

Jonathan Tidor

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Princeton University

Department of Mathematics
Assistant Professor

2025–

PREVIOUS POSITIONS

Stanford University

Stanford Science Fellow

2022–2025

EDUCATION

Massachusetts Institute of Technology

Ph.D. Mathematics; *Advisor: Yufei Zhao*

2017–2022

Massachusetts Institute of Technology

B.S. Mathematics

2013–2017

RESEARCH INTERESTS

Extremal combinatorics, discrete geometry, extremal graph theory, and additive combinatorics

AWARDS, HONORS, AND GRANTS

D. R. Fulkerson Prize

2024

Stanford Science Fellowship

2022–2025

NSF Graduate Research Fellowship

2017–2022

Charles W. and Jennifer C. Johnson Prize

2021

Hartley Rogers Jr. Prize

2019, 2020, 2021

SELECTED PUBLICATIONS

Equiangular lines with a fixed angle,

Zilin Jiang, Jonathan Tidor, Yuan Yao, Shengtong Zhang, Yufei Zhao.

Annals of Mathematics 194 (2021), 729–743

Joints of varieties,

Jonathan Tidor, Hung-Hsun Hans Yu, Yufei Zhao.

Geometric and Functional Analysis 32 (2022), 302–339

Hypergraph expanders of all uniformities from Cayley graphs,

David Conlon, Jonathan Tidor, Yufei Zhao.

Proceedings of the London Mathematical Society 121 (2020), 1311–1336

Testing linear-invariant properties,

Jonathan Tidor, Yufei Zhao.

IEEE 61st Annual Symposium on Foundations of Computer Science (FOCS 2020)

SIAM Journal on Computing 51 (2022), 1230–1279

Multilevel polynomial partitioning and semialgebraic hypergraphs: regularity, Turán, and Zarankiewicz results,
Jonathan Tidor, Hung-Hsun Hans Yu.

arXiv:2407.20221

PUBLICATION LIST

1. On monochromatic solutions to linear equations over the integers,
Dingding Dong, Nitya Mani, Huy Tuan Pham, Jonathan Tidor.
[arXiv:2410.13758](#)
2. More unit distances in arbitrary norms,
Josef Greilhuber, Carl Schildkraut, Jonathan Tidor.
Bull. Lond. Math. Soc. to appear
[arXiv:2410.07557](#)
3. Multilevel polynomial partitioning and semialgebraic hypergraphs: regularity, Turán, and Zarankiewicz results,
Jonathan Tidor, Hung-Hsun Hans Yu.
[arXiv:2407.20221](#)
4. Ramsey and Turán numbers of sparse hypergraphs,
Jacob Fox, Maya Sankar, Michael Simkin, Jonathan Tidor, Yunkun Zhou.
[arXiv:2401.00359](#)
5. Triangle Ramsey numbers of complete graphs,
Jacob Fox, Jonathan Tidor, Shengtong Zhang.
J. Combin. Theory Ser. B to appear
[arXiv:2312.06895](#)
6. Uniform sets with few progressions via colorings,
Mingyang Deng, Jonathan Tidor, Yufei Zhao.
Math. Proc. Cambridge Philos. Soc. 179 (2025), 79–103
[arXiv:2307.06914](#)
7. Cubic Goldreich-Levin,
Dain Kim, Anqi Li, Jonathan Tidor.
Proceedings of the 2023 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2023)
[arXiv:2207.13281](#)
8. Quantitative bounds for the U^4 -inverse theorem over low characteristic finite fields,
Jonathan Tidor.
Discrete Anal. 14 (2022), 17 pp.
[arXiv:2109.13108](#)
9. Non-classical polynomials and the inverse theorem,
Aaron Berger, Ashwin Sah, Mehtaab Sawhney, Jonathan Tidor.
Math. Proc. Cambridge Philos. Soc. 173 (2022), 525–537
[arXiv:2107.07495](#)
10. Popular differences for matrix patterns,
Aaron Berger, Ashwin Sah, Mehtaab Sawhney, Jonathan Tidor.
Trans. Amer. Math. Soc. 375 (2022), 2677–2704
[arXiv:2102.01684](#)
11. Memoryless Worker-Task Assignment with Polylogarithmic Switching Cost,
Aaron Berger, William Kuszmaul, Adam Polak, Jonathan Tidor, Nicole Wein.
49th International Colloquium on Automata, Languages, and Programming (ICALP 2022)
[arXiv:2008.10709](#)

