Matthew C. B. Zaremsky

Contact Information

Department of Mathematics & Statistics
University at Albany (SUNY)
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Appointments

University at Albany (SUNY), Albany, NY
Associate professor, May 2022 to present
Assistant professor, September 2017 to May 2022

Cornell University, Ithaca, NY
Visiting assistant professor/visiting scholar, August 2016 to May 2017
Mentor: Justin Moore

Binghamton University, Binghamton, NY
Riley assistant professor (postdoctoral position), August 2013 to May 2016
Mentor: Matthew Brin

University of Münster, Münster, Germany
Visiting scholar, March 2013 to June 2013
Mentor: Linus Kramer

Bielefeld University, Bielefeld, Germany
Postdoctoral researcher, September 2011 to February 2013
Mentor: Kai-Uwe Bux

Education

University of Virginia, Charlottesville, VA
Ph.D. in Mathematics, May 2011. M.S. in Mathematics, May 2010
Advisor: Peter Abramenko

Kenyon College, Gambier, OH
B.A., *magna cum laude* with distinction in mathematics, May 2007
Majors: Mathematics and Physics. Minor: Philosophy

Publications

Preprints

- (With F. Fournier-Facio, P. H. Kropholler, and R. A. Lyman) Finiteness properties of stabilisers of oligomorphic actions. arXiv:2506.02319. (16 pages)
- (With M. Ershov) Dense and empty BNSR-invariants of the McCool groups. arXiv:2505.18826. (23 pages)
- (With J. Belk, F. Fournier-Facio, and J. Hyde) Boone-Higman embeddings of $\mathrm{Aut}(F_n)$ and mapping class groups of punctured surfaces. arXiv:2503.21882. (19 pages)
- (With J. Curry and R. Gelnett) Configuration spaces of circles in the plane. arXiv:2411.04800. (27 pages)
- (With S. Balasubramanya and F. Fournier-Facio) Hyperbolic actions of Thompson's group F and generalizations. arXiv:2406.12982. (60 pages)

To appear

- (With J. Belk, C. Bleak, and F. Matucci) Hyperbolic groups satisfy the Boone-Higman conjecture. To appear, *Duke Math. J.* arXiv:2309.06224. (62 pages)
- Contractible Vietoris–Rips complexes of $\mathbb{Z}^n$. To appear, *Proc. Amer. Math. Soc.* arXiv:2410.11993. (5 pages)
- (With J. Belk, C. Bleak, and F. Matucci) Progress around the Boone-Higman conjecture. To appear, *EMS Surv. Math. Sci.* arXiv:2306.16356. (24 pages)
- Finite presentability of twisted Brin-Thompson groups. To appear, *Proc. Roy. Soc. Edinburgh Sect. A.* arXiv:2405.18354. (20 pages)
- Finitely presented simple groups with at least exponential Dehn function. To appear, *Michigan Math. J.* arXiv:2305.15176. (10 pages)

Published

41. (With E. Bashwinger) Non-inner amenability of the Higman–Thompson groups. *Internat. J. Algebra Comput.* Vol. 35 (2025), No. 8, 1123–1134. arXiv:2203.13798
40. (With B. Mallery) Houghton-like groups from "shift-similar" groups. *J. Comb. Algebra.* Vol. 9 (2025), No. 3-4, 169–208. arXiv:2202.00822
39. A taste of twisted Brin–Thompson groups. *Sémin. Congr.* Vol. 34 (2025), 303–316. Conference proceedings for Beyond Hyperbolicity/Charneyfest. arXiv:2201.00711
38. Embedding finitely presented self-similar groups into finitely presented simple groups. *Bull. Lond. Math. Soc.* Vol. 57 (2025), No. 4, 1150–1159. arXiv:2405.09722
37. (With F. Fournier-Facio and Y. Lodha) Braided Thompson groups with and without quasimorphisms. *Algebr. Geom. Topol.* Vol. 24 (2024), No. 3, 1601–1622. arXiv:2204.05272
36. (With R. Skipper) Braiding groups of automorphisms and almost-automorphisms of trees. *Canad. J. Math.* Vol. 76 (2024), No. 2, 555–593. arXiv:2109.13389
35. (With F. Fournier-Facio and Y. Lodha) Finitely presented left orderable monsters. *Ergodic Theory Dynam. Systems.* Vol. 44 (2024), No. 5, 1367–1378. arXiv:2211.05268
34. (With E. Bashwinger) Von Neumann algebras of Thompson-like groups from cloning systems. *J. Operator Theory.* Vol. 89 (2023), No. 1, 23–48. arXiv:2104.04826
33. (With E. Schesler) Random subcomplexes of finite buildings, and fibering of commutator subgroups of right-angled Coxeter groups. *J. Topol.* Vol. 16 (2023), No. 1, 20–56. arXiv:2107.10958
32. (With Y. Lodha) The BNSR-invariants of the Lodha–Moore groups, and an exotic simple group of type F_∞. *Math. Proc. Cambridge Philos. Soc.* Vol. 174 (2023), No. 1, 25–48. arXiv:2007.12518
31. Bestvina-Brady discrete Morse theory and Vietoris-Rips complexes. *Amer. J. Math.* Vol. 144 (2022), No. 5, 1177–1200. arXiv:1812.10976
30. (With J. Belk) Twisted Brin-Thompson groups. *Geom. Topol.* Vol. 26-3 (2022), 1189–1223. arXiv:2001.04579
29. (With N. A. Scoville) Higher connectivity of the Morse complex. *Proc. Amer. Math. Soc. Ser. B.* Vol. 9 (2022), 135–149. arXiv:2004.10481

