Curriculum Vitæ
SAHIR RAI BHATNAGAR

A. DATE OF PREPARATION

November 22, 2024

B. BIOGRAPHICAL INFORMATION

Address	6369 rue Fabre Montreal, Quebec, Canada H2G 2Z2
E-mail	sahir.bhatnagar@mcgill.ca
Homepage	https://sahirbhatnagar.com/
Citizenship	Canada
Languages	English, French, Hindi

C. EDUCATION

2013–2018	**Ph.D. (Biostatistics)** McGill University, Montreal QC, Canada *Thesis:* Penalized regression methods for interaction and mixed-effects models with applications to genomic and brain imaging data *Advisors:* Dr. Celia Greenwood and Dr. Yi Yang Queen Elizabeth Scholar
2012–2013	**Master of Science (Biostatistics)** Queen's University, Kingston ON, Canada *Thesis:* Absolute risk estimation in a case cohort study of prostate cancer *Advisors:* Dr. Paul Peng and Dr. Devon Lin *Committee Members:* Dr. Dongsheng Tu and Dr. Wenyu Jiang
2011	**Associate of the Society of Actuaries**
2005–2008	**Bachelor of Science (Actuarial Mathematics)** Concordia University, Montreal QC, Canada

D. RESEARCH INTERESTS

Dimension reduction for predictive models, high-dimensional statistical inference, penalized regression, interaction selection, actuarial statistics, statistical genetics

E. APPOINTMENTS

2023–	Associate Director of Statistical Genetics, 5 Prime Sciences
2022–2023	Senior Research Scientist, Deep Genomics Target Identification
2022–	Adjunct Professor, McGill University Department of Epidemiology, Biostatistics and Occupational Health
2018–2022	Assistant Professor, McGill University Department of Epidemiology, Biostatistics and Occupational Health Department of Diagnostic Radiology

F. AWARDS

2017	UK Genetics Society Training Grant £1,000
2016	McGill University and Genome Quebec Innovation Centre (MUGQIC) Travel Award $1,000
2016	Graduate Research Enhancement and Travel (GREAT) Award $1,000
2016	Quantitative Biology and Medical Genetics for the World Queen Elizabeth II Scholarship $6,000
2016	Best Student Oral Presentation - 28th International Biometric Society Meeting
2016	SSC Biostatistics Section Travel Award $250
2015	Best Poster Presentation - 4th Annual Canadian Human and Statistical Genetics Meeting $1,000
2014	Genetic Analysis Workshop 19 Travel Award $1,000
2013	McGill Graduate Excellence Award $18,000
2012	MSc Queen's Graduate Studies Award $20,000

G. GRANTS SUBMITTED (Awarded in Red)

2022

1. **CIHR Project Grant (Co-I)**: Extending whole genome air pollution interaction studies of asthma to populations of African descent (PI: Audrey Grant).

2. **CIHR Project Grant (Co-I)**: The OPERa Study: A Multicenter Observational Prospective Cohort Study to Evaluate Determinants of Long-Term Quality of Life following Restorative Proctectomy for Rectal Cancer Treatment (PI: Marylise Boutros). Total: $ 558,450.

2021

1. **CIHR Project Grant (Co-I)**: High-Resolution Spatiotemporal Variations in Urban Air Temperatures and Emergency Room Visits for Cardiorespiratory Morbidity and Mental Health Outcomes (PIs: Scott Weichenthal, Eric Lavigne, Alexandra Schmidt). Total: $761,176.

2. **Compute Canada Resources for Research Groups (PI)**: Statistical methods to analyze high-dimensional data (5 GPU years, 193 Core years, 120 TB project storage, 180 TB near-line storage). Total: $46,812.

3. **McGill Initiative in Computational Medicine ResearchMatch Program (Co-PI)**: Prediction of chronic pain trajectories in the aging population using genetic data. (PIs: Sahir Bhatnagar, Audrey Grant).

4. **CIHR Project Grant (Co-I)**: Leveraging high-volume data to characterize age and individual-specific vital signs and to develop novel geriatric vital signs that optimally predict clinical outcomes in older adults (PIs: Quoc Nguyen and Tina Wolfson).

5. **CIHR Project Grant (Co-I)**: The OPERa Study: A Multicenter Observational Prospective Cohort Study to Evaluate Determinants of Long-Term Quality of Life following Restorative Proctectomy for Rectal Cancer Treatment (PI: Marylise Boutros).

6. **CANSSI Collaborative Research Training Grant (Co-I)**: Improving robust high-dimensional causal inference and prediction modelling. (PIs: Gabriela Cohen Freue, Celia MT Greenwood). Total: $199,600.

2020

1. **CIHR Project Grant (Co-I)**: Evaluating the Trajectory of Aortic Stenosis (AS) in Quebec patients - Diagnosis, Treatments, and Outcomes. (PI: James Brophy). Total: $229,500.

2. **NSERC Discovery Grant with Discovery Lauch Supplement (PI)**: Variable Selection and Prediction for High-Dimensional Genetic Data with Complex Structures. Total:$120,000.

3. **FRSQ Recherches en Radiologie (Co-I)**: Stratification quantitative et qualitative du risque de malignité sur tomodensitométrie (TDM) des lésions kystiques complexes. (PI: Caroline Reinhold). Total:$63,500.

2019

1. **Mitacs Accelerate (PI)**: Machine Learning to Predict Temporomandibular Disorders Risk from Genotypes. Total: $106,667.

2. **FRQNT Établissement de la relève professorale (PI)**: Avances dans les modèles mixtes pour la prévision et la sélection des variables dans les données de grande dimension.

3. **CIHR Project Grant (Co-I)**: Evaluating the Trajectory of Aortic Stenosis (AS) Treatments, Outcomes and Cost-Effectiveness in Quebec patients.

4. **Heart and Stroke Foundation GIA competition (Co-I)**: Evaluating the Trajectory of Aortic Stenosis (AS) Treatments, Outcomes and Cost-Effectiveness in Quebec patients.

5. **McGill Initiative in Computational Medicine ResearchMatch Program (Co-PI)**: Genomewide Mega-Analysis of high quality phenotyped cohorts of temporomandibular disorders. (Co-PI: Luda Diatchenko). Total: $50,000.

6. **SSHRC New Frontiers in Research Fund (Co-PI)**: Exploring the Use of Deep Learning Image Analysis in Environmental Health at the Patient and Population Level.

7. **CIHR Project Grant (Co-I)**: Predicting High-Resolution Spatial and Temporal Variations in Summertime Air Temperatures to Support Public Health Interventions During Heat Emergencies.

