Courtney Y. Paquette (née Kempton)
Mathematics and Statistics Department, McGill University, Montreal, QC, Canada,
Email: courtney.paquette@mcgill.ca • Website: https://cypaquette.github.io/
Citizenship: United States

Research Positions

Assistant Professor, McGill University
Mathematics and Statistics, Montreal, QC, Canada, September 2020-present

Senior Research Scientist, Google Brain
Montreal, QC, Canada, September 2019-present
- 20% at Google Brain

NSF Postdoctoral Fellowship, University of Waterloo
Combinatorics and Optimization Department, July 2018- September 2019
Waterloo, ON
• Advisor: Stephen Vavasis

Post-doc, Lehigh University-Industrial and Systems Engineering
Bethlehem, PA, January 2018-July 2018
• NSF TRIPODS Postdoctoral position
Advisor: Katya Scheinberg

Post-doc, Ohio State University-Mathematics
Columbus, OH, August 2017-December 2017
• Ross Assistant Professor (Postdoctoral position)

Education

- B.S. (Mathematics and Finance) June 2011, University of Washington, Seattle
- Ph.D. (Mathematics) June 2017, University of Washington, Seattle.
    - Thesis: *Structure and complexity in nonconvex and nonsmooth optimization*
    - Advisor: Dmitriy Drusvyatskiy

Teaching

- *McGill University, Montreal, QC (August 2020-present)*
    - Math 463/563 (Convex Optimization & honors), undergraduate (30 students), Winter 2023, Winter 2024
    - Math 417/517 (Linear Optimization & honor version), undergraduate (40 students), Fall 2022
    - Math 315 (Ordinary differential equations), undergraduate (130 students), Fall 2020, Fall 2021
    - Math 560 (Numerical optimization), graduate (20 students), Winter 2021, Winter 2022

    - Math 597 (Convex analysis and optimization), graduate (15 students), Fall 2021

- *Lehigh University, Bethlehem, PA (January 2018-May 2018)*
    - ISE 417 (Nonlinear optimization), graduate (15 students), Spring 2018

- *The Ohio State University, Columbus, OH (August 2017-December 2017)*
    - Math 1152 (Calculus instructor), 3 sections, undergraduate (100 students), Fall 2017

- *Lead Teaching Assistant, University of Washington, Seattle WA (June 2016-August 2017)*
    - Organize and coordinate a 5-day TA orientation for incoming math graduate students
    - Advises incoming graduate students on skills in teaching as a TA Mentor
    - Supervises first year graduate students

- *Research Experience for Undergraduates (REU) Teaching Assistant University of Washington, Seattle WA, Summers 2011, 2012, 2015*
    - Assisted groups of 2-3 students in projects related to inverse problems

- *University of Washington, Seattle, WA, (September 2011-June 2017)*
    - Math 307 (Differential Equations instructor), undergraduate (50 students), Fall 2014, Spring 2014, Summer 2014, Spring 2015, Winter 2016
    - Math 125 (Integral calculus TA), undergraduate (60 students), Fall 2011, Winter 2015
    - Math 124 (Differential calculus TA), undergraduate (60 students), Winter 2012, Spring 2012, Fall 2015

Research and Scholarships

Grants

1. NSERC General Research Fund, PI ($5000; 2023-2024)
2. Google Grant, MILA, co-PI ($90,000; 2023-2024)
3. FRQNT New university researcher's start-up program, PI ($50,800; 2022-2024)
4. NSERC Discovery Grant and Supplemental for Early Career, PI ($157,500; 2022-2027)
5. NSERC CREATE, co-applicant ($1.65 million, 2022-2028)
6. CIFAR AI Chair, MILA, PI ($500,000; 2020-2025)
7. NSF Postdoctoral fellowship, PI, (July 2018-July 2019)

Awards

1. Sloan Fellowship, Computer Science (Sept. 2024-Sept. 2026)
2. CIFAR's Rising Star in AI, Winter 2022 (Reach Magazine) https://cifar.ca/publications-reports/reach/
3. NeurIPS 2021, 2022 Outstanding Reviewer Award: top 8% of reviewers for NeurIPS
4. Tanzi-Egerton Fellowship Award (2016)

