

Harrison Bray

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Dept. of Mathematical Sciences
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Positions

Aug 2022–present	Assistant Professor. <i>George Mason University.</i> Fairfax, VA.
Aug 2020–May 2022	Term Assistant Professor. <i>George Mason University.</i> Fairfax, VA.
Aug 2020–May 2022	Director of Outreach for the Mason Experimental Geometry Lab. <i>George Mason University.</i> Fairfax, VA.
Sep 2016–May 2020	Visiting Assistant Professor. <i>University of Michigan.</i> Ann Arbor, MI.
Sep 2019–May 2020	Parekh Family Fellow. <i>University of Michigan.</i> Ann Arbor, MI.
Sep 2016–Aug 2018	Research Training Grant (RTG) Postdoctoral Fellow. <i>University of Michigan.</i> Ann Arbor, MI.

Education

PhD, 2016	Tufts University. <i>Graduate School of the Arts and Sciences.</i> Medford, MA. Mathematics. Advisor: Boris Hasselblatt
MS, 2016	Tufts University. <i>Graduate School of the Arts and Sciences.</i> Medford, MA. Mathematics
BA, 2011	Hamilton College. <i>School of Arts and Sciences.</i> Clinton, NY. Major: Mathematics. Minor: Psychology

Research Interests

My research interests are in geometry, topology, and dynamical systems. More specifically, I am interested in geodesic flows, geometric structures on manifolds, convex projective structures, Hilbert geometries, Patterson-Sullivan theory, ergodic theory, thermodynamic formalism, symbolic dynamics, (nonuniformly) hyperbolic dynamical systems, and (rel) hyperbolic spaces and groups.

Grants and Awards

2018 – 2022	AMS Simons Research Travel Grant. <i>American Mathematical Society.</i> (\$4,000)
Jun. 2019	LG&TBQ: a conference celebrating LGBTQ+ mathematicians in geometry, topology, and dynamical systems. <i>National Science Foundation.</i> (\$40,000)
Jun. 2019	University of Michigan College of Literature, Science, and the Arts Mini-Grant. <i>University of Michigan College of Literature, Science, and the Arts.</i> (\$2,500)

- Apr. 2019 **The Frederick Gehring Award for Postdoctoral Excellence.** *The University of Michigan Mathematics Department.*
- Aug. 2016 **GEAR Graduate Intern Travel Grant.** *Geometric Structures and Representation Varieties (GEAR) Network.* (\$3,100)
- Jan. 2016 **AMS Graduate Student Travel Grant.** *American Science Foundation.*
- May – Dec. 2015 **Graduate Institute for Teaching Fellowship.** *Tufts University Graduate School of Arts and Sciences.*
- Oct. 2015 **Distinguished Teaching Prize.** *Tufts University Department of Mathematics.*
- Apr. 2015 **The Robert P. Guertin Graduate Student Leadership Award.** *Tufts University Graduate School of Arts and Sciences.*
- 2012 – 2014 **Tufts GSAS Conference Travel Grant.** *Tufts University Graduate School of Arts and Sciences.*
- Apr. 2016 **Outstanding Academic Scholarship Nominee.** *Tufts University Graduate School of Arts and Sciences.* (Finalist)

Selected Publications

- 2023 H Bray, R Canary, and L-Y Kao. *Pressure metrics for deformation spaces of quasifuchsian groups with parabolics.* (2023). **Algebraic and Geometric Topology.** Vol 23: (8) 3615-3653.
- 2023 H Bray, R Canary, L-Y Kao, and G Martone. *Pressure metrics for cusped Hitchin components.* (2023). **Advances in Mathematics.** Vol 435: 109352.
- 2022 H Bray, R Canary, L-Y Kao, and G Martone. *Counting, equidistribution and entropy gaps at infinity with applications to cusped Hitchin representations.* (2022). **J. Reine Angew. Math. (Crelle's Journal).** Vol 791: 1/1/51.
- 2021 H Bray and D Constantine. *Entropy rigidity for finite volume strictly convex projective manifolds.* (2021). **Geometrie Dedicata.** Vol 214: 543-557.
- 2021 H Bray, D Davis, K Lindsey, and C Wu. *The Shape of Thurston's Master Teapot.* (2021). **Advances in Mathematics.** Vol 377: 107481.