

Sam Freedman

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Last updated: June, 2022

Education

- Expected **Brown University**, *Ph.D. in Mathematics*, Providence, RI.
May 2024 Advisor: Jeremy Kahn
May 2020 **Brown University**, *Sc.M. in Mathematics*.
May 2018 **University of Michigan**, *B.S. in Mathematics with High Honors*, Ann Arbor, MI.
Minor in Computer Science

Research Interests

Translation Surfaces, Teichmüller Dynamics, Algorithms in Flat Geometry

Papers and Preprints

- December 2021 **Computing Periodic Points on Veech Surfaces**, with Z. Chowdhury, S. Everett and D. Lee, Preprint.
February 2021 **Automorphisms of Tropical Hassett Spaces**, with J. Hlavinka and S. Kannan, To appear in *Portugaliae Mathematica*.

Awards

- March 2022 **Junior Scientific Visibility Program Grant**, *Fondation Mathématique Jacques Hadamard*.

Teaching

- Fall 2022 **Intermediate Calculus (Physics/Engineering)**, *Instructor/TAII for Math 200*, Brown University.
Fall 2021 **Advanced Placement Calculus (Physics/Engineering)**, *Instructor/TAII for Math 190*, Brown University.
Winter 2021, Fall 2019 **Introductory Calculus 2**, *TA for Math 100*, Brown University.
Winter 2020 **Introductory Calculus 1**, *TA for Math 90*, Brown University.
Fall 2020 – **Levels 1400, 1700 and 1800**, *Lead Instructor at Squared School*, Providence, RI.
Winter 2018 Teacher Training Program with D. Katz

Mentoring

- Fall 2018 – **Students Mentored:**, *Directed Reading Program*, Brown University.
Seiji Shaw, Discrete Differential Geometry by Keenan Crane
Kevin Lu and Shane Weiner, Differential Topology by Guillemin and Pollack
Kevin Lu and Shane Weiner, Matrix Groups for Undergraduates by Tapp
Dominick Joo, Geometry of Surfaces by Stillwell
Kenneth Blakey and Taylor Knapp, Mostly Surfaces by Schwartz
Joseph Hlavinka, Differential Geometry of Curves and Surfaces by do Carmo
Jasper Liu, using The Four Pillars of Geometry by Stillwell
- Summer 2020 **Mentored Group 5: Electa Cleveland, Andrew Steptoe and Mathew Yee**, *BUMP (Brown Undergraduate Mathematics Program)*.

Service

- March 2022 **Organizer/Speaker**, *Brown Departmental Undergraduate Group*, “Talking about and talks about talks”.
- September 2021 **Speaker**, *GAIN (Graduates Achieveing Inclusion Now) Conference*, “Combating Sexism in Mentorship: Strategies to Uplift your Mentees”.
- Fall 2020 – **Organizer**, *Directed Reading Program*, Brown University.
- Fall 2019 – **Organizer, SAO Liason**, *Brown University Math Circle*.
- Summer 2020 **Organizer (with S. Griffith) and Mentor**, *BUMP (Brown University Mathematics Program)*.
- April 2020 **Presentor**, “**The 1, 2, 3, 4 game**”, *Math CoOp*.
- April 2019 **Panelist**, *AWM Grad School Panel*.

Talks

(* denotes an invited talk)

- May 2022 ***Geometry and Topology Seminar**, “*Computing Periodic Points on Veech Surfaces*”, University Grenoble Alpes.
- May 2022 ***Working Group Weitze-Schmithüsen**, “*Computing Periodic Points on Veech Surfaces*”, Saarland Univeristy.
- May 2022 **Structures on Surfaces**, “*Computing Periodic Points on Veech Surfaces*” (*lighting talk*), CIRM, Marseille.
- April 2022 ***Mini-conference on Flat Surfaces**, “*Computing Periodic Points on Veech Surfaces*”, LaBRI, Bordeaux.
- April 2022 ***Ergodic Theory and Dynamical Systems Seminar**, “*Computing Periodic Points on Veech Surfaces*”, University Paris-Saclay.
- February 2022 **Graduate Student Seminar**, “*How do you unfold a billard table?*”, Brown University.
- November 2021 **Graduate Student Seminar**, “*The conformal geometry of billiards*”, Brown University.

- October 2021 **Moduli Spaces Seminar**, "*Moduli Spaces of Translation Surfaces*", Brown University.
- March 2021 **Graduate Student Seminar**, "*Playing billiards on moduli space*", Brown University.
- October 2020 **Graduate Student Seminar**, "*What is...a Delaunay triangulation?*", Brown University.
- October 2020 **Geometric Analysis Seminar**, "*Plateau's problem*", Brown University.
- December 2019 **Graduate Student Seminar**, "*What is...a translation surface?*", Brown University.
- December 2019 ***Brown SIAM Math Slam**, "*Translation surfaces*", Brown University.
- November 2019 **Category Theory Seminar**, "*Synthetic differential geometry*", Brown University.
- March 2019 **Graduate Student Seminar**, "*What is...a mapping class group?*", Brown University.