

Matteus Froese

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EDUCATION

Masters of Math (Combinatorics and Optimization) *University of Waterloo* (Expected 2027)

- *Advisors:* Ren Yeats and Michael Borinsky
- Coursework:
 - Combinatorial Algebraic Geometry
 - Combinatorial Quantum Field Theory
 - Introduction to Category Theory and Homological Algebra

Bachelors of Math (Combinatorics and Optimization / Pure Math) *University of Waterloo* (2020-2025)

- Relevant Coursework:
 - Symmetric Functions
 - Combinatorial Designs
 - Algebraic Topology
 - Graph Theory
 - Matroid Theory

PUBLICATIONS

1. [An exceptional equinumerosity of Lattice paths and Young Tableaux](#) (with Liam Ayres, Evan Bialo, Alwin Chen, Aidan Cook, Erica Liu, Maryam Mohammadi Yetka, Oliver Pechenik, and Benjamin Wong). *Journal of Integer Sequences* 28 (2025).

SCHOLARSHIPS / AWARDS

NSERC USRA *University of Waterloo* (May - August 2024)
President's Scholarship of Distinction *University of Waterloo* (2020)
Faculty of Mathematics Scholarship *University of Waterloo* (2020)

CONFERENCES / PRESENTATIONS

Moduli Spaces and Graph Complexes in Algebra, Geometry and Physics
SwissMAP Research station in Les Diablerets (May 2026)
Moduli Space Summer School *Université du Québec à Montréal* (May 2026)
Ontario Combinatorics Workshop (Talk: Poset Path Splitting) *Queen's University* (May 2026)
Combinatorial Algebra Meets Algebraic Combinatorics *Dalhousie University* (January 2026)
Knots and Braids Seminar (Talk: Intro to Braid Theory) *University Of Waterloo* (October 2024)

TEACHING

Graduate Teaching Assistant *University of Waterloo* (2025-2026)

- CO 330: Introduction to Enumeration (Fall 2025)
- CO 342: Introduction to Graph Theory (Summer 2026)
- Math 135: Algebra for Honours Mathematics (Fall 2025)
- Math 235: Linear Algebra 2 (Summer 2026)
- Math 239: Introduction to Combinatorics (Winter 2026)

Mini-Courses

- Using the Borsuk-Ulam Theorem (Winter 2025)

SEMINARS ATTENDED / ORGANIZED

Tutte Colloquium

University of Waterloo (2025-2026)

Algebraic and Enumerative Combinatorics

University of Waterloo (2025-2026)

Combinatorics Meets Topology (Organized by me)

University of Waterloo (2025-2026)

Knots and Braids

University of Waterloo (2024)