

Katalin Berlow — Curriculum Vitae

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Education

University of California, Berkeley

Ph.D. in Mathematics

2021–2026

Advisor: Andrew Marks, Robin Tucker-Drob

Carnegie Mellon University

B.S. in Mathematics with Honors

Pittsburgh, PA

2017–2021

Research Publications

Graduate Research

- **The Polychromatic Number of Grids** (2025+, in preparation). With E. Hou.
- **Equivalence Relations Acting on Bundles of Trees** (2025+, in preparation). With R. Chen, A. Tserunyan, R. Tucker-Drob.
- **Separating Complexity Classes of LCL Problems on Grids** (2024, submitted). arXiv:2501.17445. With A. Bernshteyn, C. Lyons, F. Weilacher.

Undergraduate Research

- **Intersection Bodies of Polytopes**. *Beitr Algebra Geom* **63**, 419–439 (2022). arXiv:2110.05996. With M. Brandenburg, C. Meroni, I. Shankar.
- **Restricted Stacks as Functions**. *Discrete Mathematics* **334** (2021). arXiv:2008.01164.
- **Analysis on Almost Abelian Lie Groups**. *J. Math. Sci.* (2022). arXiv:2004.04369. With M. Almora-Rios et al.

Honors and Awards

- NSF Graduate Research Fellowship, 2021.
- Benter Foundation Mathematics Scholarship, 2021.

Selected Talks

Invited Talks

- **Separating Complexity Classes of LCLs on Grids**, Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM), Ottawa, May 2025.
- **Separating Complexity Classes of LCLs on Grids**, South Eastern Logic Symposium, University of Florida, March 2025.

Other Research Talks

- **Borel Polychromatic Number of Graphs Induced by Z^d Actions**, Berkeley Student Logic Colloquium, December 2023.
- **Restricted Stacks as Functions**, Western Sectional Meeting, October 2020.
- **Almost Abelian Groups, Their Subgroups and Automorphisms**, Young Mathematicians Conference, August 2019.

Teaching and Mentorship

Mentorship.....

Mentor, UC Berkeley Directed Reading Program 2021-2025

Mentored students on extremal and probabilistic combinatorics, descriptive set theory, equidecompositions, and amenable groups.

Graduate Student Instructor.....

MATH 1B: Calculus II

UC Berkeley Spring 2023

MATH 54: Linear Algebra and Differential Equations

UC Berkeley Fall 2022

MUSA 74: Transition to Upper-Division Mathematics

UC Berkeley Fall 2021

Seminars and Organizing

Distributed Algorithms and Borel Combinatorics Seminar

UC Berkeley Fall 2023

Descriptive Set Theory Seminar

UC Berkeley Spring 2022

Topics in Mathematics

Virtual 2021