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CURRICULUM VITAE

Name:	David A. Stephens
Nationality:	British, Canadian
Current Position:	Professor
Current Address:	Department of Mathematics and Statistics McGill University, Burnside Hall 805 Sherbrooke Street West Montreal, QC, H3A 0B9, Canada

Employment

2006-Present	**McGill University, Montreal, Canada** Department of Mathematics and Statistics, Professor
2019-2025	**McGill University, Montreal, Canada** Vice-Dean, Faculty of Science
2015-2019	**McGill University, Montreal, Canada** Chair of the Department of Mathematics and Statistics
2011-2018	**McGill University, Montreal, Canada** James McGill Professor
1995-2006	**Imperial College London, UK** Department of Mathematics, Lecturer/Senior Lecturer
1990-1995	**Imperial College London, UK** Department of Mathematics, Research Associate
1986-1990	**University of Nottingham, UK** PhD in Statistics, *Bayesian Edge Detection in Image Processing* Supervisor: Prof. Adrian F. M. Smith
1983-1986	**University of Nottingham, UK** BSc in Mathematics (First Class Hons.)

Research Interests: Bayesian statistics: methodological and computational methods. Specific areas of interest include bioinformatics, biostatistics, causal inference, and time series analysis.

Honours & Awards

- Fellow of the Royal Society of Canada, Elected 2024
- Gold Medal, The Statistical Society of Canada, May 2022
- Elected Fellow, American Statistical Association, 2019
- Elected Fellow, International Statistical Institute, 2015

Publications

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1. Turchetta, A, Moodie, EEM, Stephens, DA, Savy, N, Moodie, Z, **The time-dependent Poisson-gamma model in practice: Recruitment forecasting in HIV trials**, *Contemporary Clinical Trials*, 107607, 2024.
2. Shokoohi F, Stephens DA, and Greenwood CMT, **Identifying Differential Methylation in Cancer Epigenetics via a Bayesian Functional Regression Model**, *Biomolecules*,14 (6), 639, 2024.
3. Wu, H, Stephens, DA, Moodie, EEM, **An SIR-based Bayesian Framework for COVID-19 Infection Estimation**, *The Canadian Journal of Statistics*, 52 (4), e11817, 2024
4. Omar, Z, Stephens, DA, Schmidt, AM, Buckeridge, DL, **A Bayesian Non-Stationary Heteroskedastic Time Series Model for Multivariate Critical Care Data**. *Statistics in Medicine*, 43 (20), 3958-3974, 2024.
5. McVittie, JH, Wolfson, DB, Stephens, DA**, The survival function NPMLE for combined right-censored and length-biased right-censored failure time data: Properties and applications,** Accepted for publication, *International Journal of Biostatistics*, February 2024.
6. Murphy TJ, Swail H, Jain J, Anderson M, Awadalla P, Behl L, Brown PE, Charlton CL, Colwill K, Drews SD, Gingras AC, Hinshaw D, Jha P, Kanji JN, Kirsh VA, Lang ALS, Langlois MA, Lee S, Lewin A, O'Brien SF, Pambrun C, Skead K, Stephens DA, Stein DR, Tipples G, Van Caeseele PG, Evans TG, Oxlade O, Mazer BD, Buckeridge DL. **The evolution of SARS-CoV-2 seroprevalence in Canada: a time-series study, 2020–2023**. *Canadian Medical Association Journal (CMAJ)*, August 14;195:E1030-7. August 2023, doi: 10.1503/cmaj.230949
7. Turchetta, A, Savy, N, Stephens, DA, Moodie, EEM, Klein, MB, **A time-dependent Poisson-Gamma model for recruitment forecasting in multicenter studies**, *Statistics in Medicine*, 42 (23), 4193-4206, 2023.
8. Stephens DA, Nobre WS, Moodie EEM and Schmidt, AM, **Causal inference under mis-specification: adjustment based on the propensity score (with Discussion)**, *Bayesian Analysis*, 18 (2), 639-694. 2023.
9. McVittie, JH, Best, AF, Wolfson, DB, Stephens, DA, Wolfson, J, Buckeridge, DL, and Gadalla, SM **Survival Modelling for Data from Combined Cohorts: Opening the Door to Meta Survival Analyses and Survival Analysis Using Electronic Health Records.** *International Statistical Review*, 91: 72– 87, https://doi.org/10.1111/insr.12510, 2023.
10. Nobre WS, Schmidt, AM, Moodie EEM and Stephens DA, **The impact of directly observed therapy on the efficacy of Tuberculosis treatment: A Bayesian multilevel approach**, *Journal of the Royal Statistical Society, Series C: Applied Statistics*, **72** (4), 889–911, 2023.
11. Rodriguez Duque, D, Moodie EEM, Stephens DA, **Bayesian Inference for Optimal Dynamic Treatment Regimes in Practice**, Accepted for publication, *International Journal of Biostatistics*, March 2023.
12. McVittie, JH, Addona, V, Wolfson, DB and Stephens, DA, **Testing for a change in the failure time distribution using combined data from an incident and a prevalent cohort**, Accepted for Publication**,** *Statistics and its Interface*, February 2023.
13. Saarela, O, Stephens, DA, and Moodie, EEM, **The Role of Exchangeability in Causal Inference**, *Statistical Science*, **38** (3), 369-385, 2023.