2018

1. **Rossy Cancer Network Cancer Quality & Innovation Research Grant (Co-I)**: Impact of a Patient-Centered Program for Low Anterior Resection Syndrome: a Multicenter Randomized Controlled Trial. (PI: Richard Garfinkle). Total: $96,404.
2. **Canadian Society of Colon and Rectal Surgeons (CSCRS) (Co-I)**: Impact of a Patient-Centered Program for Low Anterior Resection Syndrome: a Multicenter Randomized Controlled Trial. (PI: Richard Garfinkle). Total: $35,000.
3. **Rossy Cancer Network Research Fund (Co-I)**: Radiogenomic models with artificial intelligence for detection of nodal micrometastases to reduce unnecessary neck dissections in head and neck cancer patients. (PI: Reza Forghani). Total: $100,000.
4. **McGill University Research Allowance (PI, start-up funds, non-peer reviewed)**. Total: $20,000.
5. **NVIDIA GPU Grant Program (PI)**: Accelerating computation in high-dimensional penalized regression models. Total: 1 Titan XP GPU.

H. PUBLICATIONS

authors in bold indicate my trainees

Book Chapters

1. **Bian Z**, Moodie EEM, Shortreed S, Bhatnagar SR (2023). Tailoring Variable Selection and Ranking for Optimal Treatment Decision. Contributed to Handbook of Statistical Methods for Precision Medicine, edited by Cai T., Chakraborty B., Laber E., Moodie E. and van der Laan M. Chapman & Hall CRC Handbooks of Modern Statistical Methods.

Methodological and Statistical Papers

H.1 PUBLISHED ARTICLES

1. **Islam J**, Turgeon M, Sladek R, Bhatnagar SR (2024). Case-Base Neural Network: Survival analysis with time-varying, higher-order interactions. *Machine Learning with Applications*. DOI 10.1016/j.mlwa.2024.100535
2. **Bian Z**, Moodie EE, Shortreed SM, Lambert SD, Bhatnagar SR (2024). Variable selection for individualised treatment rules with discrete outcomes. *Journal of the Royal Statistical Society Series C: Applied Statistics*. DOI 10.1093/jrsssc/qlad096
3. Genest C, Hanley JA, Bhatnagar SR (2024). Investigating Sensitive Issues in Class Through Randomized Response Polling. *Journal of Statistics and Data Science Education*. DOI 10.1080/26939169.2024.2302179

4. **Yang K**, Asgharian M, Bhatnagar SR (2024). Accelerated Gradient Methods for Sparse Statistical Learning with Nonconvex Penalties. *Statistics and Computing*. DOI 10.1007/s11222-023-10371-8

5. **St-Pierre J**, Oualkacha K, Bhatnagar SR (2023). Efficient Penalized Generalized Linear Mixed Models for Variable Selection and Genetic Risk Prediction in High-Dimensional Data. *Bioinformatics* (Accepted). https://arxiv.org/abs/2206.12267.

6. Bhatnagar, SR, Lu, T, Lovato, A, Olds, DL, Kobor, MS, Meaney, MJ, O'Donnell, K, Yang, Y, and Greenwood, CMT (2023). A Sparse Additive Model for High-Dimensional Interactions with an Exposure Variable. *Computational Statistics and Data Analysis.* DOI 10.1016/j.csda.2022.107624.

7. Bhatnagar SR, Turgeon M, **Islam J**, Hanley JA, Saarela O (2022). casebase: An Alternative Framework For Survival Analysis and Comparison of Event Rates. *R Journal*. DOI 10.32614/RJ-2022-052.

8. **St-Pierre J**, Zhang X, Lu T, Jiang L, Loffree X, Wang L, Bhatnagar SR, Greenwood CMT (2022). Considering strategies for SNP selection in genetic and polygenic risk scores. *Frontiers in Genetics*. DOI 10.3389/fgene.2022.900595.

9. **Her P**, Saeed S, Tram K, Bhatnagar SR (2022). Can tracking mobility be used as a public health tool against COVID-19 following the expiration of stay-at-home mandates? *Scientific Reports*. DOI 10.1038/s41598-022-10941-2.

10. Lefebvre TL, Ciga O, Bhatnagar SR, Ueno Y, Saif S, Winter-Reinhold E, Dohan A, Soyer P, Forghani R, Siddiqi K, Seuntjens J, Reinhold C, Savadjiev P (2022). Predicting histopathology markers of endometrial carcinoma with a quantitative image analysis approach based on spherical harmonics in multiparametric MRI. *Diagnostic and Interventional Imaging*. DOI 10.1016/j.diii.2022.10.007.

11. Dana J, Lefebvre TL, Savadjiev P, Bodard S, Gauvin S, Bhatnagar SR, Forghani R, Hélénon O, Reinhold C (2022). Malignancy risk stratification of cystic renal lesions based on a contrast-enhanced CT-based machine learning model and a clinical decision algorithm. *European Radiology.* DOI 10.1007/s00330-021-08449-w.

12. Hanley JA, Bhatnagar SR (2022). The Poisson Distribution: Origins, Reenactments, and Prospects. *The American Statistician*. DOI 10.1080/00031305.2022.2046159.

13. Golchi S, **Fu J**, Liu X, Yu E, Forghani R, Bhatnagar SR (2022). Sparse Bayesian Predictive Modelling of Tumor Response Using Radiomic Features. *Stat*. DOI 10.1002/sta4.450.

14. **Bian Z**, Moodie EEM, Shortreed S, Bhatnagar SR (2021). Variable Selection in Regression-based Estimation of Dynamic Treatment Regimes. *Biometrics*. DOI 10.1111/biom.13608.

15. Genest C, Hanley JA, Bhatnagar SR (2021). Combien de gens sont vaccinés dans mon groupe ? *Bulletin Association mathématique du Québec (AMQ).*

16. Savadjiev P, Gallix B, Rezanejad M, Bhatnagar SR, Semionov A, Siddiqi K, Forghani R, Reinhold C, Eidelman D, Dandurand R (2021). Mean curvature of isophotes: improved disease detection in chest CT. *Radiology: Artificial Intelligence*. DOI 10.1148/ryai.210105.

17. Escribe C, Lu T, Keller-Baruch J, Forgetta V, Xiao B, Richards JB, Bhatnagar SR, Oualkacha K, Greenwood CMT (2021). Block coordinate descent algorithm improves variable selection and estimation in error-in-variables regression. *Genetic Epidemiology*. DOI 10.1002/gepi.22430.

18. Forgetta V, Keller-Baruch J, Forest M, Durand A, Bhatnagar SR, Kemp JP, Nethander M, Evans D, Morris JA, Kiel DP, Rivadeneira F, Johansson H, Harvey NC, Mellström D, Karlsson M, Cooper C, Evans DM, Clarke R, Kanis JA, Orwoll E, McCloskey EV, Ohlsson C, Pineau J, Leslie WD, Greenwood CMT, Richards JB (2020). Development of a polygenic risk score to improve screening for fracture risk: A genetic risk prediction study. *Plos Medicine*. DOI 10.1371/journal.pmed.1003152.

