

*Please see the final page of this CV for a [list of acronyms](#)

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| RESEARCH INTERESTS | Experimental Design, Bayesian Methods, Computational Inference, Prior Elicitation, Dependence Modeling |
| CURRENT POSITION | Research Officer (09/2025 – present) The University of Queensland, Clinical Trials Capability (ULTRA) , Brisbane, Australia (Advisor: Prof. Andrew Martin) |
| PAST ACADEMIC POSITIONS | Postdoctoral Scholar (09/2024 – 08/2025) McGill University, Department of Epidemiology, Biostatistics & Occupational Health , Montréal, Canada (Advisor: Prof. Shirin Golchi) |
| EDUCATION | University of Waterloo , Waterloo, Canada <ul style="list-style-type: none"> PhD in Statistics, Department of Statistics & Actuarial Science 09/2021 – 08/2024 <ul style="list-style-type: none"> Thesis: Design with Sampling Distribution Segments Advisor: Prof. Nathaniel Stevens MMATH in Statistics, Dept. of Statistics & Actuarial Science 09/2020 – 08/2021 <ul style="list-style-type: none"> Master's Research Paper: A More Comprehensive Framework for Binary Response Experiments Using Comparative Probability Metrics BMATH in Mathematical Optimization & Statistics (Co-op) 09/2015 – 04/2020 |
| PEER-REVIEWED PUBLICATIONS | Published & Accepted <ol style="list-style-type: none"> S. Kaminskaïa and L. Hagar. (2026+). Language use and articulation rate in a minority French community. Accepted to <i>Speech Prosody</i> 2026. S. Kaminskaïa and L. Hagar. (2025+). Acquisition of temporal aspects of speech by Canadian English learners of French with previous core vs. immersion backgrounds. Accepted to <i>Canadian Journal of Applied Linguistics</i>. L. Hagar and N.T. Stevens. (2025+). Design of Bayesian A/B tests controlling false discovery rates and power. <i>Journal of Business and Economic Statistics</i>, in press. DOI. L. Hagar and N.T. Stevens. (2025+). Posterior ramifications of prior dependence structures. <i>Statistical Science</i>, in press. Advanced publication. arXiv. L. Hagar and N.T. Stevens. (2024+). Fast power curve approximation for posterior analyses. <i>Bayesian Analysis</i>, in press. DOI. L. Hagar and N.T. Stevens. (2025). An economical approach to design posterior analyses. <i>Journal of the American Statistical Association</i> 120(552), 2559–2568. DOI. S. Kaminskaïa and L. Hagar. (2025). A complex approach to rhythm in a minority French community. <i>LACUS Forum</i> 50(3), 1–14. DOI. W. Cichocki, S. Kaminskaïa, and L. Hagar. (2025). The relationship between articulation rate and utterance length in varieties of Canadian French. <i>LACUS Forum</i> 50(1), 13–26. DOI. S. Kaminskaïa, L. Hagar, N. Gadbois, and J.C. Van Leeuwen. (2025). It doesn't sound French, or does it? In <i>15th Annual PSSLT Proceedings</i>, 1–11. DOI. L. Hagar and N.T. Stevens. (2025). Bioequivalence design with sampling distribution segments. <i>Statistics in Medicine</i> 44(3-4), e10321. DOI. R Package. A. Deng, L. Hagar, N.T. Stevens, T. Xifara, and A.K. Gandhi. (2024). Metric decomposition in A/B tests. In <i>Proceedings of the 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining</i>, 4885–4895. DOI. |

3. W. Cichocki, S. Kaminskaïa, and **L. Hagar**. (2024). Regional variation in articulation rate in French spoken in Canada. *Journal of the International Phonetics Association* 54(1), 126–145. DOI.
2. N.T. Stevens and **L. Hagar**. (2022). Comparative probability metrics: Using posterior probabilities to account for practical equivalence in A/B tests. *The American Statistician* 76(3), 224–237. DOI. [R Shiny App 1](#), [R Shiny App 2](#).
1. L. Lu, C.M. Anderson-Cook, N.T. Stevens, and **L. Hagar**. (2022). Using a baseline with the probability of agreement to compare distribution characteristics. *Quality Engineering* 34(3), 322–343. DOI. [R Shiny App](#).