14. Rodriguez Duque D, Stephens DA, Moodie EEM, Klein MB. **Semiparametric Bayesian inference for optimal dynamic treatment regimes via dynamic marginal structural models**. *Biostatistics*. **24** (3), 708-727, 2023.
15. Turchetta, A, Moodie, EEM, Stephens, DA, and Lambert, SD, **Bayesian Sample Size Calculations for SMART Studies,** *Biometrics*, 79 (3), 2489-2502, 2023.
16. Luo Yu, Stephens DA, and Buckeridge DL, **Bayesian Clustering of Continuous-Time Hidden Markov Models**, *Canadian Journal of Statistics*, 51 (1), 134-156, 2023
17. Moodie, EEM and Stephens, DA, **Causal inference: Critical developments, past and future,** *Canadian Journal of Statistics*, **50** (4), 1299-1320, December 2022
18. McVittie, JH, Wolfson, DB, and Stephens**,** DA, **A note on the partial likelihood estimator of the proportional hazards model for combined incident and prevalent cohort data.** *Metrika* **86** (4), 487-497. 2022.
19. El Hanchi, A, Stephens, DA, and Maddison, CJ, **Stochastic Reweighted Gradient Descent,** *Proceedings of the 39th International Conference on Machine, Learning*, Baltimore, Maryland, USA, PMLR 162, June 2022. https://arxiv.org/pdf/2103.12293.pdf,
20. Cote, M-P, Genest, C and Stephens DA, **A Bayesian approach to modeling multivariate multi-level insurance claims in the presence of unsettled claims,** *Bayesian Analysis*, **17**(1): 67-93. DOI: 10.1214/20-BA1243, January 2022.
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22. Farrell, MJ, Elmasri, M, Stephens, DA and Davies TJ, **Predicting missing links in global host-parasite networks,** *Journal of Animal Ecology*, December 2021.
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27. Luo Y, Stephens DA, Verma, A and Buckeridge DL, **Bayesian Latent Multi-State Modeling for Non-Equidistant Longitudinal Electronic Health Records**, *Biometrics,* 77(1), 78-90, 2021, doi.org/10.1111/biom.13261
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30. McGillivray A, Khalili A, and Stephens DA**, Estimating networks with hubs for microbiome data,** *Journal of Multivariate Analysis*, **179,** 1046-55, June 2020.

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66. Ertefaie A, Asgharian M, and Stephens DA, **Double Bias: estimation of causal effects from length-biased samples in the presence of confounding,** *International Journal of Biostatistics*, 11(1), 69-89, doi: 10.1515/ijb-2014-0037, May 2015.
67. Moseley MJ, Wallace MP, Stephens DA, Fielder AR, Smith LC, Stewart CE, and RODS (Randomized Occlusion Dosing Strategies) Study Cooperative, **Personalized versus standardized dosing strategies for the treatment of childhood amblyopia: study protocol for a randomized controlled trial,** *Trials,* 16:189, doi: 10.1186/s13063-015-0711-4, April 2015.
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125. Moskovic R, Jordinson C, Stephens DA, et al., **A Bayesian analysis of the influence of neutron irradiation on embrittlement in ferritic submerged arc weld metal**, *Metallurgical and Materials Transactions A-Physical Metallurgy and Materials Science*, 31, 445 - 459, ISSN: 1073-5623, 2000.
126. Rahman NJ, Wakefield JC, Stephens DA, et al., **The Bayesian analysis of a pivotal pharmacokinetic study**, *Statistical Methods in Medical Research*, 8, 195 - 216, 1999.
127. Walker SG and Stephens DA, **A multivariate family of distributions on $(0, \infty)^p$**, *Biometrika*, 86, 703 - 709, ISSN: 0006-3444, 1999.
128. Stephens DA and Fisch RD, **Bayesian analysis of quantitative trait locus data using reversible jump Markov chain Monte Carlo**, *Biometrics*, 54, 1334 - 1347, ISSN: 0006-341X, 1998.
129. Sullivan P, Stephens DA, Ansari T, et al., **Variation in the measurements of basement membrane thickness and inflammatory cell number in bronchial biopsies**, *European Respiratory Journal*, 12, 811 - 815, ISSN: 0903-1936, 1998.
130. Stephens DA, Smith AFM, and Moskovic R, **Charpy impact energy data: a Markov chain Monte Carlo analysis**, *Journal of the Royal Statistical Society Series C-Applied Statistics*, 46, 477 - 492, ISSN: 0035-9254, 1997.
131. Smith CAB and Stephens DA, **Estimating linkage heterogeneity**, *Annals of Human Genetics*, 60, 161 - 169, ISSN: 0003-4800, 1996.

