Matthew Kahle

Contact

Department of Mathematics
The Ohio State University
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Columbus, OH 43210

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Positions

Chair, Department of Mathematics, Ohio State University, 2025–present
Professor, Ohio State University, 2018–present
Associate Professor, Ohio State University, 2015–2018
Assistant Professor, Ohio State University, 2011–2015
Member, Institute for Advanced Study, Princeton, 2010–2011
Samelson Postdoctoral Fellow, Stanford University, 2007–2010

Visiting positions

Technischen Universität, Berlin, Germany, 2019–2020
ICERM, Providence, Rhode Island, Autumn 2016
CIMAT, Guanajuato, Mexico, Summer 2016
IMA, Minneapolis, Minnesota, Spring 2014
MRSI, Berkeley, California, Autumn 2006
IAS-PCMI, Park City, Utah, Summer 2004

Education

University of Washington, Seattle, Washington USA

Ph.D., Mathematics, 2007

Colorado State University, Fort Collins, Colorado USA

M.S., Mathematics, 2001
B.S., Mathematics, 1999

Fellowships and awards

Mercator Fellow, 2019–2020
Simons Fellow in Mathematics, 2019–2020
Fellow of the American Mathematical Society, Class of 2019
NSF-CAREER, 2014–19
Alfred P. Sloan Research Fellow, 2012–2016
Samelson Postdoctoral Fellow, Stanford, 2007–2010
NSF-VIGRE Fellow, 2001–2004, 2005–2006
Andrew Gavin Gaudette ARCS Foundation Fellow 2001–2004

Grants

NSF #DMS-2208855: Conference: Algebraic topology: Methods, computation, and science 2022 (PI)
NSF #DMS-2005630: Stochastic topology and topological statistical mechanics, 2020–2023 (PI)
NSF-TRIPODS+X:RES #CCF-1839358, 2018–2021 (PI)
NSF-TRIPODS+X:EDU #CCF-1839356, 2018–2021 (Senior Personnel)
NSF-TRIPODS #CCF-1740761, 2017–2020 (Senior Personnel)
NSF #DMS-1613094: Conference TGDA@OSU, 2016 (PI)
NSF-RTG #DMS-1547357: Algebraic topology and its applications, 2016–23 (PI)
NSF-CAREER #DMS-1352386: Random spaces and groups, 2014–19 (PI)
NSF #CCF-1017182: Higher-dimensional spanning trees, 2013–14 (PI)
DARPA #N66001-12-1-4226: Topology and geometry of random simplicial complexes, 2012–14 (PI)
NSA #H98230-10-1-0227: Random simplicial complexes, 2009–2011 (PI)

