

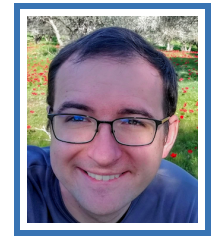
Elliot Paquette

Assistant Professor

Burnside Hall, 805 Sherbrooke St W
Montreal, Quebec H3A 0G4

✉ elliott.paquette@mcgill.ca

📄 <https://elliottaquette.github.io>



Employment

- 2020-Present **Assistant professor (Tenure stream)**, *McGill University*, Mathematics & Statistics, Montreal, Quebec, Canada.
- 2016-2020 **Assistant professor (Tenure stream)**, *The Ohio State University*, Mathematics & The Translational Data Analytics Institute, Columbus, Ohio, United States.
- 2013-2016 **NSF Postdoctoral Fellow**, *The Weizmann Institute of Science*, Faculty of Mathematics and Computer Science., Rehovot, Israel.

Education

- 2008-2013 **Doctor of Philosophy**, *Mathematics*, University of Washington, Seattle, Washington, United States.
Advisor: Ioana Dumitriu
Thesis: *Eigenvalue fluctuations of random matrices beyond the Gaussian universality class*
- 2005-2008 **Bachelor of Arts, Magna cum Laude**, *Mathematics and Physics*, Kalamazoo College, Kalamazoo, Michigan, United States.
Thesis: *A Synthetic Approach to the Characterization of Graph Invariants*

Honours and grants

- Grant NSERC Discovery 2020–2025 and Discovery launch supplement. *Random series in the unit disk, random matrix theory, and the gaussian multiplicative chaos.*
- Grant USA–Israel Binational Science Foundation Startup Grant, no. 2018341, with Alon Nishry of Tel Aviv University (2019). *Gaussian analytic functions and planar branching processes.* 2019-2021 (ended early on account of relocation)
- Grant Simons travel grant No. 638152. 2019-2024 (ended early on account of relocation)
- Prize Feinberg Graduate School prize for outstanding postdoctoral research (April 2017)
- Grant NSF Postdoctoral Fellowship DMS-1304057 (2013-2016)
- Prize McKibben-Merner Fellowship (2012-2013)

Organization & Scholarship

- Conference Organizer for “Algebraic questions in random integral matrices” conference, March 28-29 2020. Rescheduled for November 14-15, 2020 as an online conference.
- Conference Organizer for “Stochastic Spatial Processes at OSU” conference, April 18-19 2020. Rescheduled for March 2021 as an online conference.
- Referee Journal of the AMS, Duke Journal of Mathematics, International Mathematics Research Notices, Communications in Pure and Applied Mathematics, Proceedings of the London Mathematical Society, Israel Journal of Mathematics, Annals of Probability, Annals of Applied Probability, Electronic Journal of Probability, Random Structures & Algorithms, Discrete & Computational Geometry

Students & Postdocs mentored

- Kiwon Lee. (2020–present) PhD student. McGill University.
- Andrew Vander Werf. (2018–present) PhD student. The Ohio State University.

Érika Roldán. (2019–present) Postdoctoral fellow. The Ohio State University.

