Christopher Blier-Wong, Ph.D., ACIA

PERSONAL INFORMATION

Department of Statistical Sciences
University of Toronto
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EMPLOYMENT

Assistant Professor, tenure track (2024–)
Department of Statistical Sciences, University of Toronto

Postdoctoral researcher (2023–2024)
Statistics and Actuarial Science, University of Waterloo

- Supervisor: Ruodu Wang

EDUCATION

Ph.D. Actuarial science (2023, Honor Roll)
École d'actuariat, Université Laval

- Thesis title: Investigating High-Dimensional Problems in Actuarial Science, Dependence Modelling, and Quantitative Risk Management
- Supervisors: Etienne Marceau, Hélène Cossette and Luc Lamontagne

M.Sc. Computer science - Artificial intelligence (2019, Honor Roll)
Département d'informatique et de génie logiciel, Université Laval

- Thesis title: Modeling Spatial Actuarial Risks with Machine Learning

M.Sc. Actuarial science (2018, Honor Roll)
École d'actuariat, Université Laval

- Thesis title: Correction of Ratemaking Errors in Presence of Spatial Dependence
- Supervisors: Etienne Marceau and Thierry Duchesne

B.Sc. Actuarial science (2017)
École d'actuariat, Université Laval

RESEARCH EXPERIENCE

Research interests

Actuarial science	Risk aggregation, loss models, insurance pricing, fairness, climate risk management
Statistics	Dependence modelling, copulas, e-values, uncertainty quantification, spatial statistics
Operations research	Risk-sharing, risk measures, distributionally robust optimization, ambiguity, decision making under uncertainty
Computer science	Unstructured data (images, text, spatial), foundation models, machine learning in actuarial science

Research supervision

Postdoctoral fellow	Guneet Dhillon (since 2026, supervised with Ruodu Wang)
PhD	Morgan Huang (since 2026) Alana Guo (since 2026, supervised with Andrei Badescu) Isaac Marchand (since 2026, supervised with Xiaofei Shi) Pat Chimtanoo (since 2025, supervised with Andrei Badescu)

Masters	Jingwen Zhong (MScAC, since 2026) Tian Wang (MSc, since 2026) Wisdom Musah (MFI, 2026), now actuarial analyst Derek Kusmenko (MSc, 2025-2026), now actuarial analyst Jenny Jiang (MScAC, 2025), now actuarial analyst
Undergrad (Toronto)	Yingcong Xue (2026, Globalink visitor) Rui Huang (2026, Globalink visitor) Jared Xu (2025)
Undergrad (Laval)	Randy Lefebvre (2022-2023), now PhD student William Tremblay (2022), now actuarial analyst Sebastien Legros (2022), now PhD student

Working papers

1. **Blier-Wong, C.**, Lauzier, J.G., & Van Oosten, Z. (2026). An axiomatic foundation for optimized certainty equivalents.
2. Bernard, C., **Blier-Wong, C.**, & Lauzier, J.G. (2026). Optimal robust comonotonic risk sharing under operational constraints.
3. **Blier-Wong, C.** (2026). Severity estimation in dependent collective risk models.
4. **Blier-Wong, C.** and Kusmenko, D. (2026). Semantic insurance pricing with large language models.
5. **Blier-Wong, C.** and Lauzier, J.G. (2026). Designing entry-monotone risk-sharing pools.
6. **Blier-Wong, C.** and Chen, J. (2026). Sharp bounds for products of dependent random variables.
7. **Blier-Wong, C.** (2026). A Laplace-based perspective on conditional mean risk sharing.
8. **Blier-Wong, C.** (2026). Stochastic representation of Sarmanov copulas.

Refereed publications

1. Holvoet, F., **Blier-Wong, C.**, Antonio, K. (2026+). A multi-view contrastive learning framework for spatial embeddings in risk modelling. Forthcoming in the ASTIN Bulletin.
2. **Blier-Wong, C.** and Wang, R. (2026). Improved thresholds for e-values. Annals of Statistics.
3. **Blier-Wong, C.** and Lauzier, J.G. (2026). Comonotonic improvement under feasibility constraints. ASTIN Bulletin.
4. **Blier-Wong, C.**, Cossette, H., and Marceau, E. (2025). Generating function methods for the efficient computation of expected allocations. Insurance: Mathematics and Economics.
5. **Blier-Wong, C.**, Cossette, H., and Marceau, E. (2024). Collective risk models with FGM copulas. Scandinavian Actuarial Journal.
6. **Blier-Wong, C.**, Lamontagne, L., & Marceau, E. (2024). A representation-learning approach for insurance pricing with images. ASTIN Bulletin.
7. **Blier-Wong, C.**, Cossette, H., Legros, S., and Marceau, E. (2023) On copulas constructed with Bernoulli and Coxian-2 distributions. Journal of Multivariate Analysis.
8. **Blier-Wong, C.**, Cossette, H., and Marceau, E. (2023). Risk aggregation with FGM copulas. Insurance: Mathematics and Economics.