19. Bhatnagar SR, Yang Y, Lu T, Schurr E, Loredo-Osti JC, Forest M, Oualkacha K, Greenwood CMT (2020). Simultaneous SNP selection and adjustment for population structure in high dimensional prediction models. *PLoS Genetics* 16(5): e1008766. DOI 10.1371/journal.pgen.1008766.

20. Bhatnagar SR, Yang Y, Khundrakpam B, Evans A, Blanchette M, Bouchard L, Greenwood CMT (2017). An analytic approach for interpretable predictive models in high dimensional data, in the presence of interactions with exposures. *Genetic Epidemiology*. Apr 1;42(3):233-49. DOI 10.1101/102475.

21. Klein Oros K, Oualkacha K, Lafond M, Bhatnagar SR, Tonin PN, Greenwood CMT (2016). Gene coexpression analyses differentiate networks associated with diverse cancers harbouring TP53 missense or null mutations. *Frontiers in Genetics, section Statistical Genetics and Methodology*. Aug 3;7:137. DOI 10.3389/fgene.2016.00137.

22. Bhatnagar SR, Greenwood CMT, Labbe A (2016). Assessing transmission ratio distortion in extended families: a comparison of analysis methods. *BMC Proceedings*. 2016, 10(Suppl 7):12. DOI 10.1186/s12919-016-0030-0.

23. Sun J., Bhatnagar SR, Oualkacha K, Ciampi A, Greenwood CMT (2016) Joint analysis of multiple blood pressure phenotypes in GAW19 data by using a multivariate rare-variant association test. *BMC Proceedings*. 2016, 10(Suppl 7):14. DOI 10.1186/s12919-016-0048-3.

24. Wang Y, Murphy O, Turgeon M, Wang ZY, Bhatnagar SR, Schulz J, and Moodie EEM (2015) The perils of Quasi-likelihood Information Criteria. *Stat*. Feb 1;4(1):246-54. DOI: 10.1002/sta4.95.

25. Bhatnagar SR, Atherton J, Benedetti A (2015). Comparing alternating logistic regressions to other approaches to modelling correlated binary data. *Journal of Statistical Computation and Simulation*. Jul 3;85(10):2059-71. DOI 10.1080/00949655.2014.916707.

Substantive Papers

H.2 Published Articles

26. Deng J, Moskalyk M, Shammas-Toma M, Aoude A, Ghert M, Bhatnagar SR, **Bozzo A** (2024). Development of Machine Learning Models for Predicting the 1-Year Risk of Reoperation After Lower Limb Oncological Resection and Endoprosthetic Reconstruction Based on Data From the PARITY Trial. *Journal of surgical oncology*.

27. **Bozzo A**, Hollingsworth A, Chatterjee S, Apte A, Deng J, Sun S, Tap W, Aoude A, Bhatnagar SR, Healey JH (2024). A multimodal neural network with gradient blending improves predictions of survival and metastasis in sarcoma. *npj Precision Oncology*.

28. Li D, Gupta K, Bhaduri M, Sathiadoss P, Bhatnagar SR, Chong J (2024). Comparing GPT-3.5 and GPT-4 accuracy and drift in radiology diagnosis please cases. *Radiology*. DOI 10.1148/radiol.232411

29. Parsons M, Tong Y, Valenti SC, Gorelik V, Bhatnagar SR, Boily M, Gorelik N (2024). Reporting of Participant Demographics in Clinical Trials Published in General Radiology Journals. *Current Problems in Diagnostic Radiology*.

30. **Leung Soo C**, Esmail A, Dheda K, Bartlett SJ, Pai N, Bhatnagar SR (2023). Socioeconomic factors impact the risk of HIV acquisition in the township population of South Africa: a Bayesian Analysis. *PLOS Global Public Health* (Accepted).

31. Garfinkle R, Dell'Aniello S, Bhatnagar SR, Morin N, Ghitulescu G, Faria J, Vasilevsky CA, Brassard P, Boutros M (2022). Assessment of long-term bowel dysfunction after restorative proctectomy for neoplastic disease: A population-based cohort study. *Surgery*. DOI 10.1016/j.surg.2021.10.068.

32. Dana J, Gauvin S, Zhang M, Lotero J, Cassim C, Artho G, Bhatnagar SR, Tanguay S, Reinhold C (2022). CT-based Bosniak classification of cystic renal lesions: is version 2019 an improvement on version 2005?. *European Radiology*. DOI 10.1007/s00330-022-09082-x.

33. Sivakumaran L, Alturkistani H, Lerouge S, Bertrand-Grenier A, Zehtabi F, Thérasse É, Roy-Cardinal M, Bhatnagar SR, Cloutier G, Soulez G (2022). Strain Ultrasound Elastography of Aneurysm Sac Content after Randomized Endoleak Embolization with Sclerosing and Non-sclerosing Chitosan-based Hydrogels in a Canine Model. *Journal of Vascular and Interventional Radiology*. DOI 10.1016/j.jvir.2022.02.003.

34. Liu X, Maleki F, Muthukrishnan N, Ovens K, Huang S, Pérez-Lara A, Romero-Sanchez G, Bhatnagar SR, Chatterjee A, Pusztaszeri MP, Spatz A, Batist G, Payabvash S, Haider SP, Mahajan A, Reinhold C, Forghani B, O'Sullivan B, Yu E, Forghani R (2021). Site-specific variation in radiomic features of head and neck squamous cell carcinoma and its impact on machine learning models. *Cancers*. DOI 10.3390/cancers13153723.

35. Lu T, Forgetta V, Keller-Baruch J, Nethander M, Bennett D, Forest M, Bhatnagar S, Walters RG, Lin K, Chen Z, Li L. Improved prediction of fracture risk leveraging a genome-wide polygenic risk score (2021). *Genome Medicine*. DOI 10.1186/s13073-021-00838-6.

36. **Wu H**, Forgetta V, Zhou S, Bhatnagar SR, Paré G and Richards JB (2020). A Polygenic Risk Score for Low-density Lipoprotein Cholesterol is Associated with Risk of Ischemic Heart Disease and Enriches for Individuals with Familial Hypercholesterolemia. *Circulation: Genomic and Precision Medicine*. DOI 10.1161/CIRCGEN.120.003106.