Publications

Preprints

- 2020
- Joseph Najnudel, Elliot Paquette, and Nick Simm. “Secular Coefficients and the Holomorphic Multiplicative Chaos”. In: *arXiv e-prints*, arXiv:2011.01823 (Nov. 2020), 73pp. arXiv: [2011.01823](#) [[math.PR](#)]
 - Gaultier Lambert and Elliot Paquette. “Strong approximation of Gaussian β -ensemble characteristic polynomials: the edge regime and the stochastic Airy function”. In: *arXiv e-prints*, arXiv:2009.05003 (Sept. 2020), 76pp. arXiv: [2009.05003](#) [[math.PR](#)]
 - Itai Benjamini, Yoav Krauz, and Elliot Paquette. “Anchored expansion of Delaunay complexes in real hyperbolic space and stationary point processes”. In: *arXiv e-prints*, arXiv:2008.01063 (Aug. 2020), 27pp. arXiv: [2008.01063](#) [[math.PR](#)]
 - Elliot Paquette and Thomas Trogdon. “Universality for the conjugate gradient and MINRES algorithms on sample covariance matrices”. In: *arXiv e-prints*, arXiv:2007.00640 (July 2020), 42pp. arXiv: [2007.00640](#) [[math.NA](#)]
 - Courtney Paquette, Bart van Merriënboer, Elliot Paquette, and Fabian Pedregosa. “Halting Time is Predictable for Large Models: A Universality Property and Average-case Analysis”. In: *arXiv e-prints*, arXiv:2006.04299 (June 2020), 56pp. arXiv: [2006.04299](#) [[math.OC](#)]
 - Pascal Maillard and Elliot Paquette. “Interval fragmentations with choice: equidistribution and the evolution of tagged fragments”. In: *arXiv e-prints*, arXiv:2006.16932 (June 2020), 37pp. arXiv: [2006.16932](#) [[math.PR](#)]
 - Alon Nishry and Elliot Paquette. “Gaussian analytic functions of bounded mean oscillation”. In: *arXiv e-prints*, arXiv:2002.00804 (Feb. 2020), 33pp. arXiv: [2002.00804](#) [[math.CV](#)]
 - Gaultier Lambert and Elliot Paquette. “Strong approximation of Gaussian beta-ensemble characteristic polynomials: the hyperbolic regime”. In: *arXiv e-prints*, arXiv:2001.09042 (Jan. 2020), 65pp. arXiv: [2001.09042](#) [[math.PR](#)]
 - Matthew Kahle, Elliot Paquette, and Érika Roldán. “The fundamental group of 2-dimensional random cubical complexes”. In: *arXiv e-prints*, arXiv:2001.07812 (Jan. 2020), 25pp. arXiv: [2001.07812](#) [[math.CO](#)]
- 2019
- Matías Carrasco, Pablo Lessa, and Elliot Paquette. “On the speed of distance stationary sequences”. In: *arXiv e-prints*, arXiv:1912.12523 (Dec. 2019), 27pp. arXiv: [1912.12523](#) [[math.PR](#)]
- 2018
- Andrew Newman and Elliot Paquette. “The integer homology threshold in $Y_d(n, p)$ ”. In: *arXiv e-prints*, arXiv:1808.10647 (Aug. 2018), arXiv:1808.10647. arXiv: [1808.10647](#) [[math.CO](#)]

Publications

- 2020
- Anirban Basak, Elliot Paquette, and Ofer Zeitouni. “Spectrum of random perturbations of Toeplitz matrices with finite symbols”. In: *Trans. Amer. Math. Soc.* 373.7, arXiv:1812.06207 (2020), pp. 4999–5023. DOI: [10.1090/tran/8040](#). arXiv: [1812.06207](#) [[math.PR](#)]
 - Hoi H. Nguyen and Elliot Paquette. “Surjectivity of near-square random matrices”. In: *Combinatorics, Probability and Computing* 29.2, arXiv:1802.00001 (2020), pp. 267–292. DOI: [10.1017/S0963548319000348](#). arXiv: [1802.00001](#) [[math.ST](#)]

