

# Li Xing | CV

[Saskatoon, SK, Canada] [li.xing@math.usask.ca]

## Education

|   |                     |
|---|---------------------|
| Ph.D. in Statistics — [The University of British Columbia, Vancouver, Canada]   | [09/2008 — 09/2014] |
| M.Sc. in Statistics — [Simon Fraser University, Burnaby, Canada]                | [09/2005 — 05/2007] |
| M.Sc. in Mathematics — [The University of British Columbia, Vancouver, Canada]  | [09/2003 — 08/2005] |
| B.Sc. in Applied Mathematics — [Hebei University of Technology, Tianjin, China] | [09/1996 — 06/2000] |

## Research Interests

- Machine Learning
- Bayesian Methods
- Predictive Models
- data-driven discovery
- Bioinformatics
- Optimal Design

## Professional Appointments

|  |                     |
|--|---------------------|
| Mathematics and Statistics Department, The University of Victoria (Victoria, Canada)               |                     |
| • Adjunct Assistant Professor  | [12/2020 — 12/2023] |
| Mathematics and Statistics Department, The University of Saskatchewan (Saskatoon, Canada)          |                     |
| • Assistant Professor  | [07/2019 — present] |
| Institution on Aging & Lifelong Health, The University of Victoria (Victoria, Canada)              |                     |
| • Research Scientist   | [03/2019 — 03/2020] |
| • Research Associate   | [07/2018 — 02/2019] |
| Mathematics and Statistics Department, The University of Victoria (Victoria, Canada)               |                     |
| • NSERC and UVic Postdoctoral Fellow   | [07/2017 — 12/2018] |
| US Food and Drug Administration (FDA) (Silver Spring, MD, USA)                                     |                     |
| • Statistician/Visiting Associate  | [09/2016 — 07/2017] |
| Department of Biostatistics, Indiana University-Purdue University Indianapolis (Indianapolis, USA) |                     |
| • Adjunct Faculty  | [01/2016 — 08/2016] |
| • Postdoctoral Fellow  | [10/2014 — 01/2016] |
| The COAH and the Welch Center, Johns Hopkins University (Baltimore, USA)                           |                     |
| • Biostatistician  | [03/2012 — 06/2013] |
| Center for Heart and Lung Innovation, The University of British Columbia (Vancouver, Canada)       |                     |
| • Statistician   | [08/2006 — 01/2010] |

## Publications (IF: impact factor)

1. X Huang, X Shao, **L Xing**, Y Hu, DD Sin, X Zhang. (2021) The Impact of Early or Late Lockdowns on the Spread of COVID-19 in US Counties. *EClinicalMedicine*, July 15. DOI:<https://doi.org/10.1016/j.eclinm.2021.101035>. (IF=3.49)