37. Anderson-Trocme and Bhatnagar SR. Visualizing the Covid-19 pandemic with doubling rates (2020). *Significance*. https://www.significancemagazine.com/science/676-visualizing-the-covid-19

38. Gorelik N, Patil K, Chen SJ, Bhatnagar SR, Faingold R (2020). Impact of Simulation Training on Radiology Resident Performance in Neonatal Head Ultrasound. *Academic Radiology*. DOI 10.1016/j.acra.2020.06.040

39. **Garfinkle R**, Loiselle CG, Park J, Fiore Jr JF, Bordeianou LG, Liberman AS, Morin N, Faria J, Ghitulescu G, Vasilevsky C, Bhatnagar SR, Boutros M (2020). Development and evaluation of a patient-centred program for low anterior resection syndrome: protocol for a randomized controlled trial. *BMJ Open*. 10:e035587. DOI 10.1136/bmjopen-2019-035587.

40. **Garfinkle R**, Filion KB, Bhatnagar SR, Sigler G, Banks A, Letarte F, Liberman S, Brown CJ, Boutros M (2019). Prediction model and web-based risk calculator for postoperative ileus after loop ileostomy closure. *British Journal of Surgery*. DOI 10.1002/bjs.11235.

41. Khalil MA, Bhatnagar SR, Feldman L, Longtin Y, Vasilevsky CA, Carignan A, Morin N, Boutros M (2019). Development and validation of a clinical risk calculator for mortality after colectomy for fulminant Clostridium difficile colitis. *Journal of Trauma and Acute Care Surgery*. DOI 10.1097/TA.0000000000002412

42. Kronfli N, Bhatnagar SR, Hull MW, Moodie EE, Cox J, Walmsley S, Gill J, Cooper C, Martel-Laferrière V, Pick N, Klein MB (2019). Trends in cause-specific mortality in HIV–hepatitis C coinfection following hepatitis C treatment scale-up. AIDS (London, England). May 1;33(6):1013. DOI 10.1097/QAD.0000000000002156.

43. **Garfinkle R**, Wong-Chong N, Petrucci A, Sylla P, Wexner S, Bhatnagar S, Morin N, Boutros M (2019). Assessing the readability, quality and accuracy of online health information for patients with Low Anterior Resection Syndrome following surgery for rectal cancer. *Colorectal Disease*. DOI 10.1111/codi.14548.

44. Hatzikotoulas K, Tachmazidou I, Southam L, Esparza-Gordillo J, Haberland V, Zheng J, Johnson T, Koprulu M, Zengini E, Steinberg J, Wilkinson J, Bhatnagar SR, [...], Zeggini E (2019). Genome-wide analyses using UK biobank data povide new therapeutic targets for osteoarthritis. *Osteoarthritis and Cartilage*. Apr 1;27:S58-9. DOI 10.1016/j.joca.2019.02.083

45. **Garfinkle R**, Abou-Khalil M, Bhatnagar S, Wong-Chong N, Azoulay L, Morin N, Vasilevsky C, Boutros M (2019). A Comparison of Pathologic Outcomes of Open, Laparoscopic, and Robotic Resections for Rectal Cancer Using the ACS-NSQIP Proctectomy-Targeted Database: a Propensity Score Analysis. *Journal of Gastrointestinal Surgery*. 23:348–356. DOI s11605-018-3974-8.

46. Tachmazidou I, Hatzikotoulas K, Southam L, Esparza-Gordillo J, Haberland V, Zheng J, Johnson T, Koprulu M, Zengini E, Steinberg, J, Wilkinson J, Bhatnagar S, Hoffman JD, Buchan N, Süveges D, Yerges-Armstrong L, Davey Smith G, Gaunt TR, Scott RA, McCarthy LC, Zeggini E (2019). Identification of new therapeutic targets for osteoarthritis through genome-wide analyses of UK Biobank. *Nature Genetics*. 51, pages 230–236. DOI 10.1038/s41588-018-0327-1.

47. Nadig A, Flanagan T, White K, Bhatnagar SR (2018). Results of a RCT on a transition support program for adults with ASD: Effects on Self Determination and Quality of Life (2018). *Autism Research*. 11 (12), 1712-1728. DOI 10.1002/aur.2027.

48. Delouya G, Tiberi D, Bhatnagar S, Campeau S, Saad F, Taussky D. (2018). Impact of adipose tissue on prostate cancer aggressiveness–analysis of a high-risk population. *Hormone molecular biology and clinical investigation*. 36(3). DOI 10.1515/hmbci-2018-0049.

49. Steinberg J, Brooks R, Southam L, Bhatnagar SR, Roumeliotis T, Hatzikotoulas K, Zengini E, Wilkinson JM, Choudhary J, McCaskie AW, Zeggini E (2018). Widespread Epigenomic, Transcriptomic and Proteomic Differences Between Hip Osteophytic and Articular Chondrocytes in Osteoarthritis. *Rheumatology*. 57(8): 1481-1489. DOI 10.1093/rheumatology/key101.

I. PRESENTATIONS AND LECTURES

*indicates the person that gave the presentation
authors in bold indicate my trainees

I.1 KEYNOTE ADDRESSES

2019/03/15	Miser sur la sparsité. Sommet étudiant de la statistique à Montréal. UQAM.
2018/03/16	Pick your favorite buzzword: Data Science, Big Data, Machine Learning, Data Science, Big Data, Machine Learning. 14th Annual McGill Epidemiology, Biostatistics and Occupational Health Research Day.

I.2 PRESENTATIONS AT UNIVERSITIES OR RESEARCH INSTITUTES (INVITED)

2022/03/01	Variable Selection and Prediction for High- Dimensional Genetic Data with Complex Structures. Department of Epidemiology and Biostatistics. Western University.
2021/12/08	Variable Selection and Prediction for High- Dimensional Genetic Data with Complex Structures. DeepGenomics.
2021/11/19	Avances dans les modèles mixtes pour la prévision et la sélection des variables dans les données de grande dimension. Centre Armand-Frappier Santé Biotechnologie de l'INRS.
2021/11/16	Sparse Additive Interaction Learning. Department of Mathematics and Statistics. Memorial University.
2021/10/29	Sparse Additive Interaction Learning. Department of Mathematics and Statistics. UNC Greensboro.
2021/07/12	Variable selection for high-dimensional interactions. Department of Statistical and Actuarial Sciences. Western University.
2021/04/12	Advances in mixed effects models for prediction and variable selection in high-dimensional data. Department of Mathematics and Statistics. Memorial University.
2021/02/23	Variable selection methods in high-dimensional genetic data. Quantitative Life Sciences. McGill University.
2020/11/24	Avances dans les modèles mixtes pour la prévision et la sélection des variables dans les données de grande dimension. Département de mathématiques, Université de Sherbrooke.
2020/11/12	Avances dans les modèles mixtes pour la prévision et la sélection des variables dans les données de grande dimension. Département de mathématiques, UQÁM.

