

Brayden Letwin

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EDUCATION

2026–present	University of Washington , Seattle, WA. Ph.D. in Mathematics. Advised by Dan Mikulincer and Thomas Rothvoss.
2026	University of Alberta , Edmonton, AB. B.Sc. Honours in Mathematics. First-class Honours.

RESEARCH INTERESTS

Math	Probability, convex geometry, random matrix theory, lattices, sieve theory, combinatorics
Computer Science	Combinatorial optimization, cryptography, quantum computing, computational complexity

PUBLICATIONS AND PREPRINTS

5. **The KLS constant is $O(\log^{1/4} n)$**
Brayden Letwin. Preprint, 2026. [arXiv:2607.24164](https://arxiv.org/abs/2607.24164).
4. **On the smallest singular value of the product of random and deterministic matrices**
Brayden Letwin and Achintya Raya Polavarapu. Submitted, 2026. [arXiv:2607.06785](https://arxiv.org/abs/2607.06785).
3. **Dimension-free Gaussian tail estimates for linear functionals on convex bodies**
Brayden Letwin and Dan Mikulincer. Submitted, 2026. [arXiv:2605.10939](https://arxiv.org/abs/2605.10939).
2. **On the maxima of Littlewood polynomials on $[-1, 1]$**
Brayden Letwin and Mehtaab Sawhney. Submitted, 2026. [arXiv:2604.19294](https://arxiv.org/abs/2604.19294).
1. **A generalization of Grünbaum’s inequality**
Brayden Letwin and Vladyslav Yaskin. *Israel Journal of Mathematics*, to appear. [arXiv:2410.04741](https://arxiv.org/abs/2410.04741).

RESEARCH AWARDS

Summer 2026	NSERC Undergraduate Student Research Award , University of Alberta.
Summer 2025	MSS Undergraduate Student Research Award , University of Alberta.
Summers 2023, 2024	NSERC Undergraduate Student Research Awards , University of Alberta.

TEACHING EXPERIENCE

2026–present	Graduate Teaching Assistant , University of Washington. Teaching one course thus far. <i>Mathematics</i> : Calculus I
2022–2025	Undergraduate Teaching Assistant , University of Alberta. Taught sixteen courses, often two to three a semester. <i>Mathematics</i> : Calculus I/II, mathematical analysis. <i>Computer Science</i> : Introductory programming in Python, advanced algorithms.

TALKS

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| Aug. 2026 | Dimension-free Gaussian tail estimates for linear functionals on convex bodies.
ICERM Synergies between Geometry, Probability, and Computation in High Dimensions |
| Oct. 2025 | On a generalization of Grünbaum's inequality.
High Dimensional Probability Seminar, Texas A&M University. |
| Dec. 2023 | On a generalization of Grünbaum's inequality.
CMS Winter Meeting |

CONFERENCES AND WORKSHOPS

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| Aug. 2026 | High-dimensional Probability and its Applications , Evanston, IL. |
| July 2026 | Synergies between Geometry, Probability, and Computation in High Dimensions , Providence, RI. |
| Oct. 2024 | PAWS: Symmetries of Root Systems , online. |
| Nov. 2023 | Harmonic Analysis and Convexity , Banff International Research Station, Banff, AB. |

NON-MATHEMATICAL PROJECTS

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| Apr. 2025 | IMC Prosperity 3 Trading Competition. Placed 13th in Canada, top 1% worldwide. |
| Feb. 2024 | Rotman International Trading Competition. Top 30% worldwide. |

ACADEMIC SERVICE AND OUTREACH

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| 2024–2025;
2022–2023 | Society Executive , Undergraduate Mathematical Sciences Society,
University of Alberta. |
| July 2024 | Lead Coordinator , CMS Summer Mathematics Camp,
University of Alberta. |