28. Geometric structures related to the braided Thompson groups. *Math. Z.* Vol. 300 (2022), No. 3, 2591–2610. arXiv:1803.02717
27. (With M. Varisco) Equivariant Morse theory on Vietoris-Rips complexes & universal spaces for proper actions. *Bull. Lond. Math. Soc.* Vol. 53 (2021), No. 6, 1724–1739. arXiv:1909.04487
26. (With R. Spahn) The BNSR-invariants of the Stein group $F_{2,3}$. *J. Group Theory.* Vol. 24 (2021), No. 6, 1149–1162. arXiv:2012.05000
25. (With R. Skipper) Almost-automorphisms of trees, cloning systems and finiteness properties. *J. Topol. Anal.* Vol. 13 (2021), No. 1, 101–146. arXiv:1709.06524
24. A short account of why Thompson's group F is of type F_∞. *Topology Proc.* Vol. 57 (2021), 77–86. arXiv:1912.11502
23. The BNSR-invariants of the Houghton groups, concluded. *Proc. Edinb. Math. Soc.* Vol. 63 (2020), No. 1, 1–11. arXiv:1808.00634
22. (With S. Witzel) The Basilica Thompson group is not finitely presented. *Groups Geom. Dyn.* Vol. 13 (2019), No. 4, 1255–1270. arXiv:1603.01150
21. Commensurability invariance for abelian splittings of right-angled Artin groups, braid groups and loop braid groups. *Algebr. Geom. Topol.* Vol. 19 (2019), No. 3, 1247–1264. arXiv:1705.07470
20. (With R. Skipper and S. Witzel) Simple groups separated by finiteness properties. *Invent. Math.* Vol. 215 (2019), No. 2, 713–740. arXiv:1712.05361
19. (With C. Bleak, M. G. Brin, M. Kassabov and J. T. Moore) Groups of fast homeomorphisms of the interval. *J. Comb. Algebra.* Vol. 3 (2019), No. 1, 1–40. arXiv:1701.08321
18. (With S. Witzel) The Σ-invariants of Thompson's group F, via Morse theory. *Topological Methods in Group Theory*, London Math. Soc. Lecture Note Ser. Vol. 451, 173–194, Cambridge University Press, 2018. arXiv:1501.06682
17. (With S. Witzel) Thompson groups for systems of groups, and their finiteness properties. *Groups Geom. Dyn.* Vol. 12 (2018), No. 1, 289–358. arXiv:1405.5491
16. On normal subgroups of braided Thompson groups. *Groups Geom. Dyn.* Vol. 12 (2018), No. 1, 65–92. arXiv:1403.8132
15. Symmetric automorphisms of free groups, BNSR-invariants, and finiteness properties. *Michigan Math. J.* Vol. 67 (2018), No. 1, 133–158. arXiv:1607.03043
14. A user's guide to cloning systems. *Topology Proc.* Vol. 52 (2018), 13–33. arXiv:1606.08762
13. On the Σ-invariants of generalized Thompson groups and Houghton groups. *Int. Math. Res. Not. IMRN.* Vol. 2017, No. 19, 5861–5896. arXiv:1502.02620
12. Separation in the BNSR-invariants of the pure braid groups. *Publ. Mat.* Vol. 61 (2017), No. 2, 337–362. arXiv:1507.08597
11. (With L. Sabalka) On Belk's classifying space for Thompson's group F. *Forum Math.* Vol. 29 (2017), No. 3, 681–691. arXiv: 1306.6534
10. (With K.-U. Bux, M. Fluch, M. Marschler and S. Witzel) The braided Thompson's groups are of type F_∞. With an appendix by M. C. B. Zaremsky: Higher generation for pure braid groups. *J. Reine Angew. Math. (Crelle's Journal)* Vol. 2016, Issue 718, 59–101. arXiv:1210.2931. View erratum [here]