2. O Alaqeeli, **L Xing**, X Zhang. (2021) Software Benchmark - classification tree algorithms for cell atlases annotation using Single-cell RNA-sequencing data. *Microbiol. Res.* 12(2), 317-334; <https://doi.org/10.3390/microbiolres12020022> (IF=5.415)
3. Y Lu, J Zhou, **L Xing**, X Zhang (2021) The Optimal Design of Clinical Trials with Potential Biomarker Effects, A Novel Computational Approach. *Statistics in Medicine.* Mar 30;40(7):1752-1766. doi: 10.1002/sim.8868. Epub 2021 Jan 11. (IF=2.373)
4. **L Xing**, X Zhang, I Burstyn, P Gustafson (2020) On logistic Box-Cox regression for flexibly estimating the shape and strength of exposure-disease relationships. *The Canadian Journal of Statistics.* December 17. <https://doi.org/10.1002/cjs.11587>. (IF=0.588)
5. K Xu, X Zheng, D Pan, **L Xing**, X Zhang (2020) Stock Market Openness and Market Quality: Evidence from the Shanghai-Hong Kong Stock Connect Program. *Journal of Financial Research.* April 7. <https://doi.org/10.1111/jfir.12210>. (IF=1.086)
6. Y Xu, **L Xing**, J Su, X Zhang, W Qiu (2019) Bayesian hierarchical models for SNP discovery from genome-wide association studies, a pseudo-supervised machine learning approach. *Sci Rep* 9, 13686. doi:10.1038/s41598-019-50229-6. (IF=4.122)
7. **L Xing**, M Lesperance, X Zhang (2019) Simultaneously prediction of multiple outcomes using revised stacking algorithms. *Bioinformatics.* Jul 2; btz531, <https://doi.org/10.1093/bioinformatics/btz531>. (IF=4.513)
8. GW Rebok, JM Parisi, JS Barron, MC Carlson, I Diibor, KD Frick, LP Fried, TL Gruenewald, J Huang, S McGill, CM Ramsey, WA Romani, TE Seeman, E Tan, EK Tanner, **L Xing**, QL Xue (2019) Impact of Experience Corps® Participation on Children’s Academic Achievement and School Behavior. *Prev Sci.* 20(4):478-487. doi:10.1007/s11121-018-0972-8. (IF=2.594)
9. BC McDonald, LA Flashman, DB Arciniegas DB, RJ Ferguson, **L Xing**, J Harezlak, GC Sprehn, FM Hammond, AC Maerlender, CL Kruck, KL Gillock, K Frey, RN Wall, AJ Saykin, TW McAllister (2016) Methylphenidate and Memory and Attention Adaptation Training for Persistent Cognitive Symptoms after Traumatic Brain Injury: A Randomized, Placebo-Controlled Trial, *Neuropsychopharmacology.* doi: 10.1038/npp.2016.261x. (IF=6.399)
10. ED Michos, KA Carson, ALC Schneider, PL Lutsey, **L Xing**, AR Sharrett, A Alonso, L Coker, M Gross, W Post, T Mosley, RF Gottesman (2014) Vitamin D and subclinical cerebrovascular disease: the Atherosclerosis Risk in Communities brain magnetic resonance imaging study. *JAMA Neurology.* Jul 1; 71(7): 863-871. (IF=7.420)
11. **L Xing**, I Burstyn, P Gustafson (2013) A comparison of Bayesian hierarchical modeling with group-based exposure assessment in modeling risks of disease in occupational epidemiological studies. *Statistics in Medicine.* Sep 20; 32(21): 3686-99. (IF=1.825)
12. CK Lyons, **L Xing**, JD Nelson (2010) Using LME in helicopter logging data, *Society of American Foresters-Forest Science.* 56(4): 356-365. (IF=1.812)
13. R Yuan, T Nagao, PD Pare, JC Hogg, DD Sin, MW Elliott, L Loy, **L Xing**, SE Kalloger, JC English, JR Mayo, HO Coxson (2010) Quantification of lung surface area using computed tomography. *Respiratory Research.* Oct 31; 11:153. (IF=3.093)
14. JV Gosselink, S Hayashi, WM Elliott, **L Xing**, B Chan, L Yang, C Wright, DD Sin, PD Pare, JA Pierce, RA Pierce, A Patterson, J Cooper, JC Hogg (2010) Differential expression of tissue repair genes in the pathogenesis of chronic obstructive pulmonary disease. *American Journal of Respiratory and Critical Care Medicine.* Jun 15; 181(12): 1329-35. (IF=12.996)
15. E Tamagawa, K Suda, Y Wei, **L Xing**, T Mui, Y Li, SF van Eeden, SF Man, DD Sin (2009) Endotoxin-induced translocation of interleukin-6 from lungs to the systemic circulation. *Innate Immunity.* 2009 Aug; 15(4): 251-8. (IF=3.271)
16. J Yee, MD Sadar, DD Sin, M Kuzyk, **L Xing**, J Kondra, A McWilliams, SF Man, S Lam (2009) Connective tissue-activating peptide III: a novel blood biomarker for early lung cancer detection. *Journal of Clinical Oncology.* Jun 10; 27(17): 2787-92. (IF=7.636)
17. WC Tan, C Lo, A Jong, **L Xing**, MJ Fitzgerald, WM Vollmer, SA Buist, DD Sin; Vancouver Burden of Obstructive Lung Disease (BOLD) Research Group (2009) Marijuana and chronic obstructive lung disease: a population-based study. *Canadian Medical Association Journal,* Apr 14; 180(8): 814-20. (IF=5.959)
18. SFP Man, **L Xing**, JE Connett, NR Anthonisen, RA Wise, DP Tashkin, X Zhang, R Vessey, TG Walker, BR Celli and DD Sin (2008) Circulating fibronectin to C-reactive protein ratio and mortality: a biomarker in COPD? *European Respiratory Journal.* 32:1451-1457. (IF=7.636)
19. E Tamagawa, N Bai, K Morimoto, C Gray, T Mui, K Yatera, X Zhang, **L Xing**, Y Li, I Laher, DD Sin, SFP Man, SF van Eeden (2008) Particulate matter exposure induces persistent lung inflammation and endothelial dysfunction. *American Journal of Physiology - Lung Cellular and Molecular Physiology.* 295: L79-L85. (IF=4.080)