5. Excellence in Teaching Award (UW Math department) (2012)

Publications and Works (submitted, accepted, or appeared)

Papers are arranged in reverse chronological order, according to the date they are submitted to the arXiv

* Indicates a student author

1. Elliot Paquette, Courtney Paquette, Lechao Xiao, Jeffrey Pennington. ***4+3 Phases of Compute-Optimal Neural Scaling Laws.*** (2024), submitted, pdf: https://arxiv.org/pdf/2405.15074

2. Elizabeth Collins-Woodfin, Inbar Seroussi, Begoña García Malaxechebarría*, Andrew Mackenzie*, Elliot Paquette, Courtney Paquette. ***The High Line: Exact Risk and Learning Rate Curves of Stochastic Adaptive Learning Rate Algorithms***. (2024), submitted, pdf:

3. Tomás González*, Cristóbal Guzman, Courtney Paquette. ***Mirror Descent Algorithms with Nearly Dimension-Independent Rates for Differentially-Private Stochastic Saddle-Point Problems***. (2024), accepted to 37th Annual Conference on Learning Theory (COLT 2024), pdf: https://arxiv.org/pdf/2403.02912

4. Pierre Marion*, Anna Korba, Peter Barlett, Mathieu Blondel, Valentin De Bortoli, Arnaud Doucet, Felipe Llinares-López*, Courtney Paquette, Quentin Berthet. ***Implicit Diffusion: Efficient Optimization through Stochastic Sampling***. (2024) submitted, pdf: https://arxiv.org/pdf/2402.05468

5. Elizabeth Collins-Woodfin, Courtney Paquette, Elliot Paquette, Inbar Seroussi. ***Hitting the High-Dimensional Notes: An ODE for SGD learning dynamics on GLMs and multi-index models***. (2023) arXiv: https://arxiv.org/pdf/2308.08977

6. Courtney Paquette, Elliot Paquette, Ben Adlam, Jeffrey Pennington. ***Implicit Regularization or Implicit Conditioning? Exact Risk Trajectories of SGD in High Dimensions***. *Advances in Neural Information Processing Systems 35 (NeurIPS)*, 2022 pdf: https://papers.nips.cc/paper_files/paper/2022/file/e9d89428e0ef0a70913845b3ae812ee0-Paper-Conference.pdf

7. Kiwon Lee*, Andrew N. Cheng*, Elliot Paquette, Courtney Paquette. ***Trajectory of Mini-Batch Momentum: Batch Size Saturation and Convergence in High-Dimensions***. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022 pdf: https://papers.nips.cc/paper_files/paper/2022/file/efcb76ac1df9231a24893a957fcb9001-Paper-Conference.pdf

8. Courtney Paquette, Elliot Paquette, Ben Adlam, Jeffrey Pennington. ***Homogenization of SGD in high-dimensions: Exact dynamics and generalization properties.*** (2022) arXiv: https://arxiv.org/pdf/2205.07069.pdf

9. Leonardo Cunha*, Gauthier Gidel, Fabian Pedregosa, Damien Scieur, Courtney

Paquette. ***Only Tails Matter: Average-case Universality and Robustness in the Convex Regime***. *Proceedings of the 39th International Conference on Machine Learning (ICML)*, 2022 pdf: https://proceedings.mlr.press/v162/cunha22a/cunha22a.pdf

10. Courtney Paquette, Elliot Paquette. ***Dynamics of Stochastic Momentum Methods on Large-scale, Quadratic Models***. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021 pdf: https://proceedings.neurips.cc/paper/2021/file/4cf0ed8641cfcbbf46784e620a0316fb-Paper.pdf

11. Courtney Paquette, Kiwon Lee*, Fabian Pedregosa, Elliot Paquette. ***SGD in the Large: Average-case Analysis, Asymptotics, and Stepsize Criticality***. *34th Annual Conference on Learning Theory (COLT 2021)* pdf: http://proceedings.mlr.press/v134/paquette21a.html

12. Courtney Paquette, Bart van Merrienboer, Elliot Paquette, Fabian Pedregosa. ***Halting time is predictable for large models: A Universality Property and Average-case Analysis***. *Found. Comput. Math*. 23 (2023), no.2, 597–673 pdf: https://doi.org/10.1007/s10208-022-09554-y

