

Curriculum Vitae

Larry Guth

Education

B.S. Mathematics, Yale University, 2000
PhD Mathematics, MIT, 2005

Employment

Samelson Fellow, Stanford University 2005-6
Szego Assistant Professor, Stanford University, 2006 - 2008
National Science Foundation Postdoctoral Fellow, 2006 - 2008
Tenure-stream Assistant Professor, University of Toronto, 2008 - 2011
Member, Institute for Advanced Study, 2010 - 2011
Professor, New York University, 2011 - 2012
Professor, MIT, 2012 -

Fellowships

National Science Foundation Graduate Fellowship, 2001 - 2003
National Science Foundation Postdoctoral Fellowship , 2006 - 2008
Alfred P. Sloan Research Fellowship, 2010 - 2014
Simons Investigator, 2014 -

Honors

Salem prize 2013

Invited talks

Invited sectional speaker at the 2010 International Congress of Mathematics
Marston Morse lectures, IAS, 2013
Namboodiri lectures, University of Chicago, 2015

Selected publications

1. Lipschitz maps from surfaces, *Geom. Funct. Anal.* 15 (2005), no. 5, 1052-109
2. The width-volume inequality, *Geom. Funct. Anal.* 17 (2007) no. 4, 1139-1179
3. Notes on Gromov's systolic estimate, *Geom. Dedicata* 123 (2006) 113-129
4. Symplectic embeddings of polydisks, *Invent. Math.* 172 (2008) no. 3, 477-489
5. Minimax problems related to cup powers and Steenrod squares, *Geom. Funct. Anal.* 18 (2009), no. 6, 1917–1987
6. The endpoint case of the Bennett-Carbery-Tao multilinear Kakeya conjecture, *Acta Math.* 205 (2010), no. 2, 263-286.
7. Systolic inequalities and minimal hypersurfaces, *Geom. Funct. Anal.* 19 (2010), no. 6, 1688-1692.
8. Volumes of balls in large Riemannian manifolds, *Ann. of Math. (2)* 173 (2011), no. 1, 5176.
9. Area-expanding embeddings of rectangles, preprint
10. Algebraic methods in discrete analogs of the Kakeya problem (joint with Nets Katz), *Adv. Math.* 225 (2010), no. 5, 2828-2839.
11. Metaphors in systolic geometry, *Proceedings of the International Congress of Mathematicians. Volume II*, 745-768, Hindustan Book Agency, New Delhi, 2010.
12. Pants decompositions of random surfaces (joint with Hugo Parlier, Robert Young) *Geom. Funct. Anal.* 21 (2011), no. 5, 1069-1090.
13. On the Erdős distinct distance problem in the plane (joint with Nets Katz), accepted for publication in the *Annals of Math.*
14. Bounds on oscillatory integral operators based on multilinear estimates (joint with Jean Bourgain), *Geom. Funct. Anal.* 21 (2011), no. 6, 1239-1295.
15. Generalizations of the Kolmogorov-Barzdin embedding estimates (joint with Misha Gromov). *Duke Math. J.* 161 (2012), no. 13, 2549-2603.

16. Contraction of areas vs. topology of mappings, accepted for publication in Geometric and Functional Analysis.
17. The joints problem for matroids (joint with Andrew Suk),
18. Distinct distances and low degree polynomial partitioning, accepted for publication in Discrete and Computational Geometry
19. A restriction estimate using polynomial partitioning, accepted for publication in Journal of the AMS.