- 2019 ○ Anirban Basak, Elliot Paquette, and Ofer Zeitouni. “Regularization of non-normal matrices by Gaussian noise - the banded Toeplitz and twisted Toeplitz cases”. In: *Forum Math. Sigma* 7 (Nov. 2017), Paper No. e3, 72. DOI: [10.1017/fms.2018.29](https://doi.org/10.1017/fms.2018.29). eprint: [1712.00042](https://arxiv.org/abs/1712.00042) [math.PR]
- Christopher Hoffman, Matthew Kahle, and Elliot Paquette. “Spectral Gaps of Random Graphs and Applications”. In: *International Mathematics Research Notices* (May 2019). DOI: [10.1093/imrn/rnz077](https://doi.org/10.1093/imrn/rnz077). eprint: [1201.0425](https://arxiv.org/abs/1201.0425)
- 2018 ○ Elliot Paquette. “Distributional Lattices on Riemannian symmetric spaces”. In: *Unimodularity in randomly generated graphs*. Vol. 719. Contemp. Math. Amer. Math. Soc., Providence, RI, 2018, pp. 63–84. DOI: [10.1090/conm/719/14470](https://doi.org/10.1090/conm/719/14470). arXiv: [1707.00308](https://arxiv.org/abs/1707.00308) [math.PR]
- Diane Holcomb and Elliot Paquette. “The maximum deviation of the $Sine_\beta$ counting process”. In: *Electron. Commun. Probab.* 23 (2018), 13 pp. DOI: [doi:10.1214/18-ECP149](https://doi.org/10.1214/18-ECP149). eprint: [1801.08989](https://arxiv.org/abs/1801.08989)
- Itai Benjamini, Elliot Paquette, and Joshua Pfeffer. “Anchored expansion, speed and the Poisson–Voronoi tessellation in symmetric spaces”. In: *Annals of Probability* 46.4 (July 2018), pp. 1917–1956. DOI: [10.1214/17-AOP1216](https://doi.org/10.1214/17-AOP1216). arXiv: [1409.4312](https://arxiv.org/abs/1409.4312) [math.PR]
- Gaultier Lambert and Elliot Paquette. “The law of large numbers for the maximum of almost Gaussian log-correlated fields coming from random matrices”. In: *Probability Theory and Related Fields* (Feb. 2018), pp. 1–53. DOI: [10.1007/s00440-018-0832-2](https://doi.org/10.1007/s00440-018-0832-2). arXiv: [1611.08885](https://arxiv.org/abs/1611.08885) [math.PR]
- Ioana Dumitriu and Elliot Paquette. “Spectra of Overlapping Wishart Matrices and the Gaussian Free Field”. In: *Random Matrix Theory and Applications* 7.02 (2018). DOI: [doi:10.1142/S201032631850003X](https://doi.org/10.1142/S201032631850003X). arXiv: [1410.7268](https://arxiv.org/abs/1410.7268) [math.PR]
- Elliot Paquette and Ofer Zeitouni. “The maximum of the CUE field”. In: *International Mathematics Research Notices* 2018.16 (2018), pp. 5028–5119. DOI: [10.1093/imrn/rnx033](https://doi.org/10.1093/imrn/rnx033). arXiv: [1602.08875](https://arxiv.org/abs/1602.08875) [math.PR]
- 2017 ○ Elliot Paquette and Ofer Zeitouni. “Extremal eigenvalue correlations in the GUE minor process and a law of fractional logarithm”. In: *The Annals of Probability* 45.6A (2017), pp. 4112–4166. DOI: [doi:10.1214/16-AOP1161](https://doi.org/10.1214/16-AOP1161). arXiv: [1505.05627](https://arxiv.org/abs/1505.05627) [math.PR]
- Elliot Paquette and Younghwan Son. “Birkhoff sum fluctuations in substitution dynamical systems”. In: *Ergodic Theory and Dynamical Systems* (2017), pp. 1–35. DOI: [doi:10.1017/etds.2017.83](https://doi.org/10.1017/etds.2017.83). arXiv: [1505.01428](https://arxiv.org/abs/1505.01428) [math.DS]
- Christopher Hoffman, Matthew Kahle, and Elliot Paquette. “The threshold for integer homology in random d-complexes”. In: *Discrete & Computational Geometry* 57.4 (2017), pp. 810–823. DOI: [10.1007/s00454-017-9863-1](https://doi.org/10.1007/s00454-017-9863-1). arXiv: [1308.6232](https://arxiv.org/abs/1308.6232) [math.AT]
- 2016 ○ Pascal Maillard and Elliot Paquette. “Choices and intervals”. In: *Israel J. Math.* 212.1 (2016), pp. 337–384. DOI: [10.1007/s11856-016-1289-6](https://doi.org/10.1007/s11856-016-1289-6). eprint: [1402.3931](https://arxiv.org/abs/1402.3931)
- 2015 ○ Ohad Noy Feldheim, Elliot Paquette, and Ofer Zeitouni. “Regularization of non-normal matrices by Gaussian noise”. In: *Int. Math. Res. Not. IMRN* 18 (2015), pp. 8724–8751. DOI: [10.1093/imrn/rnu213](https://doi.org/10.1093/imrn/rnu213). eprint: [1404.3491](https://arxiv.org/abs/1404.3491)