13. Sina Baghal, Courtney Paquette, Stephen A. Vavasis. ***A termination criterion for stochastic gradient for binary classification***. (2020) arXiv: https://arxiv.org/abs/2003.10312 (submitted)

14. Courtney Paquette, Stephen A. Vavasis. ***Potential-based analyses of first-order methods for constrained and composite optimization***. (2019) arXiv: https://arxiv.org/pdf/1903.08497.pdf (submitted)

15. Courtney Paquette, Katya Scheinberg. ***A Stochastic Line Search Method with Expected Complexity Analysis***. *SIAM J. Optim*. 30 (2020) no. 1, 349-376 https://doi.org/10.1137/18M1216250

16. Damek Davis, Dmitriy Drusvyatskiy, Kellie J. MacPhee, Courtney Paquette. ***Subgradient methods for sharp weakly convex functions***. *J. Optim. Theory Appl.* (179) (2018) no. 3, 962-982 https://doi.org/10.1007/s10957-018-1372-8

17. Damek Davis, Dmitriy Drusvyatskiy, Courtney Paquette. ***The nonsmooth landscape of phase retrieval***. *IMA J. Numer. Anal.* 40 (2020) no. 4, 2652-2695 https://doi.org/10.1093/imanum/drz031

18. Courtney Paquette, Hongzhou Lin, Dmitriy Drusvyatskiy, Julien Mairal, Zaid Harchaoui. ***Catalyst Acceleration for Gradient-Based Non-Convex Optimization***. *22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2018)* http://proceedings.mlr.press/v84/paquette18a.html

19. Dmitriy Drusvyatskiy, Courtney Paquette. ***Efficiency of minimizing compositions of convex functions and smooth maps***. *Math. Program*. 178 (2019), no. 1-2, Ser. A, 503-558 https://doi.org/10.1007/s10107-018-1311-3

20. Dmitriy Drusvyatskiy, Courtney Paquette. ***Variational analysis of spectral functions simplified***. *J. Convex Analysis*. 25 (2018) no. 1, 119-134.

Expository Writing

1. Courtney Paquette, Elliot Paquette**.** ***High-dimensional Optimization***. *SIAM Views and News*, 20:16pp, October 2022 pdf: https://siagoptimization.github.io/assets/views/ViewsAndNews-30-1.pdf

Presentations and Tutorials

Colloquium/Plenary Speaker

- Math Department Colloquium, University of Washington, Seattle, WA (Nov. 2023)
- Math Department Colloquium, Rensselaer Polytechnic Institute, Troy, NY (January 2023)
- Conference on the Mathematical Theory of Deep Neural Networks, DeepMath, UC San Diego, CA (November 2022)
- Information Systems Laboratory Colloquium, Stanford University, Stanford, CA (October 2022)
- Plenary speaker*, GroundedML Workshop* at 10th International Conference on Learning Representations ICLR 2022, virtual event (April 2022)
- Courant Institute of Mathematical Sciences Colloquium, New York University, New York City, NY (January 2022)
- Mathematics Department Colloquium, University of California-Davis (virtual), Davis, CA, (January 2022)
- Operations Research and Financial Engineering Colloquium, Princeton University (virtual), Princeton, NJ (January 2022)
- Computational and Applied Mathematics (CAAM) Colloquium Rice University (in-person), Houston, TX, (December 2021)
- Plenary speaker*, Beyond first-order methods in machine learning systems Workshop*, International Conference on Machine Learning (ICML), virtual event (July 2021)
- Operations Research Center Seminar, Sloan School of Management, Massachusetts Institute of Technology (MIT), Boston, MA (February 2021)
- Operations Research and Information Engineering (ORIE) Colloquium, Cornell University, Ithaca, NY (February 2021)
- Tutte Colloquium, Combinatorics and Optimization Department, University of Waterloo, Waterloo, ON (June 2020)

- Center for Artificial Intelligence Design (CAIDA) (colloquium), University of British Columbia, Vancouver, BC (June 2020)

- Math Colloquium, Ohio State University, Columbus, OH (February 2019)

- Applied Math Colloquium, Brown University, Providence, RI (February 2019)

- Mathematics and Statistics Colloquium, St. Louis University, St. Louis, MO (November 2019)

