Email: stelzera@umich.edu

Ada Stelzer

Employment

Parekh Research Assistant Professor (non-tenure track) — Ann Arbor, MI
University of Michigan, Ann Arbor — 2026–

Education

University of Illinois at Urbana-Champaign (UIUC) — Urbana, IL
PhD. in Mathematics (advisor: Prof. Alexander Yong) — 2021–2026

University of Illinois at Urbana-Champaign (UIUC) — Urbana, IL
M.S. in Mathematics — 2021–2023

Lawrence University (LU) — Appleton, WI
B.A. in Mathematics, Anthropology — 2017–2021

Budapest Semesters in Mathematics (BSM) — Budapest, Hungary
Fall 2019

Publications and Preprints

1. L. Buttitta and **A. Stelzer**, "Towards combinatorial derivations of K-polynomials for determinantal varieties", arXiv:2608.14910.
2. A. Price, **A. Stelzer**, and S. Sverrisdóttir, "Plane partitions and spin adapted quantum states", arXiv:2601.06295.
3. A. Price, **A. Stelzer**, and A. Yong, "Gröbner crystal structures", arXiv:2510.07560.
4. **A. Stelzer**, "Sums of Schubert structure constants with bounded Coxeter length". Algebr. Comb. **9** (2026), no. 4, 893–900.
5. **A. Stelzer** and A. Yong, "RSK as a linear operator". Selecta Math. New Ser. **32**, 88 (2026).
6. A. Price, **A. Stelzer**, and A. Yong, "Representations from matrix varieties, and filtered RSK". To appear in Algebra and Number Theory, arXiv:2403.09938.
7. **A. Stelzer**, "Matrix Schubert varieties, binomial ideals, and reduced Gröbner bases", Proc. Amer. Math. Soc. **153** (2025), pp. 2745-2758.
8. **A. Stelzer** and A. Yong, "Combinatorial commutative algebra rules", arXiv: 2306.00737.
9. **A. Stelzer** and A. Yong, "Schubert determinantal ideals are Hilbertian", J. Algebra **677** (2025), 278–293.
10. C. Bondi, C. R. Gibbons, Y. Ke, S. Martin, S. Pothagoni, and **A. Stelzer**, "A hypergraph characterization of nearly complete intersections", in *Women in Commutative Algebra: Proceedings of the 2019 WICA Workshop*, C. Miller, J. Striuli, and E. E. Witt, Eds. Cham: Springer International Publishing, 2021, pp. 95–110, ISBN: 978-3-030-91986-3.

Presentations

- Gröbner crystal structures and equivariant Hilbert series — Richard P. Stanley Seminar in Combinatorics (MIT) 2026
- Surprise polynomiality in algebraic combinatorics (poster) — FPSAC 38 (Seattle) 2026
- Gröbner degeneration and equivariant homological invariants — KOALA Workshop 2026
- Crystal approaches to equivariant homological invariants — BIRS Workshop on Regularity 2026
- Det. varieties, K-polynomials, and equivariant Hilbert series — Special Session, AMS Spring Eastern Sectional 2026
- Gröbner crystal structures — Loyola University TACO Seminar 2025
- Gröbner crystal structures (virtual) — Schubert Seminar 2025
- Grothendieck polynomials, determinantal varieties, and equivariant Hilbert series — U. Washington C&G Seminar 2025
- Grothendieck polynomials, determinantal varieties, and equivariant Hilbert series — UIUC AGC Seminar 2025
- Surprise polynomality and Schubert structure constants — Special Session, AMS Fall Central Sectional 2025
- Grothendieck polynomials, determinantal varieties, and equivariant Hilbert series — Fields Insitute AC Seminar 2025
- RSK as a linear operator (poster) — FPSAC 37 (Sapporo) 2025
- Crystal structures, standard monomials, and filtered RSK — Special Session, AWM Research Symposium 2025
- Choosing representatives — LU HAGS Mini-Conference 2025
- RSK as a linear operator — Notre Dame AG+CA Seminar 2025
- RSK as a linear operator (poster) — AlGeCom XXV 2025
- Crystals, standard monomials, and filtered RSK — Special Session, AMS Spring Central Sectional 2025
- Representations from matrix varieties, and filtered RSK — UCLA Combinatorics Forum 2025
- Representations from matrix varieties, and filtered RSK — UCSD Combinatorics Seminar 2025
- RSK as a linear operator — LACIM Seminar (UQAM) 2025
- Representations from matrix varieties, and filtered RSK (poster) — AlGeCom XXIV 2025
- Introduction to Boij–Söderberg theory — UIUC AG+CA Student Seminar 2024
- Representations from matrix varieties, and filtered RSK (virtual) — MSU Combinatorics & Graph Theory Seminar 2024
- Representations from matrix varieties, and filtered RSK — Early-Career Conference in Combinatorics 2024
- Representations from matrix varieties, and filtered RSK — Special Session, AMS Spring Central Sectional 2024
- Representations from matrix varieties, and filtered RSK — UMN Combinatorics Seminar 2024
- Binomial Schubert determinantal ideals — Wash U Combinatorics Seminar 2023
- Combinatorial commutative algebra rules — Georgia Tech Algebra Seminar 2023
- Combinatorial commutative algebra rules — UIUC AWM Colloquium 2023
- Oops, all Hilbert! Hilbert functions, h-polynomials, and the Hilbertian property — McMaster Algebra Seminar 2023
- Oops, all Hilbert! Hilbert functions, h-polynomials, and the Hilbertian property — UIUC AGC Seminar 2023
- Binomial Schubert determinantal ideals — UIUC AGC Seminar 2023
- Binomial schubert determinantal ideals (poster) — AlGeCom XXIII 2023
- Fixing the cross product — UIUC Undergraduate Colloquium 2021
- The semiotics of enculturation into mathematical rigor — LU Harrison Symposium 2021
- Fixing the cross product — LU Math Colloquium 2021
- Category theory: a brief introduction — LU Math Colloquium 2020
- A hypergraph characterization of nearly complete intersections — LU Math Colloquium 2020
- A hypergraph characterization of nearly complete intersections (joint) — Clemson COURAGE REU conference 2020
- Gröbner bases of determinantal varieties (joint) — LU Summer Research Symposium 2019