12. Joints of varieties,
Jonathan Tidor, Hung-Hsun Hans Yu, Yufei Zhao.
Geom. Funct. Anal. 32 (2022), 302–339
[arXiv:2008.01610](#)
13. Spherical two-distance sets and eigenvalues of signed graphs,
Zilin Jiang, Jonathan Tidor, Yuan Yao, Shengtong Zhang, Yufei Zhao.
Combinatorica, 43 (2023), 203–232
[arXiv:2006.06633](#)
14. A counterexample to the Bollobás-Riordan conjectures on sparse graph limits,
Ashwin Sah, Mehtaab Sawhney, Jonathan Tidor, Yufei Zhao.
Combin. Probab. Comput. 30 (2021), 796–799
[arXiv:2003.05272](#)
15. Testing linear-invariant properties,
Jonathan Tidor, Yufei Zhao.
IEEE 61st Annual Symposium on Foundations of Computer Science (FOCS 2020)
SIAM J. Comput. 51 (2022), 1230–1279
[arXiv:1911.06793](#)
16. Induced arithmetic removal: complexity 1 patterns over finite fields,
Jacob Fox, Jonathan Tidor, Yufei Zhao.
Israel J. Math. 248 (2022), 1–38
[arXiv:1911.03427](#)
17. Equiangular lines with a fixed angle,
Zilin Jiang, Jonathan Tidor, Yuan Yao, Shengtong Zhang, Yufei Zhao.
Ann. of Math. 194 (2021), 729–743
[arXiv:1907.12466](#)
18. Hypergraph expanders of all uniformities from Cayley graphs,
David Conlon, Jonathan Tidor, Yufei Zhao.
Proc. Lond. Math. Soc. 121 (2020), 1311–1336
[arXiv:1809.06342](#)
19. Dense binary $PG(t-1, 2)$ -free matroids have critical number $t-1$ or t ,
Jonathan Tidor.
J. Combin. Theory Ser. B 124 (2017), 165–179
[arXiv:1508.07278](#)
20. Two classes of modular p -Stanley sequences,
Mehtaab Sawhney, Jonathan Tidor.
J. Comb. 11 (2020), 127–140
[arXiv:1506.07941](#)
21. Bounding sequence extremal functions with formations,
Jesse Geneson, Rohil Prasad, Jonathan Tidor.
Electron. J. Combin. 21 (2014), no. 3, Paper 3.24, 20 pp.
[arXiv:1308.3810](#)
22. Convex geometric $(k+2)$ -quasiplanar representations of semi-bar k -visibility graphs,
Jesse Geneson, Tanya Khovanova, Jonathan Tidor.
Discrete Math. 331 (2014), 83–88
[arXiv:1307.1169](#)

INVITED TALKS

2025	SLMath Extremal Combinatorics Seminar	Berkeley, CA
	Berkeley Probability Seminar	Berkeley, CA
	Rutgers Department Colloquium	New Brunswick, NJ
	Purdue Department Colloquium	West Lafayette, IN
	UBC Department Colloquium	Vancouver, BC
	UBC Discrete Mathematics Seminar	Vancouver, BC
2024	UPenn Department Colloquium	Philadelphia, PA
	Rutgers Discrete Math Seminar	New Brunswick, NJ
	Penn State Department Colloquium	State College, PA
	Stanford Combinatorics Seminar	Stanford, CA
	SIAM Conference on Discrete Mathematics (DM24)	Spokane, WA
	MIT Combinatorics Seminar	Cambridge, MA
	LSU Combinatorics Seminar	Online
2023	Random Structures & Algorithms (RS&A2023)	Pittsburgh, PA
	Workshop on Ramsey Theory	La Jolla, CA
2022	Stanford Combinatorics Seminar	Stanford, CA
	SIAM Conference on Discrete Mathematics (DM22)	Pittsburgh, PA
2021	UCSD Combinatorics Seminar	La Jolla, CA
	UCSD Theory Seminar	La Jolla, CA
	Princeton Discrete Mathematics Seminar	Princeton, NJ
	MIT Combinatorics Seminar	Cambridge, MA
	SIAM Conference on Applied Algebraic Geometry (AG21)	Online
	Extremal and Probabilistic Combinatorics Webinar	youtu.be/PrNLuXF3uUY Online
2020	Canadian Mathematical Society Winter Meeting	Online
	Symposium on Foundations of Computer Science (FOCS)	youtu.be/XdnQr61hbzI Online
	Workshop on Local Algorithms (WOLA)	youtu.be/BfboKsW23pc Online

TEACHING

MAT377: Combinatorial Mathematics	<i>Fall 2025</i>
Math 233A: Topics in Combinatorics	<i>Fall 2023</i>
Math 107: Graph Theory	<i>Winter 2023</i>
18.650: Fundamentals of Statistics (teaching assistant)	<i>Spring 2021</i>
18.600: Probability and Random Variables (teaching assistant)	<i>Fall 2020</i>

MENTORING

MIT Summer Program in Undergraduate Research+ (mentor)	2021
MIT Directed Reading Program (mentor)	2018, 2019, 2020, 2021, 2022
MIT Summer Program in Undergraduate Research (mentor)	2018, 2019, 2020
MIT Undergraduate Research Opportunities Program+ (mentor)	2018, 2022

SERVICE

Co-organizer of Princeton Discrete Mathematics Seminar	2025–
Organizer of Stanford Combinatorics Reading Seminar	2022–2025
Referee for <i>J. Amer. Math. Soc.</i> (2), <i>Geom. Funct. Anal.</i> , <i>Forum Math. Pi</i> , <i>Adv. Comb.</i> , <i>J. Combin. Theory Ser. B</i> (2), <i>Trans. Amer. Math. Soc.</i> , <i>Int. Math. Res. Not. IMRN</i> , <i>Combinatorica</i> , <i>J. Graph Theory</i> , <i>Discrete Anal.</i> (2), <i>Proc. Amer. Math. Soc.</i> , <i>Comb. Theory</i> , <i>Canad. J. Math.</i> , <i>Australas. J. Combin.</i> , <i>J. Comb.</i> , <i>STOC</i> (2), <i>SODA</i>	
Reviewer for AMS Mathematical Reviews	2022–

OTHER ACTIVITIES

SLMath (MSRI) semester program on extremal combinatorics (research member)	2025
AIM workshop on high-dimensional phenomena in discrete mathematics (invited participant)	2024
MSRI summer graduate school on the polynomial method	2019
MIT Summer Program in Undergraduate Research	2016
Duluth REU	2015
MIT Program for Research in Mathematics, Engineering and Science	2012, 2013