Tutorials

- *High-dimensional Learning Dynamics with Applications to Random Matrices,* tutorial, Random Matrices and Scaling Limits Program, Mittag Leffler, Stockholm, Sweden (Oct. 2024)

- *Nonconvex and Nonsmooth Optimization* Tutorial, East Coast Optimization Meeting, George Mason University, Fairfax, VA (April 2022)

- *Average Case Complexity Tutorial,* Workshop on Optimization under Uncertainty, Centre de recherches mathematiques (CRM), Montreal, QC (September 2021)

- *Stochastic Optimization,* Summer School talk for University of Washington's ADSI Summer School on Foundations of Data Science, Seattle, WA (August 2019)

Invited Speaker

- Portuguese American Optimization Workshop (PAOW), Pico Island, Azores, Portugal (June 2025)
- Physics of AI algorithms, Les Houches, France (Jan. 2025)
- Computational Harmonic Analysis in Data Science and Machine Learning Workshop, Oaxaca, Mexico (Sept. 2024)
- Dynamics of high-dimensional statistical learning, Joint Statistical Meetings, Portland, OR (August 2024)
- Parameter-Free Optimization, 25th International Symposium on Mathematical Programming (ISMP), Montreal, QC (July 2024)
- Continuous Optimization lecture, CIFAR Deep Learning + Reinforcement Learning Summer School, Vector Institute, Toronto, ON, July 2024
- Modeling Randomness in Neural Network Training: Mathematical, Statistical, and DIMACS Workshop on Modeling Randomness in Neural Network Training, Rutgers University, New Brunswick, NJ (June 2024)
- CIFAR AI CAN, Banff, Albert, Canada, (June 2024)
- Youth in high-dimensions Workshop, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (May 2024)
- Harvard Probability Seminar Series, Harvard University, (April 2024)
- Math Machine Learning Seminar, UCLA, Los Angeles, CA (March 2024)
- INTER-MATH-AI Monthly Seminar, U of Ottawa, Ottawa (Feb. 2024)
- The Mathematics of Data Science, Institute for Mathematical Sciences (IMS), Singapore (Jan. 2024)

- Optimization and Algorithm Design Workshop, Simons Institute for the Theory of Computing, University of California, Berkeley (Dec. 2023)
- Midwest Optimization Meeting, University of Michigan, Ann Arbor, MI, (Nov. 2023)
- Workshop on mathematical information science, Paris (Nov 2023)
- MTL-OPT, Montreal Optimization Group, MILA, Montreal, QC, (Oct. 2023)
- CodEx Seminar, (online), (Oct. 2023)
- Optimization Seminar, University of Pennsylvania, (Sept. 2023)
- Foundations of Computational Mathematics, Paris, (June 2023)
- SIAM Conference on Optimization, Seattle, WA (June 2023)
- DACO Seminar, ETH, Zurich, Switzerland (April 2023)
- US-Mexico Workshop on Optimization and Its Applications (In honor of Steve Wright's 60th Birthday Conference), Oaxaca, Mexico (January 2023)
- Department of Decision Sciences Seminar, HEC, Montreal, QC (December 2022)
- Dynamical Systems Seminar, Brown University, Providence, RI (October 2022)
- Tea talk, Quebec Artificial Intelligence Institute (MILA), Montreal, QC (September 2022)
- Adrian Lewis' 60th Birthday Conference (contributed talk), University of Washington, Seattle, WA (August 2022)
- Stochastic Optimization Session (contributed talk), International Conference on Continuous Optimization (ICCOPT 2022), Lehigh University, Bethlehem, PA (July 2022)
- Conference on random matrix theory and numerical linear algebra (contributed talk), University of Washington, Seattle, WA (June 2022)
- Dynamics of Learning and Optimization in Brains and Machines, UNIQUE Student Symposium, MILA, Montreal, QC, (June 2022)
- The Mathematics of Machine Learning, Women and Mathematics, Institute for Advanced Study, Princeton, NJ (May 2022)
- Robustness and Resilience in Stochastic Optimization and Statistical Learning: Mathematical Foundations, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy (May 2022)
- Optimization in Data Science (contributed talk), INFORMS Optimization Society Meeting 2022, Greenville, SC (March 2022)
- Optimization and ML Workshop (contributed talk), Canadian Mathematical Society (CMS), Montreal, QC (December 2021)
- OR/Optimization Seminar, UBC-Okanagan and Simon Fraser University, Burnaby, BC (December 2021)
- Machine Learning Advances and Applications Seminar, Fields Institute for Research in Mathematical Sciences, Toronto, ON (November 2021)
- Methods for Large-Scale, Nonlinear Stochastic Optimization Session (contributed talk), SIAM Conference on Optimization, Spokane, WA (July 2021)
- MILA TechAide AI Conference (invited talk), Montreal, QC (May 2021)
- Minisymposium on Random matrices and numerical linear algebra (contributed talk), SIAM Conference on Applied Linear Algebra, (May 2021)
- Numerical Analysis Seminar (invited talk), Applied Mathematics, University of Washington, Seattle, WA (April 2021)
- Applied Mathematics Seminar (invited talk), Applied Mathematics, McGill University, Montreal, QC (January 2021)
- Optimization and ML Workshop (contributed talk), Canadian Mathematical Society (CMS), Montreal, QC (December 2020)
- UW Machine Learning Seminar (invited talk), Paul G. Allen School of Computer Science,