9. HNN decompositions of the Lodha–Moore groups, and topological applications. *J. Topol. Anal.* Vol. 8 (2016), No. 4, 627–653. arXiv:1410.8442
8. (With S. Witzel) A free subgroup in the image of the 4-strand Burau representation. *J. Knot Theory Ramifications* Vol. 24 (2015), No. 12. arXiv: 1304.7923. (16 pages)
7. Division algebras and transitivity of group actions on buildings. *Adv. Geom.* Vol. 15 (2015), No. 2, 133–142. arXiv: 1105.1965
6. Rational homological stability for groups of partially symmetric automorphisms of free groups. *Algebr. Geom. Topol.* Vol. 14, (2014), No. 3, 1845–1879. arXiv:1203.4845
5. (With R. McEwen) A combinatorial proof of the Degree Theorem in Auter space. *New York J. Math.* Vol. 20 (2014), 217–228. arXiv:0907.4642
4. Representatives of elliptic Weyl group elements in algebraic groups. *J. Group Theory.* Vol. 17 (2014), No. 1, 49–71. arXiv:1109.5487
3. (With M. Fluch, M. Marschler and S. Witzel) The Brin–Thompson groups sV are of type F_∞. *Pacific J. Math.* Vol. 266 (2013), No. 2, 283–295. arXiv:1207.4832
2. (With A. Heald and M. Pearson; undergraduate publication) Waffles: Irreducible Representations of Metacyclic Groups. *Pi Mu Epsilon J.* Issue 13:2 (2010)
1. (With J. Holdener and L. Kennard; undergraduate publication) Generalized Thue-Morse sequences and the von Koch Curve. *Int. J. Pure Appl. Math.* Volume 47 (2008), No. 3

Other

- Rational homological stability for groups of symmetric automorphisms of free groups. arXiv:1111.6506. Subsumed by arXiv:1203.4845
- (With P. Abramenko.) Some reductive anisotropic groups that admit no non-trivial split spherical BN-pairs. arXiv:1108.4913. Subsumed by independent work of G. Prasad: Weakly-split spherical Tits systems in pseudo-reductive groups. *Amer. J. Math.* Vol. 136 (2014), no.3, 807-832
- (With P. Abramenko.) Strongly and Weyl transitive group actions on buildings arising from Chevalley groups. arXiv:1101.1113. Unpublished preprint
- Ph.D. Thesis: Strong Transitivity and Weyl Transitivity of Group Actions on Affine Buildings. University of Virginia, 2011

Service and Outreach

- Editorial board, Journal of Group Theory, 2025-present
- Department representative in the University Senate; member of committee "Council on Research", University at Albany, 2025-2026
- Head organizer, Special Session on "Geometric group theory," AMS Fall Eastern Sectional Meeting, Albany, NY, October 2024
- External evaluator for honors theses in mathematics, Kenyon College, 2023
- Editorial board, New York Journal of Mathematics, 2022-present
- Member of the UAlbany math department's Executive Committee, 2022-2023
- Scientific Committee, YGGT XI (11th annual "Young Geometric Group Theory" conference), Münster, Germany, 2023
- Production team, New York Journal of Mathematics, 2021-present

- Department representative in the University Senate; member of committee "Council on Research" and subcommittee "Centers, Institutes and Specialized Research Laboratories", University at Albany, 2020-2022
- Mathematics consultant, Schenectady Daily Gazette, 2020-present
- Co-organizer, Special Session on "Group actions on manifolds and related spaces," AMS Fall Eastern Sectional Meeting, Binghamton, NY, October 2019
- Graduate committee member, University at Albany, 2019-present
- Steering committee, annual Spring Topology and Dynamics Conference, 2018-2021
- Co-organizer, 52nd annual Spring Topology and Dynamics Conference (chair of geometric group theory special session), Auburn, AL, March 2018
- Co-organizer, Algebra/Topology Seminar, University at Albany, 2018-present
- Department co-webmaster, University at Albany, 2018-present
- Faculty advisor, Cornell Math Explorer's Club (outreach for grades 8-12), 2016-2017
- Mathematics consultant, Mic.com and MEL magazine, 2016-present
- Faculty advisor for Binghamton Undergraduate Math Club, 2015-2016
- Assistant faculty advisor for Binghamton Undergraduate Math Club, 2014-2015
- Curriculum development and editing of departmental course textbook, Math 130 (Mathematics in Action), Binghamton University
- Reviewer for grant and fellowship proposals for: Humboldt Foundation (Germany), United States-Israel Binational Science Foundation (BSF), Austrian Science Fund (FWF), Chilean Agencia Nacional de Investigación y Desarrollo (ANID)
- Reviewer for Mathematical Reviews and zbMATH (at least 83 reviews written)
- Referee for peer-reviewed journals, including: *Amer. J. Math*, *Arch. Math. (Basel)*, *Comm. Algebra*, *Expo. Math*, *Forum Math*, *Forum Math. Sigma*, *Geom. Dedicata*, *Geom. Topol*, *Groups Geom. Dyn*, *J. Algebra*, *J. Amer. Math. Soc*, *J. Aust. Math. Soc*, *J. Comb. Alg*, *J. Combin. Theory Ser. A*, *J. Group Theory*, *J. London Math. Soc*, *J. Pure Appl. Algebra*, *J. Topol*, *Kyoto J. Math*, *Math. Ann*, *Michigan Math. J*, *Pacific J. Math*, *Proc. Amer. Math. Soc*, *Publ. Mat*, *Q. J. Math*, *Quantum Topol*, *Topology Proc*, *Trans. Amer. Math. Soc* (44 referee reports for 28 journals; quick opinions for a number of additional journals)