9. **Blier-Wong, C.**, Cossette, H., and Marceau, E. (2023). Exchangeable FGM copulas. Advances in Applied Probability.
10. **Blier-Wong, C.**, Cossette, H., and Marceau, E. (2022). Stochastic representation of FGM copulas using multivariate Bernoulli random variables. Computational Statistics & Data Analysis.
11. **Blier-Wong, C.**, Cossette, H., Lamontagne, L., & Marceau, E. (2022). Geographic ratemaking with spatial embeddings. ASTIN Bulletin.
12. **Blier-Wong, C.**, Cossette, H., Lamontagne , L. and Marceau, E. (2021). Machine Learning in P&C Insurance: A Review for Pricing and Reserving. Risks.
13. **Blier-Wong, C.**, Baillargeon, J.-T., Cossette, H., Lamontagne , L. and Marceau, E. (2020). Encoding Neighbor Information into Geographical Embeddings using Convolutional Neural Networks. FLAIRS 2020.

Technical reports

1. **Blier-Wong, C.** (2026). Towards foundation models for insurance risk modelling.
2. **Blier-Wong, C.**, Baillargeon, J.-T., Cossette, H., Lamontagne , L. and Marceau, E. (2021). *Rethinking representations in P&C actuarial science with deep neural networks. arXiv preprint arXiv:2102.05784.*

Dissertations

1. **Blier-Wong, C.** (2023) *Investigating High-Dimensional Problems in Actuarial Science, Dependence Modelling, and Quantitative Risk Management.* PhD thesis, Actuarial Science, Université Laval.
2. **Blier-Wong, C.** (2019) *Modeling Spatial Actuarial Risks with Machine Learning.* Master's thesis, Computer Science, Université Laval.
3. **Blier-Wong, C.** (2018) *Correction of Ratemaking Errors in the Presence of Spatial Dependence.* Master's thesis, Actuarial Science, Université Laval.

Invited Talks / Seminars

1. *Random forests as feature engineering for insurance pricing with generalized linear models*, Joint Statistical Meetings, Boston, USA (August 1–6, 2026). Invited Paper Session
2. *From trees to GLMs in non-life insurance*, 2026 SSC Annual Meeting, Hamilton, Canada (May 31–June 3, 2026). Invited speaker
3. *Risk-sharing as a cooperative game*, Actuarial Science and Financial Mathematics Seminar Series, University of Waterloo, Waterloo, Canada (April 10, 2026)
4. *From trees to GLMs in non-life insurance*, Workshop in Insurance Mathematics (March 5–6, 2026). Invited speaker
5. *Three applications of representation learning for insurance pricing*, Memorial University of Newfoundland, Canada (February 2026)
6. *From trees to GLMs in non-life insurance*, University of Copenhagen, Denmark (January 2026)
7. *The Laplace-Stieltjes framework for conditional mean risk sharing*, UNIL, Lausanne, Switzerland (January 2026)
8. *Improved thresholds for e-values*, Chennai Mathematical Institute, India (June 2025)
9. *Multi-view spatial embeddings for insurance*, Young Talents in Actuarial Science and Quantitative Finance, University of Waterloo, Canada (April 2025)

