Curriculum Vitae for Benjamin Dozier

Contact Information

Mathematics Department, Cornell University
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Research Interests

Translation surfaces, Teichmüller theory, Dynamics on moduli spaces, Hyperbolic geometry, Ergodic theory, Homogeneous dynamics, Random hyperbolic surfaces

Academic Appointments

2021-Current	Assistant Professor, **Cornell University**, Ithaca, New York
2019-2021	Simons Instructor (Research postdoc), **Stony Brook University**, Stony Brook, New York
2018	Postdoctoral Fellow, **Fields Institute**, Toronto, Ontario

Education

Stanford University

Ph.D. in Mathematics, 2012-2018

- Advisors: Maryam Mirzakhani (primary), Alex Wright

Harvard University

A.B. *Magna Cum Laude* in Mathematics, 2008-2012

- Secondary Concentration in Computer Science

Research Papers

1. *Counting closed geodesics on expander surfaces* (with J. Sapir). arXiv: 2304.07938
2. *Simple vs non-simple loops on random regular graphs* (with J. Sapir). arXiv: 2209.11218
3. *Equations of linear subvarieties of strata of differentials* (with F. Benirschke, S. Grushevsky). **Geometry & Topology**, 26 (2022), 277-2830.
4. *Measure bound for translation surfaces with short saddle connections.* **Geometric and Functional Analysis**, online first.
5. *Coarse density of subsets of moduli space* (with J. Sapir). **Annales de l'Institut Fourier**, 71 (2021) no. 3, 1121-1134.
6. *Equidistribution of saddle connections on translation surfaces.* **Journal of Modern Dynamics**, 14 (2019), 87-120.
7. *Convergence of Siegel-Veech constants.* **Geometriae Dedicata**, 198 (2019), 131-142.
8. Wrote appendix to *Uniform distribution of saddle connection lengths in all $SL_2(\mathbb{R})$ orbits*, by Donald Robertson. **Geometriae Dedicata** (2003).

Expository Articles

1. *Closed geodesics on surfaces.* Snapshots of modern mathematics from Oberwolfach, 13 (2022).

Invited Research Talks

2023 Feb	Probability Seminar, Cornell
2023 Jan	Colloquium, Queen's University, Canada
2023 Jan	SaltFlat Math Research Community, University of Utah
2021 Sep	Topology and Geometric Group Theory Seminar, Cornell
2021 Jan	Special Colloquium, UT Austin
2020 Oct	Colloquium, Cornell
2020 May	Nearly Carbon Neutral Geometric Topology Conference (Virtual)
2020 May	Informal Geometry and Dynamics Seminar (over Zoom), Harvard
2020 Feb	Complex Analysis and Dynamics Seminar, City University of New York
2019 Nov	Geometry, Dynamics, and Topology Seminar, University of Michigan
2019 Oct	Geometry and Topology Seminar, Yale
2019 Oct	Dynamics Seminar, University of Maryland at College Park
2019 Oct	Algebraic Geometry Seminar, Stony Brook University
2019 May	Flat Surfaces and Dynamics on Moduli Space, BIRS Oaxaca, Mexico
2019 Feb	Representation Theory and Tiling Workshop, University of Georgia
2019 Feb	Geometry and Topology Seminar, Binghamton University, New York
2018 Nov	Dynamics, Geometry, & Groups Seminar, Queen's University, Canada
2018 Sep	Fields Institute Working Seminar, Toronto, Ontario
2018 Jun	Conference on Teichmüller dynamics, Mapping Class Groups, and Applications, Institut Fourier, Grenoble, France
2018 May	The Mathematical Legacy of Maryam Mirzakhani, Stanford University
2018 Apr	AMS Spring Southeastern Sectional Meeting, Vanderbilt University, Nashville, Tennessee
2018 Mar	Teichmüller dynamics conference, EPSRC Symposium on Geometry, Topology and Dynamics in Low Dimensions, Warwick University, UK
2017 Aug	Hamilton Workshop on Geometry and Dynamics of Moduli Spaces, Trinity College Dublin, Ireland
2017 Aug	GEAR Junior Retreat, Stanford University
2016 Apr	AMS Spring Western Sectional Meeting, University of Utah

Mentoring Experience

2023	**Research Mentor for "Salt Flat: A research community in Teichmüller dynamics"**, University of Utah
2021	**Supervised reading course for Cornell graduate student**, Cornell University, Topic: Mapping class group
2020	**Supervised Senior Honors Thesis**, Stony Brook University, Topic: Translation surfaces
2019	**Independent Study course on Teichmüller theory**, Stony Brook University
2019	**Undergraduate Research Mentor**, Stony Brook University
2017-2018	**Mentor, Stanford Math Directed Reading Program** Met weekly with Stanford undergraduates. Suggested and guided reading projects.
2017 Spring, Fall	**Mentor, Stanford Math TA Training** Observed two new graduate student teaching assistants, and provided feedback on teaching.
2016 Summer	**Mentor, Stanford Undergraduate Research Institute in Mathematics (SURIM)** Directed three Stanford undergraduates working on a research project on the mapping class group and Lefschetz fibrations.

Teaching Experience

2021-Current	**Instructor**, Cornell University –Math 7580 (Topics in Topology: Teichmüller Theory) –Math 2210 (Linear Algebra) –Math 4180 (Complex Analysis) –Math 6210 (Measure Theory and Lebesgue Integration)
2019-2021	**Instructor**, Stony Brook University –Math 364/529 (Topology and Geometry) –Math 331 (Computer-Assisted Mathematical Problem Solving) –Math 125 (Calculus A) –Math 126 (Calculus B)
2014-2018	**Teaching Assistant**, Stanford University –Math 51 ACE (Multivariable Calculus and Linear Algebra) –Math 53 (Ordinary Differential Equations with Linear Algebra) –Math 51 (Multivariable Calculus and Linear Algebra)
2014-2017	**Course Assistant**, Stanford University –Math 113 (Linear Algebra) –Math 142 (Hyperbolic Geometry)
2010 - 2011	**Course Assistant**, Harvard University –Math 123 (Algebra II: Theory of Rings and Fields) –Math 131 (Topology I: Topological Spaces and the Fundamental Group)

Service

- Referee or quick opinion for *Journal of the EMS, Geometry & Topology, Jour-*

nal of the LMS, Ergodic Theory and Dynamical Systems, Journal of Modern Dynamics, Algebraic and Geometric Topology, Geometriae Dedicata, Conformal Dynamical Systems

- Organizer for *Salt Flat: A research community in Teichmuller dynamics* (2023), for early-career mathematicians
- Organizer for *Cornell Topology Festival* (2022, 2023, and ongoing).
- Reviewer for *ZBMath, MathSciNet*
- Faculty Fellow for Akwe:kon, Cornell's program house (undergraduate residence) that serves the campus Indigenous community.
- On Cornell PhD committees for Mauro Camargo and Hazel Brenner