132. Dellaportas P and Stephens DA, **Bayesian-analysis of errors-in-variables regression models**, *Biometrics*, 51, 1085 - 1095, ISSN: 0006-341X, 1995.
133. Smith CAB and Stephens DA, **Estimating multipoint recombination fractions**, *Annals of Human Genetics*, 59, 307 - 321, ISSN: 0003-4800, 1995.
134. Stephens DA, **Bayesian retrospective multiple-changepoint identification**, *Journal of the Royal Statistical Society Series C (Applied Statistics)*, 43, 159 - 178, ISSN: 0035-9254, 1994.
135. Buck CE, Litton CD, and Stephens DA, **Detecting a change in the shape of a prehistoric corbelled tomb**, *The Statistician*, 42, 483 - 490, ISSN: 0039-0526, 1993.
136. Stephens DA and Smith AFM, **Bayesian inference in multipoint gene-mapping**, *Annals of Human Genetics*, 57, 65 - 82, ISSN: 0003-4800, 1993.
137. Stephens DA and Smith AFM**, Sampling - Resampling Techniques for the Computation of Posterior Densities in Normal Means problems**, *Test*, 1(1), 1 – 18, 1992.

Papers in Revision & Papers Submitted/Under Review:

S1 Rodriguez Duque, D, Moodie EEM, Stephens DA, **Estimation of Optimal Dynamic Treatment Regimes using Gaussian Process Emulation**, in revision after Major Revision, March 2025

S2 Luo Y, Stephens DA, Graham DJ, McCoy EJ, **Bayesian doubly robust causal inference via loss functions**, in revision, https://arxiv.org/abs/2103.04086, March 2025.

S3 Alie, R, Stephens, DA and AM Schmidt, **On Data Augmentation in Point Process Models Based on Thinning** arXiv preprint arXiv:2203.06743, 2024 https://arxiv.org/pdf/2203.06743.pdf

S4 Alie, R, Stephens, DA and AM Schmidt, **Computational Considerations for the Linear Model of Coregionalization,** in revision (after Major Revision, May 2024), *Journal of Computational and Graphical Statistics*, arXiv preprint arXiv:2402.08877, 2024 https://arxiv.org/pdf/2402.08877.pdf

Discussions:

1. Moodie EEM, and Stephens DA**, Commentary on "The Statistician in Medicine" by Professor Sir Austin Bradford Hill,** *Statistics in Medicine* **40** (1), 37-41, 2022.
2. Moodie EEM, and Stephens DA, **Comment: Clarifying Endogenous Data Structures and Consequent Modelling Choices Using Causal Graphs**, discussion of 'Linear mixed models with endogenous covariates: Modeling sequential treatment effects with application to a mobile health study', by Qian et al, *Statistical Science*, 35(3), 391-393, 2020.
3. Wallace MP, Moodie EEM, and Stephens DA, Discussion of '**Personalized dose finding using outcome weighted learning'** by Kosorok et al., *Journal of the American Statistical Association,* 111 (516), 1530 – 1534, September 2017.
4. Stephens DA**, Discussion of "Deductive derivation and Turing-computerization of semiparametric efficient estimation"** by Frangakis et al., *Biometrics,* 71 (4), 880-880, 2015.

Books:

1. Damien P, Dellaportas P, Polson NG, and Stephens DA, **Bayesian Theory and Applications**, Oxford University Press, 2012.
2. Adams NM, Crowder MJ, Hand DJ, and Stephens DA, **Methods and models in statistics: in honour of Professor John Nelder**, **FRS**, London, Imperial College Press, ISBN: 1-8609-4463-9, 2004.

Chapters in Books:

1. De Iorio M, Ebbels TMD, and Stephens DA, **Statistical Methods in Metabolomics**, *Handbook of Statistical Genetics*, 3rd Edition, 2019
2. Khalili A, Chen J, and Stephens DA, **Regularization in regime-switching Gaussian autoregressive models**, in *Advanced Statistical Methods in Data Science* (eds Chen D-G et al.), Chapter 2, 13—34, Springer, Singapore, September 2016.
3. Stephens DA, **G-estimation for dynamic treatment regimes in the longitudinal setting,** in *Adaptive Treatment Strategies in Practice: Planning Trials and Analyzing Data for Personalized Medicine* (eds Kosorok MR and Moodie EEM), Chapter 7, 89-117, ASA-SIAM Series on Statistics and Applied Mathematics, http://dx.doi.org/10.1137/1.9781611974188.ch7, December 2015.
4. Griffin JE and Stephens DA, **Advances in Markov chain Monte Carlo**, in *Bayesian Theory and Applications* (eds Damien P et al.), Oxford University Press, 2012.
5. Powers LJ, Nešlehová J, and Stephens DA, **American Options in an infinite activity Lévy market: Monte Carlo and deterministic approaches using a diffusion approximation**, in *Numerical Methods in Finance* (eds Carmona RA, Del Moral P, Hu P, and Oudjane N), Springer Proceedings in Mathematics, 12(2), 291 - 321, doi: 10.1007/978-3-642-25746-9_9, Springer, 2012.
6. Umande PP and Stephens DA, **Spatial Point Process Analysis of Promyelocytic leukemia nuclear bodies**, in *Advances in Nuclear Architecture* (eds Adams NM and Freemont P), Springer, Chapter 2, 59 - 85, 2011.
7. Russell RA, Adams NM, Stephens DA, Batty E, Jensen K, and Freemont PS, **Methodology for Quantitative Analysis of 3-D Nuclear Architecture**, in *Advances in Nuclear Architecture* (eds Adams NM and Freemont P), Springer, Chapter 2, 173-187, 2011.
8. Stephens DA, **Complexity in Systems Level Biology and Genetics: Statistical Perspectives**, *Handbook of Complexity*, Springer, 2009.
9. De Iorio M, Ebbels TMD, and Stephens DA, **Statistical Techniques in Metabolic Profiling**, to appear in *Handbook of Statistical Genetics*, 3rd Edition, 2007.
10. Stephens DA, **Statistical approaches to genetic mapping**, in *Highly structured stochastic systems* (eds Green PJ, Hjort NL, and Richardson S), Oxford, Oxford University Press, 386 - 392, ISBN: 0-1985-1055-1, 2003.
11. Wakefield JC and Stephens DA, **Bayesian errors-in-variables modeling**, in *Bayesian Analysis of Generalised Linear Models* (eds Dey DK et al.), 2000.
12. Smith CAB and Stephens DA, **Simple likelihood and probability calculations for linkage analysis**, in *Genetic Mapping of Disease Genes*, Academic Press, London, 1997.
13. Guttmann I, Dellaportas P, Stephens DA, and Smith AFM, **A Comparative Study in Perinatal Mortality using a Two Component Mixture Model**, in *Bayesian Biostatistics* (eds Berry DA and Stangl DK), Marcel Dekker, New York, 1995.
14. Stephens DA and Dellaportas P, **Bayesian Analysis of Generalised Linear Models with Covariate Measurement Error**, in *Bayesian Statistics 4* (eds Bernardo JM et al.), Clarendon Press, Oxford, UK, 813-820, 1994.
15. Stephens DA and Smith AFM, **Bayesian Edge-Detection in Images via Changepoint Methods**, *Computing Intensive Methods in Statistics* (eds Hardie W and Simar J), Physica-Verlag, Heidelberg, 1 – 29, 1993.