Research papers and preprints

1. J. Gonzalés, M. Kahle, and N. Wawrykow. The 15 Puzzle and homological stability in the space direction. (submitted, arXiv:2602.21300)
2. A. Ababneh and M. Kahle. Homology of random chain complexes of real vector spaces. (submitted, arXiv:2602.10783)
3. O. Alvarado-Garduño, J. Gonzalés, and M. Kahle. A combinatorial genesis of the right-angled relations in Artin's classical braid groups. (submitted, arXiv:2504.12201)
4. H. Edelsbrunner, M. Kahle, and S. Kanazawa. Maximum Persistent Betti Numbers of Čech Complexes. *Journal of Applied and Computational Topology*. Volume 10, article 5, (2026).
5. C. Donnay and M. Kahle, Asymptotics of Redistricting the $n \times n$ Grid. *The American Mathematical Monthly*, 132(9), 856–866. (2025).
6. P. Duncan, M. Kahle, and B. Schweinhart. Homological percolation on a torus: plaquettes and permutohedra. *Ann. Inst. H. Poincaré Probab. Statist.* 61(3): 2235–2261 (2025).
7. A. Ababneh and M. Kahle. Maximal persistence in random clique complexes. *J. Appl. Comput. Topol.* 8 (2024), no. 6, 1449–1463.
8. H. Alpert, M. Kahle, and R. MacPherson. Asymptotic Betti numbers for hard squares in the homological liquid regime. *Int. Math. Res. Not. IMRN* 2024, no. 10, 8240–8263.
9. B. Braun, K. Bruegge, M. Kahle. Facets of Random Symmetric Edge Polytopes, Degree Sequences, and Clustering. *Discrete Math. Theor. Comput. Sci.* 25 ([2023–2024]), no. 2, Paper No. 16, 20 pp.
10. M. Kahle, M. Tian, Y. Wang. On the clique number of noisy random geometric graphs. *Random Structures Algorithms* 63 (2023), no. 1, 242–279.
11. H. Alpert, U. Bauer, M. Kahle, R. MacPherson, and K. Spendlove. Homology of configuration spaces of hard squares in a rectangle. *Algebr. Geom. Topol.* 23 (2023), no. 6, 2593–2626.
12. M. Kahle and A. Newman. Topology and geometry of random 2-dimensional hypertrees. *Discrete Comput. Geom.* 67 (2022), no. 4, 1229–1244.
13. M. Kahle, E. Paquette, and É. Roldán. Topology of random 2-dimensional cubical complexes. *Forum Math. Sigma* 9 (2021), Paper No. e76, 24 pp.
14. H. Alpert, M. Kahle, and R. MacPherson (with appendix by Ulrich Bauer and Kyle Parsons). Configuration spaces of disks in an infinite strip. *Journal of Applied & Computational Topology* 5 (2021), 357–390.
15. C. Hoffman, M. Kahle, and E. Paquette. Spectral gaps of random graphs and applications. *Int. Math. Res. Notices* (2021), 8353–8404.
16. M. Kahle, F. Martinez Figueroa, and A. Soifer. A square-grid coloring problem. *Geombinatorics* 29 (2020), no. 4, 167–184.
17. M. Kahle and F. Martinez Figueroa. The chromatic number of random Borsuk graphs. *Random Structures & Algorithms* (2020), Vol 56. Issue 3. 838–850.
18. M. Kahle, F. Lutz, A. Newman, and K. Parsons. Cohen–Lenstra heuristics for torsion in homology of random complexes. *Experimental Mathematics*, 29:3, 347–359, (2020).
19. M. Kahle and E. Roldán. Polyominoes with maximally many holes. *Geombinatorics* 29 (2019), no. 1, 5–20.
20. M. Kahle, M. Tian, and Y. Wang. Local cliques in ER-perturbed random geometric graphs. *30th International Symposium on Algorithms and Computation*, Art. No. 29, 22 pp., LIPIcs. Leibniz Int. Proc. Inform., 149, Schloss Dagstuhl. Leibniz-Zent. Inform., Wadern, 2019.
21. D. Dotterrer, L. Guth, M. Kahle. 2-Complexes with large 2-girth. *Discrete Comput. Geom.* 59 (2018), no. 2, 383–412.
22. O. Bobrowski, M. Kahle, and P. Skraba. Maximally persistent cycles in random geometric complexes. *Ann. Appl. Probab.* 27 (2017), no. 4, 2032–2060.