20. H Coxson, B Quiney, DD Sin, **L Xing**, AM McWilliams, JR Mayo, S Lam (2008) Airway Thickness Assessed Using Computed Tomography and Optical Coherence Tomography. American Journal of Respiratory and Critical Care Medicine. Jun 1; 177(11): 1201-6. (IF=12.996)

## Technical Reports

21. (PhD Dissertation) **L Xing**, P Gustafson (2014) Model and Inference Issues Related to Exposure-Disease Relationships.
22. (M.Sc. project) **L Xing**, C Dean (2007) Hierarchical Segmented Regression Models with Application to Wood Density Analysis.

## Submitted Manuscripts

23. Y Guo, F Esfahani, X Shao, V Srinivasan, A Thomo, **L Xing**, X Zhang. (2021) Integrative COVID-19 Biological Network Inference with Probabilistic Core Decomposition (under invited review of Briefings in Bioinformatics). BioRxiv preprint doi: <https://doi.org/10.1101/2021.06.23.449535>.
24. X Cao, **L Xing**, E Majd, H He, J Gu, X Zhang. (2021) Benchmark study for cell phenotype classification using single-cell RNA sequencing data (under review of BMC bioinformatics) <https://www.researchsquare.com/article/rs-596075/v1>.
25. **L Xing**, X Zhang, A Van Den Hout, A Piccinin, G Muniz Terrera, S Hofer (2020) Optimal Study Design for Reducing Variances of Coefficient Estimators in Change-Point Models. (submitted to Biometrics) Available at <https://arxiv.org/abs/2004.13963>.
26. **L Xing**, S Joun, M Lesperance, K Mackey, X Zhang (2020) Handling highly correlated genes of Single-Cell RNA sequencing data in prediction models. (submitted to Bioinformatics) Available at <https://arxiv.org/abs/2007.02455>.

## Software Development

1. **DesignCTPB**: Design Clinical Trials with Potential Biomarker Effect. [CRAN link](#)
2. **MTPS**: Multi-Task Prediction using Stacking Algorithms. [CRAN link](#)
3. **GWASbyCluster**: Identifying disease-associated significant SNPs using clustering approach. [CRAN link](#)

## Grants and Awards

1. NSERC Discovery Grant: Development of Novel Multi-Task Prediction Methods for Large Scale Genomic Data (\$23,000 per year for 5 years; Role: Principal Investigator) [2021-2025]
2. NSERC Discovery Launch Supplement to Early Career Researchers (\$12,500; Role: Principal Investigator) [2021-2025]
3. Compute Canada the Resources for Research Groups Fast-Track 2021 competition (Awarded; equivalent dollar value \$24,304; role: Principal Investigator) [04/2021-03/2022]
4. NRC Collaboration Grant (Awarded; \$580,884; role: Research Partner) [2021-2023]
5. Mitacs Globalink 2021 (Awarded to support 2 undergraduate trainees; support for top tier international undergraduates for summer research) [04/2021-10/2021]
6. Genome BC Sector Innovation Program (Awarded; \$250,000; role: Co-applicant) [2021-2023]
7. Mitacs Globalink 2020 (Awarded, but canceled due to COVID-19) [06/2020-08/2020]
8. Compute Canada the Resources for Research Groups 2020 competition (Awarded; equivalent dollar value \$54,574; role: Principal Investigator) [04/2020-03/2021]
9. CIHR Grant (Awarded; \$443,700; role: Co-applicant) [2020-2024]
10. University of Saskatchewan start-up grant (Awarded; \$60,000; role: Principal Investigator) [07/2019-06/2024]

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| 11. NSERC PDF (Awarded; \$45,000 per year)                     | [2015 - 2016, 2017-2018] |
| 12. NSERC PGS-D-3 (Awarded; \$21,000 per year)                 | [2009 - 2013]            |
| 13. Four Year Doctoral Fellowship, UBC, Accepted in title only | [2009 - 2013]            |