Interviews:

1. Dellaportas, P and Stephens, DA, **Interview with Professor Adrian FM Smith**. *International Statistical Review*, 88: 265-279. https://doi.org/10.1111/insr.12395, 2020.

Graduate Supervision
Completed through May 2024

PhD Supervision:

1. Reem Al-Jaralla (2001)
2. John Gay (2002)
3. Nokuthaba Sibanda (2003)
4. Wantanee Surapatoolkorn (2004)
5. Matthew Gander (2004)
6. Ajay Jasra (2005, joint with Chris Holmes)
7. Georgia Tsiliki (2007, joint with Maria De Iorio)
8. Kitty Platanioti (2008, joint with Emma McCoy)
9. Philip Umande (2008, joint with Niall Adams)
10. Tso-Jung Yen (2008, joint with Nick Heard)
11. Wing Yip (2008, joint with Sofia Olhede)
12. Richard Russell (2010, joint with Niall Adams and Paul Freemont)
13. Chris Oduneye (2011, joint with Ajay Jasra)
14. Ashkan Ertefaie (2011, joint with Masoud Asgharian)
15. Amaan Mehrabian (2011)
16. Ben Rich (2012, joint with Erica Moodie)
17. Dan Graham (2012, joint with Emma McCoy, Imperial College)
18. Shujie Li (2013, joint with James Hanley)
19. Elena Rivera Mancia (2013, joint with Johanna Nešlehová)
20. Annaliza McGillivray (2016, joint with Abbas Khalili)
21. Luc Villandre (2017, joint with Aurelie Labbe)
22. Mohamad Elmasri (2017)
23. Yu Luo (2019, joint with David Buckeridge)
24. James McVittie (2021, joint with David Wolfson)
25. Vivian Meng (2021)
26. Daniel Rodriguez Duque (2022, joint with Erica Moodie)
27. Shomoita Alam (2023, joint with Archer (Yi) Yang)
28. Armando Turchetta (2023, joint with Erica Moodie)
29. Renaud Alie (2024, joint with Alex Schmidt)
30. Jiajun Mai (2025)

Masters Supervision

1. Mike Bottone (MPhil, 2010, co supervised with Ajay Jasra)
2. Sudipta Sadhukhan (MSc, 2011)
3. Tigran Atoyan (MSc, 2011)
4. Quan Zhou (MSc, 2012)
5. Erin Lundy (MSc, 2012, joint with David Wolfson)
6. Huijun Chen (MSc, 2012, joint with Christian Genest)

7. Vanessa Bergeron-Laperriere (MSc, 2014)
8. Wendy Weng (MSc, 2015)
9. Isabelle Grenier (MSc, 2016, joint with Abbas Khalili)
10. Hao Zhang (MSc, 2016, joint with Erica Moodie)
11. Shouao Wang (MSc, 2017, joint with Erica Moodie)
12. James McVittie (MSc, 2017, joint with David Wolfson)
13. Yiu-Sing Lau (MSc, 2018)
14. Mengtian Zhang (MSc, 2018)
15. Magid Sabbagh (MA, 2019, joint with Christian Genest)
16. Zayd Omar (MSc, 2019, joint with Alexandra Schmidt)
17. Jiajun Mai (MSc, 2019)
18. Elio Abi Younes (MSc, 2020)
19. Ayoub El hanchi (MSc, 2020)
20. David Fleischer (MSc, 2020, joint with Yi Yang)
21. Hovzep Mazakian (MSc, 2021)
22. Sameera Sheikh-Jilani (MSc, 2021, joint with Russ Steele)
23. Alicia ter-Cheam (MSc, 2021)
24. Peiyuan Huang (MSc, 2022)
25. Olivia Shi (MSc, 2022, joint with Christian Genest)
26. Lucas Bennett (MSc, 2023)
27. Yanfei Qu (MSc, February 2025)