23. C. Hoffman, M. Kahle, and E. Paquette. The threshold for integer homology in random d-complexes. *Discrete Comput. Geom.* 57 (2017), no. 4, 810–823.
24. M. Kahle and B. Pittel. Inside the critical window for cohomology of random k-complexes. *Random Structures & Algorithms* 48 (2016), no. 1, 102–124.
25. M. Kahle and B. Taha. New lower bounds on $\chi\left(\mathbb{R}^d\right)$ for $d = 8, \ldots, 12$. *Geombinatorics* 24 (2015), 109–116.
26. M. Davis and M. Kahle. Random graph products of finite groups are rational duality groups. *J. Topol.*, 7 (2014), 589–606.
27. Y. Baryshnikov, P. Bubenik, and M. Kahle. Min-type Morse theory for configuration spaces of hard spheres. *Int. Math. Res. Notices* 9 (2014), 2577–2592.
28. M. Kahle. Sharp vanishing thresholds for cohomology of random flag complexes. *Ann. of Math.* 179 (2014), 1085–1107.
29. M. Kahle and E. Meckes. Limit theorems for Betti numbers of random simplicial complexes. *Homology, Homotopy Appl.* 15(2) (2013), 343–374.
    M. Kahle and E. Meckes. Erratum to "Limit theorems for Betti numbers of random simplicial complexes". *Homology Homotopy Appl.* 18 (2016), no. 1, 129–142.
30. G. Carlsson, J. Gorham, M. Kahle, and J. Mason. Computational topology for configuration spaces of hard disks. *Phys. Rev. E*, 85 (2012).
31. D. Dotterrer and M. Kahle. Coboundary expanders. *J. Topol. Anal.* 4 (2012), no. 4, 499–514.
32. M. Kahle. Sparse locally-jammed disk packings. *Ann. Comb.* 16(4) (2012), 773–780.
33. M. Kahle. Random geometric complexes. *Discrete Comput. Geom.*, 45 (2011), no. 3, 553–573.
34. E. Babson, C. Hoffman, and M. Kahle. The fundamental group of random 2-complexes. *J. Amer. Math. Soc.* 24 (2011), no. 1, 1–28.
35. M. Kahle. Topology of random clique complexes. *Discrete Math.*, 309 (2009), no. 6, 1658–1671.
36. M. Kahle. Points in a triangle forcing small triangles *Geombinatorics* 18 (2009), no. 3, 114–128.
37. M. Kahle. The neighborhood complex of a random graph. *J. Combin. Theory Ser. A* 114 (2007), no. 2, 380–387.
38. M. Kahle. Scatters, unavoidable shapes, and crystallization. *Geombinatorics* 15 (2006), no. 3, 138–149.
39. M. Kahle. A generalization of the chromatic number of the plane. *Geombinatorics* 10 (2000), no. 2, 69–74.

Expository writing, technical reports, miscellanea

1. M. Kahle. Configuration spaces of disks in an infinite strip. *Oberwolfach Report* No. 39/2019, p. 2421–2424, DOI: 10.4171/OWR/2019/39.
2. M. Kahle. Branko Grünbaum in many dimensions. *Geombinatorics* 28 (2019), no. 3, 140–146.
3. O. Bobrowski and M. Kahle. Topology of random geometric complexes: a survey. *Journal of Applied & Computational Topology*, 331–364 (2018).
4. M. Kahle. Book chapter on "Random Simplicial Complexes" in *Handbook of Discrete & Computational Geometry, 3rd Edition* (2017), CRC Press (25 pages).
5. M. Kahle. Configuration spaces of disks. *Oberwolfach Report* No. 45/2015, p. 2652, DOI: 10.4171/OWR/2015/45.
6. M. Kahle. Permutation puzzles from Archimedes to the Rubik's Cube. Institute for Advanced Study (IAS), Princeton, NJ. *Institute Summer Letter*. Summer 2015.
7. M. Kahle. Topology of random simplicial complexes: a survey. *AMS Contemp. Math.*, 620 (2014), 201–221.

8. M. Kahle. Expansion properties of random simplicial complexes. *Oberwolfach Report* No. 24/2012, p. 1442-1445, DOI: 10.4171/OWR/2012/24.
9. M. Kahle. The geometry of random spaces. Institute for Advanced Study (IAS), Princeton, NJ. *Institute Summer Letter*. Summer 2011.
10. M. Kahle. On Branko Grünbaum's 80th birthday. *Geombinatorics* 19 (2009), no. 2, 42–45.
11. M. Kahle. Geometric random complexes. *Oberwolfach Report* No. 29/2008, p. 1626–1628.