Submitted for Publication († denotes co-first authorship)

7. **L. Hagar** and S. Golchi. (2026+). Design of Bayesian clinical trials with clustered data. Minor revision submitted to *Statistics in Medicine*, 02/2026. [arXiv](#).
6. **L. Hagar**[†], L. Maleyeff[†], S. Golchi, and D. Menzies. (2026+). An efficient approach to design Bayesian platform trials. Revision invited at *Journal of the Royal Statistical Society (Series C)*, 02/2026. [arXiv](#).
5. **L. Hagar** and A.J. Martin. (2026+). An efficient framework for robust sample size determination. Submitted to *Biometrics*, 12/2025. [arXiv](#).
4. S. Kaminskaïa and **L. Hagar**. (2026+). Variation et changement dans le rythme phonétique en français ontarien minoritaire. Revision invited at *Linx*, 12/2025.
3. **L. Hagar**, S. Golchi, and M.B. Klein. (2026+). Group sequential design with posterior and posterior predictive probabilities. Resubmitted to *Journal of the American Statistical Association*, 11/2025. [arXiv](#).
2. S. Golchi and **L. Hagar**. (2026+). Bayesian design of experiments in the presence of nuisance parameters. Submitted to *The American Statistician*, 11/2025. [arXiv](#).
1. **L. Hagar** and N.T. Stevens. (2026+). An economical approach to design with precision criteria. Submitted to *Biometrika*, 11/2025. [arXiv](#).

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| RESEARCH FUNDING AS PI | \$14,773 | AusTriM Seed Funding Grant (2026) |
| | | <ul style="list-style-type: none"> Co-investigators: Prof. Andrew Martin, Prof. Ian Marschner, Prof. Rajeny Thomas, Dr. Min Zhang |
| | \$140,000 | NSERC Postdoctoral Fellowship (Currently Paused, 2024 – 2025) |
| | \$42,000 | CRM StatLab - CANSSI Postdoctoral Fellowship (Declined, 2024 – 2025) |
| | \$63,000 | NSERC Postgraduate Scholarship – Doctoral (2021 – 2024) |
| | \$15,000 | Ontario Graduate Scholarship (Declined, 2021 – 2022) |
| | \$17,500 | NSERC Canada Graduate Scholarship – Master’s (2020 – 2021) |
| | \$4,500 | NSERC Undergraduate Student Research Award (2019) |
| SCHOLARSHIPS & AWARDS | \$1,000 | UW Mathematics Doctoral Prize - Second Place (2025) |
| | | <ul style="list-style-type: none"> This award recognizes graduating doctoral students in UW’s Faculty of Mathematics. Each department nominates one student. |
| | \$7,500 | ASQ Ellis R. Ott Scholarship for Applied Statistics & Quality (2024) |
| | | <ul style="list-style-type: none"> This award and the next recognize excellence in academics, teaching, and leadership in the applied statistics community. |
| | \$3,500 | ASA Mary G. and Joseph Natrella Scholarship (2024) |
| | \$3,000 | UW SAS Scotiabank Scholarship |
| | | <ul style="list-style-type: none"> This award recognized course coordination efforts when teaching STAT 341. |
| | \$45,000 | UW President’s Graduate Scholarship (2020 – 2024) |
| | \$1,000 | UW SAS Chair’s Award (2021 – 2024, × 5) |