10. *Collective risk models with FGM dependence*, SFU Stat & ActSci Department Seminar (November 2024)
11. *A representation-learning approach for insurance pricing with images*, Toronto Metropolitan University, Canada (November 2024)
12. *Collective risk models with FGM dependence*, AFI seminars, KU Leuven, Belgium (October 2024)
13. *A representation-learning approach for insurance pricing with images*, Weekly Seminars on Risk Management and Actuarial Science, University of Waterloo, Canada (March 2024)
14. *A representation-learning approach for insurance pricing with images*, ASTIN reading group, online event(October 2023)
15. *FGM copulas, generalizations and actuarial applications*, Weekly Seminars on Risk Management and Actuarial Science, University of Waterloo, Canada (September 2023)
16. *FGM copulas, generalizations and actuarial applications*, School of Risk and Actuarial Studies, UNSW, Sydney, Australia (May 2023)
17. *Generating function methods for computing conditional means*, Post/Doctoral Seminar in Mathematical Finance, ETH Zurich, Zurich, Switzerland (April 2023)
18. *FGM copulas, generalizations and actuarial applications*, UNIL, Lausanne, Switzerland (March 2023)
19. *Generating function methods for computing conditional means*, AFI seminars, KU Leuven, Belgium (December 2022)
20. *FGM copulas and actuarial applications*, Séminaire de statistique de l'Université de Sherbrooke (October 2022)
21. *Geographic ratemaking with spatial embeddings*, ASTIN Webinar, International Association of Actuaries, online event (September 2022)
22. *Risk aggregation with FGM dependence*, Statistical Society of Canada, online event (May 2022)
23. *FGM copulas and actuarial applications*, Finance PhD Seminar, CREST-ENSAE, Palaiseau, France (April 2022)
24. *Copules FGM et applications actuarielles*, Séminaire CIMMUL, online event (March 2022)
25. *Réseaux de neurones Bayésiens pour la tarification en assurance IARD*, Séminaire d'été d'actuariat et de statistique de l'UQAM, online event (August 2021)
26. *Introduction à la modélisation mathématique des données non structurées*, Atelier d'été du CIMMUL, Université Laval, online event (June 2021)
27. *Geographic ratemaking with spatial embeddings*, Statistical Society of Canada, online event. Actuarial Science Student Research Presentation Award (June 2021)
28. *Spatial embeddings in actuarial science*, Online Quantact Seminar, Canada, online event (June 2020)
29. *Local regression and application in homeowners insurance pricing*, Meetup Machine Learning Québec, Université Laval (November 2018)
30. *Smoothing of ratemaking errors to identify spatial auto-correlation*, Statistical Society of Canada, McGill University, Canada (June 2018)

Contributed Talks

1. *Risk-sharing as a cooperative game*, 29th International Congress on Insurance: Mathematics and Economics (IME 2026), Seoul, South Korea (June 29–July 3, 2026)
2. *Semantic representational insurance pricing*, Insurance Data Science Conference, Hannover, Germany (June 9–10, 2026)
3. *From trees to GLMs in non-life insurance*, 1st ASTIN Bulletin conference (January 2026)
4. *Multi-view spatial embeddings for insurance*, 60th Actuarial Research Conference, Toronto, Canada (July 2025)
5. *Multi-view spatial embeddings for insurance*, Actuarial, Finance, Risk and Insurance Congress 2, Maasai Mara, Kenya (June 2025)
6. *Multi-view spatial embeddings for insurance*, 2nd Joint colloquium of IAA sections, Sao Paulo, Brazil (May 2025)
7. *Rank-based sequential tests for copulas*, 27th International Congress on Insurance: Mathematics and Economics (IME 2024), Chicago, United States (July 2024)
8. *Recent advances on collective risk models with full dependence*, Waterloo Student Conference in Statistics, Actuarial Science and Finance, Waterloo, Canada (October 2023)
9. *Risk aggregation with Bernstein copulas*, 26th International Congress on Insurance: Mathematics and Economics (IME 2023), Edinburgh, Scotland (June 2023)
10. *Insurance pricing with deep Bayesian neural networks*, International Congress of Actuaries, Sydney, Australia (May 2023)
11. *Efficient computation of expected allocations*, Perspectives on actuarial risks in talks of young researchers, Valencia, Spain (January 2023)
12. *On copulas constructed with Bernoulli and Coxian-2 distributions*, CMStatistics, London, England (December 2022)
13. *On copulas constructed with Bernoulli and Coxian-2 distributions*, Waterloo Student Conference in Statistics, Actuarial Science and Finance, Waterloo, Canada (October 2022)
14. *Risk aggregation with Bernstein dependence*, Workshop on Dependence Modeling, Agistri, Greece (September 2022)
15. *Micro-level collective risk models under FGM dependence*, European Actuarial Journal Conference, Tartu, Estonia (August 2022)
16. *Exchangeable FGM copulas*, European Actuarial Journal Conference, Tartu, Estonia (August 2022)
17. *Efficient computation of expected allocations*, Actuarial Research Conference 2022, Champaign, Illinois, United States (August 2022)
18. *Risk aggregation with FGM copulas*, 25th International Congress on Insurance: Mathematics and Economics, online event (June 2022)
19. *Insurance ratemaking with images*, Insurance Data Science Conference, Milan, Italy (June 2022)
20. *Efficient computation of expected allocations*, ASTIN AFIR-ERM Colloquia, online event (June 2022)
21. *Deep Bayesian Insurance Pricing*, 24th International Congress on Insurance: Mathematics and Economics, online event (June 2021)
22. *Correction of ratemaking errors in the presence of spatial dependence*, Actuarial Research Conference, Western University, Canada (August 2018)