Public talks

Cycle Conference, Ohio State University, April 2024
Young Mathematicians Conference, Ohio State University, August 2020
Science Sundays, Ohio State University, February 2018
Inaugural CSU Math Day Lecture, November 2017
Collaborative STEAM Factory talk on Kepler's Harmonices Mundi, Franklinton, 2016-02-12
National Math Festival, Washington D.C., 2015-04-18 (two talks)
Panel: Colorado Math Olympiad, 30th Anniversary award ceremony, Colorado Springs, 2013-05-03
Demonstrations, Shift studio, Seattle, 2007-06-02

Invited talks

JMM Special Session on The Mathematics of Elections and Redistrciting, 2026-01-06
Topology seminar, University of Rochester, 2025-09-26
Colloquium, University of Rochester, 2025-09-25
Probability and the City Seminar, NYU, 2025-04-04
Cornell Probability Seminar, Ithaca, 2025-03-24
Indiana University Topology Seminar, Bloomington, 2025-03-12
Combinatorics Seminar, Brown University, 2025-02-19
Workshop on Circle Packings, Minimal Surfaces, and Discrete Differential Geometry, ICERM, 2025-02-14
Bernoulli–IMS World Congress in Probability and Statistics, Bochum, Germany, 2024-08-16
Geometry & Topology Seminar, University of Chicago, 2024-05-02
TDA Week, Kyoto, Japan, 2023-07-31
Hiraoka Seminar, Kyoto Institute for Advanced Study, 2023-07-28
Workshop on Randomness in Topology and its Applications, IMSI, Chicago (online), 2023-03-21
TGDA Seminar, Ohio State, Columbus. 2023-01-31
AARTN Seminar (online), 2023-01-25
SISSA Summer School, Trieste, Italy, week of 2022-09-19 (four lectures)
ATMCS 10, Oxford, UK, 2022-06-23
Topology Seminar, Northeastern University (online), 2022-04-26
Colloquium, Michigan State University (online), 2022-03-17
KTH Applied Combinatorics, Algebra, Topology & Statistics Seminar (online), 2022-03-01
GEOTOP-A Seminar (Web-seminar series on Applications of Geometry and Topology), 2021-12-10
Colloquium, University of Delaware (online), 2021-12-02
2021 MPS Conference on High-Dimensional Expanders. Simons Foundation, NY, 2021-10-27
Thematic mini-conference on stochastic topology (online), Berlin, Germany, 2021-09-22
Australian Geometric Topology Seminar (online), Canberra, Australia, 2021-08-18
Geometric Structures Research Seminar (online), SISSA, Italy, 2021-06-08
2021 Southeastern Probability Conference (online), 2021-05-18
AARTN Topological Complexity Seminar (online), 2021-03-11
Topology and geometry: extremal and typical (online), 2021-03-08
Applied and computational topology seminar, TU Munich, 2020-02-12
Applied Topology Seminar, EPFL, Lausanne, 2020-02-18
Colloquium, University of Osnabrück, 2019-12-04
TDA Seminar, Oxford, 2019-11-22
Facets of Complexity seminar, Berlin Mathematical School, 2019-05-20
STAR Workshop on Random Graphs, Groningen, 2019-04-10