Current Students at McGill:

- Elio Abi Younes (PhD, Year 6)
- David Fleischer (PhD, Year 6, joint with Archer (Yi) Yang)
- Hovzep Mazakian (PhD, Year 5, joint with Masoud Asgharian)
- Magid Sabbagh (PhD, Year 5)
- Haoyu Wu (PhD, Year 5, joint with Erica Moodie)
- Alicia ter-Cheam (PhD, Year 5)
- Peiyuan Huang (PhD, Year 4)
- Zayd Omar (PhD Year 4)
- Jingrui Mu (PhD, Year 4, joint with Abbas Khalili)
- Mame Diarra Toure (PhD, Year 4)
- Andrew Rambidis (PhD, Year 3, joint with Russ Steele)
- Renjie Peng (PhD, Year 3 joint with Christian Genest)
- David Garfinkle (Masters, Year 3, joint with Louigi Addario-Berry)
- Melodie Song (PhD, Year 2, joint with Abbas Khalili)
- Chloe Si (PhD, Year 1, joint with Erica Moodie)
- Lillian Yuan (PhD, Year 2, joint with Erica Moodie)
- Daniel Krasnov (Masters, Year 1)

Postdoctoral Supervision

- Vahid Partovi Nia (2009-2011). Current position: Noah's Ark Lab, Huawei Technologies Canada, Montreal.
- Will Astle (2011-2012, joint with Aurelie Labbe). Current position: Research Associate at University of Cambridge, UK.
- Olli Saarela (2011-2012, joint with Erica Moodie). Current position: Associate Professor in the Department of Biostatistics, University of Toronto.
- Irene Vrbik (2014-2016). Current position: Assistant Professor, University of British Columbia, Okanagan.
- Michael Wallace (2014-2016, joint with Erica Moodie). Current position: Assistant Professor, Department of Statistics and Actuarial Science, University of Waterloo.
- Farhad Shokoohi (2015-2016, joint with Aurelie Labbe). Current position: Assistant Professor University of Las Vegas, United States.
- Leila Golparvar (2015-2021, joint with Robert Platt; on leave 2016-17 and 2018-19). Current position: senior analyst, Statistics Canada, Ottawa.
- Levon Nurbekyan (2018-2019, joint with Adam Oberman) Current position: postdoctoral fellow, Department of Mathematics, UCLA.
- Yu Luo (2019-2020, joint with David Buckeridge). Lecturer (equivalent to Assistant Professor), Department of Mathematics, Kings College London.
- Vivian Meng (January-December 2022): Current position: sessional lecturer, University of British Columbia.

Teaching Experience

Undergraduate:
Year 1: Probability and Statistics I (1998-2000)
Year 2: Probability and Statistics II (1996-2005)
Year 3: Biostatistics (2003-2005)
Advanced Statistical Theory (2003-2005)
Ancillary: Statistics to Engineering Students

Non-calculus statistics (MATH 204, 2007-10, 2013)
Probability (Math 323, Fall 2018, Fall 2021)
Principles of Statistics 1 (MATH 203, Fall 2024)

Graduate:
MSc Bioinformatics (2001-2005) (Course Convenor for Mathematics module)
Mathematical Statistics I MATH 556 (2006-8, 2014, 2019, 2022)
Mathematical Statistics II MATH 557 (2008, 2010, 2017)
Honours Regression and Analysis of Variance MATH 423/533 (2014-16)
Generalized Linear Models MATH 523 (2011-13)
Bayesian Theory and Methods MATH 559 (2023)
Introduction to Time Series Analysis MATH 545 (2012, 2017, 2025)
Topics in Statistics: Mathematical Statistics 3 (2021)

Topics in Statistics: Introduction to Causal Inference (2018, 2021, 2024)
Topics in Statistics: Bayesian Inference and Computation (2019, 2020)
Time Series Analysis MATH 681 (2007, 2009, 2011)
Computation Intensive Statistics MATH 680 (2010, 2015)
Statistical Learning and Modern Multivariate Analysis MATH 783 (2011)
Reading Course: Functional data analysis (2025)
Reading Course: Flow-based models and adversarial learning (2023)
Reading Course: Multi-state models and Competing Risks (2022)
Reading Course: Causal Inference (2020)
Reading Course: Mathematical Theory of Bayesian Statistics (2020)
Reading Course: Diffusion-based Monte Carlo, Gradient Flow, and Optimal Transport (2020)
Reading Course: Bayesian Nonparametrics (2008, 2010)
Reading Course: Continuous Time Finance (2010)
Reading Course: Time Series Analysis (2010, 2017, 2018)
Reading Course: Asymptotic Statistics (2013)
Reading Course: Multivariate Analysis (2011)