University of Washington, Seattle, WA (November 2020)
- Soup and Science (contributed talk), McGill University, Montreal, QC (September 2020)
- Conference on Optimization, Fields Institute for Research in Mathematical Science, Toronto, ON (November 2019)
- Applied Math Seminar, McGill University, Montreal, QC (February 2019)
- Applied Math and Analysis Seminar, Duke University, Durham, NC (January 2019)
- Google Brain Tea Talk, Montreal, QC (January 2019)
- Young Researcher Workshop, Operations Research and Information Engineering (ORIE), Cornell University, Ithaca, NY (October 2018)
- DIMACS/NSF-TRIPODS conference, Lehigh University, Bethlehem, PA (July 2018)
- INFORMS annual meeting, Session talk, Houston, TX (October 2017)
- Optimization Seminar, Lehigh University, Bethlehem, PA (September 2017)
- SIAM-optimization, Session talk, Vancouver, BC (May 2017)
- Optimization and Statistical Learning, Les Houches (April 2017)
- West Coast Optimization Meeting, University of British Columbia (September 2016)

Students

Post-docs
- Inbar Seroussi (2024-present) (Tel Aviv University, Assistant Prof. starting Fall 2024)
- Elizabeth Collins-Woodfin (2022-present) (U. of Oregon, Assistant Prof. starting Fall 2025)
- Yakov Vaisbourd (2020-2022)

PhD Students
- Begoña Garcia Malaxechebarria (2023-present, U. of Washington)
- Kiwon Lee (2020-2023) (Lecturer, McGill)

Master Students
- Matt Chaubet (starting Fall 2024)
- Yixi Wang (starting Fall 2024)
- Andrew Mackenzie (2023-present)
- Hugo Latourelle-Vigeant (2022-present) (Yale, PhD starting Fall 2024)
- Andrew Cheng (2021-2023) (now PhD, Harvard)
    - FRQNT MSc Award (McGill)
    - NSERC PhD Award (Harvard U.)

Google Interns
- Tomás González Lara (2022-2023), (now PhD, Carnegie Mellon U.)
- Konstantin Mishchenko (2021), (now Research Scientist at Samsung AI)

Undergraduate Students
- Mingfei Li (McGill), summer project, 2023 (now M.Sc. student Toronto, 2023)
- Yuxuan Liu (McGill), summer project, 2023 (now M.Sc. student ETH, 2023)
- Francesco Marando (McGill), summer project, 2023
- Andrew Mackenzie (McGill), Math 470 undergraduate research, 2022 (now M.Sc. student McGill, 2023)
- Nicolas Fertout (McGill), summ´´åer project, 2021 (now M.Sc. student Stanford, 2022)
- Vincent Savignac (McGill), summer project, 2021

- Ria Stevens (McGill), summer project, 2021 (now PhD student Rice, 2022)
- Jaijun Yu (McGill), summer project, 2021 (now M.Sc. student Oxford, 2022)

Service and Extra Curricular Activities

Conference and Tutorial Organizing:

- *CRM thematic program: Mathematical Foundations of Data Science:* ***Organizer***
    - In-person event, 05/2025-06/2025
    - Organizer of *2* workshops 'High-dimensional learning dynamics' and 'Optimization of Learning'
    - Arranged and scheduled speakers, assisted in getting Aisenstadt Chair, Summer School, etc.