Advising

- PhD advisor (UAlbany): Seth Hulbert, 2025–present; Ryan Gelnett, 2025–present; Eli Bashwinger, 2022–2024 (graduated May 2024, received 2024 Distinguished Doctoral Dissertation Award, for best dissertation in the College of Arts & Sciences); Robert Spahn, 2019–2021 (graduated May 2021)
- PhD thesis committee (UAlbany): Kate Howell, 2022–2024 (graduated May 2024); Douglas Lenseth, 2018–2022 (graduated May 2022); Jordan DeSha, 2018–2021 (graduated May 2021)
- PhD external evaluator: Davide Perego, U Milan – Bicocca, 2023
- Masters advisor (UAlbany): Millard Sperbeck, 2023 (graduated May 2023)
- Informal Masters advisor (UAlbany): Brendan Mallery, 2018–2020 (graduated May 2020)
- Masters external evaluator: Arnaud Studer, EPFL, 2018; Nicolas Vaskou, EPFL, 2019
- Undergraduate advisor (UAlbany): Many students

Fellowships and Grants

- Simons Foundation Collaboration Grant for Mathematicians, "Topological methods in geometric group theory," award #635763, 2019–2024

- Dissertation Fellowship - University of Virginia Math Department, Fall 2010
- Society of Fellows travel award, for travel to Spring Topology and Dynamics Conference, March 2010
- Government Assistance in Areas of National Need (GAANN) Fellowship, University of Virginia, 2007–2011
- National Merit Scholar; Distinguished Merit Scholarship; Ohio Academic Scholarship, 2003–2007

Teaching

University at Albany (SUNY), Albany, NY (2017–present)

- Instructor for AMAT 842: Seminar in Topology (Topics course on geometric group theory), fall 2025
- Instructor for AMAT 842: Seminar in Topology (Topics course on infinite simple groups), spring 2024
- Instructor for AMAT 842: Seminar in Topology (Topics course on Thompson's groups), spring 2021
- Instructor for AMAT 840: Topics in Topology (Discrete Morse Theory and Finiteness Properties of Groups), spring 2020
- Instructor for AMAT 300 (formerly called 299): Introduction to Proofs, spring 2020, spring 2021, spring 2022, fall 2023, fall 2024, spring 2026
- Instructor for AMAT 640: Introduction to Combinatorial Group Theory, fall 2019, spring 2023
- Instructor for AMAT 327: Elementary Abstract Algebra, fall 2019, fall 2020, spring 2024, spring 2026
- Instructor for AMAT 540B: Topology II, spring 2019, spring 2022
- Instructor for AMAT 220: Linear Algebra, spring 2019, fall 2020, fall 2021, spring 2023, fall 2023
- Instructor for AMAT 540A: Topology I, fall 2018, fall 2021, fall 2022, fall 2024, fall 2025
- Instructor for AMAT/TMAT 222: Honors Linear Algebra, fall 2018
- Instructor for AMAT 840: Topics in Topology (Geometric Group Theory), spring 2018
- Instructor for AMAT/TMAT 218: Honors Calculus of Several Variables, spring 2018
- Instructor for AMAT/TMAT 119: Honors Calculus II, fall 2017

Cornell University, Ithaca, NY (2016)

- Instructor for Math 1110: Calculus I (two sections), fall 2016

Binghamton University, Binghamton, NY (2013–2016)

- Independent study with undergraduate Eidan Maimoni, summer 2016
- Instructor for Math 603: Topics in Algebra (geometric group theory), spring 2016
- Instructor for Math 461: Topology I, fall 2015
- Instructor for Math 222: Calculus II, fall 2015
- Instructor for Math 404: Advanced Linear Algebra, spring 2015
- Instructor for Math 130: Mathematics in Action, spring 2014, fall 2014, spring 2015
- Instructor for Math 304: Linear Algebra, fall 2013
- Instructor for Math 371: Ordinary Differential Equations, fall 2013

Bielefeld University, Bielefeld, Germany (2011–2013)

- Instructor for graduate level course, "Linear Algebraic Groups," winter 2012/2013
- Instructor for graduate level topics course, "Introduction to Buildings II," spring/summer 2012

- Instructor for graduate level topics course, "Introduction to Buildings," winter 2011/2012

University of Virginia, Charlottesville, VA (2007–2011)