## Teaching Appointment and Experience

- Instructor — Mathematics and Statistics Department, The University of Saskatchewan
- Stat 244, Elementary Statistical Concepts [Scheduled 09/2021-12/2021]
  - Stat 443/851, Linear Statistical Models [Scheduled 09/2021-12/2021]
  - Stat 447/846, Statistical Machine Learning for Data Science (I designed this new course.) [Scheduled 09/2021-12/2021]
- Instructor — Mathematics and Statistics Department, The University of Saskatchewan
- Stat 345, Design and Analysis of Experiments [09/2020-12/2020]
  - Math 498/Stat 846, Machine Learning [09/2020-12/2020]
  - Stat 443/851, Linear Statistical Models [01/2020-04/2020]
- Guest Lecturer — Mathematics and Statistics Department, The University of Victoria
- Stat 454/563, Machine Learning [12/2018]
  - Stat 458/568, Generalized Linear Model [02/2018 -03/2018]
- Instructor — Biostatistics Department, Indiana University-Purdue University Indianapolis [01/2016-05/2016]
- PBHL-B 546, Applied Longitudinal Data Analysis (core course for graduate students)
- Co-Instructor — Biostatistics Department, Indiana University-Purdue University Indianapolis [09/2015-11/2015]
- PBHL-B 646, Advanced Generalized Linear Models (core course for graduate students)

## Oral Presentations

- The Optimal Design of Clinical Trials with Potential Biomarker Effects
- Invited talk at the SIAM Conference on Optimization 2021, Washington, USA (Virtual online) [07/2021]
- Novel Grouping Algorithm to Handle Highly Correlated Genes
- Invited talk at Data Science Seminar series, Thompson Rivers University, Canada [06/2021]
- Machine Learning Algorithms for Analysis of Omics Data
- Research Talk at Faculty of Health Science, Simon Fraser University, Canada [07/2020]
- Simultaneously prediction of multiple outcomes using revised stacking algorithms
- 28th Virtual Conference on Intelligent Systems for Molecular Biology (Poster) [07/2020]
- About the Multi-Task Prediction Algorithms and the Optimal Design for Change Point Models
- Mathematics and Statistics Department, The University of Winnipeg [03/2019]
  - Mathematics and Statistics Department, The University of Saskatchewan [04/2019]
- Should We Use Square Root or Logarithm Transformation?
- New Researcher Conference 2018, Burnaby, Canada [07/2018]
  - the Joint Statistical Meetings 2018, Vancouver Canada (Invited Poster) [07/2018]
- A Two-Step Approach to Analyze Longitudinal Structural Neuroimaging Data
- the Joint Statistical Meetings, Chicago, USA [08/2016]
- Development of Novel Methods for Modeling Exposure-Disease Relationship and Longitudinal Structural Brain Imaging Data [04/2016]
- US Food and Drug Administration (FDA), Silver Spring, MD, USA
  - Johns Hopkins University, Baltimore, MD, USA
- Model and Inference Issues Related to Exposure-Disease Relationships [04/2014]

- Statistics Department, The University of British Columbia, Canada  
Analysis of School and Child Outcome in Experience Corps Study [09/2012]
- The Johns Hopkins Center on Aging and Health (COAH), USA  
Bayesian Methods to Estimate Risks of Disease in Epidemiology /w Partly Missing Data [06/2010]
- The WNAR of the International Biometric Society, Seattle, USA  
Hierarchical Segmented Regression Models with Application to a Wood Density Study [07/2008]
- Department of Medicine, The University of Alberta, Canada

## Professional Services

### Editorial Service

- Topic Editor and Section Editor in the probability and statistics theory section of the journal, Mathematics [05/2021]

### Grant Review

- CIHR "Fellowships-Post-PhD" Awards Committee [07/2021-06/2022]
- CIHR Observer for Project Grant [02/2021]
- CIHR COVID-19 Fast Track [05/2020]

### Paper Review

- Entropy (IF = 2.419) [06/2021]
- Annals of Applied Statistics (IF = 1.578) [04/2021]
- IEEE Access (IF = 4.098) [03/2021]
- AI (IF = 6.628) [02/2021]
- BMC Medical Research Methodology (IF=3.696) [01/2021]
- Genes (IF = 3.759) [11/2020]
- Statistics in Medicine (IF = 1.847) [10/2020]
- Cancers (IF = 6.162) [04/2020]
- International Journal of Environmental Research and Public Health (IF = 2.468) [04/2020]
- IEEE Access (IF = 4.098) [03/2020]
- Applied Science (IF = 1.689) [02/2020-06/2021]

### Department and University Service

- University Faculty Association Executive Committee [07/2021-06/2022]
- Biostats Graduate Committee [07/2021-08/2022]
- Salary Review Committee [12/2020]
- Department Graduate Committee [09/2020-08/2022]
- Department Tenure and Promotion Committee [07/2019-08/2020]
- Computer Science / Mathematics and Statistics Joint Committee [05/2020-08/2020]