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| \$1,000 | UW SAS Sprott Scholarship (2023) | <ul style="list-style-type: none"> This award recognizes PhD students in UW's SAS Department who show particular promise in research prior to their thesis defence. |
| \$500 | UW SAS Teaching Assistant Award (2023) | <ul style="list-style-type: none"> This award recognizes teaching assistants whose contributions result in an improvement of the student academic experience. |
| \$1,000 | UW SAS Comprehensive Exam Award (2022) | <ul style="list-style-type: none"> This award recognizes top performance on the PhD comprehensive exam in UW's SAS Department. |
| \$5,000 | UW SAS Doctoral Entrance Award (2021 – 2022) | <ul style="list-style-type: none"> This award is for new PhD students with top academic standing. |
| \$1,000 | UW SAS Outstanding Academic Performance Award (2021) | <ul style="list-style-type: none"> This award is presented to the student(s) with the highest academic performance in the first two terms of their MMath program. |
| \$5,000 | UW President's Scholarship of Distinction (2015 – 2020) | |
| \$500 | UW Scott Kelsey Fevreau Memorial Award (2017) | <ul style="list-style-type: none"> This student award is given based on high academic achievement, extracurricular activities, and personal characteristics. |
| \$1,500 | St. Jerome's University Robert & Margaret Forwell Scholarship (2016) | <ul style="list-style-type: none"> This award recognizes a student involved in the St. Jerome's community who demonstrates academic and leadership excellence. |

PRESENTATIONS

Invited Seminars and Conference Presentations

16. [Upcoming] *Bayesian Design with False Discovery Rates and Power*. SSC Annual Meeting, 06/2026.
15. [Upcoming] *Efficient and Robust Sample Size Determination*. Spring Research Conference, Clemson (USA), 05/2026.
14. *Economical Design with Posterior Probabilities*. Queensland University of Technology, Brisbane (Australia), 11/2025.
13. *Group Sequential Design with Posterior and Posterior Predictive Probabilities*. AusTriM Webinar, Hosted from Melbourne (Australia), 10/2025.
12. *Design of Bayesian Clinical Trials with Clustered Data*. Canadian Society for Epidemiology and Biostatistics Conference, 08/2025.
11. *Economical Computer Experiments for Sequential Design*. Quality and Productivity Research Conference, Seattle (USA), 06/2025.
10. *Economical Design of Sequential Bayesian Analyses*. SSC Annual Meeting, 05/2025.
9. *An Economical Approach to Design Posterior Analyses*. York University, 02/2025.
8. *Sample Size Determination in Bayesian Clinical Trials with Clustered Data*. McGill University, 02/2025.
7. *Design of Bayesian Clinical Trials with Clustered Data and Multiple Endpoints*. Canadian Network for Bayesian Adaptive Trials Webinar, 01/2025.
6. *Design of Posterior Analyses with Sampling Distribution Segments*. Computational and Methodological (CM)Statistics, London (UK), 12/2024.
5. *Scalable Bayesian Design for Business Innovation*. HEC Montréal, 11/2024.
4. *Scalable Design with Posterior-Based Operating Characteristics*. Joint Research Conference, 06/2024.
3. *A Bayesian Approach to Experimentation*. Airbnb AirAcademy Webinar Series. Hosted from San Francisco (USA), 11/2023.
2. *Targeted Sampling for Scalable Experimental Design*. ASQ CPID Webinar. Hosted from Milwaukee (USA), 11/2023.

1. *Using a Baseline with the Probability of Agreement to Compare Distribution Characteristics*. INFORMS Conference on Quality, Statistics, and Reliability, Raleigh (USA), 06/2023.