- Instructor for Math 2310: Calculus III, summer 2011
- Instructor for Math 1320: Calculus II, spring 2010, spring 2011 and summer 2011
- Instructor for Math 1310: Calculus I, fall 2009
- Instructor for Math 121: Applied Calculus I, spring 2009
- Instructor for Math 122: Applied Calculus II, fall 2008
- Teaching Assistant for Math 117: The Art of Mathematical Thinking (fall 2007) and Math 132: Calculus II (spring 2008)

Kenyon College, Gambier, OH (2003–2007)

- Tutor for general math, physics, and computer science classes, 2005–2007

Other

- Tutor for high school math and physics, Champion Tutoring, Charlottesville, VA, 2009–2010
- Tutor for high school math, Charlottesville High School, Charlottesville, VA, 2008–2009
- Tutor for linear/abstract algebra, freelance, Charlottesville, VA, 2007–2011

Invited Talks

66. Wolfgang and Luise Kappe Alumni Keynote Speaker, Binghamton University Graduate Conference in Algebra and Topology (BUGCAT), Binghamton, NY, November 15, 2025:
    "Some complicated simple groups"
65. Topology Seminar, Louisiana State University, November 5, 2025:
    "On the Sigma-invariants of pure symmetric automorphism groups"
64. New York Group Theory Seminar, CUNY Graduate Center, September 19, 2025:
    "Aut(F_n) satisfies the Boone–Higman conjecture"
63. Topology et al Seminar, Wesleyan University, April 23, 2025:
    "Aut(F_n) satisfies the Boone–Higman conjecture"
62. Groups and Dynamics Seminar, Institute for Advanced Study and Princeton University, March 25, 2025:
    "Progress around the Boone–Higman conjecture" – Video is [here]
61. Max Dehn Seminar, University of Utah, March 19, 2025:
    "Aut(F_n) satisfies the Boone–Higman conjecture"
60. Special Session on Applied Topology, 58th Annual Spring Topology and Dynamics Conference, Newport News VA, March 7, 2025:
    "Bestvina–Brady discrete Morse theory and Vietoris–Rips complexes"
59. Geometry and Topology Seminar, University of Oklahoma, March 5, 2025:
    "Aut(F_n) satisfies the Boone–Higman conjecture"
58. Topology & Group Theory Seminar, Vanderbilt University, February 26, 2025:
    "Aut(F_n) satisfies the Boone–Higman conjecture"
57. Geometry and Topology Seminar, Binghamton University, January 30, 2025:
    "Progress around the Boone–Higman conjecture"

56. Topology Seminar, University of Wisconsin-Milwaukee, October 7, 2024:
"Progress around the Boone–Higman conjecture"
55. Topology & Geometric Group Theory Seminar, Cornell University, October 1, 2024:
"Progress around the Boone–Higman conjecture"
54. Colloquium, University of Virginia, April 18, 2024:
"Hyperbolic groups satisfy the Boone–Higman conjecture"
53. Topological and Homological Methods in Group Theory (THGT) conference at Bielefeld University, research talk, March 22, 2024:
"Hyperbolic groups satisfy the Boone–Higman conjecture"
52. Groups, Actions, and Geometries conference at Tufts University, research talk, August 7, 2023:
"Hyperbolic groups satisfy the Boone–Higman conjecture"
51. Topology and Geometric Group Theory Seminar, The Ohio State University, April 11, 2023:
"Shift-similar groups of permutations of the natural numbers"
50. Algorithms, Combinatorics, and Optimization Seminar, Carnegie Mellon University, October 13, 2022:
"Shift-similar groups of permutations of the natural numbers"
49. New York Group Theory Seminar, CUNY Graduate Center, February 25, 2022 (virtual talk):
"Houghton-like groups from 'shift-similar' groups" – Video is [here]
48. Geometry and Topology Seminar, Binghamton University, February 10, 2022 (virtual talk):
"Higher virtual algebraic fibering of certain right-angled Coxeter groups"
47. Math Mondays (Colloquium), Kenyon College, January 24, 2022 (virtual talk):
"These are a few of my favorite groups"
46. Geometry and Analysis on Groups Research Seminar, University of Vienna, November 30, 2021 (virtual talk):
"Higher virtual algebraic fibering of certain right-angled Coxeter groups"
45. Training course on Group Cohomology and Bieri–Neumann–Strebel–Renz invariants, Basque Center for Applied Mathematics, November 29, 2021 (virtual talk):
"The BNSR-invariants of Thompson's group F and some relatives"
44. Geometric Group Theory and Topology Seminar, Tufts University, November 18, 2021:
"Higher virtual algebraic fibering of certain right-angled Coxeter groups"
43. Topology and Geometric Group Theory Seminar, Cornell University, October 26, 2021:
"Higher virtual algebraic fibering of certain right-angled Coxeter groups"
42. Plenary speaker, Beyond Hyperbolicity at the Ohio State University, July 2, 2021:
"Geometric embeddings into simple groups"
41. Subfactor Seminar, Vanderbilt University, May 28, 2021 (virtual talk):
"Group von Neumann algebras of Thompson-like groups"