Grants

1. NSERC: Discovery Grant, **Generalizing Bayes: Prior to Posterior updating within and beyond the Bayesian framework** (5 x CAD $67,000 = CAD $335,000, 2024-2029)
2. FRQNT Team Grant, **Apprentissage statistique intégratif sur des ensembles de données et des études Hétérogènes**, (CAD 3 x 50K = $150,000, 2023-2026, co-Investigator, with 4 others).
3. IVADO Fundamental Research, **Statistical modelling of health trajectories and interventions** (CAD $216,000, Sep 2020-August 2023, Principal Investigator, with 4 others).
4. NSERC: Discovery Grant, **Bayesian methods for partially specified models** (6 x CAD $57,000 = CAD $342,000, 2018-2024, renewed with one year COVID-19 extension in 2022)
5. FRQNT: Team Grant, **Méthodes d'inférence causale et la prise de décision dans un cadre bayésien,** (3 x 51K = $153,000, 2018-2021, Principal Investigator, joint with four others)
6. Healthy Brains for Health Lives (McGill CFREF): Innovative Ideas Program, **Optimal Transportation and Bayesian methods for Machine Learning** (2 x 76K = $152,000 CAD, co-Principal Investigator with Adam Oberman)
7. CIHR: Project Grant, **Developing Longitudinal Indicators for Population-Scale Monitoring of Health Care Trajectories** (Co Principal Investigator, with five others, CAD $180,000 Jul 2016-Jun 2019)
8. MITACS Accelerate: **Predicting Premia in the Canadian Auto-insurance market** (industry partner TD Assurance, Montreal), CAD $15,000 Jan-May 2016
9. FRQNT: Programme bilatéral de recherche collaborative Québec-Flandre, **Modèle de simulation fondé sur des données phylogénétiques, épidémiologiques et démographiques pour informer des stratégies de contrôle concernant les virus de l'hépatite C et du VIH-1 dans les populations vulnérables au Québec et en Belgique,** 2 x CAD $111,760 = CAD $223,420, Jan 2016 – Dec 2017 (co Principal Investigator with Bluma Brenner, Jewish General Hospital, Montreal; my portion was 50% of the total)
10. NSERC: Discovery Grant, **Bayesian methods for confounding adjustment and causality** (5 x CAD $34,750 = CAD $173,750, 2013-2018)
11. NSERC: Discovery Accelerator Supplement (3 x CAD $40,000 = CAD $120,000, 2013-2016)

12. CIHR: Open Operating Grant, **Computational methods phylogenetics clustering for HIV/HCV viral DNA sequences** (Principal Investigator: CAD $293,000, 2013-2016, joint with 4 others)
13. FQRNT Team Grant: **Outils et méthodes statistiques pour déchiffrer les réseaux génétiques régulatoires de traits et maladies complexes** (Apr 2011-Mar 2014, CAD $159,000), joint with 2 others
14. NIH, US: **HIV Risk Dynamics, Genetic Patterns, and Control** (Jul 2008-Jun 2013, USD $243,4265 estimated total, 10% salary CAD $27,000), with 8 others; Prof. James Koopman (University of Michigan), PI
15. FQRNT Team Grant: **Méthodes statistiques pour les études multiniveaux** (Apr 2008-Mar 2011, CAD $146,800), joint with 8 others
16. NSERC: Discovery Grant, **Bayesian Methods in Bioinformatics and Finance** (Apr 2007-Mar 2012, CAD $110,000)
17. NSERC: Discovery Accelerator Supplement (Apr 2007-Mar 2012, CAD $120,000)
18. Biotechnology and Biological Sciences Research Council, UK: **Bayesian methods for modelling and integrating metabolic data** (Jan 2008-Dec 2011, GBP £550,000/CAD $1,200,000), with Sylvia Richardson, Jeremy Nicholson, Maria De Iorio, and Tim E Ebbels
19. Medical Research Council, UK: Capacity Building PhD studentships, **Bayesian methods in Metabonomics** (Oct 2005-Sep 2009, GBP £120,000/CAD $240,000), with Maria De Iorio and Tim E Ebbels
20. Medical Research Council, UK: Capacity Building PhD studentship, **Computational analysis of the spatial distribution of mammalian cell nuclei** (Oct 2005-Sep 2009, GBP £120,000/CAD $240,000), with Professor Paul Freemont and two others
21. Biotechnology and Biological Sciences Research Council, UK: PhD studentship program, **Simulation-based analysis of the spatial distribution of mammalian cell nuclei** (Oct 2005-Sep 2008, GBP £80,000/ CAD $160,000), with Professor Paul Freemont and two others
22. Fight for Sight Charity: **Occlusion therapy in Amblyopia**: **A Randomized Trial** (Oct 2001-03, GBP £110,000/CAD $220,000), joint with Alistair Fielder and Merrick Moseley
23. Wellcome Trust: **Statistical Methods in Bioinformatics** (Mar 2002-04, GBP £150,000/CAD $300,000), joint with David Hand and Chris Holmes

Conference Organization and Participation

Conferences Organized

- **June 2018: Four-week short programme "Causal inference in the presence of dependence and network structure: modelling strategies and model selection"** at the CRM, June 11-July 6, 2018. The CRM contributed $52,000 towards the meeting. Financial support was also provided by CANSSI ($12,000) and PIMS ($4,500).
- **December 2017: CRM conference on Risk in the Health Sciences** (co-organized with Erica EM Moodie, Dan Graham, and Nick Jewell)
- **July 2016: CRM conference and one-month workshop in causal inference and genetics** (co-organized with Erica EM Moodie)
- **June 2011: Hierarchical models and Markov chain Monte Carlo: Conference in Honour of Professor AFM Smith** (co-organized with five others), Crete, Greece
- **May 2011: Statistical Methods in HIV** (co-organized with Erica EM Moodie), CRM Montreal, 37 participants