Contributed Presentations

17. *Economical Sample Size Calculations for Complex Designs*. Joint Statistical Meetings, Nashville (USA), 08/2025.
16. *Fast Power Curve Approximation for Posterior Analyses*. Bayesian Young Statisticians Meeting. Hosted from Durham (USA), 04/2025.
15. *Fast Design of Posterior Analyses with Operating Characteristics*. ENAR Spring Meeting, New Orleans (USA), 03/2025.
14. *A Complex Approach to Minority French Rhythm*. LACUS Conference, 07/2024.
13. *The Relationship between Articulation Rate and Utterance Length in Canadian French: Data from Reading Style*. LACUS Conference, 07/2024.
12. *Quantile Estimation for Sampling Distributions of Posterior Probabilities*. SSC Annual Meeting, 06/2024.
 - Biostatistics Section Student Presentation Award Winner
11. *Engaging Assessments with Real Data Analysis in Undergraduate Statistics Courses*. UW Teaching and Learning Conference, 05/2024.
10. *Scalable Power Curve Approximation with Targeted Hypercube Sampling*. CANSSI Showcase, 11/2023.
9. *Scalable Power Curve Approximation with Targeted Hypercube Sampling*. Waterloo Student Conference in Statistics, Actuarial Science & Finance, 10/2023.
 - Presentation Award Winner
8. *Fast Sample Size Determination for Bayesian Equivalence Tests*. Joint Statistical Meetings, 08/2023.
7. *Fast Sample Size Determination for Two-Group Equivalence Tests with Unequal Variances*. ISBIS Conference, 07/2023.
6. *Fast Sample Size Determination for Two-Group Equivalence Tests with Unequal Variances*. SSC Annual Meeting, 05/2023.
5. *Fast Sample Size Determination for Bayesian Equivalence Tests*. University of Toronto Statistics Graduate Student Research Day, 04/2023.
4. *A More Computationally Tractable Approach to Bayesian Interval-Based Sample Size Determination*. SSC Annual Meeting, 05/2022.
3. *A More Computationally Tractable Approach to Bayesian Interval-Based Sample Size Determination*. UW SAS Research Presentation Day, 03/2022.
 - Presentation Award Winner
2. *A Framework for Sample Size Determination with Comparative Probability Metrics*. SSC Annual Meeting, 06/2021.
 - Business & Industrial Statistics Section Student Presentation Award Winner
1. *A More Comprehensive Framework for Binary Response Experiments Using Comparative Probability Metrics*. Canadian Statistics Student Conference, 06/2021.

Workshops

3. *Clinical Trial Concept Development Workshop*. The University of Queensland, 02/2026.
2. *From MAMS to Bayesian Platforms: Bridging Theory and Practice*. HeRA ULTRA Showcase, 11/2025. [Google Colab](#).
1. *Sample Size Calculations for Bayesian Clinical Studies*. University of Toronto Health Data Working Group, 04/2025. [GitHub](#).

RESEARCH EXPERIENCE

Academic Collaborator, [Airbnb](#) 09/2023 – present

- Navigated changing priorities to develop methods now applied at Airbnb (see *Paper #4*), leading to an invited talk for Airbnb executives and data scientists.

Consultant, [UW Statistical Consulting & Survey Research Unit](#) 01/2022 – 04/2023

- Guided clients on how to leverage sound statistical approaches in their analyses, with active research collaboration in enhanced service projects (see e.g., *Paper #3*).

TEACHING EXPERIENCE

[McGill University](#), Montréal, Canada

Course Lecturer 08/2024 – 12/2024

- [BIOS 612](#): Advanced Generalized Linear Models with 10 graduate students. Co-instructed with Prof. Shirin Golchi.

[University of Waterloo](#), Waterloo, Canada

Sessional Lecturer 01/2024 – 04/2024

- [STAT 341](#): Computational Statistics & Data Analysis with 125 undergraduates. Coordinated two sections with 250 students and managed 6 teaching assistants.

TA Workshop Facilitator 01/2023 – 04/2024

- Facilitated and developed interdisciplinary teaching workshops for graduate students with UW's Centre for Teaching Excellence.

TA Coordinator 09/2023 – 12/2023

- Co-developed a practicum component of the teaching assistant development program for the SAS department and conducted teaching observations for TAs.