- Yury Malyshkin and Elliot Paquette. “The power of choice over preferential attachment”. In: *ALEA Lat. Am. J. Probab. Math. Stat.* 12.2 (2015), pp. 903–915. eprint: [1311.1091](#)
- 2014 ○ Yury Malyshkin and Elliot Paquette. “The power of choice combined with preferential attachment”. In: *Electron. Commun. Probab.* 19 (2014), no. 44, 13. DOI: [10.1214/ECP.v19-3461](#). eprint: [1403.4301](#)
- 2013 ○ Ioana Dumitriu, Tobias Johnson, Soumik Pal, and Elliot Paquette. “Functional limit theorems for random regular graphs”. In: *Probab. Theory Related Fields* 156.3-4 (2013), pp. 921–975. DOI: [10.1007/s00440-012-0447-y](#). eprint: [1109.4094](#)
- 2012 ○ Ioana Dumitriu and Elliot Paquette. “Global fluctuations for linear statistics of β -Jacobi ensembles”. In: *Random Matrices Theory Appl.* 1.4 (2012), p. 60. DOI: [10.1142/S201032631250013X](#). eprint: [1203.6103](#)
- 2010 ○ Tamás Keleti and Elliot Paquette. “The trouble with von Koch curves built from n -gons”. In: *Amer. Math. Monthly* 117.2 (2010), pp. 124–137. DOI: [10.4169/000298910X476040](#)
- 2009 ○ Elliot Paquette and Christopher Seaton. “The index of a vector field on an orbifold with boundary”. In: *Involve* 2.2 (2009), pp. 161–175. DOI: [10.2140/involve.2009.2.161](#). eprint: [0806.2113](#)

Other articles

- Matías Carrasco, Pablo Lessa, and Elliot Paquette. “A Furstenberg type formula for the speed of distance stationary sequences”. In: *submitted* (Oct. 2017). arXiv: [1710.00733](#) [[math.PR](#)]
- Diane Holcomb and Elliot Paquette. “Tridiagonal Models for Dyson Brownian Motion”. In: *submitted* (July 2017). arXiv: [1707.02700](#) [[math.PR](#)]
- Tobias Johnson and Elliot Paquette. “Quantitative Small Subgraph Conditioning”. In: *ArXiv e-prints* (July 2013). arXiv: [1307.4858](#) [[math.PR](#)]

Invited Talks Given (2015-present)

- December 2020 ○ E. Paquette. *The edge scaling limit of the Gaussian beta-ensemble characteristic polynomial*. Séminaire MEGA (Matrices et graphes aléatoires). Institut Henri Poincaré.
- December 2020 ○ E. Paquette. *The edge scaling limit of the Gaussian beta-ensemble characteristic polynomial*. University of Michigan seminar on integrable systems and random matrices.
- October 2020 ○ E. Paquette. *Random perturbations of non-normal matrices*. **Queen’s university colloquium**.
- October 2020 ○ E. Paquette. *The threshold for simple-connectedness in hypercube percolation*. AMS “Southeastern” special session on random discrete structures.
- August 2020 ○ P. Maillard and E. Paquette. *On a class of interval fragmentations with interaction between the fragments*. One world symposium 2020. Special session on branching and coalescing structures.
- March 2020 ○ E. Paquette. *Random matrices and the Gaussian multiplicative chaos on the line*. UCSD probability seminar. San Diego.
- January 2020 ○ E. Paquette. *Random matrices and the Gaussian multiplicative chaos on the line*. AMS Joint Mathematics meeting. Special session on random matrices. Denver