40. Applied Algebraic Topology Research Network (AATRN) Vietoris–Rips seminar, Online (affiliated with Colorado State University and The Ohio State University), May 21, 2021:
    "Vietoris-Rips complexes and geometric group theory" – Video is [here]
39. Topology Seminar, University of California, Riverside, March 3, 2021 (virtual talk):
    "Finiteness properties of normal subgroups of the Stein group"
38. Probabilistic and Geometric Group Theory Seminar, University of Hagen, December 9, 2020 (virtual talk):
    "Geometric embeddings into simple groups"
37. Oberseminar Groups and Geometry, Bielefeld University, November 11, 2020 (virtual talk):
    "Twisted Brin-Thompson groups, and geometric embeddings into simple groups"
36. Group Actions Seminar, Online (affiliated with KIAS (South Korea), UVa (Virginia), and EPFL (Switzerland)), August 13, 2020:
    "Higher connectivity toward infinity: The BNSR-invariants of a group"
35. Topology and Geometric Group Theory Seminar, Cornell University, April 21, 2020 (canceled)
34. Topology Seminar, University of Wisconsin – Milwaukee, April 8, 2020 (virtual talk):
    "Quasi-isometric embeddings into simple groups"
33. Geometric Group Theory and Topology Seminar, Tufts University, April 7, 2020 (virtual talk):
    "Quasi-isometric embeddings into simple groups"
32. Topology and Geometric Group Theory Seminar, The Ohio State University, March 19, 2020 (virtual talk):
    "Quasi-isometric embeddings into simple groups"
31. AMS Special Session on "Groups and Topological Dynamics", Joint Mathematics Meeting, Denver, CO, January 17, 2020:
    "Twisted Brin–Thompson groups"
30. Union College Mathematics Conference, September 13, 2019:
    "Bestvina–Brady Morse theory on Vietoris–Rips complexes"
29. Geometry and Topology Seminar, Binghamton University, April 11, 2019:
    "Discrete Morse theory on Vietoris–Rips complexes"
28. Geometry and Topology Seminar, Binghamton University, August 30, 2018:
    "The Bieri-Neumann-Strebel-Renz invariants of the Houghton groups"
27. Special Session on Topological Methods in Geometric Group Theory, 33rd Summer Conference on Topology and its Applications, Bowling Green, KY, July 17, 2018:
    "Simple groups separated by finiteness properties"
26. Oberwolfach Workshop – Cohomological and Metric Properties of Groups of Homeomorphisms of $\mathbb{R}$, Oberwolfach, Germany, June 5, 2018:
    "Simple groups separated by finiteness properties"

25. Mladen Bestvina's Workshop on PL-Morse Theory, 52nd Annual Spring Topology and Dynamical Systems Conference, Auburn, AL, March 15, 2018:
"PL-Morse theory and Thompson's group F"
24. Geometric Group Theory and Topology Seminar, Tufts University, February 13, 2018:
"Simple groups of type F_{n-1} but not F_n"
23. Upstate Descriptive Set Theory and Group Theory Day, Binghamton University, November 28, 2017:
"Almost-automorphisms of trees, self-similarity and finiteness properties of groups"
22. Geometric group theory seminar, McGill University, November 8, 2017:
"Finiteness properties in the extended family of Thompson's groups"
21. Mathematics, Computer Science and Statistics Department Seminar, SUNY Oneonta, October 6, 2017:
"These are a few of my favorite groups"
20. Special Session on Geometric Group Theory, 2017 Fall Eastern Section AMS meeting, Buffalo, NY, September 16, 2017:
"Virtual splittings of RAAGs over abelian subgroups, and abstract commensurability"
19. Special Session on Geometric Topology, 51st Annual Spring Topology and Dynamics Conference, Jersey City, NJ, March 8, 2017:
"Bieri–Neumann–Strebel–Renz invariants of symmetric automorphism groups"
18. Algebra Seminar, University of Virginia, October 10, 2016:
"Symmetric automorphisms of free groups and finiteness properties of certain subgroups"
17. Special Session on Geometric Group Theory, 2016 Fall Eastern Section AMS meeting, Brunswick, ME, September 24, 2016:
"Symmetric automorphisms of free groups and finiteness properties of certain subgroups"
16. Topology & Geometric Group Theory Seminar, Cornell University, April 26, 2016:
"Finiteness properties of some subgroups of the pure braid groups"
15. AMS Special Session on "What's New in Group Theory?", Joint Mathematics Meeting, Seattle, WA, January 6, 2016:
"Finiteness properties of infinite groups, and examples in pure braid groups"
14. Special Session on Geometric Group Theory, 49th Annual Spring Topology and Dynamics Conference, Bowling Green, OH, May 15, 2015:
"Sigma-invariants of generalized Thompson groups"
13. Geometry & Topology Seminar, Yale University, December 2, 2014:
"HNN decompositions of Lodha–Moore groups, and topological applications"
12. Algebra/Topology Seminar, University at Albany, September 18, 2014:
"Families of groups encoded into Thompson-esque limits"
11. Topological Methods in Group Theory (Ross Geoghegan 70th birthday conference), The Ohio State University, June 19, 2014:
"Thompson groups for systems of groups, and their finiteness properties"