Workshop on Applied Topology 2019, Kyoto, week of 2019-01-07 (two lectures)
CombinaTexas, Texas A&M University, 2018-02-12
Mathematical Conference of the Americas 2017, Montreal, 2017-07-26
FoCM 2017, Workshop on Computational Geometry and Topology, Barcelona, 2017-07-12
Combinatorics seminar, Ohio State, 2017-01-12
Special session in Computational Topology, Joint Mathematics Meetings, Atlanta, 2017-01-04
Future directions in Network Mathematics, Royal Society, London, 2016-11-22
Topology seminar, Oxford, 2016-11-21
Probabilistic methods in topology, CRM, Montreal, week of 2016-11-14 (three lectures)
Colloquium, University of South Carolina, 2016-11-03
Topology seminar, Brown, 2016-09-28
Stochastic topology seminar, ICERM, Providence, 2016-09-21
Topology and geometry seminar, UNAM, Mexico City, 2016-08-18
Stochastic topology and topological statistical mechanics, CIMAT, week of 2016-08-08 (four lectures)
Cornell topology festival, weekend of 2016–5-12 (two lectures)
Colloquium, UT Austin, 2016-04-18
Algorithms, Combinatorics and Optimization seminar, Carnegie Mellon, 2016-04-07
Topology seminar, Florida, 2016-03-08
Colloquium, Florida, 2016-03-07
AIMR, Sendai, Japan, 2016-02-22
Random and statistical topology, Sendai, Japan, week of 2016-02-15 (two lectures)
Kempner colloquium, CU Boulder, 2015-12-11
Colloquium, Georgia Tech, 2015-11-12
Computational algebraic and geometric topology, Oberwolfach, 2015-10-12
Geometry and physics of spatial random systems, Bad Herrenalb, 2015-09-09
Topology seminar, Ohio State, 2015-09-01
Dynamics, topology, and computations, Bedlewo, 2015-06-15
Special session in applied algebraic topology, AMS / EMS / SPM International Meeting, Porto, 2015-06-11
Workshop: Random graphs, simplicial complexes, and their applications, Northeastern, 2015-05-19
Colloquium, University Southern California, 2015-03-25
Joint Colloquium, Brandeis-Harvard-MIT-Northeastern, 2015-02-19
School on TDA and Stochastic Topology (four lectures), CIMAT, Guanajuato, week of 2015-01-19
FoCM, Workshop on Computational Topology and Geometry, Montevideo, 2014-12-15
Discrete, Computational and Algebraic Topology, Copenhagen, 2014-11-11
AMS Invited address, Central Autumn Sectional Meeting, Eau Claire, 2014-09-20
Colloquium, Yale, 2014-08-01
SUMRY colloquium, Yale, 2014-07-31
Research cluster on random groups, Tufts, 2014-07-20
Combinatorics, geometry, and physics, ESI, Vienna, Austria, 2014-07-18
Applied topology seminar, IST, Klosterneuburg, Austria, 2014-07-10
Applied algebraic topology, Castro Urdiales, Spain, 2014-07-04
Toponets14: Topology and networks, Berkeley, 2014-06-02
IMA workshop: Topology and Geometry of Networks and Discrete Metric Spaces, 2014-04-29
Colloquium, University of Wisconsin, 2014-04-04
IMA Annual Program Seminar, 2014-03-12 and 2014-04-02
AMS Short Course on Geometry and Topology in Statistical Inference, Baltimore, 2014-01-14
Colloquium, Western Ontario University, 2013-11-07
IMA workshop: Topological data analysis, 2013-10-09
Applied and interdisciplinary mathematics seminar, Northeastern, 2013-10-01
Research seminar in mathematics, Northeastern, 2013-10-01
Combinatorics seminar, Ohio State, 2013-09-18
Topology, geometry, and data seminar, Ohio State, 2013-09-13 and 2013-09-20
Metric Geometry, Geometric Topology and Groups, BIRS, Banff, Canada, 2013-08-04
Applied and Computational Algebraic Topology, ALTA, Bremen, Germany, 2013-07-18