2019/06/24	Perspectives on High-Dimensional Data Analysis Workshop, Uppsala University. Variable selection with the strong heredity constraint for non-linear interactions with an exposure in high dimensions.
2018/10/02	Centre for Clinical Epidemiology, Jewish General Hospital. Pick your favorite buzzword: Data Science, Big Data, Machine Learning, Data Science, Big Data, Machine Learning.
2018/03/01	McGill University, Department of Epidemiology, Biostatistics and Occupational Health. Betting on Sparsity.
2018/02/08	Université Laval, Département de mathématiques et de statistique. Miser sur la sparsité.
2017/12/18	Université de Montréal, Département de mathématiques et de statistique. Miser sur la sparsité.
2017/11/16	HEC Montréal, Department of Decision Sciences. Betting on Sparsity.

I.3 Contributed Conference Presentations

2022/05/30	Bhatnagar SR*. Variable selection in parametric hazard models. Statistical Society of Canada Annual Meeting (Virtual).
2022/05/30	**Bian Z***, Moodie EEM, Bhatnagar SR. Variable Selection for Individualized Treatment Rules. Statistical Society of Canada Annual Meeting (Virtual).
2021/11/19	**Yang K***, Asgharian M, Bhatnagar SR. Accelerated Gradient Algorithms for Variable Selection with Nonconvex Penalties. CANSSI Showcase (Virtual).
2021/11/19	**Zhang A***, Bhatnagar SR. Tensor regression for prediction of tumor location from dual energy CT scans. CANSSI Showcase (Virtual).
2021/09/01	**Bian Z***, Shortreed S, Moodie EEM, Bhatnagar SR. Tailoring Variable Selection in Regression-based Estimation of Dynamic Treatment Regimes. McGill's Fifth (Bio)Statistics Research Day.
2021/07/16	**Yang K***, Asgharian M, Bhatnagar SR. Accelerated Gradient Algorithms for Variable Selection with Nonconvex Penalties. 6th Canadian Conference in Applied Statistics. Concordia University (Virtual).
2021/06/02	Golchi S*, Forghani R, Bhatnagar SR. Sparse Bayesian Predictive Modelling of Tumor Response from Radiomic Data. 2021 Symposium on Data Science & Statistics (Virtual).
2021/05/14	Savadjiev P*, Bhatnagar SR, Semionov A, Dandurand R. A Computational Technique Based on the Mean Curvature of Isophotes for the Detection and Classification of Interstitial Lung Diseases on Chest CT. American Thoracic Society International Conference (Virtual).
2021/05/12	Hanley JA*, Bhatnagar SR. Older and newer approaches to the statistical analysis of COVID-19 mortality data. 41st Conference on Applied Statistics (CASI), Maynooth University, Ireland.
2020/09/25	**Yang K***, Asgharian M, Bhatnagar SR. Computational Method for High-Dimensional Nonconvex Sparse Learning. McGill (Bio)Statistics Research Day, Montreal, QC.
2020/08/25	**St-Pierre J***, Parisien M, Diatchenko L, Bhatnagar SR. Performance of estimation and prediction models when combining data from different painful temporomandibular disorder cohorts. 41st Annual Conference of the International Society for Clinical Biostatistics. Poland (Virtual).

2019/12/14	Bhatnagar SR*, Yang Y, Lu T, Schurr E, Loredo-Osti JC, Forest M, Oualkacha K, Greenwood CMT. Simultaneous SNP selection and adjustment for population structure in high dimensional prediction models. CMStatistics, London, UK.
2019/12/06	Muthukrishnan N*, Nett E, Bhatnagar SR, Shatzkes DR, Phillips C, Romero Sanchez GT, Gupta R, Forghani R. Dental Artifact Reduction using a Three-stage Projection-based Metal Artifact Reduction Algorithm for Spectral Imaging: A Phantom Study. Radiological Society of North America (RSNA), Chicago, IL.
2019/12/05	Liu X*, Muthukrishnan N, Forghani B, Yu E, Bhatnagar SB, Reinhold C, Forghani R. Tumor Texture Features of Head and Neck Squamous Cell Carcinoma from Different Primary Sites Differ Significantly and Impact on the Performance of Machine Learning Prediction Models. Radiological Society of North America (RSNA), Chicago, IL.
2019/12/05	Al Kindi A*, Shrivstava A, Savadjiev P, Bhatnagar SR, Forghani R, Reinhold C. Renal Cysts: Role of MRI-based 3D Texture Features to Classify Renal Cystic Lesions According to the Bosniak Classification. Radiological Society of North America (RSNA), Chicago, IL.
2019/07/10	**Islam J**, Turgeon M, Bhatnagar SR. Flexible approach to time-to-event data analysis using case-base sampling. UseR! 2019, Toulouse, France.
2019/05/11	Bonaffini PA*, Savadjiev P, Bhatnagar SR, Salman A, Lazaris A, Metrakos P, Gallix B, Reinhold C. Quantitative MRI image analysis for predicting histopathological growth patterns of liver metastases from colorectal cancer. International Society for Magnetic Resonance in Medicine 27th Annual Meeting, Montreal, QC.
2018/09/13	Garfinkle R*, Sigler G, Morin N, Ghitulescu G, Bhatnagar S, Faria J, Gordon PH, Vasilevsky CA, Boutros M Does Time to Closure of Loop Ileostomy Increase the risk of postoperative Ileus? A Large, Single-Institution Canadian Surgery Forum, St John's, NL
2018/09/13	Chau JK*, Bhatnagar S, Abou Khalil M, Morin N, Vasilevsky CA, Ghitulescu G, Faria J, Boutros M. Short-Term Outcomes of Peri-Operative Blood Transfusions in colorectal Cancer Surgery: A Propensity-Adjusted Analysis Canadian Surgery Forum, St John's, NL
2018/09/13	Garfinkle R*, Abou-Khalil M, Bhatnagar S, Wong-Chong N, Azoulay L, Morin N Vasilevsky CA, Boutros M. A Comparison of Pathologic Outcomes of Open, Laparoscopic, and Robotic Resections for Rectal Cancer Using the ACS-NSQIP Proctectomy-Targeted Database: A Propensity Score Analysis. Canadian Surgery Forum, St John's, NL
2018/08/02	Bhatnagar SR*, Oualkacha K, Yang Y, Greenwood CMT. A General Framework for Variable Selection in Linear Mixed Models with Applications to Genetic Studies with Structured Populations. Joint Statistical Meetings, Vancouver, BC.
2018/05/02	Garfinkle R*, Wong-Chong N, Petrucci A, Sylla P, Wexner S, Bhatnagar S, Morin N, Boutros M. The Readability, Quality and Accuracy of Online Health Information for Patients with Low Anterior Resection Syndrome MacLean General Surgery Day, Montreal, QC.

