proposals for Bayesian and Frequentist Inference. *Biostatistics Seminar Series*, McGill University, Montréal, Canada, November 2007.
- Directional Adaptive MCMC with Applications to Bimodal Target Densities. University of Bristol, Bristol, U.K., October 2007.
- Weak Convergence of the Random Walk Metropolis Algorithm to a Diffusion Limit. *Department of Mathematics*, University of Warwick, Coventry, U.K., June 2007.
- New Developments on Optimal Scaling for Random Walk Metropolis Algorithms. *Bayesian Statistics Cluster Meetings*, University of Sheffield, Sheffield, U.K., April 2007.

- Nouveaux développements sur l'échelonnage optimal des algorithmes Metropolis-Hastings. Université Laval, Québec, Canada, February 2007.
- New Developments on Optimal Scaling for Random Walk Metropolis Algorithms. *Young Researchers Meetings*, University of Warwick, Coventry, U.K., January 2007.
- Weak Convergence of the Random Walk Metropolis Algorithm to a Diffusion Limit. *Probability forum*, University of Warwick, Coventry, U.K., December 2006.
- Robustesse de l'échelonnage optimal pour les algorithmes de type Metropolis-Hastings. Université de Montréal, Montréal, Canada, October 2006.
- Optimal Acceptance Rates for Metropolis Algorithms: Moving Beyond 0.234. Concordia University, Montréal, Canada, September 2006.
- Efficient Sampling Using Metropolis Algorithms: The Optimal Scaling Revisited. University of Warwick, Coventry, U.K., April 2006.
- Diffusion Limits for Random Walk Metropolis Algorithms with Complex Target Distributions. *Joint Statistics and Biostatistics Graduate Student Seminar Series*, University of Toronto, Toronto, Canada, March 2005.
- Weak Convergence Results for Metropolis-Hastings Algorithms. *MCMC Seminar Series*, University of Lancaster, Lancaster, U.K., February 2005.
- Exploring Optimal Scaling for RWM Algorithms with Hierarchical Target Distributions. *Ph.D. Student Seminars*, University of Toronto, Toronto, Canada, March 2004.

TEACHING

01/2010 - 04/2010	Decision Theory, Statistics, Université de Montréal
01/2010 - 04/2010	Statistical Analyses (for students in psychoeducation), Statistics, Université de Montréal
09/2009 - 12/2009	Graduate Bayesian Decision Theory, Statistics, Université de Montréal
09/2008 - 12/2008	Graduate Bayesian Decision Theory, Statistics, Université de Montréal
01/2008 - 04/2008	Statistical Analyses (for students in communication), Statistics, Université de Montréal
09/2007 - 12/2007	Graduate Bayesian Decision Theory, Statistics, Université de Montréal
05/2004 - 06/2004	Fundamentals of Investment and Credit, Actuarial Science, University of Toronto

06/2003 - 07/2003	Introductory Life Contingencies, Actuarial Science, University of Toronto
05/2002 - 06/2002	Fundamentals of Investment and Credit, Actuarial Science, University of Toronto

PROFESSIONAL ACTIVITIES AND AFFILIATION

- Member of the Statistical Society of Canada
- Associate member of the Laboratoire de statistique du CRM
- Committee member for the 2007 Pierre-Robillard Award
- Reviewer for the Annals of Applied Probability, Bernoulli, the Journal of the American Statistical Association, the Journal of Computational and Graphical Statistics, the Journal of the Royal Statistical Society: Series B (Statistical Methodology), Statistics and Computing
- Reviewer for NSERC and FQRNT
- Courses 1,2,3 and 4 from the Society of Actuaries
- Writer for the CRM Bulletin (Fall 2009)

GRANTS AND SCHOLARSHIPS

- Invited researcher at the CNRS/ENST, Paris, August 2008.
- NSERC Research Grant 2008-13 ($70,000 over 5 years)
- NSERC Research Grant 2007-10 ($36,000 over 3 years)
- Financial support (Summer School and Conference in Probability Theory, UBC), Pacific Institute for the Mathematical Sciences, 2005
- Doctoral scholarship, NSERC (PGS D), 2004-06 ($21,000 per annum)
- Doctoral scholarship, FCAR (B2), 2003-06 ($20,000 per annum) (declined)
- Doctoral scholarship, NSERC (PGS M), 2002-04 ($21,000 per annum)
- Graduate scholarship, OGS, 2002-03 ($15,000 per annum) (declined)
- Graduate scholarship, OGS, 2001-02 ($15,000 per annum)
- Admission scholarship, Université Laval, 1998 ($1,000)

AWARDS

- Pierre-Robillard Award (best thesis in the field of probability and statistics defended in Canada in 2006), Statistical Society of Canada, 2007 ($1,000)
- Governor General's Gold Medal, School of Graduate Studies, University of Toronto, 2007
- Doctoral Award, Department of Statistics, University of Toronto, 2005 ($400)
- Teaching Assistant Award, Department of Statistics, University of Toronto, 2004-05 ($100)
- Andrews Academic Achievement Award, Department of Statistics, University of Toronto, 2001-02 ($500)

SUPERVISION

- Audrey Béliveau (undergrad NSERC project, summer 2008)
- Matei Mireuta (M.Sc. Student, February 2008 to present)

DEPARTMENTAL SERVICES

- Member of inter-order program committee (09/2009-08/2010)
- Member of committee for recruitment (09/2009-08/2010)
- Coordinator of the CRM Colloquiums (07/2009-06/2010)
- Coordinator of the Graduate Student Seminars in Statistics (09/2008-08/2010)
- Member of committee for social activities (09/2008-08/2009)
- President of jury for the Master's thesis of Maciej Augustyniak
- Member of jury for the predoctoral exams of Zeinab Mashreghi
- President of jury for the Master's essay of Matt McCamus (training report)
- Member of jury for the Ph.D. thesis of Simon Guillotte
- Member of jury for the predoctoral exams of Félix Labrecque-Synnott
- Coordinator of the departmental soccer team (09/2003 - 08/2005)

COMPUTER KNOWLEDGE

Programming languages: Visual-Basic, Fortran, HTML

Statistical software: R, S-PLUS, SAS
Other software: Excel, LaTeX, Maple Word

PERSONAL INFORMATION

Language skills: French, English, and basic Spanish
Citizenship: Canadian
Date of birth: February 12, 1979