Dynamics and Applied Topology, (three lectures), Kyoto, Japan, week of 2013-06-09
Colloquium, Indiana University, 2013-03-22
Triangle lectures in combinatorics, Wake Forest University, 2013-02-09
Data seminar, Duke, 2013-02-07
MacPherson seminar, IAS, 2013-01-24 & 2013-01-31
Workshop: Topological data analysis and machine learning theory, Banff, 2012-10-15
Colloquium, University of Washington, 2012-10-05
Stanford symposium on Algebraic topology: applications and new directions, 2012-07-25
ATMCS 5, Edinburgh, 2012-07-04
Dynamics, topology, and computation, Bedlewo, Poland, 2012-06-27
Workshop: Triangulations, Oberwolfach, 2012-05-03
CATS (Combinatorics, Algebra, Topology, and Statistics) seminar, Kentucky, 2012-04-23
Colloquium, Colorado State, 2012-04-13
Topology seminar, Ohio State, 2012-04-10
Applications of Combinatorial Topology to Computer Science, Dagstuhl, Germany, 2012-03-20
AMS Meeting, Tampa, FL, special session in algebraic & geometric combinatorics, 2012-03-10
Topology seminar, Rice, 2012-02-27
Invitation to Mathematics, Ohio State, 2012-01-18 & 2012-01-25
Workshop: Computational topology, Fields Institute, 2011-11-07
Topology and geometry of data seminar, Ohio State, October 21, 2011
SIAM Conference on Applied Algebraic Geometry, NC State, October 6, 2011
Topological Methods in Complex Systems, U Penn, August 9, 2011
Applied Algebraic Topology, ETH-Zurich, July 6, 2011
Geometric group theory conference, Ohio State, June 2, 2011
Combinatorics seminar, Washington, May 18, 2011
Colloquium, Alcatel-Lucent, Murray Hill, May 12, 2011
Distinguished interdisciplinary speaker series, NC State, April 29, 2011
Geometry/topology seminar, Chicago, March 10, 2011
Geometry seminar, Yale, February 21, 2011
Recruitment talk, Colorado State, February 3, 2011
Recruitment talk, Ohio State, January 18, 2011
Soft matter seminar, U Penn, November 29, 2010
Members seminar, IAS, Princeton, November 15, 2010
Geometry seminar, Courant Institute, NYU, November 2, 2010
Topology: identifying order in complex systems, Rutgers, October 6, 2010
Geometry & cell complexes seminar, IAS, Princeton, October 5, 2010
Algebra and Topology: Methods, Computation, and Science IV, Münster, Germany, June 24, 2010
2010 Barrett Memorial Lectures in Discrete Differential Geometry and Applications, May 17, 2010
Workshop in algebraic and random topology I, Chicago, April 18, 2010
Applied topology seminar, University of Zürich, March 26, 2010
Colloquium, Case Western Reserve, March 19, 2010
Geometry seminar, Toronto, March 8, 2010
Theory seminar, Dartmouth, March 2, 2010
Combinatorics seminar, Dartmouth, March 1, 2010
Colloquium, Cleveland State, February 26, 2010
Combinatorics seminar, UC Berkeley, February 22, 2010
Recruitment talk, Oregon, January 25, 2010
Joint seminar in probability and topology, Oregon, November 20, 2009
Probability seminar, Stanford, November 9, 2009
Applied topology, Chicago, November 5, 2009
Topological complexity of random sets, American Institute of Mathematics, August 12, 2009
Topological Methods in Scientific Computing seminar, Stanford, May 18, 2009
Data analysis using computational topology and geometric statistics, Banff, March 11, 2009
Probability seminar, Washington, February 9, 2009

Discrete math seminar, Berkeley, February 4, 2009
Probability seminar, Duke, October 30, 2008
Computational algebraic topology, Oberwolfach, June 29–July 5, 2008
Topology seminar, Oregon, April 22, 2008
Colloquium, Cal. State East Bay, February 22, 2008
Bay Area Discrete Math Day, Google, October 20, 2007
Geometry/topology seminar, Davis, October 18, 2006
Computational applications of algebraic topology, MSRI, October 2, 2006

Courses taught

Ohio State (2011–): Introductory combinatorics (undergraduate), Graph Theory and Combinatorics I & II (graduate), Linear algebra and differential equations for engineers (undergraduate), Graduate topics courses: Topological combinatorics, Random graphs and percolation theory, Random spaces and groups, Random metric spaces
Stanford (2007–2010): Modern Algebra, Applied Number Theory and Cryptography, Ordinary Differential Equations and Linear Algebra, Introduction to Combinatorics, Set Theory, Linear Algebra and Multivariable Calculus, Sophomore Seminar: Mathematics of the Rubik's Cube, Polya Problem Solving Seminar
Canada/USA Mathcamp (Summers 2003, 2005–2007) Zoology of Polytopes, Moore Method Topology, Topological and Geometric Graph Theory, The Probabilistic Method, Combinatorial Homotopy Theory, Linear algebra, Symmetric Functions, Enumeration Celebration
University of Washington (2001–2007): Ordinary Differential Equations, Linear algebra, Calculus, Grader for Topology and Geometry of Manifolds
Colorado State University (1999–2001): Modern Algebra, Linear algebra, Calculus, Trigonometry; Assistant director of the Individualized Mathematics Program