Teaching Assistant 01/2017 – 08/2023

- STAT 938: Statistical Consulting (Spring 2023)
- STAT 430: Experimental Design (Spring 2021)
- STAT 341: Computational Statistics & Data Analysis (Winter 2021)
- COMM 421: Financial Statement Analysis (Winter 2021)
- STAT 443: Forecasting (Fall 2020)
- MATH 137: Calculus I (Fall 2017)
- MATH 138: Calculus II (Winter 2017)

PROFESSIONAL DEVELOPMENT

Fellowships

- FDA-OCE-ASA [Oncology Fellowship](#) (2024 – 2025)

Certificates

- UW Certificate in University Teaching (2022 – 2023)
- UW New Instructor Foundations Program (2023)
- UW University Mathematics Teaching Techniques (2023)
- UW Fundamentals of University Teaching (2021)

SERVICE PROFILE

External Roles

[ASQ CPID Leadership Team](#)

- Chair (01/2026 - present)
- Chair-Elect (01/2025 - 12/2025)
- Secretary/Treasurer (01/2024 – 12/2024)
- Fall Technical Conference Publicity Chair (01/2023 – 12/2024)

SSC Community Connections Initiative

- Co-Organizer (12/2024 – present)

SSC Student and Recent Graduate Committee

- Past Chair (07/2024 – 06/2025)
- Chair (07/2023 – 06/2024)
 - Led a team of 10 members to host community-building and professional events for statistics students and recent graduates in Canada.
- Member (07/2022 – 06/2023)

ASA Section on Bayesian Statistical Science

- Student Paper Competition Judge (12/2024, 12/2025)

SSC Canadian Student Statistics Conference

- Judge (03/2024 – 06/2024)
- Co-chair (07/2022 – 06/2023)
 - Co-supervised a committee of 15 students to organize a national conference at Carleton University with 170 participants.
- Scientific Program Co-coordinator (09/2021 – 06/2022)

Internal Roles

McGill (Bio)Statistics Research and Career Day

- Judge (05/2025)

UW Statistical Workshops and Applications Group

- Executive Team Member (06/2022 – 08/2023)

UW Math Faculty Graduate Studies Committee

- Elected Graduate Student Representative (05/2021 – 08/2023)

UW Math Faculty-Level Student Course Perceptions Working Group

- Graduate Student Representative (03/2022 – 03/2023)

St. Jerome's University Student Leadership Team

- Peer Academic Leader (09/2015 – 04/2017)

Conference Session Organizer

Invited Sessions

- *Bayesian Clinical Trials: Innovative Methods for Real-World Challenges*, International Biometric Conference (2026)
- *Bridging Theory and Practice in Experimental Design*, SSC Annual Meeting (2025)

Topic-Contributed Sessions

- *Economical Methods for Experimental Design*, Joint Statistical Meetings (2025)

Conference Session Chair

- Canadian Statistics Student Conference (2023), Joint Research Conference (2024), LACUS Conference (2024), Quality and Productivity Research Conference (2025), SSC Annual Meeting (2022, 2023, 2025)

Reviewer

- *Banff International Research Station, Biometrics* (x2), *BMC Medical Research Methodology*, *Canadian Journal of Statistics* (x2), *Clinical Epidemiology*, *Computational Statistics* (x2), *Journal of Statistical Theory and Practice*, *Statistical Methods in Medical Research*, *Statistics in Medicine*, *The American Statistician*, *Xenobiotica*

EDITORIAL ACTIVITIES

ACRONYMS

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| AusTriM | Australian Trials Methodology Research Network |
| ASA | American Statistical Association |
| ASQ | American Society for Quality |
| CANSSI | Canadian Statistical Sciences Institute |
| CPID | Chemical and Process Industries Division |
| CRM | Centre de recherches mathématiques |
| FDA | U.S. Food & Drug Administration |
| ENAR | Eastern North American Region (International Biometric Society) |
| INFORMS | Institute for Operations Research and the Management Sciences |
| ISBIS | International Society for Business and Industrial Statistics |
| LACUS | Linguistic Association of Canada and the United States |
| NSERC | Natural Sciences and Engineering Research Council |
| OCE | Oncology Center of Excellence |
| SAS | Statistics & Actuarial Science |
| SSC | Statistical Society of Canada |
| ULTRA | The University of Queensland's cLincial TRials cApability |
| UW | University of Waterloo |