- **June 2010: Summer School in Statistics and Probability** (co-organized with colleagues in the Department), 22 participants at senior undergraduate and junior graduate level
- **May 2009: BIRS 5-day Workshop Causal Inference in Statistics and the Quantitative Sciences** (co-organized with Erica EM Moodie), 42 participants at Banff International Research Station
- **October 2008: One-day Workshop "MCMC: Theory and Applications" CRM Montreal,** six speakers at Université Sherbrooke
- **December 2005: Workshop on Stochastic Volatility, Institute for Mathematical Sciences, Imperial College London**. This one-day conference involved around 40 participants and eight top researchers in the field of statistical aspects of stochastic volatility modelling in finance.
- **March 2004**: **Meeting in Honour of Professor John Nelder on the occasion of his 80th Birthday, Imperial College London.** This two-day meeting involved 70 participants and ten speakers of international renown, including Sir David Cox, Professor Brian Ripley, Professor Rosemary Bailey, and Professor Yudi Pawitan.

Workshops/Invited Short Courses Given:

- *Propensity Score Method, Models and Adjustment,* Summer Institutes in Clinical & Epidemiological Research, University of Washington, Department of Biostatistics, School of Public Health, USA (2014-2022)
- *An Introduction to Causal Inference*, University of Toronto, Department of Biostatistics, Dalla Lana School of Public Health (May 2016)
- *Propensity Score Models, Methods and Adjustment,* Statistical Society of Canada Meeting, Halifax, Nova Scotia (2015)

Older courses:

- *Bayesian Statistical Methods* (Qinetiq PLC, 2002)
- *Use of Statistics in Research* (Imperial College London 2003-2004)
- *Statistical Analysis of Microarray Data (*International Biometric Society Conference (IBS-EMR), Corfu, Greece (2005)
- *Bioinformatics and Statistical Genetics* (MSc, University of Athens, Department of Statistics)
- *Statistical Analysis using R (*Imperial College London, 2006)
- *Statistical Modelling and Inference in Finance and Econometrics (*GSA Capital, London, 2005-2006*)*
- *Statistical Analysis of Microarray Data using R* (Imperial College London, 2006)
- Courses in Statistical Methods for GSEPS graduate school at Imperial College

Recent Invited Seminars/Conference Talks (2006/2022)

- Keynote speaker: Greek Stochastics 'nu', Naxos, Greece, 'What is Bayesian about Bayesian analysis? (Part I and Part II)', (July 2023).
- Keynote speaker (Gold Medal Address): Statistical Society of Canada Annual Meeting, Ottawa, ON, 'What is Bayesian about Bayesian analysis?' (May 20223).
- Keynote speaker: ISBA World Meeting, Montreal, "Bayes(ish) estimates for the linear(ish) model" (June 2022).
- Keynote speaker: Statistics 2021, Concordia University, Montreal, "Bayesian inference for partially specified models" (July 2021).
- Keynote speaker: SMAC 2021: Statistiques, philosophie et santé, Cancéropôle Grand Sud-Ouest, Universite de Bordeaux "Bayesian methods in health data analysis" (June 2021)

- Invited speaker: Statistical Society of Canada Annual Meeting, Montreal QC, "Phylogenetic and Phylodynamic analysis of HIV infection in Montreal" (June 2018)
- Invited speaker: Statistical Society of Canada Annual Meeting, Winnipeg MB, "G-estimation and Model Selection" (June 2017)
- Invited speaker: iLike Workshop, Lancaster, UK, "Hidden Markov models and methylation sequencing: Modelling and computation strategies" (June 2016)
- Invited speaker: Statistical Society of Canada Annual Meeting, Brock ON, "Hidden Markov Models for Identifying Differentially Methylated Regions: Investigation of the BLK gene region" (May 2016)
- Invited speaker: High-dimensional Data Analysis IV Workshop (BIRS, Banff, AB, August 2014): "Bayesian methods for reconstructing metabolomics spectra"
- Invited speaker: International Biometric Society World Meeting (Florence, Italy, July 2014): "Bayesian methods for reconstructing metabolomic spectra"
- Invited speaker: Statistical Society of Canada Meeting (Toronto), May 2014: "New Directions in Causal Inference"
- Invited speaker: UK Causal Inference Meeting (Cambridge, UK), April 2014: "Bayesian Methods in Causal Inference – A Lack of Success Story"
- Joint Statistical Meetings (JSM – August 2013): *Marginal Structural Competing Risk Models Analysis of the Canadian HIV/HCV Co-infection Cohort Data* (Montreal, Quebec – international meeting of the statistical professional societies)
- BIRS workshop on high-throughput genetics (Banff, Alberta), August 2013: "*Statistical Analysis of Methylation Profiles via Biosulphite Sequencing Investigation of the BLK gene region"*
- CIHR Human Genetics Workshop (L'esterel, Quebec) April 2013: "Computational and statistical approaches for understanding nuclear organization"
- High-dimensional Data Analysis III Workshop (UBC, Vancouver, BC), May 2013: ``Causal adjustment procedures for high-dimensional confounders"
- Statistics 2011 (Concordia, Montreal), July 2011:
  - "Particle MCMC methods"
  - "Bayesian phylogenetic methods for HIV surveillance in Quebec"
- Statistical Society of Canada Meeting (Acadia), May 2011: "Particle MCMC methods"
- Statistical Society of Canada Meeting (Quebec City), May 2010: "Markov chain Monte Carlo for Markov chain macro data"
- Department of Mathematics and Statistics, Université Laval, March 2010: "Propensity Score methods in Causal Inference: beyond the binary treatment case"
- Canadian Mathematical Society, Winter Conference, Windsor, December 2009: Invited speaker, Mathematical Statistics session "Bayesian nonparametric two-sample testing"
- Department of Statistics, University of Toronto, February 2009: "Bayesian methods in causal inference: using the Generalized Propensity Score"
- Department of Mathematics, Imperial College London, December 2008: "Bayesian perspectives in causal inference"
- MD Anderson Cancer Center, Houston, TX, US (September 2007)
- CRM Colloque, Université de Montreal, Montreal, Canada (September 2007)
- Invited Fellow, Bayesian Nonparametric Regression Workshop, Isaac Newton Institute, Cambridge, UK (August 2007)
- *MCMC and Bioinformatics, Bridging the Gap*. BIRS Workshop, Banff, Canada (July 2007)
- *Statistical Genomics in Canada.* BIRS Workshop, Banff, Canada (July 2007)