10. Math Colloquium, Kenyon College, April 14, 2014:
    "These are a few of my favorite groups"
9. Special Session on Geometric Group Theory, 48th Annual Spring Topology and Dynamics Conference, Richmond, VA, March 13, 2014:
    "Connectivity properties of matching complexes of arcs on surfaces"
8. Algebra Seminar, University of Virginia, October 11, 2013:
    "Playing ping-pong on a euclidean building, and an application to the Burau representation"
7. Topology & Geometric Group Theory Seminar, Cornell University, September 24, 2013:
    "Finiteness properties of Thompson-like groups"
6. Seminar on groups and geometry, Bielefeld University, May 22, 2013:
    "Classifying spaces and cohomology rings for Thompson's groups F and braided F"
5. Geometric group theory block seminar, Karlsruhe-Münster-Regensburg, September 27, 2012:
    "Borel density and CAT(0) lattices"
4. Geometric group theory and model theory seminar, University of Münster, May 10, 2012:
    "Partially symmetric automorphisms of free groups"
3. Topology & Geometric Group Theory Seminar, Cornell University, November 9, 2010:
    "Weyl transitive but not strongly transitive group actions on buildings"
2. Special Session on Geometric Group Theory and Geometric Topology, 44th Annual Spring Topology and Dynamics Conference, Starkville, MS, March 18, 2010:
    "Weyl group representatives in Chevalley groups, and an application to buildings"
1. Special Session on Lattices, Coxeter Groups, and Buildings, 2009 Fall Southeastern Section AMS meeting, Boca Raton, FL, November 1, 2009:
    "Chevalley groups and Weyl group representatives"

Invited Talks Declined for Family Reasons (Paternity Leave etc.)

- "Algebra Day on the Hudson" conference, Hoboken, NJ, December 7, 2024
- AMS Special Session on "Discrete Homotopy Theory", Joint Mathematics Meeting, San Francisco, CA, January 5, 2024
- Oberwolfach Mini-Workshop – Homological Aspects for TDLC-Groups, Oberwolfach, Germany, November 26–December 2 2023
- GoTh Workshop: Groups of Thompson and their relatives, Magdeburg, Germany, September 18–22 2023
- Casa Matemática Oaxaca Workshop – Group Actions on Cantor Sets, Oaxaca, Mexico, September 3rd 2023
- Casa Matemática Oaxaca Workshop – Interactions between Algebraic Topology and Geometric Group Theory, Oaxaca, Mexico, May 28th 2023
- Union College Mathematics Conference 2022, June 3–June 5, 2022
- Conference on Self-similarity in groups and group actions, part of the special trimester "Groups Acting on Fractals, Hyperbolicity and Self-similarity" at the Institut Henri Poincaré in Paris, May 30–June 3, 2022

- Bridging Applied and Quantitative Topology (online conference), May 9–May 13, 2022
- 55th Annual Spring Topology and Dynamics Conference, Waco, TX, March 2022

Other Talks

- Zassenhaus Group Theory Conference, Binghamton University, May 31, 2025:
  "Some difficult simple groups"
- Math Club, University at Albany, February 18, 2022:
  "These are a few of my favorite groups"
- Zassenhaus Group Theory Conference, Online, May 29, 2021:
  "Finiteness properties of normal subgroups of the Stein group $F_{2,3}$"
- Zassenhaus Group Theory Conference, Online, May 30, 2020:
  "Geometric embeddings into simple groups" – Video is [here]
- Colloquium, University at Albany:
  "Hyperbolic groups satisfy the Boone–Higman conjecture" October 27, 2023
  "Discrete Morse theory on Vietoris–Rips complexes" March 29, 2019
- Algebra/Topology Seminar, University at Albany:
  "Aut(F_n) satisfies the Boone–Higman conjecture" September 4, 2025
  "Hyperbolic actions of Thompson's group F" April 11, 2024
  "Shift-similar groups of permutations of the natural numbers" September 15, 2022
  "Applications of discrete Morse theory on Vietoris–Rips complexes" April 4, 2019
  "Finiteness properties of infinite simple groups" September 13, 2018
- MAA Session on "The Creation and Implementation of Effective Homework Assignments", Joint Mathematics Meeting, Atlanta, GA, January 7, 2017:
  "Grading more than just the final answer with an automated grading system: Benefits and pitfalls"
- Working seminar in geometric topology, Binghamton University:
  "Finiteness properties of groups and discrete Morse theory, Parts I and II" April 14-15, 2015
- Zassenhaus Group Theory Conference, The Ohio State University, May 10, 2014:
  "Normal subgroups of braided Thompson groups"
- Geometry and Topology Seminar, Binghamton University:
  "Finiteness properties of some subgroups of the pure braid groups" April 14, 2016
  "The Σ-invariants of the generalized Thompson's groups F_n" March 26, 2015
  "The Σ-invariants of Thompson's group F, via Morse theory" March 19, 2015
  "HNN decompositions of Lodha–Moore groups, and topological applications" November 13, 2014
  "Finiteness properties of Thompson-like groups" October 3, 2013
- Math Club, Binghamton University, February 25, 2014:
  "Elementary matrix row reduction: When it works, when it doesn't, and when nobody knows"
- Tea seminar for Kramer's research group, University of Münster, April 23, 2013:
  "Playing ping-pong on a euclidean building"
- Buildings 2012 conference, University of Münster, October 1, 2012:
  "Higher generation for braid groups"
- Seminar on groups and geometry, Bielefeld University:
  "An approach of Bux and Wortman to non-finite presentability of the group $SL_2(\mathbb{Z}[t, t^{-1}])$" October 26, 2012