- *2nd High-dimensional Learning Dynamics Workshop: The Emergence of Structure and Reasoning (ICML 2024):* ***Program Chair***
    - In-person event, 01/2024-06/2024
    - Website: https://sites.google.com/view/hidimlearning/home
    - Created and led the workshop
    - Arranged and scheduled speakers, reviewed papers for a proceeding, and set-up entire 8-hour in-person event

- *International Symposium on Mathematical Programming:* **Organizing committee** member, Optimization under uncertainty
    - In-person event, 06/2024
    - Website: https://ismp2024.gerad.ca/

- *Optimization for Machine Learning Workshop (NeurIPS 2023):* ***co-Program Chair***
    - In-person event, 06/2023-12/2023
    - Website: https://opt-ml.org/
    - Arranged and scheduled speakers, reviewed papers for a proceeding (~100), and set-up entire 8-hour in-person event, ~150 participants in the conference with 5 plenary speakers
    - Acceptance rate: 60/120 workshops accepted to NeurIPS

- *High-dimensional Learning Dynamics Workshop (ICML 2023):* ***Program Chair***
    - In-person event, 01/2023-06/2023
    - Website: https://sites.google.com/view/hidimlearning/home
    - Created and led the workshop
    - Arranged and scheduled speakers, reviewed papers for a proceeding (~50), and set-up entire 8-hour in-person event, ~150 participants in the conference with 5 plenary speakers
    - Acceptance rate: 30/114 workshops accepted to ICML

- *Optimization for Machine Learning Workshop (NeurIPS 2022):* ***Program Chair***
    - In-person event, 06/2022-12/2022
    - Website: https://opt-ml.org/
    - Arranged and scheduled speakers, reviewed papers for a proceeding (~100), and set-up entire 8-hour in-person event, ~150 participants in the conference with 5 plenary speakers

    - Acceptance rate: 60/120 workshops accepted to NeurIPS

- *Optimization for Machine Learning Workshop (NeurIPS 2021):* ***Program Chair***
    - Virtual event, 06/2021-12/2021
    - Website: https://opt-ml.org/
    - Arranged and scheduled speakers, reviewed papers for a proceeding, and set-up entire 12-hour virtual event, ~400 participants in the conference with 8 plenary speakers and ~60 paper submissions
    - Acceptance rate: 60/120 workshops accepted to NeurIPS

- *Montreal AI Symposium:* ***Program Chair***
    - Hybrid event, 06/2021-10/2021
    - Website: http://montrealaisymposium.com/
    - 1-day event that brings together researchers from the greater Montreal Area in machine learning and artificial intelligence
    - Arranged for sponsors and speakers
    - Hybrid event: both in-person and virtual components
    - ~100 paper submissions and 7 plenary speakers; attendance ~300

- *Random Matrix Theory and Machine Learning Tutorial (ICML 2021):* ***Organizer***
    - Virtual event, 01/2021-06/2021
    - Website: https://random-matrix-learning.github.io/
    - 3-hour introductory tutorial on the usage of random matrix theory techniques in machine learning; part of the ICML conference
    - Acceptance rate: 30/60 tutorials accepted to ICML

- *Optimization for Machine Learning Workshop (NeurIPS 2020):* ***Program Chair***
    - Virtual event, 06/2020-12/2020
    - Website: https://opt-ml.org/
    - Arranged and scheduled speakers, reviewed papers for a proceeding, and set-up entire 12-hour virtual event, expect ~250 participants with 9 plenary speakers and ~100 paper submissions
    - Acceptance rate: 60/120 workshops accepted to NeurIPS

Seminar Organizing:

- *Random Matrix Theory, Machine Learning, and Optimization (RMT+ML+OPT) Graduate Seminar: Co-Lead Organizer*
    - McGill University, Montreal, QC; 09/2021-present
    - Website: https://elliotpaquette.github.io/rmtmloptseminar.html
    - Co-created by Elliot Paquette
    - Created a weekly seminar for undergraduate and graduate students to present papers and research ideas in the field of mathematics of Machine Learning