- Joint Statistical Meeting: Session on Developments in Computation in Bioinformatics, Seattle, Washington, US (August 2006)
- Workshop on Developments in Computation in Bioinformatics: Department of Statistics, University of British Columbia, Canada (August 2006)
- Conference on Developments in Bayesian Computation, Department of Statistics, University of Warwick, UK (August 2006)
- Contributed Talk, IBS Meeting in Montreal, Canada (July 2006)

Professional activities

- **Associate Editor,** ***Bayesian Analysis*** (October 2016-December 2021)
- **Editor-in-Chief,** ***The Canadian Journal of Statistics*** **(**January 2013-December 2015**)**
- **Associate Editor,** ***The Canadian Journal of Statistics*** (January 2007-December 2012, January 2016-December 2022)
- **Editor,** ***STAT*** **(**August 2012-present**)**
- **Editor,** ***International Journal of Biostatistics*** (April 2010-present)
- **Statistical Society of Canada: Provincial Representative Quebec** (2008-2011)
- **NSERC Discovery Grant Committee Member Statistical Sciences (GSC-14/1508)** (July 2008-June 2012), **Statistics co-chair for 2011 and 2012.**
- **CIHR, Clinical Trials Project Grants, March 2023-present**
- **Canadian Statistical Sciences Institute (CANSSI):** CRM representative on the scientific advisory board (2017-2021)

Administrative duties and other contributions

At McGill

- **Vice-Dean, Faculty of Science** (March 2019-present)
- **Provost's Advisory Committee, Dean of Engineering** (Fall 2022-Spring 2023)
- **Provost's Advisory Committee, Dean of Management** (Fall 2020-Spring 2021)
- **Provost's Advisory Committee, Dean of Libraries** (Fall 2019)
- **Provost's Advisory Committee, Dean of Engineering** (Fall 2009)
- **Senate, McGill University (**July 2015-August 2021, August 2023-present**)**
  Senate Nominating Committee (September 2023-present)
  Senate Steering Committee (October 2024-present)
- **University Tenure Committee** (2014-2017)

- **Chair, Department of Mathematics and Statistics** (June 2015-March 2019)
- **Chair's Advisory Committee, Department of Mathematics and Statistics** (September 2006-2015)
- **Graduate Affairs Committee, Department of Mathematics and Statistics** (September 2006-2008, May 2013-May 2015)
- **Statistics Working Group, Department of Mathematics and Statistics** (from November 2006)
- **Chair, Probability Search Committee** (November 2006-March 2007, September 2007-March 2008, October 2008-March 2009)
- **Chair, Statistics Search Committee** (September 2008-March 2009)

- **Chair, Statistics Search Committee** (September 2014-March 2015)
- **Departmental Planning Committee** (June 2007-April 2008)

- **Gairdner Day presentation in Faculty of Science outreach day** (Fall 2009)
- **Freshman Interest Group leader** (Fall 2010, Fall 2011, Fall 2012)

- **Labour Relations Committee:** AMURE negotiation (June 2019-April 2023)
- **Labour Relations Committee:** MCLIU negotiation (October 2022-December 2023)
- **Web Advisory Committee:** June 2020-December 2023.
- **Subcommittee on Courses and Teaching Programs (SCTP):** October 2023-present.

At Imperial College

- Department Undergraduate Course Committee (1 year)
- Department Examinations Committee (2 years)
- Department Examination Liaison Panel (8 years)
- Statistics Section Research Assessment Exercise (RAE) Panel (1/2 year)
- Bioinformatics MSc Management Committee (5 years)
- Mathematics Department Database Manager (2000-2003)
- Postgraduate Admissions Tutor (Statistics Section) (1998-2004)
- Postgraduate Course Committee (2000-2004)
- Advanced Lectures in Statistics (Statistics Section): (2003-4) Course Organizer