David Owen Horace Cutler

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Research interests

Metric geometry, broader geometry and analysis (especially complex and convex geometry)

Education

B.S. in Mathematics

Tufts University — expected May 2026

GPA: 4.0

Coursework (some work in progress):

Undergraduate:	Real Analysis I–II, Harmonic Analysis, Abstract Algebra I–II, Topics in Algebra, Geometric Group Theory
Graduate:	Analysis, Functional Analysis, Topics in Complex Variables, Algebra II, Special Topics in Algebra, Differential Forms in Algebraic Topology, Algebraic Geometry, Differential Geometry, Metric Geometry and Curvature

Research experiences:

UMD REU, metric geometry/complex geometry with Prof. Tamás Darvas	Jun – Jul 2024
Rutgers DIMACS REU, complex geometry with Prof. Chi Li	May – Jul 2025
UCSD research minicourse, complex geometry	Jul 2025

Papers

Research publications

The Hausdorff distance and metrics on toric singularity types (with A. Aitokhuehi, B. Braiman, T. Darvas, M. Deaton, P. Gupta, J. Horsley, V. Pidaparthy, J. Tang), Bull. Sci. Math. 204 (2025), art. 103714, arXiv:2411.11246

On valuation deviations and their geometry (with M. Deaton), preprint, arXiv:2511.23468

Manuscripts, other papers, etc.

Cutting a pancake using an exotic knife (with N. J. A. Sloane), preprint, arXiv:2511.15864

Awards and honors

Martin Guterman Award	Apr 2024
Goldwater Scholarship	Mar 2025
Sigma Xi	Jun 2025

Talks

Counterexamples in measure, Tufts Math Monday Meeting	Mar 2024
Manifolds, mixed volumes, and a quasi-metric, Tufts Math Monday Meeting	Oct 2024
Hölder estimates for the Hausdorff distance and a quasi-metric, Special Session on	Jan 2025

Research in Mathematics by Undergraduates, JMM 2025

Metric geometry of convex bodies, Tufts Math Monday Meeting   Oct 2025

(Near-)metrics arising from valuations on convex bodies, BUGCAT 2025   Nov 2025

Alternative geometries on the space of convex bodies, Contributed Session on   Jan 2026
Research by Undergraduates, JMM 2026

Teaching experience

Teaching assistant

MATH 135: Real Analysis I   Fall 2024

MATH 136: Real Analysis II   Fall 2025

MATH 171: Point Set Topology   Spring 2026

Grader

MATH 135: Real Analysis I   Fall 2023, Spring 2024

MATH 51: Differential Equations   Spring 2025

Reading groups

Geometric group theory (Löh) with Prof. Nima Hoda   Feb 2025 – present

Geometric group theory (Bridson-Haefliger) with Tufts graduate students   Sep 2025 – present