"Higher generation for pure braid groups" October 19, 2012
"Homological stability and partially symmetric automorphisms of free groups, parts I and II," March 19-21, 2012

- Buildings 2011 conference, University of Münster, October 5, 2011:
  "Some highly non-weakly transitive actions on buildings"
- Algebra Seminar, University of Virginia:
  "Anisotropic groups and split BN-pairs," February 23, 2011
  "Weyl transitive but not strongly transitive group actions on buildings," November 3, 2010
  "Torsion properties of representatives of Weyl group elements in Chevalley groups," February 24, 2010
- Binghamton University Graduate Conference in Algebra and Topology, Binghamton, NY:
  "Finiteness properties of groups," November 9, 2013
  "Never hire a division algebra to work on a building," November 6, 2010
  "VRGD systems and affine buildings," November 14, 2009
- Graduate Seminar, University of Virginia:
  "Cramming fields into quaternion phone booths," October 29, 2010
  "The Chevalley Group: The Chevrolet of groups," September 18, 2009
  "Irreducible representations of metacyclic groups: The Waffle Method," November 16, 2007
- Graduate Student Topology and Geometry Conference, Madison, WI, April 19, 2009:
  "Buildings, from the ground up"
- Ohio Section MAA Fall Meeting, Muskingum, OH, October 27, 2006:
  "Irreducible representations of metacyclic groups: The Waffle Method"

Other Conferences Attended, and Research Visits

- The William Rowan Hamilton Geometry and Topology Workshop: Celebrating Martin Bridson's 60th Birthday, Dublin, Ireland, June–July 2025
- Research visit, Cambridge University, UK, June 2025
- Research visit, University of St Andrews, UK, June 2025
- GAGTA, Hoboken, NJ, June 2025
- Redbud Topology Conference, Fayetteville, AR, March 2025
- Cornell Topology Festival, Ithaca, NY, May 2024
- 54th Annual Spring Topology and Dynamics Conference, Murray, KY, March 2020 (canceled)
- 53rd Annual Spring Topology and Dynamics Conference, Birmingham, AL, March 2019
- UNYTS – Upstate New York Topology Seminar, Albany, NY, November 2018
- Cornell Topology Festival, Ithaca, NY, May 2016
- Binghamton University Graduate Conference in Algebra and Topology, Binghamton, NY, November 2015
- Zassenhaus Group Theory Conference, Binghamton, NY, May 2015
- Binghamton University Graduate Conference in Algebra and Topology, Binghamton, NY, October 2014
- Joint Mathematics Meeting, Baltimore, MD, January 2014
- Locally compact groups beyond Lie theory, Spa, Belgium, April 2013
- Geometric Group Theory Summer School, Park City, UT, July 2012
- Topology and Groups, Berlin, Germany, June 2012

- Groups 2012 – A conference in honour of the 75th birthday of Bernd Fischer, Bielefeld, March 2012
- Young Geometric Group Theory Meeting, Bedlewo, Poland, January 2012
- Workshop on Arithmetic Groups and their Applications in Combinatorics, Geometry and Topology, Charlottesville, VA, April 2010
- Graduate Student Topology and Geometry Conference, Ann Arbor, MI, April 2010
- Joint Mathematics Meeting, New Orleans, LA, January 2007 (presented poster)

Awards and Honors

- GTA Teaching Award, Honorable Mention, University of Virginia, spring 2011
- GTA Teaching Award, Honorable Mention, University of Virginia, spring 2010
- Phi Beta Kappa, inducted May 2007
- Franklin Miller award for excellence in extracurricular research, Kenyon College, May 2007
- Reginald B. Allen award for excellence in mathematics, Kenyon College, April 2007

Memberships

- American Mathematical Society