

Foster Tom

Curriculum Vitæ

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Academic Positions

2022-2025 **Massachusetts Institute of Technology**
Postdoctoral Instructor, Mathematics

Education

2018-2022 **University of California, Berkeley**
Ph.D., Mathematics, Supervised by Mark Haiman (Received May 13, 2022)

2016-2018 **University of British Columbia**
M.Sc., Mathematics, Supervised by Stephanie van Willigenburg

2012-2016 **University of British Columbia**
B.Sc., Honours Mathematics

Publications

Submitted

2023 [A signed \$e\$ -expansion of the chromatic symmetric function and some new \$e\$ -positive graphs](#)

Accepted

2021 [A horizontal-strip LLT polynomial is determined by its weighted graph](#)
Combinatorial Theory, Vol. 3, No. 3.

Appeared

2021 [A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials](#)
Combinatorial Theory, Vol. 1, No. 14.

2020 [Classifying the near-equality of ribbon Schur functions](#)
European Journal of Combinatorics, Vol. 90, 103197.

2019 [The number of rational points of hyperelliptic curves over subsets of finite fields](#)
(with Kristina Nelson, József Solymosi, and Ching Wong)
Involve, a Journal of Mathematics, Vol. 12, No.5, pp.755–765.

2018 [Necessary conditions for Schur maximality](#)
(with Stephanie van Willigenburg)
Electronic Journal of Combinatorics, Vol. 25, P2.30.

Refereed Conference

- 2023 **Horizontal-strip LLT polynomials**
Séminaire Lotharingien de Combinatoire (2022)
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
Séminaire Lotharingien de Combinatoire 85B.18 (2021)
- 2018 **Schur-positivity of equitable ribbons**
(with Stephanie van Willigenburg)
Séminaire Lotharingien de Combinatoire 80B.18 (2018)

Presentations

Invited

- 2023 **A signed e -expansion of the chromatic symmetric function and some new e -positive graphs**
Illinois Institute of Technology Discrete Math Seminar
- 2022 **Horizontal-strip LLT polynomials**
Banff International Research Station Workshop
- 2022 **Horizontal-strip LLT polynomials**
AMS Spring 2022 Western Sectional Meeting

Contributed

- 2023 **Horizontal-strip LLT polynomials**
MIT Combinatorics Seminar
- 2021 **Horizontal-strip LLT polynomials**
Rocky Mountain Algebraic Combinatorics Seminar
- 2021 **Horizontal-strip LLT polynomials**
UC Davis Algebraic Combinatorics Seminar
- 2021 **Horizontal-strip LLT polynomials**
Waterloo Algebraic and Enumerative Combinatorics Seminar
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
Algebraic Combinatorics Virtual Expedition (AlCoVE)
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM)
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
UC Berkeley Combinatorics seminar
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
York University Applied Algebra seminar
- 2021 **A combinatorial Schur expansion of triangle-free horizontal-strip LLT polynomials**
Graduate Online Combinatorics Colloquium (GOCC)
- 2019 **Classifying the near-equality of ribbon Schur functions**
Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM)
- 2018 **Classifying the near-equality of ribbon Schur functions**
UC Berkeley Combinatorics Seminar
- 2017 **Classifying the near-equality of ribbon Schur functions**
UBC Graduate Student Seminar
- 2018 **Necessary conditions for Schur maximality** (with Stephanie van Willigenburg)
Formal Power Series and Algebraic Combinatorics Conference (FPSAC)
- 2017 **Necessary conditions for Schur maximality** (with Stephanie van Willigenburg)
UBC Discrete Math Seminar
- 2016 **Necessary conditions for Schur maximality** (with Stephanie van Willigenburg)
Canadian Undergraduate Mathematics Conference

Conference Organization

- 2021 41st Bay Area Discrete Math Day, UC Berkeley
(with Jessica De Silva, Chris Eur, Max Hlavacek, Isabelle Shankar, and Mariel Supina)

Seminar Organization

2020 Shuffe Combinatorics Reading Seminar
(with Sylvie Corteel and Nicolle Gonzalez)

Selected Awards

2021 Math Department Summer Grant
2021 James H. Simons Fellowship
2018-2021 Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship-
Doctoral
2018 Faculty of Science Graduate Prize
2017 Stanley M Grant Scholarship in Mathematics
2016 Wendy Fan Memorial Scholarship
2016 Faculty of Science Graduate Award
2016 Dr. R. D. James Medal in Mathematics
2015 R.O.T.T.O.W. Scholarship
2015 Reginald Palliser-Wilson Scholarship
2015 Ron Riddell and Roy Douglas Memorial Scholarship in Mathematics
2013-2015 Trek Excellence Scholarship for Continuing Students
2015 W H MacInnes Scholarship in Physics and Mathematics

Teaching

2023 18.204: Undergraduate Seminar in Discrete Mathematics
2023 18.03: Differential Equations
2022 18.01A/18.02A: Calculus
2022 Math 113: Introduction to Abstract Algebra
2021 Math 1B: Calculus II
2021 Math N16A: Calculus I
2020 Math 1B: Calculus II
2020 Math N16A: Calculus I
2020 Math 1B: Calculus II
2019 Math 1A: Calculus I
2019 Math N16B: Calculus II
2019 Math 1B: Calculus II
2018 Math 1A: Calculus I