2018/05/02	Chau JK*, Bhatnagar S, Abou Khalil M, Morin N, Vasilevsky CA, Ghitulescu G, Faria J, Boutros M. Short-Term Outcomes of Peri-Operative Blood Transfusions in colorectal Cancer Surgery: A Propensity-Adjusted Analysis. Fraser Gurd Surgery Research Day, Montreal, QC.
2018/05/02	Wong-Chong N*, Abou Khalil M, Garfinkle R, Bhatnagar S, Ghitulescu G, Vasilevsky CA, Morin M, Boutros M. Are rectal cancer patients with pretreatment N2-positive disease suitable for "Watch and Wait" protocols? An ACS-NSQIP analysis. Fraser Gurd Surgery Research Day, Montreal, QC.
2018/05/02	Garfinkle R*, Wong-Chong N, Petrucci A, Sylla P, Wexner S, Bhatnagar S, Morin N, Boutros M. The Readability, Quality and Accuracy of Online Health Information for Patients with Low Anterior Resection Syndrome. Fraser Gurd Surgery Research Day, Montreal, QC.
2018/07/21	Wong-Chong N*, Abou Khalil M, Garfinkle R, Bhatnagar S, Ghitulescu G, Vasilevsky CA, Morin M, Boutros M. Are rectal cancer patients with pretreatment N2-positive disease suitable for "Watch and Wait" protocols? An ACS-NSQIP analysis. ACS Quality and Safety Conference, Orlando, FL.
2017/09/13	Abou Khalil M*, Bhatnagar SR, Vasilevsky CA, Morin N, Ghitulescu G, Feldman L, Longtin Y, Boutros M: Development and validation of a clinical risk calculator for fulminant Clostridium difficile colitis. Resident Research Retreat, Canadian Surgical Forum, Victoria, British Columbia, Canada.
2017/07/24	Kronfli N*, Bhatnagar SR, Moodie EEM, Hull M, Klein MB: Trends in Cause-Specific Mortality in HIV-hepatitis C (HCV) co-infected patients in Canada (2003–2016): Possible Beneficial impact of HCV therapy. 9th IAS Conference on HIV Science, Paris, France.
2017/06/12	Bhatnagar SR*, Yang Y, Jolicoeur-Martineau A, Wazana A, Greenwood CMT: Variable Selection in Nonlinear Interactions with the Group Lasso. 45th Annual Meeting of the Statistical Society of Canada, Winnipeg, Canada.
2016/11/18	Bhatnagar SR: Genomic Visualisations for Biologists in R. Plotcon 2016, New York City, NY. YouTube video of presentation.
2016/11/03	Bhatnagar SR*, Yang Y, Khundrakpam B, Evans A, Blanchette M, Bouchard L, Greenwood CMT: An analytic approach for interpretable predictive models in high dimensional data, in the presence of interactions with exposures. 25th Annual International Genetic Epidemiology Society Meeting, Toronto, Canada.
2016/09/09	Hamadani FT*, Bhatnagar SR, Balvardi S, Trepanier M, Grushka J, Deckelbaum D, Court O, Fata P: Burnout and Career Satisfaction Among Canadian General Surgeons: Results of the CAGS National Burnout Study. Canadian Surgery Forum, Toronto, Canada.
2016/07/10	Bhatnagar SR*, Yang Y, Blanchette M, Greenwood CMT: Strong Heredity Models in High Dimensional Data. 28th International Biometrics Conference, Victoria, Canada.
2016/04/18	Bhatnagar SR*, Yang Y, Blanchette M, Greenwood CMT: A Model for Interpretable High-Dimensional Interactions. 5th Annual Canadian Human and Statistical Genetics Meeting, Halifax, Canada.
2015/04/19	Bhatnagar SR*, Houde A, Voisin G, Bouchard L, Blanchette M, Greenwood CMT: DNA methylation and Expression to predict childhood obesity. 4th Annual Canadian Human and Statistical Genetics Meeting, Vancouver, Canada.

I.4 Poster Presentations

2022/06/26	**Fu J***, Brophy J, Bhatnagar SR. Predicting the determinants of aortic stenosis treatments across geographical regions in Quebec with Bayesian shrinkage methods. The International Society for Bayesian Analysis Meeting (ISBA). Montreal, Canada.
2022/06/26	**Leung Soo C***, Pai N, Bartlett S, Bhatnagar SR. Bayesian predictive projection to identify predictors of HIV infection in South Africa. The International Society for Bayesian Analysis Meeting (ISBA). Montreal, Canada.
2017/10/22	Abou Khalil M*, Bhatnagar SR, Vasilevsky CA, Morin N, Ghitulescu G, Feldman L, Longtin Y, Boutros M: A Nomogram for Prediction of Mortality in Patients who Undergo Surgery for Fulminant Clostridium Difficile Colitis: Results from the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) Database. American College of Surgeons' 2017 Clinical Congress, San Diego, CA, USA.
2017/09/10	Bhatnagar SR*, Oualkacha K, Yang Y, Forest M, Greenwood CMT: Estimation for High-Dimensional Multivariate Linear Mixed Models in Structured Populations. 2017 International Genetic Epidemiology Society Meeting, Cambridge, UK.
2017/05/13	Nadig A*, Flanagan T, Bhatnagar SR, White K: Results of a RCT on a Transition Support Program for Adults with ASD: Effects on Quality of Life and Self-Determination. 2017 International Meeting for Autism Research, San Francisco, California, USA.
2016/05/12	Hull M*, Bhatnagar SR, Moodie EEM, Klein M: Trends in causes of mortality in the Canadian Co-infection cohort (CCC) 2005 – 2015. 25th Annual Canadian Conference on HIV/AIDS Research, Winnipeg, Canada.
2016/04/17	Bhatnagar SR*, Yang Y, Blanchette M, Greenwood CMT: A Model for Interpretable High Dimensional Interactions. 5th Annual Canadian Human and Statistical Genetics Meeting, Halifax, Canada.
2015/04/19	Bhatnagar SR*, Houde A, Voisin G, Bouchard L, Blanchette M, Greenwood CMT: Integrating DNA Methylation and Gene Expression data in Placenta Tissue to Predict Childhood Obesity. 4th Annual Canadian Human and Statistical Genetics Meeting, Vancouver, Canada. *$1,000 Award for Best Poster*
2014/08/24	Bhatnagar SR*, Greenwood CMT, Labbe A: Transmission Ratio Distorition in Extended Families. Genetic Analysis Workshop 19, Vienna, Austria.
2014/08/25	Sun J, Bhatnagar SR*, Oualkacha K, Ciampi A, Greenwood CMT: Joint analysis of multiple blood pressure phenotypes in GAW19 data by using a multivariate rare-variant association test. Genetic Analysis Workshop 19, Vienna, Austria.
2014/05/26	Bhatnagar SR*, McGregor K*, Turgeon M*: Effect of economy on TV time use. 42nd Annual Meeting of the Statistical Society of Canada, Toronto, Ontario.