Awards and Honors

- AWM Dissertation Prize 2027
- Philippe Tondeur Dissertation Prize, UIUC 2026
- Irving Reiner Memorial Award, UIUC 2025
- Graduate Research Fellow, NSF 2023
- Ruth V. Shaff & Genevie I. Andrews Fellowship, UIUC 2023
- Susan C. Morisato IGL Graduate Student Scholarship, UIUC 2023
- Teacher Ranked Excellent by Students, UIUC Fall 2022, Spring 2022, 2023
- Valedictorian, LU 2021
- Andrew C. Berry–James C. Stewart Prize in Math, LU 2021
- Phi Beta Kappa 2021
- Dean's List, LU 2018–2021
- Mortar Board, LU 2020
- White Prize in Math, LU 2019
- Academic Honors, BSM 2019
- Phi Beta Kappa Freshman Award, LU 2018
- Freshman Studies Writing Prize, LU 2018
- National Merit Scholarship 2017
- Richard Warch Honor Scholarship, LU 2017
- More Light Scholarship, LU 2017

Teaching

- **Instructor** at UMich Fall 2026
  Linear Algebra (MATH 217)
- **Merit Teaching Assistant** at UIUC Spring 2023
  Calculus 2 (MATH 231)
- **Merit Teaching Assistant** at UIUC Fall 2022
  Calculus 1 (MATH 221)
- **Head Teaching Assistant** at UIUC Spring 2022
  Calculus 2 (MATH 231)
- **Teaching Assistant** at UIUC Fall 2021
  Algebra, Precalculus (MATH 112, 115)

Service

- **Advisory Committee Member** at Notices of the AMS 2024-2026
- **Co-organizer**, JMM Special Session "Crystals, Schubert Calculus, and Beyond" 2027
- **Co-organizer**, Illinois Summer Workshop in Algebraic Combinatorics (ISWAC) 2026
- **Instructor/Program Coordinator** at Summer Illinois Math Camp 2022, 2024

- **Mentor** at UIUC Merit Mentoring and Professional Network 2024-2025
- **Mentor** at UIUC Directed Reading Program 2025
- **Undergraduate Research Mentor** at Illinois Mathematics Lab 2022-2024
- **Undergraduate Research Mentor** at Illinois Combinatorics Lab 2023-2026
- **Secretary** for UIUC Graduate Chapter of the Association for Women in Mathematics 2022-2026
- **Committee Member** for UIUC Climate, Equity, and Inclusion Committee 2023-2025
- **Committee Member** for UIUC TA Teaching Awards Committee 2023-2024
- **Committee Member** for UIUC Teaching Awards Committee 2022-2023, 2024-2025