- *Continuous Optimization Seminar: Lead Organizer*
    - University of Waterloo, Waterloo, ON; 09/2018-06/2019
    - Arranged and scheduled student and faculty speakers from multiple departments (computer science, electrical engineering, statistics, mathematics, and applied math)

- *NSF TRIPODS/DIMACS: Organizer*

    - Lehigh University, Bethlehem PA; 08/2018
    - Arranged and scheduled speakers for a 3-day conference as part of the NSF TRIPODS grant

- *NSF TRIPODS summer school: Organizer*
    - Lehigh University, Bethlehem, PA; 08/2018
    - Arranged and scheduled 40 students to participate in a 3-day summer school that covers optimization in machine learning, TensorFlow, and online learning

- *Opt-ML Seminar: Organizer*
    - Lehigh University, Bethlehem, Pal 01/2018-06/2018
    - Arranged and scheduled student and faculty speakers from multiple departments (computer science, electrical engineering, statistics, mathematics, and applied math)

- *Trends in Optimization Seminar: Organizer*
    - University of Washington, Seattle; 01/2018-06/2018
    - Arranged and scheduled student and faculty speakers from multiple departments (computer science, electrical engineering, statistics, mathematics, and applied math)

Mini symposium Organizing:

- *Machine Learning and Optimization mini symposium (Canadian Applied and Industrial Mathematics, CAIMS annual meeting): Lead Organizer*
    - Hybrid event, 06/2022
    - Website: https://caims.ca/
    - Arranged and scheduled speakers 4 speakers

Departmental committees:

- Bellairs Research Institute Review Committee(McGill), 2024-present
- NSERC Standing Internal Review Committee (CRC and Internal Awards) (McGill), member, 2024-present
- Committee of Undergraduate Affairs (McGill), member, 2023-present
- Selection committee (hiring, statistics) (McGill), member, 2023
- Computing and Equipment (McGill), **chair**, 2021-2023
- Computing and Equipment (McGill), member, 2020-2021;

Editorial Boards:

- Open Journal of Mathematical Optimization, Associate Editor, 2023-present
- Math. Prog. Series B: Special Issue: International Symposium on Mathematical Programming 2024, Guest Editor, 2023-present
- Math. Prog. Series B: Special Issue: Optimization for Machine Learning, Guest Editor, 2024-present

Other Service Activities

- INFORMS Young Researchers Prize committee member (2023),

- NSERC Evaluation Group for Computer Science Discovery Grants, committee member (2023-2026), **Chair of Computer Science Theory** (2024-present)

Diversity, Equity, and Inclusion Activities:

- Co-organizing: 1st local (Montreal) Women in Data Science (WiDS) Conference (https://www.widsworldwide.org/). Organizing event to be held at Google in Fall 2024 to bring together local AI experts

- Co-lead the Young Researchers Seminar, *Women and Mathematics – The Mathematics of Machine Learning*, **Institute for Advanced Study**, Princeton, NJ, May 2022: Organized 10 young women (post-docs and assistant professors) to give short talks on their research in machine learning

- Optimization Journal Club, *Eastern Europe ML Summer School*, July 2022: Ran and organized student presenters on optimization papers; led discussions; talked about career and research in optimization

- CIFAR/MILA Career Panel, *CIFAR Deep Learning and Reinforcement Learning Summer Schoo*l, August 2020: Served as a panelist detailing my career path and experiences

- UW AWM Chapter: Secretary and Original member
  University of Washington, Seattle, 2015-2017
  - Part of the leadership group that established the University of Washington's first AWM chapter
  - Chief organizer of a campus outreach tutoring program to encourage undergraduate

Reviewing articles: NeurIPS reviewer (2018, 2020, 2021, 2022, 2023); Math. Programming; SIAM J. of Optimization; J. of Machine Learning Research; J. for Optimization Theory; J. of Convex Analysis; IMA J. of Numerical Analysis; IMA Information and Inference; Communications on Pure and Applied Mathematics; Transactions on Machine Learning Research; ICML reviewer (2024); NeurIPS Area Chair (2024)