I.5 Seminar Presentations

2017/07/12	Bhatnagar SR, Forest M, Keller-Baruch J: Statistics vs. Machine Learning: Why can't we be friends? Lady Davis Institute, Montreal Jewish General Hospital.
2016/05/19	Bhatnagar SR: Methods for High Dimensional Interactions Ludmer Centre for Neuroinformatics and Mental Health, Montreal Neurological Institute.
2015/08/12	Bhatnagar SR: Introduction to knitr and R Markdown. Montréal UseR Group, Notman House, Montréal.
2015/03/12	Bhatnagar SR: Imputing the Epigenome. Lady Davis Institute, Montreal Jewish General Hospital.
2015/03/05	Bhatnagar SR: Making sense of Methylation & Expression data in Cordblood and Placenta Tissues. Lady Davis Institute, Montreal Jewish General Hospital.
2014/04/07	Bhatnagar SR: Estimation and Accuracy after Model Selection by Bradley Efron. Department of Mathematics and Statistics, McGill University.
2014/01/23	Bhatnagar SR: Reproducible Research and Biostatistics. Biostatistics Reading Group, McGill University.
2014/08/07	Bhatnagar SR*, Greenwood CMT, Labbe A: Transmission Ratio Distortion in Extended Families. Lady Davis Institute, Montreal Jewish General Hospital.
2013/08/30	Bhatnagar SR: Absolute Risk Estimation in a Case Cohort Study of Prostate Cancer. Department of Mathematics and Statistics, Queen's University.
2013/03/06	Bhatnagar SR: Colorectal Cancer Screening in Visible Minorities in Canada. Department of Public Health Sciences, Queen's University.
2012/11/27	Bhatnagar SR: Computational Methods for the Case-Cohort Design. Department of Public Health Sciences, Queen's University.

J. SOFTWARE

* download counts according to official CRAN logs as of January 18, 2023

1. R package **eclust**: Dimension reduction technique for analyzing interactions between a high dimensional dataset (e.g. genomics, brain imaging), the environment and a response. https://cran.r-project.org/package=eclust. 26k downloads.

2. R package **gglasso**: A unified algorithm, blockwise-majorization-descent, for efficiently computing the solution paths of the group-lasso penalized least squares, logistic regression, Huberized SVM and squared SVM. https://cran.r-project.org/package=gglasso. 96k downloads

3. R package **casebase**: Fit smooth-in-time parametric hazard functions using case-base sampling. This approach allows the explicit inclusion of the time variable into the model, which enables the user to fit a wide class of parametric hazard functions. https://cran.r-project.org/package=casebase. 66k downloads.

4. R package **manhattanly**: Create interactive Q-Q and manhattan plots that are usable from the R console, in the 'RStudio' viewer pane, in 'R Markdown' documents, and in 'Shiny' apps. https://cran.r-project.org/package=manhattanly. 46k downloads.

5. R package **acm4r**: Fragment lengths or molecular weights from pairs of lanes are compared, and a number of matching bands are calculated using the Align-and-Count Method https://cran.r-project.org/package=acm4r. 35k downloads.

6. R package **sail**: Sparse Additive Interaction Learning with the strong heredity property, i.e., an interaction is selected only if its corresponding main effects are also included. Fits high-dimensional linear models with non-linear interactions via penalized maximum likelihood. https://sahirbhatnagar.com/sail/. 11k downloads.

7. R package **ggmix**: Implementation of a linear mixed model with lasso penalty as described in the paper 'Simultaneous SNP selection and adjustment for population structure in high dimensional prediction models'. https://cran.r-project.org/package=ggmix. 11k downloads.

8. Shiny Application **Prediction of Postoperative Ileus After Loop Ileostomy Closure**: Postoperative ileus (POI) is a significant complication after loop ileostomy closure given both its frequency and impact on the patient. The purpose of this calculator is to assess the risk for POI after loop ileostomy closure. http://ileusafterileostomy.com/.

9. Shiny Application **cdiff**: Interactive, online web application to guide preoperative decision making for patients with fulminant Clostridium difficile colitis (FCDC) being evaluated for surgery. This calculator predicts 30-day postoperative mortality for patients with FCDC based on easily attainable pre-operative parameters. https://sahir.shinyapps.io/cdiff/.

K. TEACHING

K.1 GRADUATE COURSES

2021 Fall	EPIB607: Principles of Inferential Statistics. 4 Credits, 48 in-class hours, 96 graduate students enrolled. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2021 Winter	Fundamentals of Clinical Research for Radiologists. Lecture series, 20 hours online, 20 radiology residents attend.
2020 Fall	EPIB607: Principles of Inferential Statistics. 4 Credits, 48 in-class hours, 80 graduate students enrolled. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2020 Winter	Fundamentals of Clinical Research for Radiologists. Lecture series, 20 in-class hours, 30 radiology residents attend.
2019 Fall	EPIB607: Principles of Inferential Statistics. 4 Credits, 48 in-class hours, 73 graduate students enrolled. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2019 Winter	Fundamentals of Clinical Research for Radiologists. Lecture series, 20 in-class hours, 40 radiology residents attend.
2018 Fall	EPIB607: Principles of Inferential Statistics. 4 Credits, 48 in-class hours, 81 graduate students enrolled. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2017 Fall	MATH697: Mathematical Statistics. 4 Credits, 48 in-class hours, 10 graduate students. Quantitative Life Sciences, McGill University.