Organizing

SIAM Conference on Applied Algebraic Geometry (AG25), Madison, WI, July 2025
Scientific Committee, TDA Week, Kyoto, August 2023
Algebraic Topology and Topological Data Analysis: A conference in honor of Gunnar Carlsson, IMA, Minneapolis, August 2022
Scientific Committee, ATMCS, Oxford, June 2022
Workshop on Topological Data Analysis, IMSI, Chicago, April 2021
ATMCS 2020, scheduled for June 2020 but cancelled due to COVID
Block Course on Stochastic Topology, TU Berlin, scheduled for March 2020 but cancelled due to COVID
AMS Central Sectional Meeting, March 2018
ICERM Semester Program on "Topology in Motion", Autumn 2016
Probabilistic Methods in Topology, CRM, November 14–18, 2016
TGDA@OSU 2016, May 2016
Special session "Random spaces", AMS Central Autumn Sectional Meeting, Eau Claire, WI, 2014
Executive committee, ATMCS 6, Vancouver, Canada, summer 2014
Scientific committee, Applied Topology, Bedlewo, Poland, summer 2013.
TGDA seminar, Ohio State, 2013–
Special session "Applied topology", AMS sectional meeting, Akron, OH, October 20–21, 2012
Combinatorics seminar, Ohio State, 2011–
IAS seminar in "Geometry and cell complexes", 2010–2011
Seminar in "Graph homomorphisms", Stanford, Autumn 2009
Bay Area Discrete Math Day, 2007–2010
Combinatorics and geometry seminar, Stanford, 2007–2008
Graduate Student Conference in Combinatorics, UW, Spring 2007.

PhD advising

Chloe Ireland (current student)

Luči Krnic (current student)
Tyson Trauger (current student)
Amber Wu (current student)
Christopher Donnay (PhD Ohio State, 2024)
Shreeya Behera (PhD Ohio State, 2024)
Andrew Vander Werf (PhD Ohio State, 2023)
Ayat Ababneh (PhD Ohio State, 2022)
Paul Duncan (PhD Ohio State, 2022)
Francisco Martinez Figueroa (PhD Ohio State, 2022)
Jimin Kim (PhD Ohio State, 2022)
Katherine Ritchey (PhD Ohio State, 2019)
Érika Roldán Roa (PhD CIMAT, 2018)
Andrew Newman (PhD Ohio State, 2018)
Kyle Parsons (PhD Ohio State, 2017)
Greg Malen (PhD Ohio State, 2016)

Other students mentored

Kenneth Berglund (M.S. Ohio State, 2021)
Kaelyn Willingham (B.S. Ohio State, 2021)
Jessica Zehel (M.S. Ohio State, 2018)
Joseph Antonides (M.S. Ohio State, 2018)
Peter Kosek (M.S. Ohio State, 2014)
Birra Taha (B.S. Ohio State, 2013)
Dominic Dotterrer (PhD Toronto, 2013)
Ted Dokos (B.S. Ohio State, 2012)
Sukhada Fadnavis (PhD Stanford, 2012)
Jackson Gorham, (B.S. Stanford 2010)
Heather M. Lee, (B.S. University of Washington, 2007)

Postdocs mentored

Ranthony Edmonds
Hannah Alpert
Fedor Manin
Benjamin Schweinhart
Jeremy Mason
Matthew Wright
Izhar Oppenheim

Editor

Associate Editor, Journal of Applied and Computational Topology, 2024–present
Associate Editor, ALEA (Latin American Journal of Probability and Mathematical Statistics), 2016–18

Refereeing

Algebraic & Geometric Topology
Annals of Applied Probability
Annals of Probability
Annals of Mathematics
Discrete & Computational Geometry
Discrete Mathematics
Experimental Mathematics
European Journal of Combinatorics
Journal of Applied & Computational Topology
Journal of Topology & Analysis

Pacific Journal of Mathematics
Probability Theory and Related Fields
Proceedings of the American Mathematical Society
Proceedings of the National Academy of Sciences
Random Structures & Algorithms
Rose-Hulman Undergraduate Journal
Symposium on Computational Geometry

Other service

Math Department Committee for Graduate Health & Well Being (2020–)
AMS Centennial Committee (2018–20)
AMS Central Section Committee (2016–18)
Grant review for various funding agencies: NSF, NSA, ISF, ESF, etc.