23. *Automated tests in R - How to maintain code*, R à Québec, Université Laval, Canada. (May 2019)

Invited industry talks

1. *From Data to Language: Rethinking How LLMs Price Insurance*, SOA ImpACT conference, Society of Actuaries, Pittsburgh, United States (October 2026)
2. *Utilisation des spatial embeddings en tarification territoriale*, Association des Actuaires IARD (November 2024)
3. *A representation-learning approach for insurance pricing with images*, Intact internal seminar, online event (September 2023)
4. *Rethinking Actuarial Representations used in Machine Learning*, SOA webcast, Society of Actuaries, online event (October 2021)
5. *Territorial ratemaking with spatial embeddings*, Intact internal seminar, online event (September 2020)
6. *Correction of ratemaking errors in the presence of spatial dependence*, 1er Workshop scientifique Ulaval-Intact, Université Laval (February 2019)
7. *Geographic ratemaking with spatial embeddings*, Intact internal seminar, online event (April 2021)

Teaching experience

Instructor (University of Toronto)

Fall	2026	ACT 240	Mathematics of Investment & Credit
Fall	2026	ACT 351	Loss Models I
Fall	2025	ACT 240	Mathematics of Investment & Credit
Fall	2025	ACT 351	Loss Models I
Fall	2025	STA 2536	Data Science for Risk Modelling
Winter	2025	ACT 452	Loss Models II
Fall	2024	STA 2536	Data Science for Risk Modelling

Instructor (Université Laval)

Fall	2020	ACT-1003 Complements in Mathematics
Winter	2020	ACT-1003 Complements in Mathematics
Fall	2019	ACT-1003 Complements in Mathematics

Peer-review service

Annals of Actuarial Science, Applied Stochastic Models in Business and Industry, ASTIN Bulletin, Biometrika, Canadian Journal of Statistics, European Actuarial Journal, Insurance: Mathematics and Economics, Journal of Multivariate Analysis, Journal of Risk and Insurance, North American Actuarial Journal, Scandinavian Actuarial Journal, Statistics and Probability Letters, Test, The American Statistician (35 papers, reviews of revisions not included)

Organization of research activities

- 5th Workshop on E-value Theory, Sequential Anytime-valid Inference, and Game-theoretic Statistics (2027), Organizing committee
- Statistical Society of Canada Annual Meeting (2027), Chair and session organizer: Robust Approaches to Financial and Insurance Risk
- Workshop on Insurance Mathematics (2026), Organizing committee

- Actuarial Research Conference (2025), Operations committee
- Statistical Society of Canada Annual Meeting (2025), Chair and session organizer: Data-driven techniques in actuarial science
- Canadian Statistics Student Conference (2023), Organization committee
- Quantact SummerDay (2022), Organizing committee (chair)

Grants

2026–2031 Climate risk management: insurance pricing, stress testing, and resilience (Alliance grant)
PI (with Andrei Badescu and Xiaofei Shi as co-PIs)
250,133 CAD
NSERC

2026–2027 Insurance pricing with large language models
21,400 USD
Society of Actuaries Research Institute

2026–2027 SSHRC Destination Horizon Grants
15,000 CAD
Social Sciences and Humanities Research Council of Canada

2026–2027 Horizon Europe Consortium-Development Seed Grants
12,000 CAD
Office of the Vice-President, International, UofT

2026–2027 Academic Research Grant
20,000 CAD
Canadian Institute of Actuaries

2026–2027 KU Leuven global seed fund
Toronto PI (with Katrien Antonio as KU Leuven PI and Andrei Badescu as Toronto co-PI)
30,000 EUR
KU Leuven

2026 Horizon Europe International Mobility Award
5,000 CAD
Mitacs

2025-2030 Dependence, inference and unstructured data in actuarial science (Discovery Grant)
35,000 CAD per year
NSERC

2025-2026 Discovery Launch Supplement
12,500 CAD
NSERC

Awards, Prizes and Scholarships	2023–2025	NSERC Postdoctoral Fellowship
	2020–2022	NSERC Doctoral Scholarship
	2017–2023	21 additional awards, scholarships, and research grants from Mitacs, the National Bank of Canada, Université Laval, the Chaire d'actuariat, Charles Brindamour, the Statistical Society of Canada, NSERC, Quantact, the Society of Actuaries, and the Centre de recherches mathématiques.

Actuarial credentials	Associate of the Canadian Institute of Actuaries since 2026.	
	CAS exams:	1, 2, 3F, MAS I, MAS II, OC1, OC2, 5 and 7

Languages	French	Proficient (first language)
	English	Proficient