K.2 SHORT COURSES AND TUTORIALS

2019/05/27	Creating an R Package (https://sahirbhatnagar.com/rpkg/). Part of the BIOS 702 course. McGill University.
2019/05/14	Atelier d'une journée sur les outils pour la diffusion rapide et reproductible de la recherche (https://github.com/sahirbhatnagar/raqc). R à Québec. Campus de l'Université Laval.
2019/05/09	Data analysis using penalized regression methods. McGill Summer School in Health Data Analytics.
2019/02/27	Data Organization in Spreadsheets and Tidy Data. McGill Environmental Epidemiology Seminar.
2018/07/08	4 day Introduction to R Workshop. Northwestern Polytechical University. Xi'an, China.
2018/06/02	Having an Online Presence: Tools for Reproducible and Rapid Dissemination of Research. 6th Annual Canadian Statistics Student Conference. Montréal, QC.
2018/02/28	Introduction to Regression Trees. MATH 680 - Computation Intensive Statistics. Department of Mathematics and Statistics, McGill University.
2018/02/08	Modèles d'arbres de régression. Mini-cours. Département de mathématiques et de statistique, Université Laval.
2017/03/28	Introduction to the R package `casebase` for fitting smooth-in-time prognostic risk functions for survival data and visualizing incidence density using population time plots. Guest lecturer for BIOS 602 - Epidemiology Regression Models II. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2016/05/21	GitHub for Data Scientists without the Terminal: http://sahirbhatnagar.com/git4ds/
2016/04/15	Loops and Simulations in R. Department of Epidemiology, Biostatistics and Occupational Health, McGill University. Sponsored by Epidemiology, Biostatistics and Occupational Health Student Society (EBOSS). http://www.sahirbhatnagar.com/biosR/
2016/03/23	Introduction to the R package `casebase` for fitting smooth-in-time prognostic risk functions for survival data and visualizing incidence density using population time plots. Guest lecturer for BIOS 602 - Epidemiology Regression Models II. Department of Epidemiology, Biostatistics and Occupational Health, McGill University.
2015/07/29	Atelier sur le logiciel en R: Un introduction à la programmation en R. GERAD: Groupe d'études et de recherche en analyse, Université de Montréal. Sponsored by HEC Montréal.
2015/05/28	Reproducible Research: An introduction to `knitr`. Department of Epidemiology, Biostatistics and Occupational Health, McGill University. Sponsored by the CRM Statistics Laboratory and the Montreal Biostatistics Seminar Series.
2013/05/13	Introduction to LaTeX. Queen's University, Department of Mathematics and Statistics.

K.3 Research Trainees Supervised

Graduate students: Doctoral degree supervision

2022 –	Anthony Bozzo, Ph.D Experimental Surgery
2019 – 2024	Kai Yang, Ph.D Biostatistics. (Co-supervisor: Masoud Asgharian) CRM StatLab Graduate Award ($500)
2019 –	Julien St-Pierre, Ph.D Biostatistics. (Co-supervisor: Karim Oualkacha) CRM StatLab Graduate Award ($500)
2019 –	Jesse Islam, Ph.D QLS. (Co-supervisor: Rob Sladek) District 3 - AI Genomics Competition Award 1st place ($2,000) District 3 - AI Genomics Demo Day IVADO Prize Statistical Society of Canada Annual Meeting Travel Award ($500) QLSDay 2021 Presentation Award - 3rd Place
2020 – 2022	Zeyu Bian, Ph.D Biostatistics. (Co-supervisor: Erica EM Moodie) First position after graduation: Postdoctoral Fellow, University of Miami
2018 – 2020	Richard Garfinkle, Ph.D Experimental Surgery. (Co-supervisor: Marylise Boutros)

Graduate students: Doctoral degree thesis committee member

2019 – 2022	Le Chang, Ph.D Human Genetics, McGill University.

Graduate students: Doctoral degree thesis examiner

2019	Omidali Aghababaei Jazi, Ph.D Mathematics and Statistics, McGill University.

Graduate students: Doctoral degree comprehensive examiner

2019	Yixiao Zeng, Ph.D QLS, McGill University.
2019	Maria Abou Khalil, Ph.D Experimental Surgery, McGill University.
2020	Robert Goulden, Ph.D Epidemiology, McGill University.
2020	Yi Lian, Ph.D Biostatistics, McGill University.

Graduate students: Master's degree supervision

2019 – 2020	Haoyu Wu, M.Sc. Epidemiology. (Co-supervisor: Brent Richards). Graduate Research Enhancement and Travel Awards ($560) *Current position*: Ph.D. student McGill Biostatistics
2020 – 2022	Jingyan Fu, M.Sc. Biostatistics. (Co-supervisor: Jay Brophy). *Topic: Bayesian regularisation methods*.

2021 – 2023	Cindy Leung Soo, M.Sc. Epidemiology, McGill University. (Co-supervisor: Nikita Pai).

Undergraduate trainee supervision

2021	Arthur Ayestas Hilgert, B.Sc. Mathematics and Statistics, McGill University. NSERC USRA Recipient ($7000) Summer 2022.
2021	Yu Rong, B.Sc. Mathematics and Statistics, McGill University.
2021	Loveni Hanumunthadu, B.Sc. Engineering. McGill Initiative in Computational Medicine Summer Scholar Program. Project: Prediction of chronic pain trajectories in the aging population using genetic data
2021	Zijian Pei, B.Sc. Mathematics and Statistics and Computer Science, McGill University.
2021	Jiajun Yu, B.Sc. Mathematics and Statistics, McGill University.
2021	Zhiwei (Alouette) Zhang, B.Sc. Quantitative Biology, McGill University. McGill Initiative in Computational Medicine Summer Scholars Award ($7,125) - *declined* *Current Position*: PhD Student in Human Genetics at McGill University.
2020 – 2021	Peter Her, B.Sc. Pharmacology, McGill University. *Current position*: MSc student in Medical Biophysics at the University of Toronto.
2020 – 2021	Mohan Zhao, B.Sc. Mathematics and Statistics, McGill University. *Current position*: PhD student in Computer Science at the University of Toronto.

Practicum students

2019	Tianyuan Lu, Ph.D Quantitative Life Science, McGill University. 3 month rotation. *Topic: Polygenic risk scores based on penalized multivariable mixed-effects models*
2019	Jesse Islam, Ph.D Quantitative Life Science, McGill University. 3 month rotation. *Topic: Smooth-in-time parametric hazard functions using case-base sampling*.

L. Other Contributions

L.1 Reviewer of Journal Articles

International Journal of Epidemiology, BMC Bioinformatics, Journal of the American Statistical Association: Theory and Methods, International Journal of Biostatistics, PloS Genetics, PloS One, BMC Bioinformatics, Annals of Epidemiology, Canadian Medical Association Journal, Statistical Methods in Medical Research.

L.2 Grant Panels

2021	Medical Research Council (MRC) Research Grant

L.3 Event/session organization

2019	Co-organizer for the invited session on Variable Selection in High-dimensional Models. International Workshop on Perspectives on High-dimensional Data Analysis, Uppsala University, Sweden.
2018	Chair for the invited session on Advances in Estimation Methods. Joint Statistical Meetings, Vancouver, BC.

L.4 Administrative Responsibilities and Committees

2021	Abstract reviewer, Canadian Statistics Student Conference
2020	Abstract reviewer, EBOH Research Day
2020	Abstract reviewer, Canadian Statistics Student Conference
2018 – 2020	Chair, Data Science / Health Analytics Certificate Committee
2019 – 2022	Member, Biostatistics Admissions Committee
2015–2018	International Genetic Epidemiology Society Communications Committee Member
2014–2015	Post-Graduate Students' Society (PGSS) Councillor

L.5 Professional Associations

2011– 2021	Society of Actuaries
2013–	Statistical Society of Canada
2016–	International Genetic Epidemiology Society