- October 2019 ○ E. Paquette. *Random matrices and the Gaussian multiplicative chaos on the line*. CRM probability seminar. Montreal
- July 2019 ○ E. Paquette. *The characteristic polynomial of random matrices and the Gaussian multiplicative chaos*. Random geometries and multifractality. International Institute of Physics. Natal, Brazil
- February 2019 ○ E. Paquette. *The Gaussian analytic function is either bounded or covers the plane*. Weizmann Institute Probability seminar.
- February 2019 ○ E. Paquette. *The characteristic polynomial of random matrices and the Gaussian multiplicative chaos*. McGill University.
- January 2019 ○ E. Paquette. *Random matrix point processes via stochastic processes*, UC Irvine Probability Seminar,
- November 2018 ○ E. Paquette. *Distributional approximation of the characteristic polynomial of a Gaussian beta-ensemble*, Cincinnati Symposium on Probability Theory, University of Cincinnati
- October 2018 ○ E. Paquette. *Distributional approximation of the characteristic polynomial of a Gaussian beta-ensemble*, Courant Probability Seminar, NYU
- October 2018 ○ E. Paquette. *Distributional approximation of the characteristic polynomial of a Gaussian beta-ensemble*, Wisconsin Probability Seminar, Madison
- September 2018 ○ E. Paquette. *Random matrix point processes via stochastic processes*, AMS Sectional Meeting, Newark Delaware
- June 2018 ○ E. Paquette. *Distributional approximation of the characteristic polynomial of a Gaussian beta-ensemble*, Gaussian Fields in Random Matrix Theory, Institute Mittag-Leffler
- May 2018 ○ E. Paquette. *Random matrix point processes via stochastic processes*, Weizmann
- May 2018 ○ E. Paquette. *Random matrix point processes via stochastic processes*, Southeastern Probability Conference, Duke
- April 2018 ○ E. Paquette. *Algebraic questions about combinatorial random matrices*, AMS sectional meeting, Nashville
- January 2018 ○ E. Paquette. *Perturbations of non-normal matrices*, AMS sectional meeting, UC Riverside
- November 2017 ○ E. Paquette. *Choices and intervals*, Georgia Tech Probability seminar
- October 2017 ○ E. Paquette. *The law of large numbers for the maximum of the log-potential of random matrices*, Northwestern University Probability seminar
- July 2017 ○ E. Paquette. *Tridiagonal models of β -Dyson Brownian motion*, PCMI Summer Session 2017: Random matrices
- March 2017 ○ E. Paquette. *Perturbations of non-normal matrices*, NYU Courant Probability seminar
- February 2017 ○ E. Paquette. *The law of fractional logarithm of the GUE minor process*, Michigan Probability seminar
- February 2017 ○ E. Paquette. *Probability and spectra*, Rabaden Lab, Columbia University

- January 2017 ○ E. Paquette. *Random perturbations of non-normal matrices*, UC Irvine Probability Seminar
- December 2016 ○ E. Paquette. *Ibid*, US Air Force Institute of Technology
- November 2016 ○ E. Paquette. *The law of large numbers for the maximum of the log-potential of random matrices*, IUPUI Analysis seminar
- November 2016 ○ E. Paquette. *Property (T) in simplicial complexes and the spectral evolution of random graphs*, Stochastic Topology and thermodynamic limits, ICERM
- November 2016 ○ E. Paquette. *The law of fractional logarithm in the GUE minor process*, Temple/UPenn Probability seminar
- October 2016 ○ E. Paquette. *Hyperbolic Poisson Voronoi Tessellation*, Denver AMS Sectional meeting
- October 2016 ○ E. Paquette. *Almost Gaussian log-correlated fields*, Geometry seminar, Indiana University
- October 2016 ○ E. Paquette. *The law of large numbers for the maximum of the log-potential of random matrices*, Denver AMS Sectional meeting
- September 2016 ○ E. Paquette. *Ibid.*, Probability seminar, Purdue University
- May 2016 ○ E. Paquette. *Almost gaussian log-correlated fields*, Dynamics and Probability seminar, Hebrew University of Jerusalem
- May 2016 ○ E. Paquette. *The correction term for the maximum of the CUE characteristic polynomial*, Extrema of logarithmically correlated processes, Heilbronn Institute, Bristol
- May 2016 ○ E. Paquette. *Ibid.*, Probability seminar, Technion
- April 2016 ○ E. Paquette. *The law of large numbers for the maximum of the log-potential of random matrices*, Beta Ensembles: Universality, Integrability, and Asymptotics, Banff
- March 2016 ○ E. Paquette. *The law of large numbers for the maximum of the log-characteristic polynomial associated to GUE*, Random matrix theory and strongly correlated systems, Warwick
- March 2016 ○ E. Paquette. *The law of fractional logarithm in the GUE minor process*, Probability Seminar, Queen Mary University, London
- January 2016 ○ E. Paquette. *The Poisson Voronoi tessellation in hyperbolic space*, Department colloquium, Utrecht,
- January 2016 ○ E. Paquette. *Ibid.*, Spectrum of random graphs, CIRM Luminy,
- October 2015 ○ E. Paquette. *The law of fractional logarithm in the GUE minor process*, Probability Seminar, ETH Zurich
- October 2015 ○ E. Paquette. *The Poisson Voronoi tessellation in hyperbolic space*, Probability Seminar, Orsay
- September 2015 ○ E. Paquette. *Ibid.*, Probability Seminar, Universidad de la República, Uruguay
- April 2015 ○ E. Paquette. *Ibid.*, Seymour Sherman Conference. Bloomington, Indiana